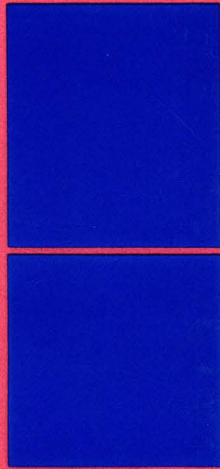
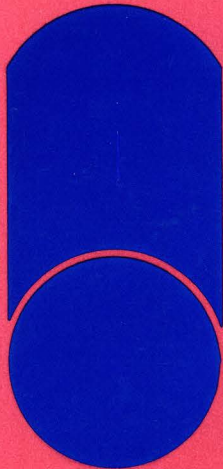
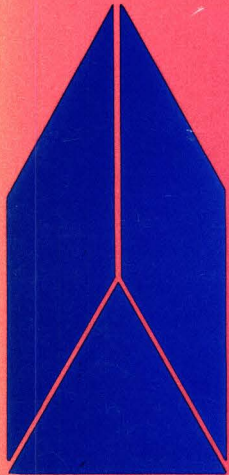


Dictionary of Occupational Titles

Fourth Edition Supplement, 1986



U.S. Department of Labor
Employment and Training Administration



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Dictionary of Occupational Titles

Fourth Edition Supplement, 1986



U.S. Department of Labor
William E. Brock, Secretary
Employment and Training Administration
Roger D. Semerad
Assistant Secretary for Employment and Training
1986

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Foreword

The escalating number of jobs affected by new technologies presents a tremendous challenge to those involved in the effort to provide accurate data on the array of work activities in the American economy. And yet, valid documentation of what workers do in their jobs and which skills, knowledges, and abilities employers require is essential in planning for and realizing the optimal utilization of our national work force.

This second Supplement to the 1977 Fourth Edition *Dictionary of Occupational Titles* (DOT) is a vehicle for maintaining the currency of the *Dictionary* and for responding to the requests of users in the public and private sectors for comprehensive up-to-date occupational information. It is hoped that the information contained in this publication will enhance the usefulness of the *Dictionary* for its many and varied users. For ease of reference, this Supplement contains information included in the 1982 Supplement to the Fourth Edition *Dictionary* and supersedes that publication.

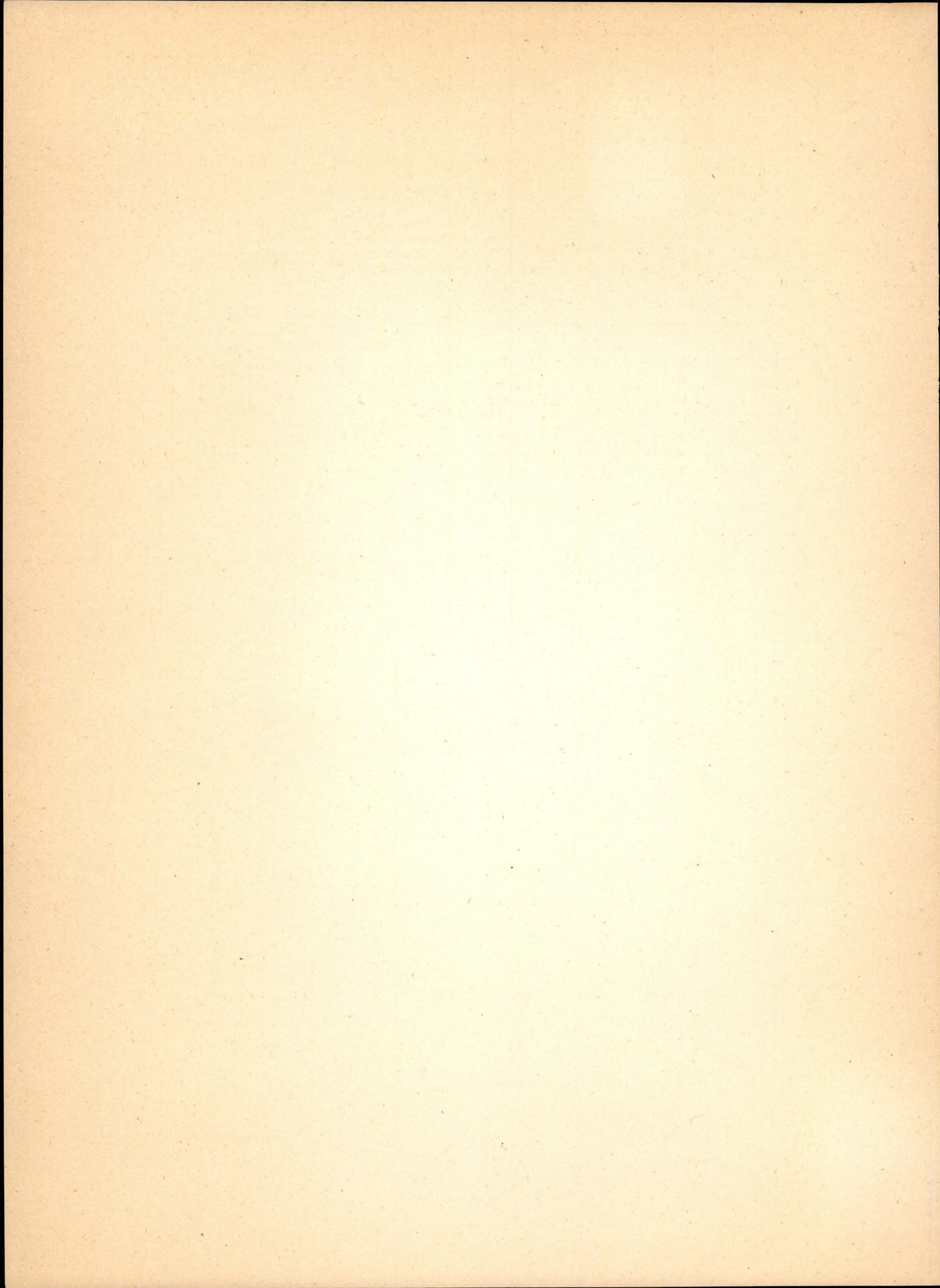
User participation in the Occupational Code Request program continues to provide valuable information on omitted, new, and changing jobs. The Occupational Code Request form, a facsimile of which appears in Appendix A, is available at local Job Service Offices. We express appreciation to *Dictionary* users who have used this means to add to the source data reflected in the Supplement. Such interest and vigilance helped make this publication possible.

Comments and inquiries about the *Dictionary* and this Supplement are invited and should be addressed to:

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Division of Planning and Operations
Employment and Training Administration
U.S. Department of Labor
Frances Perkins Bldg. Room N4456
200 Constitution Ave NW
Washington, DC 20210

Telephone inquiries may be made by calling (202) 535-0192

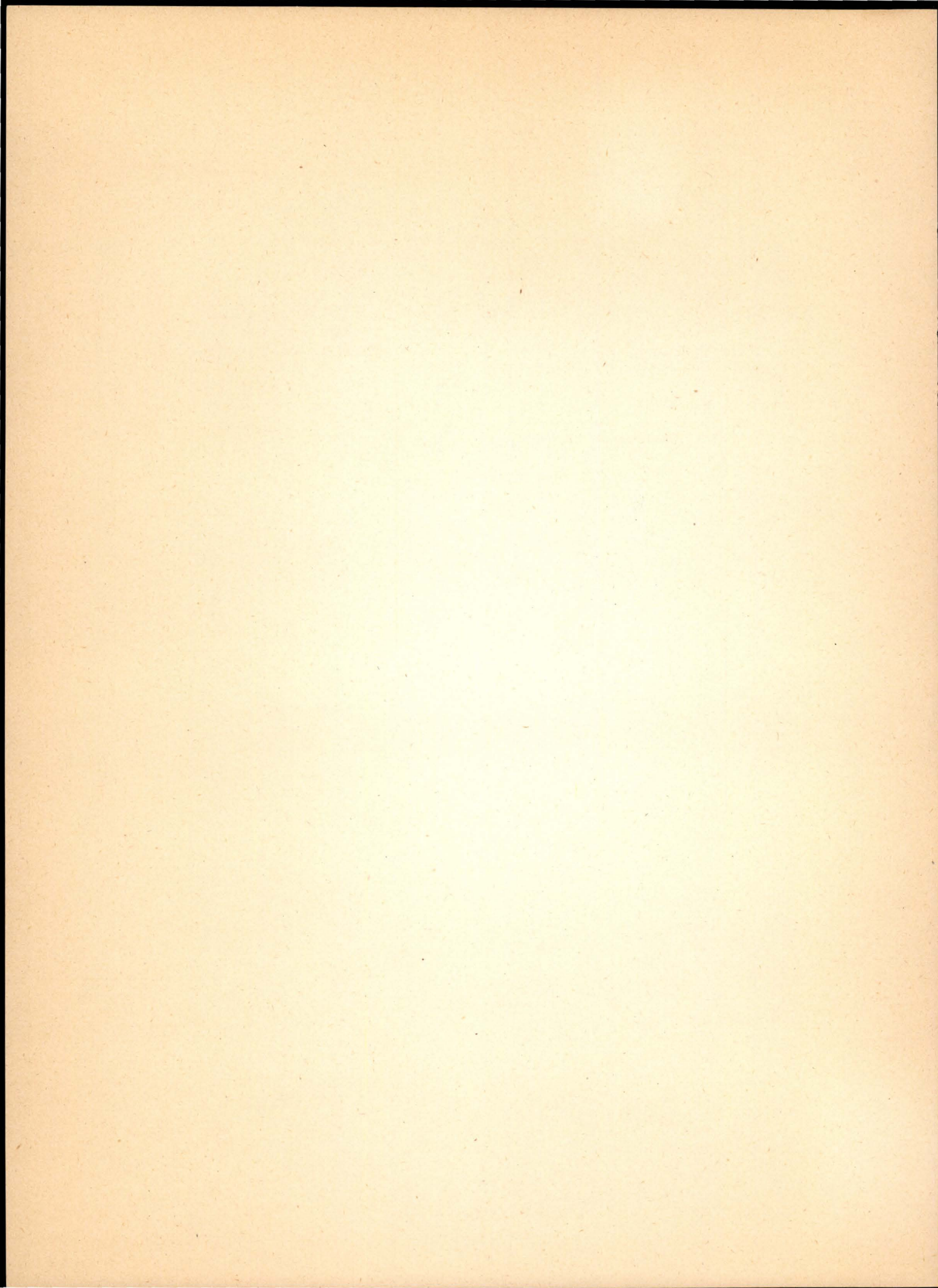
Robert Schaerfl
Administrator
U.S. Employment Service



Acknowledgments

John Hawk and John Welch of the Division of Operations and Planning, United States Employment Service, Employment and Training Administration, planned and directed the development of this Supplement; the North Carolina Occupational Analysis Field Center, under the direction of Stanley Rose, provided leadership for its production. Grateful acknowledgment is made to the staff of the North Carolina Center, and to the staffs of the Massachusetts, Michigan, Missouri, and Utah Occupational Analysis Field Centers, under the direction of Robert Vinson, Thomas Kearney, Jerome Stevens, and Sam Lee, respectively, for their spirited work in gathering the occupational data and preparing it for publication. Acknowledgment is also made to Robert Horstman of the Office of Administration and Management, Employment and Training Administration, for specialized computer services.

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Special Notice

Occupational information in the Supplement reflects jobs as they have been found to occur, but may not coincide in every detail with the content of jobs as performed in particular localities or establishments. To have the greatest applicability, the data should be supplemented by local information about jobs within the community.

The United States Employment Service has no responsibility for setting wages or hours or for settling jurisdictional matters. In preparing occupational definitions, no facts concerning such matters were collected. Therefore, the data contained in this publication cannot be considered as establishing standards for setting wages or hours or for settling jurisdictional matters.

Introduction

The occupational definitions in this Supplement appear in numeric order which corresponds to the Occupational Group Arrangement (OGA) of titles by nine-digit code in the 1977 Fourth Edition *Dictionary of Occupational Titles* (DOT). To reduce the bulk of the Supplement, the OGA category, division, and group headings under which occupational definitions appear in the *Dictionary* have been omitted. Please refer to the introduction and Occupational Group Arrangement sections of the Fourth Edition DOT for an explanation of occupational code numbers and the DOT classification structure.

This Supplement contains 840 occupational definitions; of these, 761 were not defined in the Fourth Edition. The definitions in this Supplement derive from several sources. A significant number of occupations were identified by DOT users and given temporary codes and titles through the Occupational Code Request program which documents occupations omitted from the DOT. These occupations have been subsequently studied in the field by occupational analysts; sixty-one have been assigned permanent titles and codes in this publication. Many of the definitions result from current studies of selected jobs affected by microelectronics and related technologies. Others developed from industry studies conducted since the last edition of the *Dictionary*. Seventy-nine of the occupations are repeated from the Fourth Edition and have been included here because of changes in definition content or amendments of ratings in the characteristics profile following each definition. (See Appendixes B and C for listings of these occupations.) The Supplement listing supersedes the corresponding definition in the 1977 Fourth Edition DOT. Finally, for convenience to users, 276 of the 278 occupational definitions published in the 1982 Supplement to the DOT have been incorporated into this publication. One of the remaining two definitions from the First Supplement is now an alternate title; one is no longer used.

Characteristics and auxiliary classification profiles have been appended to the definition to complement the occupational information in publications that present Fourth Edition DOT data. *Selected Characteristics of Occupations Defined in the Dictionary of Occupational Titles* (1981), a United States Employment Service (USES) publication, explains estimates for Mathematical (M) and Language (L) development, and Specific Vocational Preparation (SVP). The *Guide for Occupational Exploration*, also a USES publication, and the *Standard Occupational Classification Manual* explain GOE and SOC classifications, respectively.

Since the publication of the Fourth Edition DOT and the 1982 Supplement, selected rating structures used by occupational analysts have been changed. The rating structures for Physical Demands (PD) and Environmental Conditions (EC) have added descriptors that permit greater discrimination in rating job situations for these factors. For an explanation of the PD and EC rating structures please see Appendix D.

The 1977 Fourth Edition *Dictionary* remains the primary source of reference. However, the Supplement should be routinely consulted to ensure use of the most current and valid occupational data.

The Fourth Edition of the *Dictionary of Occupational Titles* and this Supplement are available on two computer tapes from National Technical Information Service (NTIS); U.S. Department of Commerce; 5285 Port Royal Road; Springfield, Virginia 22161; (703) 487-4650. Rating structures used by occupational analysts have changed since the publication of the Fourth Edition; therefore, data on the Supplement tape cannot be merged with data on the Fourth Edition tape. Please contact the nearest Occupational Analysis Field Center (Appendix A) to obtain information about the revised ratings used for (1) Materials, Products, Subject Matter, and Services; (2) Work Fields; and (3) Temperaments.

MUSEUM INTERN (museum)

A term applied to individuals who perform curatorial, administrative, educational, conservation, or research duties in museum or similar institution, to assist professional staff in utilization of institution's collections and other resources and to gain practical experience and knowledge to enhance personal qualifications for career. Classifications are made according to assignment which is usually based upon academic specialization as CRAFT DEMONSTRATOR (museum) 109.364-010, PAINTINGS RESTORER (profess. & kin.) 102.261-014, RESEARCH ASSISTANT (profess. & kin.) 109.267-010, or RESEARCH ASSOCIATE (museum) 109.067-014.

RESEARCH ASSOCIATE (profess. & kin.)

A term applied to persons who conduct independent research in scientific, legal, medical, political, academic, or other specialized fields. Individuals working at this level are required to have a graduate degree. Classifications are made according to field of specialization as AERODYNAMIST (aircraft-aerospace mfg.) 002.061-010; METALLURGIST, PHYSICAL (profess. & kin.) 011.061-022; MICROBIOLOGIST (profess. & kin.) 041.061-058; PATHOLOGIST (medical ser.) 070.061-010; POLITICAL SCIENTIST (profess. & kin.) 051.067-010.

002.167-018 AERONAUTICAL PROJECT ENGINEER (aircraft-aerospace mfg.)

Directs and coordinates activities of personnel engaged in designing landing gear, flight control equipment, and armaments of military aircraft, applying knowledge of engineering theory and technology: Reviews request from military services or formulates idea for design and capability changes of aircraft. Analyzes proposals for engineering feasibility, design, production time, and advantages and disadvantages of proposals, using knowledge of engineering theory and technology. Discusses proposals with engineering and military personnel, and assigns and directs personnel to design proposals. Examines and reviews drawings, design specifications, reports, tests, photographs, and finished parts for accuracy and quality control. Coordinates production of parts by subcontractors. GOE 05.01.08 PD L 12 13 15 EC 11 M6 L6 SVP 9 SOC 1622

003.131-010 SUPERVISOR, DRAFTING AND PRINTED CIRCUIT DESIGN (profess. & kin.)

Supervises and coordinates activities of workers engaged in drafting and designing layouts of printed circuit boards (PCBs) for use in manufacture of electronic equipment: Confers with PCB vendors to resolve problems encountered with board design. Reviews cost quotations for equipment and attends demonstrations to select equipment for purchase. Requisitions supplies, such as film positives. May design or change design of layout for PCBs [DRAFTER (profess. & kin.) Master Title]. Performs duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.03.02 PD S 08 09 15 18 M4 L4 SVP 8 SOC 372

003.161-018 TECHNICIAN, SEMICONDUCTOR DEVELOPMENT (profess. & kin.)

Tests developmental semiconductor devices or sample production units, and evaluates test equipment to develop data for engineering evaluation of new designs or special production yield study, applying knowledge of electronic theory and test equipment operating principles: Designs basic circuitry and prepares rough sketches for design documentation as directed by engineers, using drafting instruments and computer-aided design (CAD) system. Evaluates, calibrates, and tests new equipment circuits and fixtures, using testing equipment, such as oscilloscopes, logic and test probes, and calibrators. Builds and modifies electronic components, using handtools and power tools. Assists engineers in development of testing techniques and laboratory equipment. Assists with equipment maintenance. Liaises between test project sites to ensure orderly flow of information and materials. May supervise other technicians in unit. GOE 05.01.01 PD L 08 09 10 12 13 15 17 18 19 EC 07 09 13 M5 L4 SVP 8 SOC 3711

003.167-070 ENGINEERING MANAGER, ELECTRONICS (profess. & kin.)

Directs and coordinates activities of engineering department to design, manufacture, and test electronic components, products, and systems: Directs department activities, through subordinates, to design new products, modify existing designs, improve production techniques, and develop test procedures. Analyzes technology trends, manpower needs, and market demand to plan projects. Confers with management, production, and marketing staff to determine engineering feasibility, cost effectiveness, and customer demand for new and existing products. Forecasts operating costs of department and directs preparation of budget requests. Directs personnel activities of department, such as recruitment, hiring, performance evaluations, and salary adjustments. GOE 05.01.08 PD S 12 13 15 M6 L5 SVP 9 SOC 126

003.261-014 CONTROLS DESIGNER (profess. & kin.) controls project engineer.

Designs and drafts systems of electrical, hydraulic, and pneumatic controls for machines and equipment, such as arc welders, robots, conveyors, and programmable logic controllers, applying knowledge of electricity, electronics, hydraulics, and pneumatics: Discusses project with SUPERVISOR (any ind.) Master Title and APPLICATIONS ENGINEER, MANUFACTURING (profess. & kin.) 007.061-038 to review functions of machines and equipment. Designs and drafts arrangement of linkage of con-

ductors, relays, and other components of electrical, electronic, hydraulic, pneumatic, and lubrication devices, using drafting tools, and applying knowledge of electrical engineering and drafting [DRAFTER (profess. & kin.) Master Title]. Diagrams logic system for functions such as sequence and timing control. Designs and drafts diagrams of cable connection for robots, robot end-of-arm tool, robot controller, and other machines. Illustrates and describes installation and maintenance details, such as where bearings should be lubricated, types of lubrication, and which parts are lubricated automatically and manually. Confers with ASSEMBLER AND WIRER, INDUSTRIAL EQUIPMENT (elec. equip.; mach. mfg.) 826.361-010 to resolve problems regarding building of controls systems. Reviews schematics with customer's representatives to answer questions during installation of robot systems. Observes gauges during trial run of programmed machine and equipment operation to verify that electrical signals in system conform to specifications. May design controls for energy conversion or other industrial plant monitoring systems. May use computer and software programs to produce design drawings and be designated CONTROLS DESIGNER, COMPUTER-ASSISTED (profess. & kin.). GOE 05.03.02 PD S 08 09 10 12 13 15 16 17 M4 L4 SVP 8 SOC 372

003.261-018 INTEGRATED CIRCUIT LAYOUT DESIGNER (profess. & kin.) mask designer.

Designs layout for integrated circuits (IC), according to engineering specifications, using computer-assisted design (CAD) equipment and software, and utilizing knowledge of electronics, drafting, and IC design rules (standard IC manufacturing process requirements): Reviews and analyzes engineering design schematics and supporting documents, such as logic diagrams and design rules to plan layout of IC. Confers with engineering staff to resolve design details or problems. Enters engineering specifications into computer memory of CAD equipment and composes configurations on equipment display screen of IC logic elements (basic components of integrated circuit, such as resistors and transistors) for all IC layers, using keyboard, digitizing work aids (light pen or digitizing tablet), and engineering design schematics, and applying knowledge of design rules, programmed CAD functions, and electronics. Compares logic element configuration on equipment display screen with engineering schematics and redesigns or modifies logic elements, as needed, using digitizing work aids (light pen or digitizing tablet), keyboard, and programmed CAD functions. Lays out, redesigns, and modifies arrangement and interconnections of logic elements for each layer of integrated circuit, using digitizing work aids (light pen or digitizing tablet), keyboard and programmed CAD functions listed on display screen. Keys in specified commands, using CAD equipment keyboard, to test final IC layout for errors in design rules, using design rule software package. May generate copy of logic element design, using plotter to verify that logic element design copy meets design requirements and for use in laying out IC layer design for Very Large Scale (VLS) integrated circuits. May generate tape of final layout design for use in producing photo masks for each layer of IC, using CAD equipment. May program CAD equipment to change CAD functions listed on display screen, using keyboard. May be designated according to complexity of IC designed, such as IC DESIGNER, CUSTOM (profess. & kin.); IC DESIGNER, GATE ARRAYS (profess. & kin.); IC DESIGNER, STANDARD CELLS (profess. & kin.). GOE 05.03.02 PD S 08 09 10 12 13 15 17 18 19 M4 L4 SVP 8 SOC 372

003.261-022 PRINTED CIRCUIT DESIGNER (profess. & kin.)

Designs and drafts layout for printed circuit boards (PCBs), according to engineering specifications, utilizing knowledge of electronics, drafting, and PCB design rules (standard design requirements): Reviews and analyzes engineering design schematics and supporting documents to plan layout of PCB components and printed circuitry. Confers with engineering staff to resolve design details or problems. Drafts detailed drawings [DRAFTER (profess. & kin.) Master Title] and composes representation of design components and circuitry on clear mylar sheets (master layout), using press-on adhesive symbols and drafting tools and equipment. Examines and verifies master layout for electrical and mechanical accuracy. May verify accuracy of film reproductions of master layout. May prepare copies of drawings for use in PCB fabrication, using blueprint machine or diazo print machine. May generate computer tape of design for use in photo plotting design onto film, using digitizing equipment. May design and draft layout for multilayered PCBs. May use computer-assisted design equipment and software to design PCBs and be designated PRINTED CIRCUIT DESIGNER, COMPUTER-ASSISTED (profess. & kin.). GOE 05.03.02 PD S 08 09 10 12 13 15 17 18 19 M4 L4 SVP 7 SOC 372

003.281-010 DRAFTER, ELECTRICAL (profess. & kin.)

Drafts electrical equipment working drawings and wiring diagrams used by construction crews and repairmen who erect, install, and repair electrical equipment and wiring in communications centers, power plants, industrial establishments, commercial or domestic buildings, or electrical distribution systems, performing duties as described under DRAFTER (profess. & kin.) Master Title. May use computer-assisted drafting (CAD) equipment and software and be designated DRAFTER (CAD), ELECTRICAL (profess. & kin.). May prepare detail cable layout and diagrams for cable installation and be designated ELECTRIC-CABLE DIAGRAMER (elec. equip.). GOE 05.03.02 PD S 08 09 10 15 18 19 M5 L4 SVP 7 SOC 372

003.281-014 DRAFTER, ELECTRONIC (profess. & kin.) drafter, electro-mechanical.

Drafts detailed drawings, such as wiring diagrams, layout drawings, mechanical detail drawings, and drawings of intermediate and final assemblies, used in manufacture, assembly, installation, and repair of printed circuit boards and electronic components and equipment: Examines electronic schematics and supporting documents received from design engineering department to verify specifications, such as dimensions and tolerances. Computes drafting specifications to determine data, such as configuration dimensions, using calculator. Prepares final detail drawings of components and equipment [DRAFTER (profess. & kin.) Master Title]. May use computer-assisted drafting (CAD) equipment and software and be designated DRAFTER (CAD), ELECTRONIC (profess. & kin.). GOE 05.03.02 PD S 08 09 10 15 18 19 M5 L4 SVP 7 SOC 372

003.362-010 DESIGN TECHNICIAN, COMPUTER-AIDED (electronics) digitizer.

Operates computer-aided design (CAD) system and peripheral equipment to resize or modify integrated circuit designs (artwork) and to generate computer tape of artwork for use in producing mask plates used in manufacturing integrated circuits: Reviews work order and procedural manuals to determine critical dimensions of design. Calculates figures to convert design dimensions to resizing dimensions specified for subsequent production processes, using conversion chart and calculator. Locates file relating to specified design projection data base library and loads program into computer. Enters specified commands into computer, using keyboard, to retrieve design information from file and display design on CAD equipment display screen. Types commands on keyboard to enter resizing specifications into computer. Confers with engineering and design staff to determine design modifications and enters editing information into computer. Keys in specified information, using keyboard connected to on-line or off-line peripheral equipment (plotter), to produce graphic representation (hard copy) of design for review and approval by engineering and design staff. Enters specified information into computer, using keyboard, to generate computer tape of approved design. GOE 05.03.02 PD L 08 09 10 12 13 15 17 18 19 M3 L3 SVP 5 SOC 379

005.061-042 WASTE-MANAGEMENT ENGINEER, RADIOACTIVE MATERIALS (profess. & kin.)

Designs, implements, and tests systems and procedures to reduce volume and dispose of nuclear waste materials and contaminated objects: Identifies objects contaminated by exposure to radiation, such as trash, workers' clothing, and discarded tools and equipment. Analyzes samples of sludge and liquid effluents resulting from operation of nuclear reactors to determine level of radioactivity in substances and potential for retention of radioactivity, using radioactivity counters and chemical and electronic analyzers. Refers to State and Federal regulations and technical manuals to determine disposal method recommended for prevention of leakage or absorption of radioactive waste. Compares costs of transporting waste to designated nuclear waste disposal sites and reducing volume of waste and storing waste on plant site. Confers with equipment manufacturers' representatives and plant technical and management personnel to discuss alternatives and to choose most suitable plan on basis of safety, efficiency, and cost-effectiveness. Designs and draws plans for systems to reduce volume of waste by solidification, compaction, or incineration. Oversees construction, testing, and implementation of waste disposal systems, and resolves operational problems. Develops plans for modification of operating procedures to reduce volume and radioactive level of effluents, and writes manuals to instruct workers in changes in work procedures. Advises management on selection of lands suitable for use as nuclear waste disposal sites and on establishment of effective safety, operating, and closure procedures. GOE 05.01.03 PD L 08 09 15 17 EC 13 M5 L5 SVP 8 SOC 1628

005.167-026 PRODUCTION ENGINEER, TRACK (r.r. trans.)

Plans, directs, and coordinates, through supervisory personnel, activities of track maintenance crews of railway system: Analyzes engineering data and inspects repair site to determine priority of proposed track repair and maintenance projects. Coordinates scheduling of track maintenance and activities within designated region. Determines frequency of track use and project costs, utilizing computerized data and knowledge of railroad operations and maintenance expense to formulate recommendations for revising established project priorities. Reviews production reports and confers with engineering personnel to identify causes of low productivity of repair crews. Visits worksites to observe work crews and to inspect repairs. Directs engineering supervisors to correct standard repairs. GOE 05.01.06 PD L 12 13 15 M3 L4 SVP 9 SOC 1634

005.261-010 ENGINEERING TECHNICIAN (profess. & kin.)

Conducts surveys and studies and inspects existing water and wastewater treatment systems and those under construction to ensure that pollution control requirements are met: Reviews plans and specifications for details concerning construction or repair of sewage systems, sewage and water treatment facilities, and water supply systems for conformance to pollution control requirements. Reviews information, such as size of unit, capacities, length of pipe, reinforcements, unit locations, and other data to ensure adherence to requirements. Conducts stream surveys and comprehensive basin studies to gather data. Sets up and maintains water monitoring equipment to obtain samples, flow measurements, and other data. Tabulates data and prepares sketches, diagrams, and graphs for eval-

uation by engineering staff. Inspects existing systems and construction, in progress and upon completion, to ensure pollution control requirements are met. Performs various other duties, such as filing plans and other documents, answering inquiries, and assisting engineering personnel, or assisting and training personnel operating equipment. GOE 05.03.08 PD L 08 09 15 18 M4 L4 SVP 7 SOC 3719

005.261-014 CIVIL ENGINEERING TECHNICIAN (profess. & kin.)

Assists CIVIL ENGINEER (profess. & kin.) 005.061-014 in application of principles, methods, and techniques of civil engineering technology: Reviews project specifications and confers with CIVIL ENGINEER (profess. & kin.) 005.061-014 concerning assistance required, such as plan preparation, acceptance testing, evaluation of field conditions, design changes, and reports. Conducts materials testing and analysis, using tools and equipment and applying engineering knowledge necessary to conduct tests. Prepares reports detailing tests conducted and results. Surveys project sites to obtain and analyze topographical details of sites, using maps and surveying equipment. Drafts detailed dimensional drawings, such as those needed for highway plans, structural steel fabrication, and water control projects, performing duties as described under DRAFTER (profess. & kin.) Master Title. Calculates dimensions, profile specifications, and quantities of materials such as steel, concrete, and asphalt, using calculator. Inspects construction site to determine conformance of site to design specifications. GOE 05.03.02 PD L 08 09 10 12 13 15 17 18 M4 L4 SVP 7 SOC 371

007.061-038 APPLICATIONS ENGINEER, MANUFACTURING (profess. & kin.)

Plans, designs, and coordinates integration of machinery and equipment into manufacturing process of industrial establishment, applying knowledge of engineering and programming, and using computer, precision-measuring instruments, and drafting tools: Develops and writes equipment specifications, performance requirements, cost analysis, and proposal for integrating machinery and equipment, such as robots, *robot controllers*, and *programmable controllers* into manufacturing process, applying knowledge of mechanics, hydraulics, pneumatics, electrical wiring, electronics, programming, and manufacturing requirements, and using computer and calculator. Selects or designs robot end-of-arm tools to meet specifications, using robot manuals and either drafting tools or computer and software programs. Writes operating programs, using existing computer program, or writes own computer programs, applying knowledge of programming language and computer. Oversees installation to ensure machines and equipment are installed and functioning according to specifications. Tests ability of machines, such as robot, to perform tasks, using *teach pendant* and precision measuring instruments and following specifications. Confers with establishment personnel to implement operating procedures and resolve system malfunctions. Determines parts supply, maintenance tasks, safety procedures, and service schedule required to maintain machines and equipment in prescribed condition. Develops models of alternate processing methods to test feasibility of new applications of system components, and recommends implementation of improved procedures. Participates in meetings, seminars, and training sessions to stay apprised of new developments in field. Confers with workers in other departments, such as marketing, legal, and engineering, to provide technical information. May develop and conduct robot and related equipment training programs and demonstrate skills to trainees, using teach pendant, handtools, precision-measuring instruments, and following schematics, plant drawings, and manufacturer's specifications. GOE 05.01.08 PD L 08 09 10 12 13 15 17 EC 08 M5 L5 SVP 8 SOC 1635

007.061-042 STRESS ANALYST (profess. & kin.)

Conducts stress analyses on engineering designs for electronic components, systems, and products, using mathematical formulas and computer-aided engineering (CAE) systems: Analyzes engineering designs, schematics, and customer specifications to determine stress requirements on product. Formulates mathematical model or three-dimensional computer graphic model of product, using calculator or CAE system. Analyzes ability of product to withstand stress imposed by conditions such as temperature, loads, motion, and vibration, using mathematical formulas and computer simulation. Builds product model of wood or other material, performs physical stress tests on model, and evaluates test results. Consults with ELECTRONICS-DESIGN ENGINEER (profess. & kin.) 003.061-034 to recommend design modifications of product based on results of stress analyses. Prepares stress analysis reports. GOE 05.01.04 PD S 10 15 M6 L5 SVP 8 SOC 1635

007.161-038 SOLAR-ENERGY-SYSTEMS DESIGNER (profess. & kin.)

Designs solar domestic hot water and space heating systems for new and existing structures, applying knowledge of energy requirements of structure, local climatological conditions, solar technology, and thermodynamics: Estimates energy requirements of new or existing structures, based on analysis of utility bills of structure, calculations of thermal efficiency of structure, and prevailing climatological conditions. Determines type of solar system, such as water, glycol, or silicone, which functions most efficiently under prevailing climatological conditions. Calculates onsite heat generating capacity of different solar panels to determine optimum size and type of panels which meet structure's energy requirements. Arranges location of solar system components, such as panel, pumps, and storage tanks, to minimize length and number of direction changes in pipes and

reconstruction of existing structures. Studies engineering tables to determine size of pipes and pumps required to maintain specified flow rate through solar panels. Specifies types of electrical controls, such as differential thermostat, temperature sensors, and solenoid valves, compatible with other system components, using knowledge of control systems. Completes parts list, specifying components of system. Draws wiring, piping, and other diagrams, using drafting tools. May inspect structures to compile data used in solar system design, such as structure's angle of alignment with sun and temperature of incoming cold water. May inspect construction of system to ensure adherence to design specifications. GOE 05.03.07 PD L 08 09 10 11 15 17 18 M4 L4 SVP 5 SOC 1635

007.267-010 DRAWINGS CHECKER, ENGINEERING (profess. & kin.)

Examines engineering drawings of military and commercial parts, assemblies, and installations to detect errors in design documents: Compares figures and lines on production drawing or diagram with production layout, examining angles, dimensions, bend allowances, and tolerances for accuracy. Determines practicality of design, material selection, available tooling, and fabrication process, applying knowledge of drafting and manufacturing methods. Confers with design personnel to resolve drawing and design discrepancies. May specialize in checking specific types of designs, such as mechanical assemblies, microelectronic circuitry, or fluid-flow systems. GOE 05.03.02 PD S 08 09 15 17 M4 L4 SVP 6 SOC 1635

008.061-030 NUCLEAR-DECONTAMINATION RESEARCH SPECIALIST (profess. & kin.)

Conducts research into problems of decontaminating radioactive equipment and work areas in nuclear plants, laboratories, and other facilities: Examines and tests machinery and equipment to determine type and cause of radioactive contamination, using electron microscope, Geiger counter, and scintillation counter. Develops new decontamination processes, using knowledge of nuclear chemistry. Invents and constructs models of equipment to achieve specific objectives in decontamination processes, devising ways to minimize radiation risk to operative personnel. Devises wash and leach procedures and designs electropolishing equipment to clean and decontaminate metals. Invents regenerative-dilute decontamination process to reduce volume of radioactive liquid waste generated from wash and leach procedures. Prepares technical report to explain research and development of improved techniques and equipment for decontamination of radioactive equipment and work areas. GOE 05.01.01 PD L 08 09 12 13 15 M6 L6 SVP 8 SOC 1626

011.261-018 NONDESTRUCTIVE TESTER (bus. ser.)

Conducts radiographic, penetrant, ultrasonic, and magnetic particle tests on metal parts in commercial testing laboratory to determine if parts meet nondestructive specifications: Reviews test orders to determine type of tests requested, test procedures to follow, and part acceptability criteria. Applies agents, such as cleaners, penetrants, developers, and couplant (light oil which acts as medium), to parts, or heats parts in oven, to prepare parts for testing. Determines test equipment settings according to type of metal, thickness, distance from test equipment, and related variables, using standard formulas. Calibrates test equipment, such as magnetic particle, x ray, and ultrasonic contact machines, to standard settings, following manual instructions. Sets up equipment to perform tests, and conducts tests on parts, following procedures established for specified tests performed. Examines surface-treated materials when conducting penetrant and magnetic particle tests to locate and identify flaws, cracks, and related defects, using black light. Moves transducer probe across part when conducting ultrasonic tests and observes CRT (cathode ray tube) screen to detect and locate discontinuities in metal structure [ULTRASONIC TESTER (bus. ser.) 709.281-018]. Examines film when conducting radiographic tests to locate structural or welding flaws. Marks tested parts to indicate areas where flaws were detected. Evaluates test results against designated standards, utilizing knowledge of metals and testing experience. Prepares reports outlining findings and conclusions. May perform similar tests on parts or structures composed of materials other than metals. GOE 05.07.01 PD H 04 05 06 08 09 15 19 20 EC 03 04 07 11 M3 L3 SVP 6 SOC 399

012.167-078 DOCUMENTATION ENGINEER (profess. & kin.)

Plans, directs, and coordinates preparation of project documentation, such as engineering drawings, production specifications and schedules, and contract modifications, to ensure customer contract requirements are met: Reviews contract to determine documentation required for each phase of project, applying knowledge of engineering and manufacturing processes. Schedules due dates for drawings, specifications, software, technical manuals, and other documents. Monitors status of project to ensure documentation is submitted according to schedule. Reviews and verifies project documents for completeness, format, and compliance to contract requirements. Submits project documentation to management for approval, and transmits approved documents to customer. Confers with engineers, managers, customers, and others to discuss project, prepare documents, or modify contract schedules. GOE 05.01.06 PD L 12 13 15 M5 L5 SVP 8 SOC 1634

015.061-026 NUCLEAR-FUELS RECLAMATION ENGINEER (profess. & kin.)

Plans, designs, and oversees construction and operation of nuclear fuels reprocessing systems: Performs research and experiments to determine ac-

ceptable methods of reclaiming various types of nuclear fuels. Designs nuclear fuel reclamation systems and equipment for pilot plants. Communicates with vendors and contractors, and computes cost estimates of reclamation systems. Writes project proposals and submits them to company review board. Studies safety procedures, guidelines, and controls, and confers with safety officials to ensure that safety limits are not violated in design, construction, or operation of systems and equipment. Oversees nuclear fuels reprocessing system construction and operation, conferring with construction supervisory and operating personnel. Tests system equipment and approves equipment for operation. Monitors operations to detect potential or inherent problems. Initiates corrective actions and orders plant shutdown in emergency situations. Identifies operational and processing problems and recommends solutions. Maintains log of plant operations, and prepares reports for review by plant officials. GOE 05.01.03 PD L 08 12 13 15 EC 11 M5 L5 SVP 7 SOC 1627

015.061-030 NUCLEAR-FUELS RESEARCH ENGINEER (profess. & kin.)

Studies behavior of various fuels and fuel configurations in differentiated reactor environments to determine safest and most efficient usage of nuclear fuels, applying theoretical and experiential knowledge of reactor physics and thermal and metallurgical characteristics of nuclear fuels and fuel cell claddings: Analyzes available data and consults with other scientists to determine parameters of experimentation and suitability of analytical models. Designs fuels behavior tests and coordinates activities of experimental research team in performance and analysis of test operations. Monitors test reactor indicators of factors such as neutron power level, coolant level, and vital pressure, temperature and humidity readings, and changes or modifies procedures to meet test goals. Synthesizes analyses of test results and prepares technical reports to disseminate findings and recommendations. Formulates equations that describe phenomena occurring during fissioning of nuclear fuels and develops analytical models for nuclear fuels research. GOE 05.01.03 PD L 08 09 10 12 13 15 17 M6 L6 SVP 8 SOC 1627

015.067-010 NUCLEAR-CRITICALITY SAFETY ENGINEER (profess. & kin.)

Conducts research and analyzes and evaluates proposed and existing methods of transportation, handling, and storage of nuclear fuel to preclude accidental nuclear reaction at nuclear facilities: Reviews and evaluates fuel transfer and storage plans received from nuclear plants. Studies reports of nuclear fuel characteristics to determine potential or inherent problems. Reads blueprints of proposed storage facilities and visits storage sites to determine adequacy of storage plans. Forecasts nuclear fuel criticality (point at which nuclear chain reaction becomes self-sustaining), given various factors which may exist in fuel handling and storage, using knowledge of nuclear physics, calculator, and computer terminal. Determines potential hazards and accident conditions which may exist in fuel handling and storage and recommends preventive measures. Summarizes findings and writes reports. Confers with project officials to resolve situations where hazard is beyond acceptable levels. Prepares proposal reports for handling and storage of fuels to be submitted to government review board. Studies existing procedures and recommends changes or additions to guidelines and controls to ensure prevention of self-sustaining nuclear chain reaction. GOE 05.01.02 PD L 08 10 12 13 15 EC 07 11 M6 L5 SVP 8 SOC 1627

015.137-010 RADIATION-PROTECTION ENGINEER (gov. ser.)

Supervises and coordinates activities of workers engaged in monitoring radiation levels in water and detecting corrosion of equipment used to produce nuclear energy for generation of power: Evaluates data concerning chemical analysis of water in primary and supportive plant systems to determine compliance with regulations governing radiation content and corrosion control. Investigates problems concerning excessive radiation or corrosion of equipment, applying knowledge of radiation protection techniques and principles of chemistry and engineering to correct conditions. Confers with other supervisory personnel, representatives of equipment manufacturing firms, and regulatory agency staff members to discuss problems and develop plans for safe and efficient monitoring program. Supervises workers who test and analyze water samples and monitor operation of processing system. Prepares reports of environmental monitoring operation and radioactive waste release and shipment activities for review by administrative personnel and submission to regulatory agency. GOE 05.01.02 PD S 12 13 15 M4 L5 SVP 8 SOC 1627

015.167-010 NUCLEAR-PLANT TECHNICAL ADVISOR (light, heat, & power)

Monitors plant safety status, advises operations staff, and prepares technical reports for operation of thermal-nuclear reactor at electric-power generating station: Observes control-room instrumentation systems and confers with operating personnel to ensure safe operation of plant. Walks throughout plant and observes machinery, equipment, and operating procedures to identify potential hazards. Examines locations of accidents and transients (sudden changes of voltage or load) and obtains data to formulate preventive measures. Implements changes in systems, procedures, structure, or equipment to improve safety. Compares critical parameters with plant transient predictions and accident analysis and determines whether response of plant safety systems is sufficient. Formulates correc-

tive actions, calculates critical parameters from raw data, and computes rate of control rod withdrawal during reactor startup. Confers with operating personnel to provide technical assistance and to discuss maintenance activities, abnormal conditions, and safe operation of plant. Prepares reports to inform management officials of any proposed changes or irregularities in plant operation or systems. GOE 05.01.02 PD L 12 13 15 17 M5 L5 SVP 8 SOC 1627

015.167-014 NUCLEAR-TEST-REACTOR PROGRAM COORDINATOR (profess. & kin.)

Evaluates, coordinates, and oversees testing of nuclear reactor equipment: Analyzes test proposal to ensure that test is valid and feasible. Identifies and resolves problems, such as incompatibilities between proposal and nuclear test-reactor system. Coordinates technical and financial agreements involving feasibility, scope, purpose, and cost of project in nuclear test facility. Assists engineering personnel in interpretation of test language, mathematical formulas, and computer codes used in test. Writes operational instructions. Inspects general condition of nuclear test-reactor vessel and related systems. Verifies setup of nuclear test-reactor for compliance with specifications. Observes control room instrumentation to ensure that performance factors such as neutron power level, chemical composition of coolant, and reactor temperatures and pressures are carried out as prescribed. Evaluates and resolves operational problems. Coordinates activities directed toward removal of test specimens from reactors and subsequent chemical, metallurgical, or mechanical analysis. Compiles report of test results. GOE 05.01.04 PD L 08 09 10 12 13 15 17 EC 11 M5 L5 SVP 8 SOC 1627

015.261-010 CHEMICAL-RADIATION TECHNICIAN (gov. ser.)

Tests materials and monitors operations of nuclear-powered electric generating plant, using specialized laboratory equipment and chemical and radiation detection instruments: Collects samples of water, gases, and solids at specified intervals during production process, using automatic sampling equipment. Analyzes materials, according to specified procedures, to determine if chemical components and radiation levels are within established limits. Records test results and prepares reports for review by supervisor. Assists workers to set up equipment and monitors equipment that automatically detects deviations from standard operations. Notifies personnel to adjust processing equipment, quantity of additives, and rate of discharge of waste materials, when test results and monitoring of equipment indicate that radiation levels, chemical balance, and discharge of radionuclide materials are in excess of standards. Carries out decontamination procedures to ensure safety of workers and continued operation of processing equipment in plant. Calibrates and maintains chemical instrumentation sensing elements and sampling system equipment, using handtools. Assists workers in diagnosis and correction of problems in instruments and processing equipment. Advises plant personnel of methods of protection from excessive exposure to radiation. GOE 11.10.03 PD L 08 09 15 M3 L3 SVP 6 SOC 3832

017.684-010 TAPER, PRINTED CIRCUIT LAYOUT (electronics)

Places (tapes) adhesive symbols and precision tape on sheets of mylar in conformance with preliminary drawing of printed circuit board (PCB) to produce master layout: Places, aligns, and secures preliminary drawing of PCB and successive layers of transparent sheets of mylar on lighted drafting table, using register bar. Selects specified symbols and width of tape to indicate peak voltage potential. Cuts tape and places tape and adhesive symbols on specified sheets of mylar to outline board size, to indicate connector pads, placement of various components, and to trace circuitry of PCB as indicated on underlying preliminary drawing, using utility knife, precision grid, and straightedge. Places specified adhesive identification and reference numbers on master layout. Reproduces blueprint copy of master layout, using print machine. Inspects copy to verify accuracy. GOE 05.03.02 PD S 08 09 10 15 17 19 M2 L2 SVP 2 SOC 372

019.061-026 RELIABILITY ENGINEER (profess. & kin.)

Analyzes preliminary engineering-design concepts of major product, such as aircraft, naval vessel, or electronic communication or control system to recommend design or test methods for attaining customer-specified operational reliability, using knowledge of reliability engineering and other technologies: Analyzes preliminary plans and develops reliability engineering program to achieve customer reliability objectives. Analyzes projected product utilization and calculates cumulative effect on final system reliability of individual part reliabilities. Drafts *failure mode and effect* analysis sheets or formulates mathematical models, using computer-aided engineering equipment, to identify units posing excessive failure risks and support proposed changes in design. Enters data to simulate electrical inputs, transient conditions, temperature, stress, and other factors to develop computer models, and analyzes and adjusts design to predict and improve system reliability. Advises and confers with engineers in design review meetings to give reliability findings and recommendations. Determines units requiring environmental testing and specifies minimum number of samples to obtain statistically valid data. Reviews subcontractors' proposals for reliability program and submits evaluation for decision. Reviews engineering specifications and drawings, proposing design modifications to improve reliability within cost and other performance requirements. Observes conduct of tests at supplier, plant, or field locations to evaluate reliability factors, such as numbers and causes of unit failures. Monitors failure data generated by customer using product to ascertain potential re-

quirement for product improvement. GOE 05.01.04 PD S 09 10 12 13 15 M6 L5 SVP 8 SOC 1639

019.167-018 RESOURCE-RECOVERY ENGINEER (gov. ser.)

Plans and participates in activities concerned with study, development, and inspection of solid-waste resource recovery systems and marketability of solid-waste recovery products: Conducts studies of chemical and mechanical solid-waste recovery processes and system designs to evaluate efficiency and cost-effectiveness of proposed operations. Inspects solid-waste resource recovery facilities to determine compliance with regulations governing construction and use. Collects data on resource recovery systems and analyzes alternate plans to determine most feasible systems for specific solid-waste recovery purposes. Prepares recommendations for development of resource recovery programs, based on analysis of alternate plans and knowledge of physical properties of various solid-waste materials. Confers with design engineers, management personnel, and others concerned with recovery of solid-waste resources to discuss problems and provide technical advice. Coordinates activities of workers engaged in study of potential markets for reclaimable materials. Lectures civic and professional organizations and provides information about practices to media representatives to promote interest and participation in solid-waste resource recovery practices. GOE 05.01.02 PD S 11 12 15 M6 L5 SVP 8 SOC 1628

019.261-026 FIRE-PROTECTION ENGINEERING TECHNICIAN (profess. & kin.)

Designs and drafts plans and estimates costs for installation of fire protection systems for facilities and structures, applying knowledge of drafting, physical science, engineering principles, and fire protection codes: Analyzes blueprints and specifications prepared by ARCHITECT (profess. & kin.) 001.061-010 to determine dimensions of system to meet fire protection codes. Determines design and size of system components, using calculator or computer. Drafts detailed drawing of system to ensure conformance to specifications and applicable codes. May negotiate relocation of system components with SUPERINTENDENT, CONSTRUCTION (const.) 182.167-026 to resolve conflicts of co-location with other systems. May inspect fire-damaged structures to detect malfunctions. May specialize in one type of fire protection system, such as foam, water, dry chemical, or vaporous gas or specialize in one type of establishment, such as construction, insurance, or government. GOE 05.03.02 PD L 02 08 09 10 12 13 15 16 17 18 19 M4 L4 SVP 7 SOC 371

020.162-014 PROGRAMMER, BUSINESS (profess. & kin.)

Converts symbolic statements of administrative data or business problems to detailed logical flow charts for coding into computer language: Analyzes all or part of workflow chart or diagram representing business problem by applying knowledge of computer capabilities, subject matter, algebra, and symbolic logic to develop sequence of program steps. Confers with supervisor and representatives of departments concerned with program to resolve questions of program intent, output requirements, input data acquisition, extent of automatic programming and coding use and modification, and inclusion of internal checks and controls. Writes detailed logical flow chart in symbolic form to represent work order of data to be processed by computer system, and to describe input, output, and arithmetic and logical operations involved. Converts detailed logical flow chart to language processable by computer [PROGRAMMER, DETAIL (clerical) 219.367-026]. Devises sample input data to provide test of program adequacy. Prepares block diagrams to specify equipment configuration. Observes or operates computer to test coded program, using actual or sample input data. Corrects program errors by such methods as altering program steps and sequence. Prepares written instructions (run book) to guide operating personnel during production runs. Analyzes, reviews, and rewrites programs to increase operating efficiency or adapt to new requirements. Compiles documentation of program development and subsequent revisions. May specialize in writing programs for one make and type of computer. May operate computer to run daily programs. May direct and coordinate activities of other workers. GOE 11.01.01 PD S 08 09 10 12 13 15 M5 L4 SVP 7 SOC 3971

020.224-010 CUSTOMER-SUPPORT SPECIALIST (whole. tr.)

Converts client's manual accounting systems to computerized systems, trains client's employees to program systems, and diagnoses computer hardware malfunctions: Reviews and evaluates client's manual accounting and bookkeeping systems, using established accounting procedures to convert from manual system to computerized system. Contacts computer software vendor to order initial supply of forms. Teaches client's employees to program computer, using standardized programming methods and observing hands-on practices. Reviews client's operational procedures to implement improvements. Troubleshoots computer hardware malfunctions, using electronic test meter and tools, and repairs simple malfunctions or writes service order for use of repair personnel. GOE 11.01.01 PD L 08 09 11 12 15 17 M4 L4 SVP 7 SOC 1719

020.262-010 SOFTWARE TECHNICIAN (profess. & kin.)

Analyzes problems, plans and develops software programs, transfers programs to memory chips, installs chips on printed circuit boards (PCB), and tests and corrects operation of chips and boards, using computer equipment: Assembles units into logical sequence and translates charts into

programmed computer language to develop detailed flow charts. Enters coded commands into computer, tests printer for system errors, and corrects errors by altering commands until desired results are attained, using keyboard. Transfers program data onto disk, using terminal keyboard, mounts disk onto cathode-ray-tube (CRT) unit, checks screen for errors, and corrects errors as necessary. Mounts disk and blank chips in device which imprints program onto erasable memory chip. Writes specifications and instructs operator how to input data to obtain required results. Installs chips on printed circuit board and connects lead wires to board circuitry, utilizing diagrams and knowledge of electric circuitry and electronics. Observes operation of chip in terminal, changes sequence of program commands if necessary, and submits data specifications on tested chip to engineering department. GOE 11.01.01 PD L 08 09 10 12 13 15 M4 L4 SVP 7 SOC 3971

022.081-010 TOXICOLOGIST (drug, prep. & rel. prod.)

Conducts research on toxic effects of cosmetic products and ingredients on laboratory animals for manufacturer of cosmetics: Applies cosmetic ingredient or cosmetic being developed to exposed shaved skin area of test animal and observes and examines skin periodically for possible development of abnormalities, inflammation, or irritation. Injects ingredient into test animal, using hypodermic needle and syringe, and periodically observes animal for signs of toxicity. Injects antidotes to determine which antidote best neutralizes toxic effects. Tests and analyzes blood samples for presence of toxic conditions, using microscope and laboratory test equipment. Dissects dead animals, using surgical instruments, and examines organs to determine effects of cosmetic ingredients being tested. Prepares formal reports of test results. GOE 02.04.02 PD L 08 09 15 M4 L5 SVP 8 SOC 382

022.261-018 CHEMIST, INSTRUMENTATION (profess. & kin.; sanitary ser.)

Conducts chemical analyses of wastewater discharges of industrial users of municipal wastewater treatment plant to determine industrial waste surcharge assessments and to ensure that users meet pollution control requirements: Conducts chemical analyses of samples, using special instrumentation, such as gas chromatograph with electron capture, flame ionization, and thermal conductivity detectors, ultraviolet-visible recording spectrophotometer with photometry attachments, and infrared spectrophotometer. Compares findings with industry declared data and legal requirements and notes variations to be used in determining industrial waste surcharge assessments and to regulate industrial waste discharges. Develops new procedures in use of equipment and procedures for analyzing samples. Directs subordinate laboratory personnel in routine tests. GOE 02.01.01 PD L 09 10 15 19 EC 07 M5 L4 SVP 7 SOC 3831

022.261-022 CHEMIST, WASTEWATER-TREATMENT PLANT (profess. & kin.; sanitary ser.)

Analyzes samples of streams, raw and treated wastewater, sludge, and other byproducts of wastewater treatment process to determine efficiency of plant processes and to ensure that plant effluent meets water pollution control requirements, using standard laboratory equipment: Conducts tests for settleable solids, suspended solids, total solids, volatile solids, volatile acids, alkalinity, pH, dissolved oxygen demand, turbidity, and other substances. Initiates changes in laboratory procedures and equipment in order to increase efficiency of laboratory. Directs laboratory personnel in prescribed laboratory techniques and performance of routine tests. GOE 02.04.02 PD L 09 10 15 EC 07 M5 L4 SVP 7 SOC 3831

024.267-010 GEOLOGICAL AIDE (petrol. production)

Examines and compiles geological information to provide technical data to GEOLOGIST, PETROLEUM (petrol. production) 024.061-022, using surface and subsurface maps, oil and gas well activity reports, and sand and core analysis studies: Studies geological reports to extract well data and posts data to maps and logs. Draws subsurface formation contours on charts to lay out and prepare geological cross section charts. Compiles information regarding well tests, completions, and formation tops to prepare oil or gas well records. Records net sand and sand percentage counts and calculates isopachous values to compile sand analysis data. Studies directional logs and surveys to calculate and plot formation tops. Reads well activity reports and records key well locations in drilling activity book. Assembles and distributes prepared charts, maps, and reports to geologist requesting material. Maintains file record systems and geological library. Attends SCOUT (petrol. production) 010.267-010 meeting to compile information on well activity. Contacts competitors to acquire oil and gas samples from wells. Operates computer terminal for input and retrieval of geological data. GOE 02.04.01 PD L 10 80 91 21 31 51 8 M5 L5 SVP 8 SOC 3833

040.261-010 SOIL-CONSERVATION TECHNICIAN (profess. & kin.)

Provides technical assistance to land users in planning and applying soil and water conservation practices, utilizing basic engineering and surveying tools, instruments, and techniques and knowledge of agricultural and related sciences, such as agronomy, soil conservation, and hydrology: Analyzes conservation problems of land and discusses alternative solutions to problems with land users. Advises land users in developing plans for conservation practices, such as conservation cropping systems, woodlands management, pasture planning, and engineering systems, based on cost estimates of different practices, needs of land users, maintenance require-

ments, and life expectancy of practices. Computes design specification for particular practices to be installed, using survey and field information technical guides, engineering field manuals, and calculator. Submits copy of engineering design specifications to land users for implementation by land user or contractor. Surveys property to mark locations and measurements, using surveying instruments. Monitors projects during and after construction to ensure projects conform to design specifications. Periodically revisits land users to view implemented land use practices and plans. GOE 02.02.02 PD L 08 09 12 13 15 16 17 M4 L4 SVP 7 SOC 1852

041.061-094 STAFF TOXICOLOGIST (gov. ser.)

Studies effects of toxic substances on physiological functions of human beings, animals, and plants to develop data for use in consumer protection and industrial safety programs: Designs and conducts studies to determine physiological effects of various substances on laboratory animals, plants, and human tissue, using biological and biochemical techniques. Interprets results of studies in terms of toxicological properties of substances and hazards associated with misuse of products containing substances. Provides information concerning toxicological properties of products and materials to regulatory agency personnel and industrial firms. Reviews toxicological data submitted by others for adequacy, and suggests amendment or expansion of data to clarify or correct information. Confers with governmental and industrial personnel to provide advice on precautionary labeling for hazardous materials and products and on nature and degree of hazard in cases of accidental exposure or ingestion. Prepares and maintains records of studies for use as toxicological resource material. Testifies as expert witness on toxicology in hearings and court proceedings. GOE 02.02.01 PD L 08 09 12 13 15 EC 13 M6 L5 SVP 8 SOC 1854

041.067-010 MEDICAL COORDINATOR, PESTICIDE USE (gov. ser.)

Studies human health-and-safety aspects of pesticides and other agricultural chemicals: Studies long-term health implications of low-dose pesticide exposure and determines safe worker reentry intervals. Reviews and provides recommendations on medical regulations governing use of pesticides. Reviews information and recommendations pertaining to safe levels of pesticide residues on agricultural products. Recommends specifications for safe working conditions for workers exposed to pesticides or their residues, and makes recommendations on public safety aspects of pesticide exposure. Confers with health department personnel to develop programs to improve ability of physicians and other medical personnel to diagnose, treat, and report pesticide-related illnesses. Confers with government agency representatives, physicians, university staff members, and other research workers to develop health and safety standards related to pesticide exposure. Advises industry representatives on organization of adequate medical supervision programs for employers. Prepares reports on research studies. Addresses interested groups as requested. GOE 02.02.01 PD S 12 13 M5 L6 SVP 9 SOC 1855

041.167-010 ENVIRONMENTAL EPIDEMIOLOGIST (gov. ser.)

Plans, directs, and conducts studies concerned with incidence of disease in industrial settings and effects of industrial chemicals on health: Confers with industry representatives to select occupational groups for study and to arrange for collection of data concerning work history of individuals and disease concentration and mortality rates among groups. Plans methods of conducting epidemiological studies and provides detailed specifications for collecting data to personnel participating in studies. Develops codes to facilitate computer input of demographic and epidemiological data for use by data processing personnel engaged in programming epidemiological statistics. Compares statistics on causes of death among members of selected working populations with those among general population, using life-table analyses. Analyzes data collected to determine probable effects of work settings and activities on disease and mortality rates, using valid statistical techniques and knowledge of epidemiology. Presents data in designated statistical format to illustrate common patterns among workers in selected occupations. Initiates and maintains contacts with statistical and data processing managers in other agencies to maintain access to epidemiological source materials. Evaluates materials from all sources for addition to or amendment of epidemiological data bank. Plans and directs activities of clerical and statistical personnel engaged in tabulation and analysis of epidemiological information to ensure accomplishment of objectives. GOE 02.02.01 PD L 12 13 15 M6 L5 SVP 8 SOC 1854

041.384-010 HERBARIUM WORKER (profess. & kin.)

Fumigates, presses, and mounts plant specimens, and maintains collection records of herbarium maintained by botanical garden, museum, or other institution: Records identification information concerning incoming plants. Places specimens in fumigation cabinet and turns valves to release toxic fumes that destroy insects, fungus, or parasites adhering to specimens. Arranges specimens between sheets of unsized paper so that upper and under portions of leaves, blossoms, and other components are visible, and pads paper with layers of felt and newsprint to protect specimens and form stacks. Places specified number of stacks in pressing frame and writes identification information on top layer of paper on each stack. Secures frame around stacks by tightening frame section with screws, fastening with leather straps, or tying with twine, to compress stacks and press and dry specimens in desired configuration. Mounts dried specimens on heavy paper, using glue, adhesive strips, or needle and thread, taking care to prevent distortion or breakage of specimens. Writes identification information

on papers and inserts mounted specimens in labeled envelopes or folders. Files folders in drawers or cabinets according to standard botanical classification system. Maintains card files of specimens in herbarium collection and records of acquisitions, loans, exchanges, or sales of specimens. GOE 02.04.02 PD L 08 09 10 15 M3 L4 SVP 5 SOC 399

045.107-046 PSYCHOLOGIST, CHIEF (profess. & kin.)

Plans psychological service programs and directs, coordinates, and participates in activities of personnel engaged in providing psychological services to clients in psychiatric center or hospital: Reviews reports, case management reviews, and psychiatric center's or hospital's procedural manual to assess need for psychological services. Plans psychological treatment programs that meet standards of accreditation. Plans utilization of available staff, assigns staff to treatment units, and recruits professional and nonprofessional psychological staff. Develops, directs, and participates in training programs. Directs testing and evaluation of new admissions and re-evaluation of present clients. Participates in staff conferences to evaluate and plan treatment programs. Interviews clients that present difficult and complex diagnostic problems and assesses their psychological status. Reviews management of cases, assignments, case problems, issues, and methods of treatment. Works with community agencies to develop effective corrective programs and to arrange to provide psychological services. Plans and supervises psychological research. Collaborates with psychiatrists and other professional staff to help develop comprehensive program of therapy, evaluation, and treatment. GOE 10.01.02 PD S 12 13 15 M5 L6 SVP 8 SOC 1915

049.364-014 VECTOR CONTROL ASSISTANT (gov. ser.)

Assists public health staff in activities concerned with identification, prevention, and control of vectors (disease-carrying insects and rodents): Carries and sets up field equipment to be used in surveys of number and type of vectors in area. Sets traps and cuts through brush and weeds to obtain specimens of vector population for use in laboratory tests, using sweep. Prepares, mounts, and stores specimens, following instructions of supervisor. Prepares reports of field surveys and laboratory tests based upon information obtained from personnel involved in specific activities, for use in planning and carrying out projects for prevention and control of vectors. GOE 02.04.02 PD L 08 09 15 EC 01 M2 L3 SVP 5 SOC 382

054.107-010 CLINICAL SOCIOLOGIST (profess. & kin.)

Develops and implements corrective procedures to alleviate group dysfunctions: Confers with individuals and groups to determine nature of group dysfunction. Observes group interaction and interviews group members to identify problems related to factors such as group organization, authority relationships, and role conflicts. Develops approaches to solution of group's problems, based on findings and incorporating sociological research and study in related disciplines. Develops intervention procedures, utilizing techniques such as interviews, consultations, role playing, and participant observation of group interaction, to facilitate resolution of group problems. Monitors group interaction and role affiliations to evaluate progress and to determine need for additional change. GOE 11.03.02 PD S 12 13 15 M4 L5 SVP 6 SOC 1916

070.107-018 DIRECTOR, DIAGNOSTIC-AND-EVALUATION CLINIC (medical ser.)

Plans, coordinates, and participates in activities of diagnostic clinic serving suspected mental retardates: Establishes procedures for admitting and examining suspected retardates and providing related services, such as home visits, parent counseling, and followup evaluations. Directs and coordinates activities of staff engaged in clinical, maintenance, and clerical services. Arranges for treatment and specialized diagnostic services performed outside clinic. Conducts conferences with staff to arrive at diagnostic conclusions, resolve administrative problems, and inform staff of changes in responsibilities or procedures. Interprets clinic program to parents and visitors, and explains diagnostic findings and patient-care or rehabilitation recommendations to parents. Represents clinic at professional meetings and in contacts with other agencies. Prepares or directs preparation of records, recommendation, and reports for budgetary approval and for use by public health, welfare, and school officials. Examines patients and provides emergency or inpatient treatment. Participates in research activities. Instructs clinic staff, medical and nursing students, residents, and interns in diagnosis and treatment of retarded persons. GOE 02.03.01 PD S 12 13 15 M5 L6 SVP 8 SOC 261

070.117-010 CHIEF OF NUCLEAR MEDICINE (medical ser.)

Directs activities of nuclear technology laboratory, performs nuclear medical research, determines treatment for patients, and instructs medical students in theory and techniques of nuclear medicine in hospital: Formulates policies and directs operation of nuclear laboratory. Coordinates activities of nuclear laboratory with other hospital departments and medical staff. Performs and directs research to develop new uses for nuclear medicine in diagnosis and treatment of patients. Examines patients, evaluates results of tests, confers with physicians, and recommends treatment for patients. Instructs medical students in theory and techniques of nuclear medicine. Attends conferences, seminars, and workshops, and reads professional and technical journals to acquire knowledge of current information and research in nuclear medicine. GOE 02.03.01 PD L 08 09 12 13 15 17 18 EC 11 M5 L6 SVP 9 SOC 261

070.117-014 DIRECTOR OF RADIOLOGY (medical ser.)

Administers radiology programs and directs and coordinates department activities in accordance with accepted national standards and administrative policies: Plans, organizes, and oversees radiology program in cooperation with hospital officials and other departments. Participates with personnel of other departments to plan joint administrative and technical programs and recommends methods and procedures to coordinate radiological services with other departments. Investigates and studies trends and developments in radiologic practices and techniques. Develops manuals to assist staff members to keep abreast of current methods, procedures, and techniques. Develops and oversees safety programs to ensure safe and acceptable use of x-ray equipment and radioactive materials used in diagnosis and therapy. Prepares and submits budgets, reports, records, and statistical data to ADMINISTRATOR, HOSPITAL (medical ser.) 187.117-010. Presents lectures, seminars, and on-the-job training to instruct students and interns in theory and practice of radiology. Recommends course of action following diagnosis to provide technical assistance and guidance. Oversees activities of subordinates and uses x-ray equipment to diagnose symptoms and conditions of patients. GOE 02.03.01 PD L 12 13 15 EC 11 M5 L6 SVP 8 SOC 261

072.117-010 DIRECTOR, DENTAL SERVICES (medical ser.)

Administers dental program in hospital and directs departmental activities in accordance with accepted national standards and administrative policies: Confers with hospital administrators to formulate policies and recommend procedural changes. Establishes training program, using lectures and seminars, to advance skill levels of students and interns involved in dentistry practice. Implements procedures for hiring of professional staff and approves hiring and promotion of all staff members. Establishes work schedules and assigns staff members to duty stations to maximize efficient use of staff. Observes and assists staff members at work to ensure safe and ethical practices and to solve problems and demonstrate techniques. Confers with ADMINISTRATOR, HOSPITAL (medical ser.) 187.117-010 to submit budget and statistical reports used to justify expenditures for equipment, supplies, and personnel. GOE 02.03.02 PD L 12 13 15 M5 L5 SVP 8 SOC 262

073.101-018 ZOO VETERINARIAN (medical ser.)

Maintains zoo veterinary clinic and plans, supervises, and participates in all phases of health care program for zoo animal collection: Establishes and conducts effective quarantine and testing procedures for all incoming animals to ensure health of collection, prevent spread of disease, and comply with government regulations. Conducts regularly scheduled immunization and preventive care programs to maintain health of animals and guard against spread of communicable diseases. Provides immediate medical attention to diseased or traumatized animals. Participates with other personnel in planning and executing zoo nutrition and reproduction programs for animals in collection. Develops special programs to encourage reproduction among animals designated as belonging to endangered species, based on knowledge of native habitats and instincts. Participates in employee training in handling and care of animals in collection. Conducts postmortem studies and analyses. Develops medical record system and supervises workers engaged in maintenance of records. GOE 02.03.03 PD M 04 05 06 07 08 09 10 11 12 13 15 16 17 18 19 20 EC 14 M5 L5 SVP 8 SOC 27

073.361-014 LABORATORY ASSISTANT, ZOO (medical ser.)

Assists professional veterinary workers in examination and treatment of animals and performance of research: Prepares treatment room for examination of animals and holds or restrains animals during examination, treatment, or inoculation. Hands instruments and materials to professional workers as directed. Sterilizes and cleans instruments. Administers immunization inoculations to animals to comply with quarantine regulations or assist in preventive medicine program. Performs routine laboratory tests, such as urinalyses and blood counts according to established procedures. Prepares vaccines and serums according to standard laboratory methods, and bottles and stores materials for future use. Assists professional workers in performance of autopsies. Maintains records of preventive and therapeutic treatment administered. Assists professional personnel in performance of tests and maintenance of records associated with various research projects. GOE 02.04.02 PD L 08 09 10 15 17 18 19 EC 14 M3 L4 SVP 5 SOC 369

074.131-010 DIRECTOR, PHARMACY SERVICES (medical ser.)

Supervises and coordinates activities of personnel in hospital pharmacy: Plans, establishes, and implements procedures in hospital pharmacy according to standard practices, hospital policies, and legal requirements. Directs pharmacy personnel programs, such as hiring, training, and intern program. Establishes work schedules and assigns pharmacy personnel to work stations, such as research or dispensary. Supervises personnel engaged in maintenance of records, formularies, and reports of drugs and other supplies dispensed, for drug control and budgetary purposes. Analyzes records to indicate prescribing trends and excessive usage. Prepares pharmacy budget, newsletters, and other reports required by hospital administrators. Attends staff meetings to advise and inform hospital medical staff of various drug applications and characteristics. Supervises and assists pharmacy personnel to prepare and dispense drugs. Observes pharmacy personnel at work to ensure safe, legal, and ethical practices. Maintains

master files of formulas and procedures for stock drugs prepared in pharmacy. Oversees preparation and dispensation of experimental drugs which are in clinical stage of development. Contacts drug wholesalers to order drugs and chemicals to maintain adequate drug stock levels. GOE 02.04.01 PD L 08 09 10 12 13 15 18 19 M6 L6 SVP 8 SOC 301

074.161-014 RADIOPHARMACIST (medical ser.)

Prepares and dispenses radioactive pharmaceuticals used for patient diagnosis and therapy, applying principles and practices of pharmacy and radiochemistry: Receives radiopharmaceutical prescription from PHYSICIAN (medical ser.) and reviews prescription to determine suitability of radiopharmaceutical for intended use. Verifies that specified radioactive substance and reagent will give desired results in examination or treatment procedures, utilizing knowledge of radiopharmaceutical preparation and principles of drug biodistribution. Calculates volume of radioactive pharmaceutical required to provide patient with desired level of radioactivity at prescribed time, according to established rates of radioisotope decay. Compounds radioactive substances and reagents to prepare radiopharmaceutical, following radiopharmacy laboratory procedures. Assays prepared radiopharmaceutical, using measuring and analysis instruments and equipment, such as ionization chamber, pulse-height analyzer, and radioisotope dose calibrator, to verify rate of drug disintegration and to ensure that patient receives required dose. Consults with PHYSICIAN (medical ser.) following patient treatment or procedure to review and evaluate quality and effectiveness of radiopharmaceutical. Conducts research to develop or improve radiopharmaceuticals. Prepares reports for regulatory agencies to obtain approval for testing and use of new radiopharmaceuticals. Maintains control records for receipt, storage, preparation, and disposal of radioactive nuclei. Occasionally conducts training for students and medical professionals concerning radiopharmacy use, characteristics, and compounding procedures. GOE 02.04.01 PD L 08 09 12 13 15 17 18 EC 11 M5 L5 SVP 7 SOC 301

075.127-030 NURSE SUPERVISOR, EVENING-OR-NIGHT (medical ser.)

Plans, organizes, and directs activities for evening or night shift of hospital nursing department: Establishes policies and procedures for nursing department, following directions of hospital administrators. Observes techniques of and services rendered by nursing staff to ensure adherence to hospital guidelines. Demonstrates techniques for nursing students and new personnel to provide training and direction. Identifies problem areas in nursing department, such as understaffing, absenteeism, and wastefulness, and takes corrective action. Monitors use of supplies and equipment to avoid abuses and requisitions supplies. Responds to various departments requesting emergency assistance and assigns staff accordingly during emergencies. Prepares work schedule and assigns duties to nursing staff in department for efficient use of personnel. GOE 10.02.01 PD L 08 09 10 12 13 15 19 M4 L5 SVP 8 SOC 29

076.104-010 VOICE PATHOLOGIST (profess. & kin.)

Diagnoses and treats voice disorders, such as those associated with professional use of voice: Develops and implements perceptual evaluation procedures and psychophysical methods for voice assessment. Collects diagnostic data on individuals, such as output pressures, airflow, chestwall movements, and articular and laryngeal displacement, using scopes and other measuring instruments. Analyzes and interprets diagnostic data and consults with OTOLARYNGOLOGIST (medical ser.) 070.101-062 and other professionals to determine method of treatment, such as surgery, vocal modification, or voice therapy. Plans and conducts voice therapy sessions, applying auditory, visual, kinematic, and biofeedback techniques. Plans and conducts voice hygiene workshops. Calibrates equipment. May teach voice science to associates and direct research in area of voice. May establish procedures and direct operation of laboratory specializing in diagnosing and treating voice disorders and be designated DIRECTOR, BIO-COMMUNICATIONS LABORATORY (medical ser.). GOE 02.03.04 PD L 08 09 10 11 12 13 15 18 M5 L5 SVP 8 SOC 3034

076.124-018 HORTICULTURAL THERAPIST (medical ser.)

Plans, coordinates, and conducts therapeutic gardening program to facilitate rehabilitation of physically and mentally handicapped patients: Confers with medical staff and patients to determine patients' needs. Evaluates patients' disabilities to determine gardening programs. Conducts gardening sessions to rehabilitate, train, and provide recreation for patients. Revises gardening program, based on observations and evaluation of patients' progress. GOE 10.02.02 PD L 04 05 06 08 09 12 13 15 EC 01 M4 L5 SVP 7 SOC 3039

076.127-018 DANCE THERAPIST (medical ser.)

Plans, organizes, and leads dance and body movement activities to improve patients' mental outlooks and physical well-beings: Observes and evaluates patient's mental and physical disabilities to determine dance and body movement treatment. Confers with patient and medical personnel to develop dance therapy program. Conducts individual and group dance sessions to improve patient's mental and physical well-being. Makes changes in patient's program based on observation and evaluation of progress. Attends and participates in professional conferences and workshops to enhance efficiency and knowledge. GOE 10.02.02 PD L 03 08 12 13 17 20 M3 L5 SVP 8 SOC 3039

076.264-010 PHYSICAL-INTEGRATION PRACTITIONER (per. ser.)

Conducts physical integration program to improve client's muscular function and flexibility: Determines client's medical history regarding accidents, operations, or chronic health complaints to plan objectives of program, using questionnaire. Photographs client to obtain different views of client's posture to facilitate treatment, using camera. Instructs client to demonstrate arm and leg movement and flexion of spine to evaluate client against established program norms. Determines program treatment procedures and discusses goals of program with client. Applies skin lubricant to section of body specified for treatment and massages muscles to release subclinical adhesions either manually or using handheld tool, utilizing knowledge of anatomy. Demonstrates and directs client's participation in specific exercises designed to fatigue desired muscle groups and release tension. Observes client's progress during program through such factors as increased joint movement, improved posture, or coordination. Records client's treatment, response, and progress. GOE 10.02.02 PD L 08 09 10 11 12 13 15 M1 L2 SVP 6 SOC 3033

078.161-014 CARDIOPULMONARY TECHNOLOGIST, CHIEF (medical ser.)

Coordinates activities of CARDIOPULMONARY TECHNOLOGISTS (medical ser.) 078.362-030 engaged in performing diagnostic testing and treatment of patients with heart, lung, and blood vessel disorders. Establishes methods for conducting tests and treatments, applying knowledge of medical requirements and laboratory procedures. Schedules patients for tests and treatment by staff members. Reviews reports to ensure compliance with test and treatment procedures. Develops and modifies training program for assigned personnel. Evaluates worker performances and recommends promotions, transfers, and dismissals. GOE 02.04.02 PD L 08 09 10 12 13 15 17 18 19 M4 L5 SVP 7 SOC 369

078.161-018 CHIEF TECHNOLOGIST, NUCLEAR MEDICINE (medical ser.)

Supervises and coordinates activities of NUCLEAR MEDICAL TECHNOLOGISTS (medical ser.) 078.361-018: Assigns workers to prepare radiopharmaceuticals, perform nuclear medicine studies, and conduct in vitro and ex vivo laboratory tests, and monitors activities to ensure efficiency and accuracy of procedures. Develops protocols for new or revised procedures and trains department workers and other personnel in treatment theory, management of patient, and calibration and use of equipment. Administers radiopharmaceuticals under direction of PHYSICIAN (medical ser.) or other qualified medical personnel. Assists in coordinating activities with other departments and in resolving operating problems. GOE 02.04.02 PD L 08 09 12 13 15 EC 11 M4 L5 SVP 8 SOC 365

078.221-010 IMMUNOHEMATOLOGIST (medical ser.)

Performs immunohematology tests, recommends blood problem solutions to doctors, and serves blood bank and community as consultant and instructor: Visually analyzes blood in specimen tubes to determine temperature and speed of centrifuge for starting hematology tests. Centrifuges blood specimen to separate red cells from serum and examines separated cells to detect presence of antibodies. Interprets evidence observed to devise experiments and suggest techniques that will resolve patient's blood problems. Combines known and unknown serums with red cells in test tubes and selects reagents, such as albumin, protolytic enzymes, and anti-human globulin, for individual tests to enhance and make visible reactions of agglutination and hemolysis. Processes various combinations in centrifuge and examines resulting samples under microscope to identify evidence of agglutination or hemolysis. Repeats and varies tests until normal suspension of reagents, serum, and red cells is attained. Writes blood specifications to meet patient's need, on basis of test results, and applies knowledge of blood classification system to locate donor's blood. Performs hematology tests on donor's blood to confirm matching blood types. Requisitions and sends blood to supply patient's need, and prepares written report to inform physician of test results and of required volume of blood to administer. Forwards copy of report to furnish data input for computer files. Studies worksheets to evaluate completeness of hematology tests and reads labels of related specimen tubes to identify known patients. Instructs MEDICAL-LABORATORY TECHNICIANS (medical ser.) 078.381-014 in classroom, in work situations, and over telephone to teach techniques of microscopic identification of precipitation, agglutination, or hemolysis in blood that leads to resolutions of problems. Writes notes on worksheets of MEDICAL-LABORATORY TECHNICIANS (medical ser.) 078.381-014 to suggest possible solutions for specific problems and returns worksheets and specimens to aid personnel in blood bank reference library. GOE 02.04.02 PD L 04 08 09 10 12 13 15 18 19 M3 L5 SVP 8 SOC 369

078.262-010 PULMONARY-FUNCTION TECHNICIAN (medical ser.)

Performs pulmonary-function, lung-capacity, and blood-and-oxygen tests to gather data for medical evaluation, following instructions of supervisor: Confers with patient in treatment room to explain test procedures. Explains specified methods of breathing to patient and conducts pulmonary-function tests, such as helium dilution and gross spirometry tests, and lung-capacity tests, such as vital capacity and maximum breathing capacity tests, using spirometer. Activates co-oximeter and injects blood specimen into co-oximeter to perform blood analysis tests, such as oxygen saturation and red cell count. Collects and analyzes contents of expired air of patient, using oxygen analyzer. Observes and records readings on metering devices

of analysis equipment, and conveys findings of tests and analyses to supervisor for evaluation. GOE 10.03.01 PD L 08 09 12 13 15 EC 14 M4 L4 SVP 6 SOC 369

078.264-010 HOLTER SCANNING TECHNICIAN (medical ser.)

Analyzes tape from cardiac-function monitoring device (Holter monitor) worn by patient to provide data for diagnosis of cardiovascular disorders: Places magnetic tape from heart monitor worn by patient during specified test period onto spindle of tape scanner and pushes button to activate scanner. Turns knobs on scanner to adjust controls that regulate taped sounds associated with heart activity and focus video representation of sounds on screen of scanner. Observes scanner screen to identify irregularities in patient cardiac patterns, utilizing knowledge of regular and irregular cardiac-function patterns. Presses button on scanner to activate printer that prints sections of tape showing abnormal cardiac patterns. Tears strip of tape from printer and measures distances between peaks and valleys of heart activity patterns, using calipers, to obtain data for further analysis. Records findings on laboratory report forms and forwards tapes and forms to designated personnel. May fit patient with heart monitor, following instructions of supervisory personnel. May analyze patient diary to identify incidents that correspond to heart pattern irregularities detected on monitor tape. May perform other diagnostic procedures, such as electrocardiography and stress testing, to aid in medical evaluation of patient. GOE 10.03.01 PD M 08 09 10 15 18 19 M3 L3 SVP 6 SOC 369

078.361-034 RADIATION-THERAPY TECHNOLOGIST (medical ser.)

Operates radiation therapy equipment to treat patients with prescribed doses of ionizing radiation: Positions patient under equipment to expose necessary areas to treatment and adjusts equipment according to instructions. Calculates exposure time and intensity required, using mechanical and electronic regulating controls. Turns controls to operate and adjust equipment and regulate application. Observes dials to monitor duration and intensity of treatment. Prepares and maintains records for review by medical staff. GOE 02.03.04 PD L 08 09 10 15 EC 11 M4 L4 SVP 6 SOC 365

078.362-030 CARDIOPULMONARY TECHNOLOGIST (medical ser.)

Performs diagnostic tests of cardiovascular and pulmonary systems of patients in hospital, using variety of laboratory machines and other work devices, to aid physicians in diagnosis and treatment: Conducts electrocardiogram, phonocardiography, vectorcardiography, ultrasound, stress, cardiac catheterization, blood pressure, and other vascular tests to diagnose disorders of cardiovascular system, using variety of laboratory equipment, such as electrocardiograph and phonocardiograph machines, stethoscope, and catheter. Conducts tests of pulmonary system to diagnose pulmonary disorders, using respiratory equipment. Analyzes and interprets test findings and furnishes results to physician. GOE 10.03.01 PD L 08 09 10 12 13 15 17 18 19 M4 L4 SVP 7 SOC 369

078.362-034 PERFUSIONIST (medical ser.)

Sets up and operates heart-lung machine in hospital to take over functions of patient's heart and lungs during surgery or respiratory failure: Consults with surgeon or physician to obtain patient information needed to set up heart-lung machine. Assembles, sets up, and tests heart-lung machine to ensure that machine functions according to specifications. Operates heart-lung machine to regulate blood circulation and composition and oxygen and carbon dioxide levels, to administer drugs, and to control body temperature during surgery or respiratory failure of patient. Changes quantities administered at direction of physician, surgeon, or anesthesiologist. Cleans, repairs, and adjusts malfunctioning parts of heart-lung machine. GOE 10.03.02 PD L 08 09 10 12 13 15 20 M3 L4 SVP 7 SOC 369

078.367-010 CARDIAC MONITOR TECHNICIAN (medical ser.) telemetry technician.

Monitors heart rhythm pattern of patients in special care unit of hospital to detect abnormal pattern variances, using telemetry equipment: Reviews patient information to determine normal heart rhythm pattern, current pattern, and prior variances. Observes screen of cardiac monitor and listens for alarm to identify abnormal variation in heart rhythm. Informs supervisor or NURSE, GENERAL DUTY (medical ser.) 075.374-010 of variances to initiate examination of patient. Measures length and height of patient's heart rhythm pattern on graphic tape readout, using calipers, and posts information on patient records. Answers calls for assistance from patients and inquiries concerning patients from medical staff, using intercom and call director. May perform duties as described under ELECTROCARDIOGRAPH TECHNICIAN (medical ser.) 078.362-018. GOE 10.03.01 PD S 08 09 10 12 13 15 18 M2 L2 SVP 5 SOC 369

079.131-010 DIRECTOR, SPEECH-AND-HEARING (medical ser.)

Directs and coordinates activities of personnel in hospital speech and hearing department engaged in research and in testing and treating patients according to established policies: Organizes and establishes personnel procedures, including hiring and training, counsels employees, and evaluates work performance. Confers with ADMINISTRATOR, HOSPITAL (medical ser.) 187.117-010 and committee members to request expenditures for equipment, supplies, and personnel. Meets with ADMINISTRATOR, HOSPITAL (medical ser.) 187.117-010, department officials, and staff members to explain new techniques and procedures or to demonstrate new and innovative equipment. Plans and directs research and treatment programs to provide direction and assistance to staff members. Con-

ducts workshops and seminars to develop staff expertise and knowledge. Analyzes data and maintains records of research and treatment programs. GOE 11.07.02 PD S 12 13 15 18 M5 L5 SVP 8 SOC 131

079.137-010 UTILIZATION-REVIEW COORDINATOR (medical ser.)

Supervises and coordinates activities of utilization review staff and develops policies, standards, and procedures governing admissions and treatment of patients of health-care facility: Analyzes individual patient records to determine legitimacy of admission and continued stay in health-care facility, reviews patient treatment plans to ensure adherence to established criteria and standards, and supervises activities of utilization review staff. Reviews and analyzes governmental and accrediting agency standards governing admissions, treatment, and continued stay of patients to develop policies, procedures, and criteria for facility center. Reviews application for patient admission and determines necessity of each admission, applying established admission criteria. Approves admission or refers case to facility Utilization Review Committee for review and course of action when case fails to meet criteria. Reviews inpatient medical records to determine necessity of continued stay or discharge. Reviews physician treatment plans for inpatients to determine appropriateness of plan to patient manifested conditions and to ensure consistency with standard medical practice and facility policies. Makes clinical judgment regarding correctness of physician directed care. Determines next review date in accordance with established diagnostic criteria. Abstracts data from records. Assists review committee in planning and holding federally-mandated quality assurance reviews, periodic medical reviews, and professional reviews. Serves as review committee liaison with other committees within facility in development of policies and procedures. Participates in facility orientation and training programs. Supervises and coordinates activities of utilization review staff in maintenance of policy and procedure manuals, file, records, and correspondence. GOE 11.07.02 PD L 08 09 12 13 15 M4 L5 SVP 7 SOC 131

079.224-010 HOME HEALTH TECHNICIAN (medical ser.)

Provides patient care, assistance, and instructions in household management and in-home medical care techniques to patients and families in home or homelike environment: Assists ambulatory and bedridden patient with dressing, bathing, grooming, and elimination. Transfers patient to and from wheelchair, and helps patient to walk to and from bed, shower, tub, and lavatory. Performs procedures and treatments as directed by professional staff, such as massages, hot and cold applications, dressing changes, wound irrigation, enemas, douches, catheterizations, and ostomy care, utilizing knowledge of body structures and function and aseptic techniques. Administers oral medications and injections under medical supervision. Measures and records patient temperature, pulse, and respiration rates, blood pressure, fluid intake and output, and performs throat inspection and urine tests to provide data for health-care team assessment. Teaches patients and family members approved medical techniques, such as mobility training in use of walkers, crutches, and other range-of-motion and supportive devices, to enable continuing home care, utilizing knowledge of physical rehabilitation techniques. Demonstrates basic home management techniques, such as housekeeping, nutrition, meal planning and preparation, and adapts techniques to patient's physical limitations. Guides and encourages patient and family to obtain optimal adjustment to illness or disability. GOE 10.03.02 PD M 08 09 12 13 15 17 M3 L4 SVP 6 SOC 369

079.271-014 ACUPRESSURIST (medical ser.)

Examines patients and analyzes findings to diagnose and treat physical problems according to knowledge and techniques of acupressure: Directs patient to lie on treatment couch and positions patient's arms and legs in relaxed position to facilitate examination and treatment. Examines patient's muscular system visually and feels tissue around muscles, nerves, and blood vessels to locate knots and other blockages which indicate excessive accumulations of blood, water, and other substances in tissue. Determines cause of accumulations and treatment procedures, according to knowledge of acupressure and experience. Feels tissue around muscles, nerves, and blood vessels to locate pressure points and presses at pressure points, using thumbs, fingers, and elbows to redirect accumulated body fluids into normal channels according to acupressure knowledge, techniques, and experience. Discusses findings with patient and explains relationship to internal organs. Outlines course of treatment for patient and advises patient regarding methods and diet for prevention of problem recurrence. Uses specific method or combination of acupressure methods, such as Ghi Ahp, Jin Shin Do, or Shiatsu, and may be known accordingly. GOE 10.02.02 PD M 08 09 10 11 12 13 M3 L4 SVP 7 SOC 289

079.361-014 ANIMAL HEALTH TECHNICIAN (medical ser.)

Assists veterinary staff to diagnose and treat animals for injury and illness, applying knowledge of veterinary medical assisting procedures and techniques and following directions of veterinary staff: Soothes and quiets patients prior to examination or treatment and restrains patients during examination and treatment to facilitate procedures. Measures and records patient temperature, pulse rate, and respiration as directed. Applies bandages, dressings, and splints, and administers oxygen and oral and injected medications as prescribed. Administers treatments, cleans teeth, removes sutures, and inserts catheters, endotracheal tubes, and related devices as instructed. Draws patient blood and collects specimens as directed. Gathers and positions surgical packs and related instruments and materials for

use by veterinary staff during surgery. Administers prescribed pre-anesthetic drugs to patient, and washes, shaves, and applies antiseptic solution to surgical site to prepare patient for surgery. Monitors patient's vital signs and reflexes during and after surgery and informs veterinary staff of changes. Observes patients in hospital to monitor eating and elimination and to detect abnormal conditions. Conducts tests and microscopic examinations of specimens, following standard test and examination procedures and using various laboratory equipment and materials. Dispenses prescribed drugs, maintains prescription records, and inventories supplies of drugs, instruments, and related items. Cleans and sterilizes instruments and materials and maintains equipment and machines. Sets up and operates radiological equipment to conduct x-ray examinations of patients, utilizing knowledge of radiological techniques and procedures. GOE 02.03.03 PD M 08 09 10 12 13 15 18 19 20 M3 L4 SVP 6 SOC 369

079.364-022 PHLEBOTOMIST (medical ser.)

Draws blood from patients or donors in hospital, blood bank, or similar facility for analysis or other medical purposes: Assembles equipment, such as tourniquet, needles, blood collection devices, gauze, cotton, and alcohol on work tray, according to requirements for specified tests or procedures. Verifies or records identity of patient or donor and converses with patient or donor to allay fear of procedure. Applies tourniquet to arm, locates accessible vein, swabs puncture area with disinfectant, and inserts needle into vein to draw blood into collection tube or bag. Withdraws needle, applies treatment to puncture site, and labels and stores blood container for subsequent processing. May prick finger to draw blood. May conduct interviews, take vital signs, and draw and test blood samples to screen donors at blood bank. GOE 02.04.02 PD L 08 09 10 11 12 13 15 16 M2 L4 SVP 3 SOC 5233

079.374-014 NURSE, LICENSED PRACTICAL (medical ser.)

Cares for ill, injured, convalescent, and handicapped persons in hospitals, clinics, private homes, sanitariums, and similar institutions: Takes and records temperature, blood pressure, and pulse and respiration rate. Dresses wounds, gives enemas, douches, alcohol rubs, and massages. Applies compresses, ice bags, and hot water bottles. Observes patient and reports adverse reactions to medical personnel in charge. Administers specified medication, and notes time and amount on patient's chart. Assembles and uses such equipment as catheters, tracheotomy tubes, and oxygen suppliers. Performs routine laboratory work, such as urinalysis. Sterilizes equipment and supplies, using germicides, sterilizer, or autoclave. Prepares food trays and feeds patient. Records food and fluid intake and output. Bathes, dresses, and assists patient in walking and turning. Cleans rooms, makes beds, and answers patient's calls. Washes and dresses bodies of deceased persons. Must pass state board examination and be licensed. May assist in delivery, care, and feeding of infants. GOE 10.02.01 PD M 04 08 09 10 12 13 15 17 18 19 EC 07 14 M3 L4 SVP 6 SOC 366

079.374-026 PSYCHIATRIC TECHNICIAN (medical ser.)

Provides nursing care to mentally ill, emotionally disturbed, or mentally retarded patients in psychiatric hospital or mental health clinic and participates in rehabilitation and treatment programs: Helps patients with their personal hygiene, such as bathing and keeping beds, clothing, and living areas clean. Administers oral medications and hypodermic injections, following physician's prescriptions and hospital procedures. Takes and records measures of patient's general physical condition, such as pulse, temperature, and respiration, to provide daily information. Observes patients to detect behavior patterns and reports observations to medical staff. Intervenes to restrain violent or potentially violent or suicidal patients by verbal or physical means as required. Leads prescribed individual or group therapy sessions as part of specific therapeutic procedures. May complete initial admittance forms for new patients. May contact patient's relatives by telephone to arrange family conferences. May issue medications from dispensary and maintain records in accordance with specified procedures. May be required to hold State license. GOE 10.02.02 PD M 08 09 10 11 12 13 EC 14 M3 L4 SVP 6 SOC 366

090.164-010 LABORATORY MANAGER (education)

Coordinates activities of university science laboratory to assist faculty in teaching and research programs: Consults with faculty laboratory coordinator to determine equipment purchase priorities based on budget allowances, condition of existing equipment, and scheduled laboratory activities. Prepares and puts in place equipment scheduled for use during laboratory teaching sessions. Demonstrates care and use of equipment to teaching assistants. Builds prototype equipment, applying electromechanical knowledge and using handtools and power tools. Trains teaching staff and students in application and use of new equipment. Diagnoses equipment malfunctions and dismantles and repairs equipment, applying knowledge of shop mechanics and using gauges, meters, handtools, and power tools. Develops methods of laboratory experimentation, applying knowledge of scientific theory and computer capability. Confers with teaching staff periodically to evaluate new equipment and methods. Teaches laboratory sessions in absence of teaching assistant. GOE 11.07.03 PD L 08 09 12 13 15 M5 L4 SVP 7 SOC 22

090.167-034 DIRECTOR, FIELD SERVICES (education) director of recruitment.

Directs and plans recruitment activities of community college: Plans comprehensive program of marketing services in recruitment of students

and outreach activities with business, industry, community organizations, and public agencies to establish educational programs and to identify educational needs of community. Develops and distributes recruiting literature in locations, such as high schools and shopping centers. Plans publicity campaign and contacts target groups directly through visits with school counselors, career day activities, and meetings with industry groups to explain college educational programs and services. Studies Federal and State regulations and local demographic and employment trends to determine impact on enrollment. Coordinates recruitment activities with other colleges. Advises administrative staff on need for new programs and courses. Prepares budget and annual reports. GOE 11.07.03 PD M 08 09 12 13 15 M4 L5 SVP 8 SOC 1281

090.222-010 INSTRUCTOR, BUSINESS EDUCATION (education)

Instructs students in commercial subjects, such as typing, filing, secretarial procedures, business mathematics, office equipment use, and personality development, in business schools, community colleges, or training programs: Instructs students in subject matter, utilizing various methods, such as lecture and demonstration, and uses audiovisual aids and other materials to supplement presentations. Prepares or follows teaching outline for course of study, assigns lessons, and corrects homework and classroom papers. Administers tests to evaluate students' progress, records results, and issues reports to inform students of their progress. Maintains discipline in classroom. GOE 11.02.01 PD L 10 11 12 13 15 M4 L5 SVP 8 SOC 2233

094.107-010 WORK-STUDY COORDINATOR, SPECIAL EDUCATION (education)

Plans and conducts special education work and study program for in-school youth: Establishes contacts with employers and employment agencies and surveys newspapers and other sources to locate work opportunities for students. Confers with potential employers to communicate objectives of work study program and to solicit cooperation in adapting work situations to special needs of students. Evaluates and selects program participants according to specified criteria and counsels and instructs selected students in matters such as vocational choices, job readiness, and job retention skills and behaviors. Assists students in applying for jobs and accompanies students to employment interviews. Confers with employer and visits worksite to monitor progress of student and to determine support needed to meet employer requirements and fulfill program goals. Counsels students to foster development of satisfactory job performance. Confers with school and community personnel to impart information about program and to coordinate program functions with related activities. GOE 10.02.03 PD L 12 13 15 M3 L5 SVP 7 SOC 235

094.117-018 VOCATIONAL REHABILITATION CONSULTANT (gov. ser.)

Develops and coordinates implementation of vocational rehabilitation programs: Consults with members of local communities and personnel of rehabilitation facilities, such as sheltered workshops and skills training centers, to identify need for new programs or modification of existing programs. Collects and analyzes data to define problems and develops proposals for programs to provide needed services, utilizing knowledge of vocational rehabilitation theory and practice, program funding sources, and government regulations. Provides staff training, negotiates contracts for equipment and supplies, and performs related functions to implement program changes. Monitors program operations and recommends additional measures to ensure programs meet defined needs. GOE 11.07.03 PD S 12 13 15 18 M4 L5 SVP 8 SOC 1283

094.167-010 SUPERVISOR, SPECIAL EDUCATION (education)

Directs and coordinates activities of teachers and other staff providing home or school instruction, evaluation services, job placement, or other special education services to physically, mentally, emotionally, or neurologically handicapped children: Reviews referrals and diagnoses and participates in conferences with administrators, staff, parents, children, and other concerned parties to formulate recommendations for student placement and provision of services. Monitors staff activities and gives technical assistance in areas, such as assessment, curriculum development, use of materials and equipment, and management of student behavior. Plans and conducts in-service training. Interviews applicants, recommends hirings, and evaluates staff performance. May write grant proposals. May assist program administrators in preparation of budget and development of program policy and goals. May address public to elicit support and explain program objectives. GOE 10.02.03 PD L 12 13 M4 L5 SVP 8 SOC 235

094.224-010 TEACHER, DEAF STUDENTS (education) instructor, deaf-mute; teacher, aurally handicapped; teacher, oral-deaf.

Teaches elementary and secondary school subjects to aurally-handicapped students, using various methods, such as lip reading, finger spelling, cued speech, and sign language: Instructs deaf and hard-of-hearing students in communication skills, using hearing aid or other electronic or electrical amplifying equipment. Plans curriculum and prepares lessons and other instructional materials according to grade level of students, utilizing visual media, such as films, television, and charts. Instructs students in specific subject areas, such as geography, biology, and art. Encourages students to participate in verbal communication classroom learning experiences to ensure their comprehension of subject matter, development of

social skills, and ability to communicate in situations encountered in daily living. May attend and interpret lectures and instructions for students enrolled in regular classes. May specialize in teaching lip reading and be designated as TEACHER, LIP READING (education). GOE 10.02.03 PD L 08 10 11 12 13 M4 L5 SVP 7 SOC 235

094.227-010 EDUCATIONAL THERAPIST (education) teacher, educationally handicapped.

Teaches elementary and secondary school subjects to educationally-handicapped students with neurological or emotional disabilities in schools, institutions, or other specialized facilities: Plans curriculum and prepares lessons and other instructional materials to meet individual needs of students, considering factors, such as physical, emotional, and educational levels of development. Instructs students in specific subject areas, such as English, mathematics, and geography. Observes students for sign of disruptive behavior, such as violence, outbursts of temper, and episodes of destructiveness. Counsels students with regard to disruptive behavior, utilizing variety of therapeutic methods. Confers with other staff members to plan programs designed to promote educational, physical, and social development of students. GOE 10.02.03 PD L 07 08 09 12 13 15 16 20 M4 L5 SVP 7 SOC 235

094.227-018 TEACHER, HANDICAPPED STUDENTS (education) instructor, crippled students; teacher, exceptional children; teacher, orthopedically handicapped.

Teaches elementary and secondary school subjects to physically-handicapped students, adapting teaching techniques and methods of instruction to meet individual needs of students in schools, hospitals, and students' homes: Plans curriculum and prepares lessons and other materials, considering factors, such as individual needs, abilities, learning levels, and physical limitations of students. Arranges and adjusts tools, work aids, and equipment utilized by students in classroom, such as specially equipped worktables, typewriters, and mechanized page turners. Devises special teaching tools, techniques, and equipment. Instructs students in academic subjects and other activities designed to provide learning experience. Confers with other members of staff to develop programs to maximize students' potentials. May assist members of medical staff in rehabilitation programs for students. GOE 10.02.03 PD L 08 09 10 12 13 M4 L5 SVP 7 SOC 235

094.227-022 TEACHER, MENTALLY-RETARDED STUDENTS (education) teacher, educable mentally retarded.

Teaches basic academic and living skills to mentally-retarded students in schools, centers, and institutions, using various teaching techniques to reinforce learning: Plans curriculum and prepares lessons and other instructional materials according to achievement levels of students. Instructs students in subject areas, such as reading, writing, and basic arithmetic, utilizing various techniques, such as those of phonetics, multisensory learning, and repetition to reinforce learning. Instructs students in subjects and personal skills required to prepare them for independent maintenance and economic self-sufficiency. Administers ability and achievement tests and interprets results. Observes, evaluates, and prepares reports on progress of students. GOE 10.02.03 PD L 12 13 M4 L5 SVP 7 SOC 235

094.227-026 TEACHER, VOCATIONAL TRAINING (education)

Teaches vocational skills to handicapped students: Confers with students, parents, school personnel, and other individuals to plan vocational training that meets needs, interests, and abilities of students. Instructs students in areas such as personal-social skills and work-related attitudes and behaviors. Develops work opportunities that allow students to experience success in performing tasks of increasing difficulty and that teach work values, such as self-improvement, independence, dependability, productivity, and pride of workmanship. Conducts field trips to enable students to learn about job activities and to explore work environments. May teach academic skills to students. May instruct students in one or more vocational skills, such as woodworking, building maintenance, cosmetology, food preparation, gardening, sewing, or nurse aiding. GOE 10.02.03 PD L 08 09 10 12 13 15 18 M3 L5 SVP 7 SOC 235

094.267-010 EVALUATOR (education)

Assesses type and degree of disability of handicapped children to aid in determining special programs and services required to meet educational needs: Reviews referrals of children having or suspected of having learning disabilities, mental retardation, behavioral disorders, or physical handicaps to determine evaluation procedure. Confers with school or other personnel and scrutinizes records to obtain additional information on nature and severity of disability. Observes student behavior and rates strength and weakness of factors such as rapport, motivation, cooperativeness, aggression, attention span, and task completion. Selects, administers, and scores variety of preliminary tests to measure individual's aptitudes, educational achievements, perceptual motor skills, vision, and hearing. Reports findings for staff consideration in placement of children in educational programs. May test preschool children to detect learning handicaps and recommend followup activities, consultation, or services. May administer work related tests and review records and other data to assess student vocational interests and abilities. May specialize in evaluating student readiness to transfer from special classes to regular classroom, and in providing supportive services to regular classroom teacher and be designated MAINSTREAMING FACILITATOR (education). GOE 10.02.03 PD L 08 09 10 12 13 15 M4 L5 SVP 7 SOC 235

099.117-030 DIRECTOR, EDUCATION (museum)

Plans, develops, and administers educational program of museum, zoo, or similar institution: Confers with administrative personnel to decide scope of program to be offered. Prepares schedules of classes and rough drafts of course content to determine number and background of instructors needed. Interviews, hires, trains, and evaluates work performance of education department staff. Contacts and arranges for services of guest lecturers from academic institutions, industry, and other establishments to augment education staff members in presentation of classes. Assists instructors in preparation of course descriptions and informational materials for publicity or distribution to class members. Prepares budget for education programs and directs maintenance of records of expenditures, receipts, and public and school participation in programs. Works with other staff members to plan and present lecture series, film programs, field trips, and other special activities. May teach classes. May speak before school and community groups and appear on radio or television to promote institution programs. May coordinate institution educational activities with those of other area organizations to maximize utilization of resources. May train establishment volunteers to assist in presentation of classes or tours. May develop and submit program and activity grant proposals and applications and implement programs funded as result of successful applications. GOE 11.07.03 PD S 12 13 15 18 M4 L5 SVP 7 SOC 1283

099.167-030 EDUCATIONAL RESOURCE COORDINATOR (museum)

Directs operation of educational resource center of museum, zoo, or similar establishment: Maintains collections of slides, video tapes, programmed texts, and other educational materials related to institution specialty, storing or filing materials according to subject matter, geographic or ethnic association, or historical period. Composes or directs others in composition of descriptions of materials, and prepares catalog listing materials for use of museum staff members, area school teachers, and others. Compiles list of books, periodicals, and other materials designed to augment items available in resource center. Explains storage and cataloging systems to teachers and others who visit center and suggests materials for various projects, such as preparing school classes for tour of institution or presentation of lecture for community group. Issues loan materials to teachers or lecturer, or schedules and coordinates delivery of materials to designated locations. Maintains records of loans and prepares circulation reports for review by administrative personnel. Conducts workshops to acquaint educators with use of institution's facilities and materials. Attends teacher meetings and conventions to promote use of institution services. GOE 11.07.03 PD L 12 13 15 17 18 19 M2 L5 SVP 7 SOC 1283

099.167-034 DIRECTOR OF PUPIL PERSONNEL PROGRAM (education)

Directs pupil information data system program in support of educational services, in accordance with governmental laws and regulations for school district: Develops and maintains compliance program to meet legal requirements concerning students rights to privacy and due process of law in accordance to applicable laws and regulations. Directs and coordinates activities of clerical staff engaged in compiling, maintaining, and releasing pupil records and information. Confers with staff and reviews records management system to recommend changes to improve system, utilizing knowledge of filing methods and coding system, equipment, legal problems, and Board of Education requirements. Provides in-service training on topics, such as legal requirements concerning pupil records and information and to improve quality of report writing. Prepares departmental budget, records, and reports. GOE 11.07.03 PD S 09 10 15 19 20 M4 L5 SVP 8 SOC 1283

099.224-014 TEACHER, ADVENTURE EDUCATION (education)

Instructs and leads students in variety of stressful and challenging activities, such as rock climbing, canoeing, spelunking, and skiing to build student confidence and promote physical, mental, and social development: Appraises students' tolerance to stress and selects and structures learning environment that provides for success in activities appropriate to maturity, interests, and abilities of students. Demonstrates basic skills, safety precautions, and other techniques to prepare students for activities. Arranges for provisions, such as transportation, food, and equipment. Teaches camping and related outdoor skills to students, staff, and volunteers. GOE 10.02.03 PD M 02 03 04 05 06 07 08 09 10 12 13 15 16 17 18 19 20 EC 01 M4 L5 SVP 7 SOC 235

099.227-038 TEACHER (museum)

Teaches classes, presents lectures, conducts workshops, and participates in other activities to further educational program of museum, zoo, or similar institution: Plans course content and method of presentation, and prepares outline of material to be covered and submits it for approval. Selects and assembles materials to be used in teaching assignment, such as pieces of pottery or samples of plant life, and arranges use of audiovisual equipment or other teaching aids. Conducts classes for children in various scientific, history, or art subjects, utilizing museum displays to augment standard teaching methods and adapting course content and complexity to ages and interests of students. Teaches adult classes in such subjects as art, history, astronomy, or horticulture, using audiovisual aids, demonstration, or laboratory techniques appropriate to subject matter. Presents series of lectures on subjects related to institution collections, often incorporating films or slides into presentation. Conducts seminars or workshops for

school system teachers or lay persons to demonstrate methods of using institution facilities and collections to enhance school programs or to enrich other activities. Conducts workshops or field trips for students or community groups and plans and directs activities associated with projects. Plans and presents vacation or weekend programs for elementary or preschool children, combining recreational activities with teaching methods geared to age groups. Conducts classes for academic credit in cooperation with area schools or universities. Teaches courses in museum work to participants in work-study programs. Works with adult leaders of youth groups to assist youths to earn merit badges or fulfill other group requirements. Maintains records of attendance. Evaluates success of courses, basing evaluation on number and enthusiasm of persons participating and recommends retaining or dropping course in future plans. When course is offered for academic credit, evaluates class member performances, administers tests, and issues grades in accordance with methods used by cooperating educational institution. GOE 11.02.01 PD L 08 09 12 13 16 17 18 19 20 M4 L5 SVP 7 SOC 2216

099.227-042 TEACHER, RESOURCE (education) mathematics improvement teacher; reading improvement teacher.

Teaches basic academic subjects to students requiring remedial work, using special help programs to improve scholastic level: Teaches basic subjects, such as reading and math, applying lesson techniques designed for short attention spans. Administers achievement tests and evaluates test results to discover level of language and math skills. Selects and teaches reading material and math problems related to everyday life of individual student. Confers with school counselors and teaching staff to obtain additional testing information and to gain insight on student behavioral disorders affecting learning process. Designs special help programs for low achievers and encourages parent-teacher cooperation. Attends professional meetings, writes reports, and maintains records. GOE 11.02.01 PD L 12 13 15 M5 L5 SVP 7 SOC 23

099.327-010 TEACHER AIDE (education) I assistant teacher.

Assists teaching staff of public or private elementary or secondary school by performing any combination of following instructional tasks in classroom: Discusses assigned teaching area with classroom teacher to coordinate instructional efforts. Prepares lesson outline and plan in assigned area and submits it for review. Plans, prepares, and develops various teaching aids, such as bibliographies, charts, and graphs. Presents subject matter to students, utilizing variety of methods and techniques, such as lecture, discussion, and supervised role playing. Prepares, gives, and grades examinations. Assists students, individually or in groups, with lesson assignments to present or reinforce learning concepts. May confer with parents on progress of students. May specialize in specific subject area or total classroom experience. May be designated by school level as TEACHER AIDE, PRIMARY SCHOOL (education); TEACHER AIDE, SECONDARY SCHOOL (education) I. GOE 11.02.01 PD L 08 09 10 12 13 15 18 19 20 M4 L4 SVP 6 SOC 399

100.117-014 LIBRARY CONSULTANT (library)

Advises administrators of public libraries: Analyzes administrative policies, observes work procedures, and reviews data relative to book collections to determine effectiveness of library service to public. Compares allocations for building funds, salaries, and book collections with statewide and national standards, to determine effectiveness of fiscal operations. Gathers statistical data, such as population and community growth rates, and analyzes building plans to determine adequacy of programs for expansion. Prepares evaluation of library systems based on observations and surveys, and recommends measures to improve organization and administration of systems. GOE 11.07.04 PD S 12 13 M4 L6 SVP 8 SOC 251

102.117-014 DIRECTOR, MUSEUM-OR-ZOO (museum)

Administers affairs of museum, zoo, or similar establishment: Confers with institution's board of directors to formulate policies and plan overall operations. Directs acquisition, education, research, public service, and development activities of institution, consulting with curatorial, administrative, and maintenance staff members to implement policies and initiate programs. Works with members of curatorial and administrative staffs to acquire additions to collections. Confers with administrative staff members to determine budget requirements, plan fund raising drives, prepare applications for grants from government agencies or private foundations, and solicit financial support for institution. Establishes and maintains contact with administrators of other institutions to exchange information concerning operations and plan, coordinate, or consolidate community service and education programs. Represents institution at professional and civic social events, conventions, and other gatherings to strengthen relationships with cultural and civic leaders, present lectures or participate in seminars, or explain institution's functions and seek financial support for projects. Reviews materials prepared by staff members, such as articles for journals, requests for grants, and reports on institution programs, and approves materials or suggests changes. Instructs classes in institution's education program or as guest lecturer at university. Writes articles for technical journals or other publications. GOE 11.02.01 PD S 12 13 15 16 17 18 19 20 M4 L6 SVP 8 SOC 252

102.167-014 HISTORIC-SITE ADMINISTRATOR (museum)

Manages operation of historic structure or site: Discusses house or site operation with governing body representatives to form or change policies.

Oversees activities of building and grounds maintenance staff and other employees. Maintains roster of volunteer guides, and contacts volunteers to conduct tours of premises according to schedule. Conducts tours, explaining points of interest and answers visitors' questions. Studies documents, books, and other materials to obtain information concerning history of site or structure. Conducts classes in tour presentation methods for volunteer guides. Accepts group reservations for house tours and special social events. Arranges for refreshments, entertainment, and decorations for special events. Collects admission and special event fees, and maintains records of receipts, expenses, and numbers of persons served. Assists in planning publicity, and arranges for printing of brochures or placement of information in media. Inspects premises for evidence of deterioration and need for repair, and notifies governing body of such need. GOE 11.02.01 PD L 12 13 15 16 18 19 20 M4 L5 SVP 5 SOC 252

102.167-018 REGISTRAR, MUSEUM (museum)

Maintains records of accession, condition, and location of objects in museum collection, and oversees movement, packing, and shipping of objects to conform to insurance regulations: Observes unpacking of objects acquired by museum through gift, purchase, or loan to determine that damage or deterioration to objects has not occurred. Registers and assigns accession and catalog numbers to all objects in collection, according to established registration system. Composes concise description of objects, and records descriptions on file cards and in collection catalogs. Oversees handling, packing, movement, and inspection of all objects entering or leaving establishment, including traveling exhibits, and confers with other personnel to develop and initiate most practical methods of packing and shipping fragile or valuable objects. Maintains records of storage, exhibit, and loan locations of all objects in collection for use of establishment personnel, insurance representatives, and other persons utilizing facilities. Prepares acquisition reports for review of curatorial and administrative staff. Periodically reviews and evaluates registration and catalog system to maintain applicability, consistency, and operation. Recommends changes in record-keeping procedures to achieve maximum accessibility to and efficient retrieval of collection objects. Arranges for insurance of objects on loan or special exhibition, or recommends insurance coverage on parts of or entire collection. GOE 07.01.02 PD S 12 13 15 18 M4 L5 SVP 6 SOC 252

102.361-014 RESTORER, CERAMIC (museum)

Cleans, preserves, restores, and repairs objects made of glass, porcelain, china, fired clay, and other ceramic materials: Coats excavated objects with surface-active agents to loosen adhering mud or clay and washes objects with clear water. Places cleaned objects in dilute hydrochloric acid or other solution to remove remaining deposits of lime or chalk, basing choice of solution on knowledge of physical and chemical structure of objects and destructive qualities of solvents. Cleans glass, porcelain, or similar objects by such methods as soaking objects in lukewarm water with ammonia added, wiping gilded or enameled objects with solvent-saturated swab, or rubbing objects with paste cleanser. Rubs objects with jewelers' rouge or other mild cleanser, soaks objects in distilled water with bleach or solvent added, or applies paste or liquid solvent, such as magnesium silicate or acetone, basing choice of method and material on age, condition, and chemical structure of objects, to remove stains from objects. Recommends preservation measures, such as control of temperature, humidity, and exposure to light, to curatorial and building maintenance staff to prevent damage to or deterioration of object. Impregnates surfaces with diluted synthetic lacquers to reduce porosity of material to increase durability of ancient earthenware. Restores or simulates original appearance of objects by such methods as polishing surfaces to restore translucency, removing crackled glaze and applying soluble synthetic coating, grinding or cutting out chipped edges and repolishing surfaces, or applying matt paints, gold leaf, or other coating to object, basing methods and materials used on knowledge of original craft and condition of objects. Repairs broken objects, employing such techniques as bonding edges together with adhesive, inserting dowel pins in sections and cementing together, or affixing adhesive coated strips to inner portions of broken objects. Replaces missing sections of objects by constructing wire frames of missing sections, shaping plasticene or other materials over frames, affixing modeled sections to objects with dowels or adhesive, and painting attached sections to reproduce original appearance. Constructs replicas of archaeological artifacts or historically significant ceramic ware, basing construction design on size, curvature, and thickness of excavated shards or pieces of objects available and knowledge of techniques and designs characteristic of period. GOE 01.06.02 PD L 08 09 10 11 15 17 18 19 M5 L5 SVP 7 SOC 252

109.067-014 RESEARCH ASSOCIATE (museum)

Plans, organizes, and conducts research in scientific, cultural, historical, or artistic field for use in own work or in project of sponsoring institution: Develops plans for project or studies guidelines for project prepared by professional staff member to outline research procedures to be followed. Plans schedule according to variety of methods to be used, availability and quantity of resources, and number of subordinate personnel assigned to participate in project. Conducts research, utilizing institution library, archives, and collections, and other sources of information, to collect, record, analyze, and evaluate facts. Discusses findings with other personnel to evaluate validity of findings. Prepares reports of completed projects

for publication in technical journals, for presentation to agency requesting project, or for use in further applied or theoretical research activities. GOE 11.03.03 PD S 12 13 15 17 18 M6 L6 SVP 7 SOC 252

109.361-010 RESTORER, PAPER-AND-PRINTS (library; museum)

Cleans, preserves, restores, and repairs books, documents, maps, prints, photographs, and other paper objects of historic or artistic significance: Examines or tests objects to determine physical condition and chemical structure of paper, ink, paint, or other coating, in order to identify problem and plan safest and most effective method of treating material. Cleans objects by such methods as sprinkling crumbled art gum or draft powder over surface and rotating soft cloth over cleaning agent to absorb soil (dry cleaning), immersing objects in circulating bath of water or mild chemical solution (wet cleaning), or applying solvent to remove rust, fly specks, mildew, or other stains, basing choice of method on knowledge of physical and chemical structure of objects and effects of various kinds of treatment. Preserves or directs preservation of objects by such methods as immersing paper in deacidification baths to remove acidity from papers and ink to prevent deterioration, sealing documents or other papers in cellulose cases and passing sealed objects through heated rollers to laminate them, spraying objects, storage containers, or areas with fungicides, insecticides, or pesticides, and controlling temperature, humidity, and exposure to natural or artificial light in areas where objects are displayed or stored. Restores objects to original appearance by such methods as immersing papers in mild bleach solution to brighten faded backgrounds, removing old varnish from such art works as engravings and mezzotints, or strengthening papers by resizing in bath of gelatin solution. Repairs objects by such methods as mending tears with adhesive and tissue, patching and filling worm holes, torn corners, or large tears by chamfering, inserting, affixing, and staining paper of similar weight and weave to simulate original appearance, or retouching stained, faded, or blurred watercolors, prints, or documents, using colors and strokes to reproduce those of original artist or writer. GOE 01.06.03 PD S 08 09 10 15 17 18 19 M5 L5 SVP 7 SOC 252

109.364-010 CRAFT DEMONSTRATOR (museum)

Demonstrates and explains techniques and purposes of handicraft or other activity, such as candle dipping, horseshoeing, or soap making, as part of display in history or folk museum, or restored or refurbished farm, village, or neighborhood: Studies historical and technical literature to acquire information about time period and lifestyle depicted in display and craft techniques associated with time and area, to devise plan for authentic presentation of craft. Drafts outline of talk, assisted by research personnel, to acquaint visitors with customs and crafts associated with folk life depicted. Practices techniques involved in handicraft to ensure accurate and skillful demonstrations. Molds candles, shoes horses, operates looms, or engages in other crafts or activities, working in appropriate period setting, to demonstrate craft to visitors. Explains techniques of craft, and points out relationship of craft to lifestyle depicted to assist visitors to comprehend traditional techniques of work and play peculiar to time and area. Answers visitor questions or refers visitor to other sources for information. GOE 09.01.02 PD L 08 09 10 12 13 15 16 17 18 19 20 EC 01 M2 L4 SVP 4 SOC 252

109.367-010 MUSEUM ATTENDANT (museum)

Conducts operation of museum and provides information about regulations, facilities, and exhibits to visitors: Opens museum at designated hours, greets visitors, and invites visitors to sign guest register. Monitors visitors viewing exhibits, cautions persons not complying with museum regulations, distributes promotional materials, and answers questions concerning exhibits, regulations, and facilities. Arranges tours of facility for schools or other groups, and schedules volunteers or other staff members to conduct tours. Examines exhibit facilities and collection objects periodically and notifies museum professional personnel or governing body when need for repair or replacement is observed. GOE 07.04.04 PD L 12 13 15 16 18 20 M3 L4 SVP 3 SOC 252

129.027-010 CANTOR (profess. & kin.)

Chants and reads portions of ritual during religious services, and directs congregants in musical activities: Arranges musical portion of religious services in consultation with leader of congregation. Chants or recites religious texts during worship services or other observances and trains and leads congregants in musical responses. May create variations of traditional music or compose music for services. May train and direct choir or teach vocal music to youth or other groups of congregants. GOE 11.07.03 PD L 12 13 M1 L4 SVP 8 SOC 2049

129.107-026 PASTORAL ASSISTANT (nonprofit organ.)

Assists ordained clergy in conducting worship services; provides spiritual guidance to church members; and plans and arranges educational, social, and recreational programs for congregation: Assists CLERGY MEMBER (profess. & kin.) 120.007-010 in conducting worship, wedding, funeral, and other services and in coordinating activities of lay participants, such as organist, choir, and ushers. Visits church members in hospitals and convalescent facilities or at home to offer spiritual guidance and assistance, such as emergency financial aid or referral to community support services. Assists CLERGY MEMBER (profess. & kin.) 120.007-010 and lay teachers in selecting books and reference materials for religious education classes and in adapting content to meet needs of different age

groups. May write and deliver sermons. May teach history and doctrine of church to church members. May assist CLERGY MEMBER (profess. & kin.) 120.007-010 in coordinating committees that oversee social and recreational programs. GOE 10.01.01 PD L 12 13 M3 L5 SVP 6 SOC 2049

132.067-030 PROGRAM PROPOSALS COORDINATOR (radio & tv broad.) coordinator, program planning.

Develops, writes, and edits proposals for new radio or television programs: Reviews program proposals submitted by staff, station and independent producers, and other sources to determine proposal feasibility, based on knowledge of station's programming needs, policy and budgetary considerations, and potential underwriting (funding) sources. Edits proposals, or writes proposals for original program concepts, and submits proposals for review of programming, financial, and other departmental personnel. Participates in selection of researchers, consultants, producers, and on-air personalities to facilitate development of program ideas. Authorizes preparation of budget for final proposals. Maintains liaison between program production department and proposal originators to inform originators of status of accepted projects. GOE 11.05.02 PD S 08 09 10 12 13 15 M3 L5 SVP 7 SOC 324

139.167-010 PROGRAM COORDINATOR (amuse. & rec.)

Coordinates activities of amusement park educational department to present educational scripts during animal performances: Reviews educational materials to gather information for scripts. Confers with animal trainer to verify format of performance, and writes script to coincide with performance, or reviews scripts prepared by department researchers for suggested changes in format. Prepares brochures containing information, such as time of performances, theme of performances, and map of park facilities. Reads reservation log to determine information, such as name of visiting groups, size of groups, and time of arrival. Greets visitors, passes out brochures, answers questions, and escorts visitors to site of performance. May introduce trainer to audience and present memorized script during performance over speaker system and be designated NARRATOR (amuse. & rec.). GOE 01.03.03 PD L 08 09 15 M2 L4 SVP 8 SOC 328

141.061-034 POLICE ARTIST (gov. ser.) forensic artist.

Sketches likenesses of criminal suspects, according to descriptions of victims and witnesses, and prepares schematic drawings depicting scenes of crimes: Interviews crime victims and witnesses to obtain descriptive information concerning physical build, sex, nationality, facial features, and related characteristics of unidentified suspect. Prepares series of simple line drawings conforming to description of suspect and presents drawings to informant for selection of sketch that most resembles suspect. Questions informant to obtain additional descriptive information and draws and verifies details of features to improve resemblance of conception to recollection of informant. Measures distances and sketches layout of crime scene, or develops sketches from photographs and measurements taken at scene of crime by other police personnel to prepare schematic drawing of scene of crime. GOE 01.02.03 PD L 08 09 10 12 13 15 16 17 18 19 20 M3 L4 SVP 7 SOC 325

141.137-010 PRODUCTION MANAGER, ADVERTISING (profess. & kin.)

Coordinates activities of design, illustration, photography, paste-up, and typography personnel to prepare advertisements for publication, and supervises workers engaged in pasting-up advertising layouts in art department or studio: Determines arrangement of art work and photographs and selects style and size of type, considering factors such as size of advertisement, design, layout, sketches, and method or printing specified. Submits copy and typography instructions to printing firm or department for typesetting. Reviews proofs of printed copy for conformance to specifications. Assigns personnel to mount printed copy and illustration on final layouts, coordinating assignments with completion of art work to ensure that schedules are maintained. Writes instructions for final margin widths and type sizes, and submits layout for printing. Examines layout proofs for quality of printing and conformance to layout. GOE 01.02.03 PD S 08 09 12 13 15 19 M3 L4 SVP 7 SOC 322

142.061-058 EXHIBIT DESIGNER (museum)

Plans, designs, and oversees construction and installation of permanent and temporary exhibits and displays: Confers with administrative, curatorial, and exhibit staff members to determine theme, content, interpretative or informational purpose, and planned location of exhibit, to discuss budget, promotion, and time limitations, and to plan production schedule for fabrication and installation of exhibit components. Prepares preliminary drawings of proposed exhibit, including detailed construction, layout, and special effect diagrams and material specifications, for final drawing rendition by other personnel, basing design and specifications on knowledge of artistic and technical concepts, principles, and techniques. Submits plan for approval, and adapts plan as needed to serve intended purpose or to conform to budget or fabrication restrictions. Oversees preparation of artwork and construction of exhibit components to ensure intended interpretation of concepts and conformance to structural and material specifications. Arranges for acquisition of specimens or graphics or building of exhibit structures by outside contractors as needed to complete exhibit. Inspects installed exhibit for conformance to specifications and satisfactory operation of special effects components. Oversees placement of collection

objects or informational materials in exhibit framework. GOE 01.02.03 PD S 08 09 10 12 13 15 16 17 18 19 20 M4 L5 SVP 7 SOC 322

143.260-010 OPTICAL-EFFECTS-CAMERA OPERATOR (motion pic.)

Sets up and operates optical printers and related equipment to produce fades, dissolves, superimpositions, and other optical effects required in motion pictures, applying knowledge of optical effects printing and photography. Reads work order and count sheet to ascertain optical effects specifications and location of subject material on original photography film. Analyzes specifications to determine work procedures, sequence of operations, and machine setup, using knowledge of optical effects techniques and procedures. Loads camera of optical effects printer with magazine of unexposed film stock. Mounts original photography film in transport and masking mechanism of optical-printer projector and moves film into designated position for optical effect, using counter and film markings to determine placement. Adjusts camera position, lens position, mask opening, lens aperture, focus, shutter angle, film transport speed, and related controls, using precision measuring instruments and knowledge of optical effects techniques to determine settings. Selects designated color and neutral density filters and mounts in filter holder to control light and intensity. Sets controls in automatic or manual mode, moves control to start camera, and observes printer operation and footage counter during filming. Adjusts controls during filming operation when operating in manual mode, and stops camera when designated counter reading is observed. Moves controls to rewind camera film and original photography film and repeats select portions or entire operation number of times necessary to produce designated effect. Sets up and operates animation and matte cameras and related equipment to photograph artwork, such as titles and painted mattes. Sets up and operates single pass optical printers when enlarging or reducing film or performing related operations. Sets up and operates subtitle camera and related equipment to photograph film subtitles. Examines frames of film exposed with different combinations of color filters (wedges) to select optimum color balance based on experience and judgment. GOE 01.02.03 PD L 08 09 10 15 18 19 20 M3 L3 SVP 7 SOC 326

149.261-010 EXHIBIT ARTIST (museum)

Produces artwork for use in permanent or temporary exhibit settings of museum, zoo, or similar establishment, performing any combination of following duties to prepare exhibit setting and accessories for installation: Confers with professional museum personnel to discuss objectives of exhibits and type of artwork needed. Makes scale drawing of exhibit design, indicating size, position, and general outlines of artwork needed for use of installation and other fabrication personnel. Paints scenic, panoramic, or abstract composition on canvas, board, burlap, or other material to be used as background or component of exhibit, following layout prepared by designer. Paints or stencils exhibit titles and legends on boards, or cuts letters from plastic or plywood to form title and legend copy, and mounts letters on panel or board, using adhesives or handtools. Photographs persons, artifacts, scenes, plants, or other objects, and develops negatives to obtain prints to be used in exhibits. Enlarges, intensifies, or otherwise modifies prints, according to exhibit design specifications. Fashions exhibit accessories, such as human figures, tree parts, or relief maps, from clay, plastic, wood, fiberglass, papier mache, or other materials, using hands, handtools, or molding equipment to cut, carve, scrape, mold, or otherwise shape material to specified dimensions. Brushes or sprays protective or decorative finish on completed background panels, informational legends, and exhibit accessories. Maintains files of photographs, paintings, and accessories for use in exhibits. GOE 01.02.03 PD L 08 09 10 15 16 17 18 19 20 M3 L4 SVP 6 SOC 325

153.137-010 MANAGER, POOL (amuse. & rec.)

Supervises and coordinates activities of swimming pool staff to prevent accidents and provide assistance to swimmers, and conducts swimming classes: Assigns duties to lifeguards, locker room attendants, and clerical staff. Schedules swimming classes for basic and specialty techniques, according to enrollment, age, and number of instructors. Meets with employees to discuss and resolve work related problems. Completes staff evaluation forms reflecting information such as work habits, effectiveness in interpersonal relations, and acceptance of responsibility. Instructs individuals or groups in swimming classes, principles of water confidence, and lifesaving. Administers first aid, according to prescribed procedures, or calls emergency medical facility, when necessary. Determines chlorine content, pH value, and color of pool water at periodic intervals during day, using testing kit. Completes forms indicating time, date, and pool water test results. Routes forms to supervisor for evaluation and filing. Maintains required forms, such as time and attendance, inventory list, and program of facility activities. GOE 11.11.02 PD H 08 09 10 12 13 15 16 17 19 EC 04 M3 L3 SVP 4 SOC 1352

159.042-010 LASERIST (amuse. & rec.)

Creates optical designs-and-effects show for entertainment of audiences, using control console and related laser projection and recording equipment: Sets up and operates console to control laser projection, recording equipment, and house lights. Presses switches and turns dials to dim house lights, cue opening music, and begin programmed laser sequence. Moves controls to orchestrate colors, patterns, and movements in concert with musical accompaniment. Tests, repairs, and adjusts laser and sound systems, using circuit schematics and test equipment. Examines, cleans, and

maintains system cooling, optical, and sound equipment according to preventive maintenance schedule. Discusses show concepts and laser equipment operation with press representatives to promote public relations. GOE 05.03.05 PD L 08 09 10 12 13 15 16 17 18 19 20 M3 L4 SVP 6 SOC 328

159.167-022 EXECUTIVE PRODUCER, PROMOS (radio & tv broad.)

Directs and coordinates production of promos (promotional spot announcements) for local or national broadcasting service: Directs activities of workers involved in production of promos, utilizing knowledge of continuity writing, on-air promotion guidelines, and filming and videotaping techniques. Contacts vendors to secure needed props, audio visual materials, and sound effects. Edits scripts for continuity. Confers with operations and support services personnel to coordinate unit activities with those of other departments. Serves as liaison between station and advertising service of program sponsors or underwriters to coordinate unit activities with client promotional campaigns in other media. Reviews completed promos and filler continuity and schedules approved productions for broadcast. Arranges for timely delivery of promo materials to local or network promotion departments. GOE 11.09.01 PD S 12 13 15 16 19 M3 L5 SVP 7 SOC 125

160.167-010 ACCOUNTANT (profess. & kin.) manager, office.

Directs and coordinates activities of workers engaged in general accounting, or applies principles of accounting to devise and implement system for general accounting: Directs and coordinates activities of workers engaged in keeping accounts and records, or performing such book-keeping activities as recording disbursements, expenses, and tax payments. Prepares individual, division, or consolidated balance sheets to reflect company's assets, liabilities, and capital. Prepares profit and loss statements for specified accounting period. Audits contracts, orders, and vouchers, and prepares reports to substantiate individual transactions prior to settlement. May represent company before government agencies upon certification by agency involved. May work independently for fee or as member of accounting firm and be designated as ACCOUNTANT, PUBLIC (profess. & kin.). GOE 11.06.01 PD S 09 10 12 13 15 M5 L5 SVP 8 SOC 1412

160.167-018 ACCOUNTANT, COST (profess. & kin.)

Applies principles of cost accounting and statistics to devise, implement, and administer systems to provide management with detailed cost data not ordinarily supplied by general accounting systems: Plans, implements, and directs cost finding and reporting systems to determine, record, and report unit costs of factors affecting production, such as raw material purchases, labor, inventory, and machine maintenance. Analyzes changes in product design, raw materials, overhead, manufacturing methods, or wages, for effects upon production costs. Analyzes actual manufacturing costs and prepares periodic report comparing standard costs to actual production costs. Provides management with cost and comparative reports to indicate needs for changes in pricing or production. May specialize in analyzing costs relating to public utility rate schedule and be designated RATE ENGINEER (profess. & kin.). May specialize in appraisal and evaluation of real property or equipment for sale, acquisition, or tax purposes for public utility and be designated VALUATION ENGINEER (profess. & kin.). GOE 11.06.01 PD S 08 09 10 12 13 15 M5 L5 SVP 8 SOC 1412

161.267-030 BUDGET ANALYST (gov. ser.)

Analyzes current and past budgets, prepares and justifies budget requests, and allocates funds according to spending priorities in governmental service agency: Analyzes accounting records to determine financial resources required to implement program and submits recommendations for budget allocations. Recommends approval or disapproval of requests for funds. Advises staff on cost analysis and fiscal allocations. GOE 11.06.05 PD S 10 12 13 15 M3 L4 SVP 7 SOC 1419

163.117-022 DIRECTOR, MEDIA MARKETING (radio & tv broad.)

Plans and administers marketing and distribution of broadcasting television programs and negotiates agreements for ancillary properties, such as copyrights and distribution rights for films and audiovisual materials: Reviews inventory of television programs and films produced and distribution rights of broadcasting station to determine potential markets. Develops marketing strategy, based on knowledge of establishment policy, nature of market, copyright and royalty requirements, and cost and markup factors. Compiles catalog of audiovisual offerings and sets prices and rental fees. Negotiates with media agents to secure agreements for translation of materials into other media. Arranges for reproduction of materials for distribution and examines reproductions for conformity to standards. Edits materials according to specific market or customer requirements. Confers with legal staff to resolve problems, such as copyrights and royalty sharing with outside producers and distributors. GOE 11.05.04 PD S 12 13 15 16 19 M4 L5 SVP 8 SOC 125

163.117-026 DIRECTOR, UNDERWRITER SOLICITATION (radio & tv broad.) director, underwriter sales.

Plans and directs activities to secure and maintain underwriting (funding) of public television or radio programming: Reviews reports, periodicals, and other materials to identify prospective funding sources for proposed broadcast programs. Directs and counsels subordinates in developing strategies to secure program funding and negotiates final agreements with funding establishment representatives. Serves as liaison between sta-

tion's legal, programming, public information, and other departmental staff and funding establishment personnel to provide information on status of projects and to resolve problems. May specialize in solicitation of funding from government, foundation, or corporation sources. GOE 11.05.04 PD S 12 13 M3 L4 SVP 8 SOC 125

164.117-018 MEDIA DIRECTOR (profess. & kin.)

Plans and administers media programs in advertising department of food corporation: Confers with representatives of advertising agencies, product managers, and corporate advertising staff to establish media goals, objectives, and strategies within corporate advertising budget. Confers with advertising agents or media representatives to select specific programs and negotiate advertising to ensure optimum use of budgeted funds and long-term contracts. Adjusts broadcasting schedules due to program cancellations. Studies demographic data and consumer profiles to identify target audiences of media advertising. Reads trade journals and professional literature to stay informed of trends, innovations, and changes that affect media planning. GOE 11.09.01 PD S 10 12 13 15 M4 L5 SVP 8 SOC 125

165.117-014 DIRECTOR, FUNDS DEVELOPMENT (profess. & kin.)

Plans, organizes, directs, and coordinates ongoing and special project funding programs for museum, zoo, or similar institution: Prepares statement of planned activities and enlists support from members of institution staff and volunteer organizations. Develops public relations materials to enhance institution image and promote fundraising program. Identifies potential contributors to special project funds and supporters of institution's ongoing operations through examination of past records, individual and corporate contracts, and knowledge of community. Plans and coordinates fund drives for special projects. Assigns responsibilities for personal solicitation to members of staff, volunteer organizations, and governing body according to special interests or capabilities. Organizes direct mail campaign to reach other potential contributors. Plans and coordinates benefit events, such as banquets, balls, or auctions. Organizes solicitation drives for pledges of ongoing support from individuals, corporations, and foundations. Informs potential contributors of special needs of institution, and encourages individuals, corporations, and foundations to establish or contribute to special funds through endowments, trusts, donations of gifts-in-kind, or bequests, conferring with attorneys to establish methods of transferring funds to benefit both donors and institution. Researches public and private grant agencies and foundations to identify other sources of funding for research, community service, or other projects. Supervises and coordinates activities of workers engaged in maintaining records of contributors and grants and preparing letters of appreciation to be sent to contributors. GOE 11.09.02 PD S 12 13 M4 L5 SVP 7 SOC 139

166.167-026 MANAGER, EDUCATION AND TRAINING (education) training administrator.

Plans, coordinates, and directs personnel training and staff development programs for industrial, commercial, service, or governmental establishment: Confers with management and supervisory personnel in order to determine training needs. Compiles data and analyzes past and current year training requirements to prepare budgets and justify funds requested, using calculator. Formulates training policies and schedules, utilizing knowledge of identified training needs, company production processes, business systems, or changes in products, procedures, or services. Designates training procedures, utilizing knowledge of effectiveness of such training methods as individual coaching, group instruction, lectures, demonstrations, conferences, meetings, and workshops. Organizes and develops training manuals, reference library, testing and evaluation procedures, multimedia visual aids, and other educational materials. Trains assigned instructors and supervisory personnel in effective techniques for training in both general and specialized areas, such as those concerned with new employees' orientation, specific on-the-job training, apprenticeship programs, sales techniques, health and safety practices, public relations, refresher training, promotional development, upgrading, retraining, leadership development, and other such adaptations to changes in policies, procedures, and technologies. Updates records and compiles statistical reports on interviews, transfers, performance evaluations, and promotions to evaluate performance of instructors and monitor progress of trainees, applying knowledge of establishment policies and job requirements, and using computer and calculator. May coordinate established training courses with technical and professional courses offered by community schools. May screen, test, counsel, and recommend employees for company educational programs or for promotion or transfer. May write applications and proposals to submit to fund-granting authorities, such as government and foundations. GOE 11.07.03 PD S 12 13 15 M4 L5 SVP 8 SOC 123

166.167-050 PROGRAM SPECIALIST, EMPLOYEE-HEALTH MAINTENANCE (profess. & kin.)

Coordinates activities of area employers in setting up local government funded program within establishments to help employees who are not functioning at satisfactory levels of job performance due to alcoholism or other behavioral medical problems: Writes and prepares newspaper advertisements, newsletters, and questionnaires and speaks before community groups to promote employee assistance program within business community. Analyzes character and type of business establishments in area, and compiles list of prospective employers appropriate for implementing assistance program. Contacts prospective employers, explains program and fees, points out advantages of program, and reaches agreement with interested

employers on extent of proposed program. Develops program within establishment. Establishes committee composed of company officials and workers to develop statement of employee assistance program and policy and procedures. Plans and conducts training sessions for company officials to develop skills in identifying and handling employees troubled by alcoholism or other personal problems. Assists employer in setting up in-plant educational program to prevent alcoholism, using posters, pamphlets, and films, and establishes referral network providing for in-plant and out-of-plant group or individual counseling for troubled employees. Confers with team member of assistance program who provides counseling regarding planning and progress of counseling components. Confers with staff of employee assistance program regarding progress and evaluation of current programs and proposals for developing new programs. GOE 11.05.02 PD S 12 13 M3 L5 SVP 6 SOC 123

166.167-054 TECHNICAL TRAINING COORDINATOR (education)

Coordinates activities of instructors engaged in training employees or customers of industrial or commercial establishment: Confers with managers, instructors, or customer's representative to determine training needs. Assigns instructors to conduct training. Schedules classes, based on availability of classrooms, equipment, and instructors. Evaluates training packages, including outline, text, and handouts written by instructors. Assigns instructors to in-service or out-service training classes to learn new skills as needed. Monitors budget to ensure that training costs do not exceed allocated funds. Writes budget report listing training costs, such as instructors' wages and equipment costs, to justify expenditures. Attends meetings and seminars to obtain information useful to training staff and to inform management of training programs and goals. Monitors instructors during lectures and laboratory demonstrations to evaluate performance. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May develop and conduct training programs for employees or customers of industrial or commercial establishment [INSTRUCTOR, TECHNICAL TRAINING (education) 166.221-010]. GOE 11.07.03 PD L 12 13 M4 L5 SVP 8 SOC 239

166.221-010 INSTRUCTOR, TECHNICAL TRAINING (education) training specialist.

Develops and conducts programs to train employees or customers of industrial or commercial establishment in installation, programming, safety, maintenance, and repair of machinery and equipment, such as robots, *programmable controllers*, and *robot controllers*, following manuals, specifications, blueprints, and schematics, and using handtools, measuring instruments, and testing equipment: Confers with management and staff or TECHNICAL TRAINING COORDINATOR (education) 166.167-054 to determine training objectives. Writes training program, including outline, text, handouts, and tests, and designs laboratory exercises, applying knowledge of electronics, mechanics, hydraulics, pneumatics, and programming, and following machine, equipment, and tooling manuals. Schedules classes based on classroom and equipment availability. Lectures class on safety, installation, programming, maintenance, and repair of machinery and equipment, following outline, handouts, and texts, and using visual aids, such as graphs, charts, videotape, and slides. Demonstrates procedures being taught, such as programming and repair, applying knowledge of electrical wire color coding, programming, electronics, mechanics, hydraulics, and pneumatics, using handtools, measuring instruments, and testing equipment, and following course outline. Observes trainees in laboratory and answers trainees' questions. Administers written and practical exams and writes performance reports to evaluate trainees' performance. Participates in meetings, seminars, and training sessions to obtain information useful to training facility and integrates information into training program. May repair electrical and electronic components of robots in industrial establishments. May install, program, maintain, and repair robots in customer's establishment [FIELD SERVICE TECHNICIAN (mach. mfg.) 638.261-026]. May be designated according to subject taught as INSTRUCTOR, PROGRAMMABLE CONTROLLERS (education); INSTRUCTOR, ROBOTICS (education). GOE 11.02.02 PD L 08 09 12 13 19 20 M4 L5 SVP 8 SOC 239

166.257-010 EMPLOYER RELATIONS REPRESENTATIVE (profess. & kin.)

Establishes and maintains working relationships with local employers to promote use of public employment programs and services: Contacts employers new to area or company requiring revisit and arranges appointment to visit company representative or employer responsible for hiring workers. Establishes rapport between Employment Service and company to promote use of agency programs and services. Confers with employer to resolve problems, such as local employment office effectiveness, employer complaints, and alternative employer actions for recruiting qualified applicants. Answers employer questions concerning Employment Service programs or services available. Solicits employers to list job openings with Employment Service. Receives job orders from employers by phone or in person and records information to facilitate selection and referral process. GOE 11.09.03 PD L 08 09 12 13 M2 L4 SVP 6 SOC 332

166.267-026 RECRUITER (military ser.) career counselor.

Interviews military and civilian personnel to recruit and inform individuals on matters concerning career opportunities, incentives, military rights and benefits, and advantages of military career: Assists and advises mili-

tary commands in organizing, preparing, and implementing an enlisted recruiting and retention program. Interviews individuals to determine their suitability for placement into specific military occupation. Occasionally lectures to civic and social groups, military dependents, school officials, and religious leaders concerning military career opportunities. GOE 11.03.04 PD L 12 13 M2 L3 SVP 5 SOC 143

166.267-034 JOB DEVELOPMENT SPECIALIST (profess. & kin.)

Promotes and develops employment and on-the-job training opportunities for disadvantaged applicants: Assists employers in revising standards which exclude applicants from jobs. Demonstrates to employers effectiveness and profitability of employing chronically unemployed by identifying jobs that workers could perform. Establishes relationships with employers regarding problems, complaints, and progress of recently placed disadvantaged applicants and recommends corrective action. Assists employers in establishing wage scales commensurate with prevailing rates. Promotes, develops, and terminates on-the-job training program opportunities with employers and assists in writing contracts. Identifies need for and assists in development of auxiliary services to facilitate bringing disadvantaged applicants into job-ready status. Informs business, labor, and public about training programs through various media. GOE 11.03.04 PD S 12 13 M3 L4 SVP 5 SOC 143

166.267-038 PERSONNEL RECRUITER (profess. & kin.)

Seeks out, interviews, screens, and recruits job applicants to fill existing company job openings: Discusses personnel needs with department supervisors to prepare and implement recruitment program. Contacts colleges to set up on-campus interviews. Provides information on company facilities and job opportunities to potential applicants. Interviews college applicants to obtain work history, education, training, job skills, and salary requirements. Screens and refers qualified applicants to company hiring personnel for follow-up interview. Arranges travel and lodging for selected applicants at company expense. Performs reference and background checks on applicants. Corresponds with job applicants to notify them of employment consideration. Files and maintains employment records for future references. Projects yearly recruitment expenditures for budgetary control. GOE 11.03.04 PD S 12 13 15 M3 L5 SVP 7 SOC 143

166.267-042 EMPLOYEE RELATIONS SPECIALIST (motor trans.)

Interviews workers to gather information on worker attitudes toward work environment and supervision received to facilitate resolution of employee relations problems: Explains company and governmental rules, regulations, and procedures to inform workers of need for compliance. Gathers information on workers' feelings about factors that affect worker morale, motivation, and efficiency. Meets with management to discuss possible actions to be taken. Inspects work stations to ensure required changes or actions are implemented. Interviews workers to determine reactions to specific actions taken. Prepares reports on workers' comments and actions taken. Enrolls eligible workers in company programs, such as pension and savings plans. Maintains medical, insurance, and other personnel records and forms. GOE 11.03.04 PD S 08 09 10 12 13 M2 L2 SVP 7 SOC 143

166.267-046 HUMAN RESOURCE ADVISOR (profess. & kin.)

Provides establishment personnel assistance in identifying, evaluating, and resolving human relations and work performance problems within establishment to facilitate communication and improve employee human relations skills and work performance: Talks informally with establishment personnel and attends meetings of managers, supervisors, and work units to facilitate effective interpersonal communication among participants and to ascertain human relations and work related problems that adversely affect employee morale and establishment productivity. Evaluates human relations and work related problems and meets with supervisors and managers to determine effective remediation techniques, such as job skill training or personal intervention, to resolve human relations issues among personnel. Develops and conducts training to instruct establishment managers, supervisors, and workers in human relation skills, such as supervisory skills, conflict resolution skills, interpersonal communication skills, and effective group interaction skills. Schedules individuals for technical job-related skills training to improve individual work performance. May participate in resolving labor relations issues. May assist in screening applicants for establishment training programs. May write employee newsletter. GOE 11.02.02 PD L 12 13 M3 L5 SVP 7 SOC 143

168.161-014 INDUSTRIAL-SAFETY-AND-HEALTH TECHNICIAN (any ind.)

Plans and directs safety and health activities in industrial plant to evaluate and control environmental hazards: Tests noise levels and measures air quality, using precision instruments. Maintains and calibrates instruments. Administers hearing tests to employees. Trains forklift operators to qualify for licensing. Enforces use of safety equipment. Lectures employees to obtain compliance with regulations. Develops and monitors emergency action plans. Investigates accidents and prepares accident reports. Assists management to prepare safety and health budget. Recommends changes in policies and procedures to prevent accidents and illness. GOE 11.10.03 PD L 08 09 10 12 13 15 17 18 M4 L4 SVP 6 SOC 1473

168.167-086 SAFETY MANAGER (medical ser.)

Plans, implements, coordinates, and assesses hospital accident, fire prevention, and occupational safety and health programs under general direc-

tion of hospital officials, utilizing knowledge of industrial safety-related engineering discipline and operating regulations: Develops and recommends new procedures and approaches to safety and loss prevention based on reports of incidents, accidents, and other data gathered from hospital personnel. Disseminates information to department heads and others regarding toxic substances, hazards, carcinogens, and other safety information. Assists department heads and administrators in enforcing safety regulations and codes. Measures and evaluates effectiveness of safety program, using established goals. Conducts building and grounds surveys on periodic and regular basis to detect code violations, hazards, and incorrect work practices and procedures. Develops and reviews safety training for hospital staff. Maintains administrative control of records related to safety and health programs. Prepares and disseminates memos and reports. Maintains required records. Assists personnel department in administering worker compensation program. GOE 11.10.03 PD L 08 09 10 12 13 15 17 18 M5 L5 SVP 7 SOC 1473

168.167-090 MANAGER, REGULATED PROGRAM (gov. ser.)

Directs and coordinates activities of departmental personnel engaged in investigating regulated activities to ensure compliance with Federal, State, or municipal laws, utilizing knowledge of agency's purposes, rules, regulations, procedures, and practices: Reviews agency's current workload status, schedules, and individual personnel assignments and expertise to establish priorities and to determine ability to accept and complete future commitments. Assigns specific duties to inspectors and/or INVESTIGATOR (gov. ser.) 168.267-062 either directly or through subordinate supervisors. Reviews work reports, papers, rulings, and other records prepared by subordinate personnel for clarity, completeness, accuracy, and conformance with agency policies. Routes approved reports and records to designated individuals, such as DIRECTOR, REGULATORY AGENCY (gov. ser.) 188.117-134 for action or for information. May participate in or make initial and/or advanced level investigations, tests, or rulings. May testify in court and/or before control or review board. May be required to be certified in designated speciality area. May be designated according to function or agency as BUSINESS REGULATION INVESTIGATOR (gov. ser.); CHILD DAY CARE PROGRAM SUPERVISOR (gov. ser.); FEED INSPECTION SUPERVISOR (gov. ser.); INSURANCE LICENSING SUPERVISOR (gov. ser.); MEAT AND POULTRY SPECIALIST SUPERVISOR (gov. ser.); PETROLEUM PRODUCTS DISTRICT SUPERVISOR (gov. ser.); POULTRY SPECIALIST SUPERVISOR (gov. ser.); PUBLIC UTILITIES COMPLAINT ANALYST SUPERVISOR (gov. ser.); or SUPERVISOR, WEIGHTS AND MEASURES, GAS AND OIL INSPECTION (gov. ser.). Workers involved in these activities may be identified by different titles, according to classification used by various agencies. GOE 11.05.03 PD L 08 09 12 13 15 M5 L5 SVP 8 SOC 1139

168.261-010 RADIATION-PROTECTION SPECIALIST (gov. ser.)

Tests x-ray equipment, inspects areas where equipment is used, and evaluates operating procedures to detect and control radiation hazards: Visits hospitals, medical offices, and other establishments to test x-ray machines and fluoroscopes and to inspect premises. Tests equipment to determine that kilovolt potential, alignment of components, and other elements of equipment meet standards for safe operation, using specialized instruments and procedures. Operates equipment to determine need for calibration, repair, or replacement of tubes or other parts. Measures density of lead shielding in walls, using radiometric equipment. Computes cumulative radiation levels and refers to regulations to determine if amount of shielding is sufficient to absorb radiation emissions. Examines license of equipment operator for authenticity and observes operating practices to determine competence of operator to use equipment. Confers with physicians, dentists, and x-ray personnel to explain procedures and legal requirements pertaining to use of equipment. Demonstrates exposure techniques to improve procedures and minimize amount of radiation delivered to patient and operator. Reviews plans and specifications for proposed x-ray installations for conformance to legal requirements and radiation safety practices. Contacts organizations submitting inadequate specifications to explain changes in shielding or layout needed to conform to regulations. GOE 11.10.03 PD L 08 09 12 13 15 M4 L5 SVP 8 SOC 1473

168.264-018 GAS INSPECTOR (gov. ser.; light, heat, & power)

Inspects equipment and facilities used to store, transport, distribute, and measure liquefied petroleum and/or compressed and/or natural gas: Examines establishment inspection records to determine that establishment inspection schedule and remedial actions conform with procedures and regulations. Examines containers, piping, tubing, and fittings for leaks and for adherence to government specifications for pressure level, design, construction, and installation. Examines and tests components and support systems, such as relief valves, steam vaporizers, safety devices, electrical equipment, exhaust systems, and vehicles for conformance with standards and regulations. Connects test equipment, using handtools, and tests calibration of meters and gauges. Inspects above and below ground gas mains to determine that rate of flow, pressure, location, construction, and/or installation conform to establishment or regulated standards. Maintains records and prepares reports of results of inspections. Discusses and explains procedures and regulations and/or need for corrective action with establishment and/or regulatory agency personnel. May be designated ac-

ording to function, agency, or establishment where employed as DIVISION FIELD INSPECTOR (light, heat, & power); GAS INSPECTOR, LIQUEFIED (gov. ser.). GOE 11.10.03 PD L 02 03 05 07 08 09 10 12 13 14 15 16 17 EC 07 10 12 M4 L5 SVP 7 SOC 1473

168.267-082 AGRICULTURAL-CHEMICALS INSPECTOR (gov. ser.)

Inspects establishments where agricultural service products, such as livestock feed and remedies, fertilizers, and pesticides, are manufactured, sold, or used to ensure conformance to laws regulating product quality and labeling: Visits processing plants, distribution warehouses, sales outlets, agricultural pest control service organizations, and farmers to collect product samples for analysis and to examine fresh and dried produce for spray residue. Inspects product label information concerning ingredients and advertising claims for conformance to chemical analysis of ingredients and documented effects of use. Investigates suspected violations of product quality and labeling laws. Interviews farmers, merchants, and others to determine nature of suspected violations and to obtain documented evidence to be used in legal action against violators. Calls on dealers to determine that licensing requirements have been met, and calls on manufacturers and distributors to collect delinquent tonnage reports. Prepares reports of all inspections and investigations for review by supervisory personnel and for use as evidence in legal action initiated by others. GOE 11.10.03 PD L 08 09 12 13 15 M2 L3 SVP 7 SOC 1473

168.267-086 HAZARDOUS-WASTE MANAGEMENT SPECIALIST (gov. ser.)

Conducts studies on hazardous waste management projects and provides information on treatment and containment of hazardous waste: Participates in developing hazardous waste rules and regulations to protect people and environment. Surveys industries to determine type and magnitude of disposal problem. Assesses available hazardous waste treatment and disposal alternatives, and costs involved, to compare economic impact of alternative methods. Assists in developing comprehensive spill prevention programs and reviews facility plans for spill prevention. Participates in developing spill-reporting regulations and environmental damage assessment programs. Prepares reports of findings concerning spills and prepares material for use in legal actions. Answers inquiries and prepares informational literature to provide technical assistance to representatives of industry, government agencies, and to general public. Provides technical assistance in event of hazardous chemical spill and identifies pollutant, determines hazardous impact, and recommends corrective action. GOE 11.10.03 PD S 08 09 12 13 15 M3 L5 SVP 7 SOC 1473

168.267-090 INSPECTOR, WATER-POLLUTION CONTROL (gov. ser.)

Inspects sites where discharges enter State waters and investigates complaints concerning water pollution problems: Inspects wastewater treatment facilities at sites, such as mobile home parks, sewage treatment plants, and other sources of pollution. Inspects lagoons and area where effluent enters State waters for such features as obvious discoloration of water, sludge, algae, rodents, and other conditions. Informs owner when unacceptable or questionable conditions are present and recommends corrective action. Notifies mobile laboratory technicians when sampling is required. Advises property owners, facility managers, and equipment operators concerning pollution control regulations. Investigates complaints concerning water pollution problems. Compiles information for pollution control discharge permits. Prepares technical reports of investigations. GOE 11.10.03 PD L 12 13 15 M4 L5 SVP 7 SOC 1473

168.267-094 MARINE-CARGO SURVEYOR (bus. ser.)

Inspects cargoes of seagoing vessels to certify compliance with national and international health and safety regulations in cargo handling and stowage: Reads vessel documents that set forth cargo loading and securing procedures, capacities, and stability factors to ascertain cargo capabilities according to design and cargo regulations. Advises crew in techniques of stowing dangerous and heavy cargo, such as use of extra support beams (deck bedding), shoring, and additional stronger lashings, according to knowledge of hazards present when shipping grain, explosives, logs, and heavy machinery. Inspects loaded, secured cargo in holds and lashed to decks to ascertain that pertinent cargo handling regulations have been observed. Issues certificate of compliance when violations are not detected. Recommends remedial procedures to correct deficiencies. Measures ship holds and depth of fuel and water in tanks, using sounding line and tape measure, and reads draft markings to ascertain depth of vessel in water. Times roll of ship, using stopwatch. Calculates hold capacities, volume of stored fuel and water, weight of cargo, and ship stability factors, using standard mathematical formulas and calculator. Analyzes data obtained from survey, formulates recommendations pertaining to vessel capacities, and writes report of findings. Inspects cargo handling devices, such as boom, hoists, and derricks, to identify need for maintenance. GOE 11.10.03 PD L 02 03 08 09 12 13 15 16 17 20 EC 01 14 M4 L4 SVP 9 SOC 1473

168.267-098 PESTICIDE-CONTROL INSPECTOR (gov. ser.)

Inspects operations of distributors and commercial applicators of pesticides to determine compliance with government regulations on handling, sale, and use of pesticides: Inspects premises of wholesale and retail distributors to ensure that registered pesticides are handled in accordance with State and Federal regulations. Determines that handlers possess permits and sell restricted pesticides only to authorized users. Evaluates pesti-

cides for correct labeling, misbranding, misrepresentation, or adulteration, and confiscates or quarantines unacceptable pesticides. Inspects operations of commercial applicators of pesticides and observes application methods to ensure correct use of equipment, application procedures, and that applicators possess valid permits. Determines that accurate records are kept to show pesticides used, dosage, times, places, and methods of applications. Inspects premises to ensure that storage and disposal of pesticides conform to regulations. Investigates complaints concerning pesticides and uses. Identifies insect or disease, recommends treatment, and authorizes emergency use of suitable restricted pesticides to respond to emergency situations, such as insect infestations or outbreaks of plant disease. GOE 11.10.03 PD L 08 09 12 13 15 M2 L3 SVP 7 SOC 1473

168.267-102 PLAN CHECKER (gov. ser.)

Examines commercial and private building plans and inspects construction sites to ensure compliance with building code regulations: Reviews building plans for completeness and accuracy. Examines individual plan components to ensure that all code mandated items are included. Calculates footage between building components, such as doors, windows, and parking areas and amount of area occupied by components to ensure compliance with code. Notes instances of noncompliance on plans and correction sheet and suggests modifications to bring plans into compliance. Approves and signs plans meeting code requirements. Inspects building sites and buildings to ensure construction follows plans. Submits reports detailing items of noncompliance to builder for correction. Provides code information to individuals planning buildings. Issues occupancy certificates to building owners when completed buildings are in compliance with codes. Tours jurisdictional area to detect unapproved or noncompliance construction. Proposes studies to improve or update building codes. Testifies at appeal hearings regarding buildings alleged to be not in compliance with codes. GOE 05.03.06 PD L 08 09 12 13 15 17 M4 L4 SVP 7 SOC 1472

168.267-106 REGISTRATION SPECIALIST, AGRICULTURAL CHEMICALS (gov. ser.)

Reviews and evaluates information on applications for registration of products containing dangerous chemicals for compliance with statutory regulations: Reads registration applications from manufacturers and distributors of pesticides, fertilizers, and other products containing dangerous chemicals. Evaluates label information to determine that directions for use and claims for effectiveness of product are stated clearly and accurately. Reviews statements concerning product ingredients, effects of misuse, and administration of antidotes for adequacy of information and conformance to regulatory requirements for substances. Forwards approved applications to other personnel for registration. Contacts manufacturers and distributors of products not meeting standards to clarify regulations and to suggest changes in label information to permit registration. Prepares, organizes, and maintains records to document activities and provide reference materials. Conducts studies and investigations of faulty labeling or use of products as directed by agricultural agency personnel. GOE 11.10.03 PD S 08 09 12 13 15 M3 L4 SVP 7 SOC 1473

168.267-110 SANITATION INSPECTOR (gov. ser.)

Inspects community land areas and investigates complaints concerning neglect of property and illegal dumping of refuse to ensure compliance with municipal code: Inspects designated areas periodically for evidence of neglect, excessive litter, and presence of unsightly or hazardous refuse. Interviews residents and inspects area to investigate reports of illegal dumping and neglected land. Locates property owners to explain nature of inspection and investigation findings and to encourage voluntary action to resolve problems. Studies laws and statutes in municipal code to determine specific nature of code violation and type of action to be taken. Issues notices of violation to land owners not complying with request for voluntary correction of problems. Issues notices of abatement to known violators of dumping regulations and informs other municipal agencies of need to post signs forbidding illegal dumping at designated sites. Prepares case materials when legal action is required to solve problems. Conducts informational meetings for residents, organizes neighborhood cleanup projects, and participates in campaigns to beautify city to promote community interest in eliminating dangerous and unsightly land use practices. GOE 11.10.03 PD L 12 13 EC 01 M2 L3 SVP 5 SOC 1473

168.267-114 EQUAL OPPORTUNITY OFFICER (any ind.)

Monitors company contracts to determine affirmative action requirements and facilitate compliance: Reviews contracts to determine company actions required to meet equal opportunity provisions of local, State, or Federal laws. Studies equal opportunity complaints to clarify issues, and meets with personnel involved to arbitrate and settle disputes. Confers with supervisory personnel to verify or document alleged violations of law, such as failure to post notices, process grievances, or correct ethnic or other imbalances. Prepares report of findings and makes recommendations for corrective action. Participates with MANAGER, PERSONNEL (profess. & kin.) 166.117-018 in addressing and resolving issues involving company hiring and related personnel policies. GOE 11.10.02 PD L 12 13 15 M3 L5 SVP 7 SOC 1473

168.367-018 CODE INSPECTOR (gov. ser.)

Inspects existing residential buildings and dwelling units, visually, to determine compliance with city ordinance standards and explains ordinance requirements to concerned personnel: Obtains permission from owners and tenants to enter dwellings. Visually examines all areas to determine compliance with ordinance standards for heating, lighting, ventilating, and plumbing installations. Measures dwelling units and rooms to determine compliance with ordinance space requirements, using tape measure. Inspects premises for overall cleanliness, adequate disposal of garbage and rubbish, and for signs of vermin infestation. Prepares forms and letters advising property owners and tenants of possible violations and time allowed for correcting deficiencies. Consults file of violation reports and revisits dwellings at periodic intervals to verify correction of violations by property owners and tenants. Explains requirements of housing standards ordinance to property owners, building contractors, and other interested parties. GOE 05.03.06 PD L 12 13 15 16 M2 L3 SVP 5 SOC 1473

168.367-022 PERSONNEL QUALITY ASSURANCE AUDITOR (electronics)

Audits work activities of processing production workers to verify conformance of activities to quality assurance standards, applying knowledge of job performance requirements, equipment operation standards, and product processing specifications: Obtains quality assurance personnel check list. Observes and asks worker questions pertaining to job functions. Reads processing information, such as worker logs, product processing sheets, and specification sheets, to verify that records adhere to quality assurance specifications. Observes worker using equipment to verify that equipment is being operated and maintained according to quality assurance standards, applying knowledge of equipment operation. Writes audit information on quality assurance form and keys information into computer, using keyboard. Submits audit report to supervisory personnel. GOE 11.10.05 PD L 08 09 12 13 15 18 M2 L3 SVP 6 SOC 1473

169.117-014 GRANT COORDINATOR (profess. & kin.)

Develops and coordinates grant-funded programs for agencies, institutions, local government, or units of local government, such as school systems or metropolitan police departments: Reviews literature dealing with funds available through grants from governmental agencies and private foundations to determine feasibility of developing programs to supplement local annual budget allocations. Discusses program requirements and sources of funds available with administrative personnel. Confers with personnel affected by proposed program to develop program goals and objectives, outline how funds are to be used, and explain procedures necessary to obtain funding. Works with fiscal officer in preparing narrative justification for purchase of new equipment and other budgetary expenditures. Submits proposal to officials for approval. Writes grant application, according to format required, and submits application to funding agency or foundation. Meets with representatives of funding sources to work out final details of proposal. Directs and coordinates evaluation and monitoring of grant-funded programs, or writes specifications for evaluation or monitoring of program by outside agency. Assists department personnel in writing periodic reports to comply with grant requirements. Maintains master files on all grants. Monitors all paper work connected with grant-funded programs. GOE 11.05.02 PD S 09 10 12 13 15 M4 L6 SVP 7 SOC 149

169.167-062 COORDINATOR, SKILL-TRAINING PROGRAM (gov. ser.)

Plans and arranges for cooperation with and participation in skill training program by private industry, agencies, and concerned individuals: Organizes and coordinates recruiting, training, and placement of participants. Contacts various service agencies on behalf of trainees with social problems and refers trainees to appropriate agencies to ensure trainees receive maximum available assistance. Prepares periodic reports to monitor and evaluate progress of program. GOE 07.01.02 PD S 10 12 13 15 M4 L4 SVP 6 SOC 139

169.167-066 LEGISLATIVE ASSISTANT (gov. ser.)

Assists legislator in preparation of proposed legislation: Conducts research into subject of proposed legislation and develops preliminary draft of bill. Analyzes pending legislation and suggests to legislator action to be taken. Briefs legislator on policy issues. Attends committee meetings and prepares reports of proceedings. Speaks with lobbyists, constituents, and members of press to gather and provide information on behalf of legislator. Analyzes voting records of other legislators and political activity in legislator home district to derive data for legislator consideration. Maintains liaison with government agencies affected by proposed or pending legislation. Assists in campaign activities and drafts speeches for legislator. GOE 11.05.03 PD S 12 13 15 M3 L5 SVP 7 SOC 1139

169.167-070 DIRECTOR, EDUCATIONAL PROGRAMMING (radio & tv broad.)

Plans, develops, and administers programs to promote educational uses of television programs and auxiliary services of public broadcasting station: Reviews past and current educational and instructional programs produced by station and others to determine improvements needed in production and presentation of programs and auxiliary services, such as teaching guides and workshops. Analyzes data to determine prospective users, audiences, and potential funding sources. Confers with education officials

and administrators to develop programs and services consistent with mandated curriculum requirements. Plans, initiates, and administers, through subordinates, preparation of written proposals and implementation of special educational projects, such as instructional programs for in-school and home-viewing courses. Confers with representatives of international educational and broadcasting agencies to ascertain availability of programs from foreign sources and to promote use of station's programs and services by foreign stations and schools. Directs printing, publishing, and dissemination of educational and promotional materials, such as newsletters, lesson plans, and study guides. May prepare budget for contracting programs and services to educational institutions. GOE 11.05.02 PD S 12 13 M4 L5 SVP 7 SOC 1341

169.167-074 PREVENTIVE MAINTENANCE COORDINATOR (any ind.)

Plans and coordinates schedule of preventive maintenance for equipment, machinery, tools, and/or buildings: Reviews manufacturers' service manuals, own establishment's usage schedules, and records of maintenance problems to determine optimum frequency of preventive maintenance. Studies production and operation schedules and confers with other staff and with maintenance supervisors to determine when planned maintenance will least interfere with operation of establishment. Estimates costs of personnel, parts, and supplies to be used during scheduled maintenance. Maintains records of planned and completed maintenance. May develop and coordinate plans for reconstruction and/or installation of new equipment, machinery, and/or buildings. May direct and coordinate activities of subordinate staff, such as MAINTENANCE DATA ANALYST (military ser.) 221.367-038. May direct and coordinate activities of maintenance workers. GOE 05.01.06 PD L 12 13 15 M3 L3 SVP 7 SOC 142

169.167-078 UTILIZATION COORDINATOR (radio & tv broad.)

Coordinates subscriber utilization of instructional television programming: Communicates with administrators, teaching staff, audiovisual specialists, and other personnel to assist subscribers in incorporating programs and related materials into planned curricula. Conducts surveys to determine problems in use of programs and materials and develops workshops and other services to address identified needs. Confers with prospective users of programs to elicit interest in subscribing to services. Participates with other station personnel in developing advertising and promotional material. Oversees activities of workers engaged in processing subscriber accounts. GOE 11.05.02 PD S 08 09 12 13 M3 L5 SVP 7 SOC 149

169.262-010 CASEWORKER (gov. ser.)

Performs research into laws of United States and procedures of Federal agencies and prepares correspondence in office of Member of Congress to resolve problems or complaints of constituents: Confers with individuals who have requested assistance to determine nature and extent of problems. Analyzes U.S. Code to become familiar with laws relating to specific complaints of constituents. Researches procedures and systems of governmental agencies and contacts representatives of Federal agencies to obtain information on policies. Contacts Congressional Research Service to collect information relating to agency policies and laws. Contacts colleges and universities to obtain information relating to constituent problems. Determines action to facilitate resolution of constituent problems. Composes and types letters to Federal agencies and Congressional committees concerning resolution of problems of constituents. Prepares memoranda to inform Member of Congress of problems which require legislative attention. Confers with personnel assisting Member of Congress to discuss introduction of legislation to solve constituent problems. Calculates social security benefits, veterans' benefits, tax assessments, and other data concerning constituent complaints, using desk calculator. GOE 07.01.06 PD S 10 12 13 15 M3 L4 SVP 5 SOC 1139

169.267-030 PASSPORT-APPLICATION EXAMINER (gov. ser.)

Approves applications for United States passports and related privileges and services: Reviews information on applications, such as applicant's birthplace and birthplaces of applicant's parents, to determine eligibility according to nationality laws and governmental policies. Examines supporting documents, such as affidavits, records, newspaper files, and Bibles, to evaluate relevance and authenticity of documents. Queries applicants to obtain additional or clarifying data. Forwards approved applications to designated official, and prepares summaries for cases not approved indicating points of law. Answers questions of individuals concerning passport applications and related services. GOE 07.01.05 PD L 12 13 15 M3 L4 SVP 5 SOC 1473

169.267-034 RESEARCH ANALYST (insurance)

Evaluates insurance industry developments to update company products and procedures: Reviews industry publications and monitors pending legislation and regulations to determine impact of new developments on company insurance products. Consults with designated company personnel to disseminate information necessitating changes in language or provisions of insurance contracts and assists in preparation of documents or directives needed to implement changes. Corresponds or consults with agents, brokers, and other interested persons to determine feasibility and marketability of new products to meet competition and increase sales. Develops procedures and materials for introduction and administration of new products, and submits package for review by company personnel and regulatory

bodies. May recommend lobbying activities to management. May direct or coordinate activities of other workers. May specialize in analyzing developments in group insurance operations and be designated GROUP-CONTRACT ANALYST (insurance). GOE 11.05.02 PD L 08 09 12 13 15 M4 L5 SVP 8 SOC 149

180.161-014 SUPERINTENDENT, HORTICULTURE (museum)

Plans, coordinates, and directs activities concerned with breeding, growing, and displaying ornamental flowers, shrubs, and other plants in botanical garden, arboretum, park, or similar facility: Confers with administrative, technical, and maintenance staff members to plan activities for maintenance of growing stock and production of plants for display on grounds, installation in special exhibits, sale to public, or use in research projects. Discusses plans for renovation or additions to facility with administrative personnel and devises designs for floral exhibits to complement theme of new or renovated sections. Prepares scale drawings of outdoor or greenhouse exhibits for use of gardening staff members. Issues instructions to supervisory personnel in charge of plant growing, greenhouse, and display activities. Inspects greenhouse, hothouses, potting sheds, experimental growing areas, and other areas to determine need for repair and to observe activities of workers. Maintains inventory of propagation and growing equipment and supplies, and orders additional materials as needed. Arranges purchase, sale, or exchange of plants with representatives of similar institutions. Confers with research personnel to discuss development of new strains of plants and to devise methods to exhibit, publicize, or market new products. Represents establishment at civic or professional meetings. Participates in radio or television shows or prepares articles for newspapers to provide horticultural information to public. GOE 02.02.02 PD L 08 09 10 12 13 15 16 17 18 19 20 M4 L5 SVP 8 SOC 5525

180.167-062 MANAGER, AERIAL PLANTING AND CULTIVATION (agric.)

Manages operations of aerial seed sowing and crop dusting establishment: Negotiates contracts with farm personnel to sow seeds of specified varieties or to spray or dust fields or crops with specified agricultural chemicals. Confers with AIRPLANE PILOT (agric.) 196.263-010 to determine materials and conditions required to meet terms of contract and schedules flights according to factors, such as client requests, weather conditions, aircraft availability, and legal and safety considerations. Monitors AIRPLANE-PILOT HELPER (agric.) 409.667-010 mixing chemicals, loading chemicals and seeds into hopper of aircraft, and indicating flight passes to pilot from ground to ensure efficient and safe operations. Purchases seeds and chemicals from suppliers. Oversees repair and maintenance of aircraft and contracts for repair and maintenance of hangars, runway, and related company facilities. Maintains records for billing and payroll purposes. Initiates personnel actions, such as hiring, firing, and disciplining workers. GOE 11.11.03 PD S 12 13 M4 L4 SVP 7 SOC 1342

180.167-066 MANAGER, ORCHARD (agric.)

Manages orchards: Directs and coordinates, through subordinate supervisory personnel, orchard activities, such as orchard development, irrigation, chemical application, and harvesting to ensure that company production goals are met. Evaluates oral and written reports and observes operations to monitor progress of work and to detect and resolve problems. Determines and authorizes alternative procedures to accommodate variables, such as weather conditions, water supply, stage of crop or tree development, and new legislation. Coordinates orchard department activities with those of engineering, equipment maintenance, packing house, and other related departments. Analyzes financial statements and makes budget proposals. May initiate personnel actions, interpret company policy, and enforce safety regulations. GOE 03.01.01 PD L 12 13 15 16 17 18 19 20 M4 L5 SVP 8 SOC 5523

184.117-086 MANAGER, CAR INSPECTION AND REPAIR (r.r. trans.)

Plans, directs, and coordinates, through subordinate supervisors, activities concerned with inspection, repair, and maintenance of railroad equipment: Confers with department heads to establish administrative and operational policies and procedures for following Federal, Railroad Association, and union regulations and agreements. Interprets policies and procedures for subordinate supervisors, and monitors activities to ensure that policies and procedures are followed. Analyzes records of daily operations, such as freight car inspections, repairs completed or scheduled, or worker absenteeism, to maintain knowledge of department activities. Instructs subordinates to institute specific measures, such as studies and maintaining bar graphs, to monitor productivity. Discusses freight car repairs with shippers or consignees and inspection and repair violations with Federal and public representatives to resolve concerns, such as time of repair, repair cost, and methods of preventing future violations. Monitors inventory of parts and materials and prepares requisition forms for items in short supply. Conducts investigations of personnel matters, such as continued tardiness, excessive absenteeism, or safety violations; negotiates with union representative matters, such as contract violations, job abolishment, and reallocation of manpower; and prepares required reports, according to prescribed procedures. GOE 11.11.03 PD S 12 13 15 M4 L5 SVP 8 SOC 1342

184.117-090 REGIONAL SUPERINTENDENT, RAILROAD CAR INSPECTION AND REPAIR (r.r. trans.)

Plans and coordinates inspection, maintenance, and repair of railroad equipment within assigned railroad region: Analyzes productivity and

budget reports to determine allocation of work force, and equipment and productivity of inspection and repair facilities within assigned region. Confers with shop and yard supervisory personnel and shippers to stay apprised of daily work schedules and to ensure priority scheduling of repairs for railcars needed back in service. Oversees administrative matters, such as training policies, budget allocations, and equipment replacement. Monitors administration of safety program, according to company rules, union agreements, and Federal regulations. GOE 11.11.03 PD S 12 13 15 M4 L4 SVP 9 SOC 1342

184.167-282 DIVISION ROAD SUPERVISOR (r.r. trans.)

Directs and coordinates through supervisory personnel activities of railroad engine crews to ensure efficient operation of railroad in specified jurisdictions: Interviews engine crew personnel to evaluate workers' knowledge of operating and train-handling rules and of railroad route characteristics, such as locations and meanings of signals and types of grades on routes. Rides trains and observes personnel to determine conformance to regulations governing matters, such as train signals, train timetables, and emergency procedures. Determines speed of trains, using radar gun and electrical speed-recording device, and documents detected violations. Conducts investigations of train wrecks to determine causes, to assess equipment damage, to identify personnel responsible, and issues reports of findings. GOE 05.02.02 PD L 12 13 EC 13 M3 L4 SVP 8 SOC 1342

184.167-286 GENERAL CAR SUPERVISOR, YARD (r.r. trans.)

Directs and coordinates, through subordinate supervisors, activities of workers engaged in inspection, repair, and maintenance of railroad freight cars, utilizing knowledge of railroad maintenance regulations: Analyzes production reports, work schedules, and freight car repair list to determine efficient utilization of manpower, and recommends to superiors increasing, reducing, or shifting manpower as necessary to complete work requirements. Fills out daily worksheets identifying defective freight cars, necessary repairs, and priority of repairs for use of subordinate supervisors. Notifies YARD MANAGER (r.r. trans.) 184.167-278 to close tracks on which freight trains are being inspected to other rail traffic. Coordinates dispatching of wreck crews and heavy equipment to wreck site within yard or assigned geographic area. Contacts private contractors to rent equipment needed at wreck site. Informs consignees of damaged freight cars and obtains permission to transfer loads when necessary. Observes work in yard and repair shop to determine that areas are clean and free of hazards. Serves on committees to investigate causes of wrecks. Conducts investigations to determine cause of accidental worker injuries. Submits written reports of findings to superiors. GOE 05.02.02 PD L 12 13 15 M3 L3 SVP 7 SOC 1342

184.167-290 SUPERVISOR, COMMUNICATIONS-AND-SIGNALS (r.r. trans.)

Directs and coordinates, through subordinate supervisory personnel, activities of workers engaged in installing, maintaining, and testing communications and signalling equipment within specified jurisdiction of railroad: Reviews reports that describe handling of communications and signal irregularities to discern whether deployment of personnel and maintenance procedures followed administrative and labor regulations. Discusses causes of irregularities with supervisor who directed repairs to suggest changes in inspection or maintenance techniques that would prevent recurrence of irregularities, utilizing knowledge of communication and signal functioning. Writes summary of reports indicating worker overtime involved and nature of equipment malfunctions and routes reports to superior. Confers with company engineers regarding major repairs or installation projects in communication and signal system to stay apprised of changes within system. Confers with supervisors throughout projects to provide technical assistance and to ensure availability of equipment needed to complete project. GOE 11.11.03 PD L 12 13 15 16 M4 L4 SVP 8 SOC 1342

184.167-294 SUPERVISOR, TRAIN OPERATIONS (r.r. trans.)

Directs and coordinates activities of personnel engaged in scheduling and routing trains and engines in specified railroad territory: Observes record entries and monitors railroad radio communications and lights on train location panelboard to oversee train and engine movements along specified territory of railroad. Confers with railroad dispatchers to determine scheduling of trains and engines. Directs delays of train departures upon notification of substandard track conditions. Coordinates train movements to utilize train crews efficiently to schedule engines to arrive at service locations when due for maintenance and to maximize use of local trains versus special work trains. Scrutinizes train schedules and advises specified personnel of availability of tracks for scheduled repair and maintenance. Issues directives to subordinates to coordinate movement of expedited, late, or special railroad trains, using information received through railroad information network. GOE 05.02.02 PD L 12 13 15 19 M3 L4 SVP 8 SOC 1342

185.117-014 AREA SUPERVISOR, RETAIL CHAIN STORE (ret. tr.) operations manager.

Directs and coordinates activities of subordinate managerial personnel involved in operating retail chain stores in an assigned area: Interviews and selects individuals to fill managerial vacancies. Maintains employment records for each manager. Terminates employment of store managers whose performance does not meet company standards. Directs, through

subordinate managerial personnel, compliance of workers with established company policies, procedures, and standards, such as safekeeping of company funds and property, personnel and grievance practices, and adherence to policies governing acceptance and processing of customer credit card charges. Inspects premises of assigned area stores to ensure that adequate security exists and that physical facilities comply with safety and environmental codes and ordinances. Reviews operational records and reports of store managers to project sales and to determine store profitability. Coordinates sales and promotional activities of store managers. Analyzes marketing potential of new and existing store locations and recommends additional sites or deletion of existing area stores. Negotiates with vendors to enter into contracts for merchandise and determines allocations to each store manager. GOE 11.11.05 PD L 12 13 15 M3 L4 SVP 7 SOC 139

185.164-010 SERVICE MANAGER (ret. tr.)

Coordinates activities of service department in lawnmower sales and service establishment: Directs activities of workers through supervisory staff. Discusses with supervisory staff methods of assembling and repairing lawnmowers to ensure compliance with prescribed procedures. Interviews and hires workers. Maintains time and production records. Answers questions and discusses complaints with customers regarding services as specified in equipment warranty agreement. Assembles and tests operation of new lawnmowers to prepare mowers for sales floor, following assembly and test procedures and using handtools. GOE 05.10.02 PD H 08 09 11 12 15 17 M3 L3 SVP 7 SOC 60

185.167-074 MANAGER, AUTO SPECIALTY SERVICES (auto. ser.)

Manages establishment engaged in automotive specialty services, such as engine tune-up, front-end alignment, or muffler installation: Directs and coordinates, through subordinate personnel, activities of workers engaged in diagnosing and repairing automobile malfunctions. Monitors operations to ensure that services rendered conform to company policy and standards. Resolves customer complaints. Reviews operational expenses and collection reports for accuracy. Authorizes acquisition of tools, equipment, and parts. Hires, discharges, and assists in training workers. May contact advertising media to publicize services. GOE 11.11.04 PD L 12 13 M4 L4 SVP 7 SOC 60

186.167-062 CONDOMINIUM MANAGER (real estate)

Manages condominium complex in accordance with homeowners' property management contract: Confers with representatives of homeowners' association or board of directors to review financial status of association and to determine management priorities. Directs collection of monthly assessments from residents and payment of incurred operating expenses. Directs maintenance staff in routine repair and maintenance of buildings and grounds of complex. Arranges for outside contractors to perform specified repairs. Investigates tenant complaints, such as utility malfunctions. Resolves complaints concerning other tenants or visitors. Prepares annual budget and activity reports and submits reports to association members. May assist elderly residents with essential tasks, such as food shopping. GOE 11.11.01 PD L 12 13 15 M3 L4 SVP 7 SOC 1353

186.167-066 MANAGER, REAL-ESTATE FIRM (real estate)

Directs and coordinates activities of sales staff for real estate firm: Screens and hires sales agents. Conducts training sessions to present and discuss sales techniques, ethics, and methods of maintaining sales quotas. Accompanies sales agents and clients to observe sales methods utilized, and counsels agents regarding matters, such as professionalism, financing, and sales closings. Confers with agents and clients to resolve problems, such as adjusting sales price, repairing property, or accepting closing costs. Sells or rents property for clients [SALES AGENT, REAL ESTATE (real estate) 250.357-018]. Manages residential and commercial properties for clients [MANAGER, PROPERTY (real estate) 186.167-046]. May own real estate firm or be employed by nationwide franchise. GOE 11.11.04 PD S 12 13 M3 L4 SVP 7 SOC 4123

187.117-058 DIRECTOR, OUTPATIENT SERVICES (medical ser.)

Supervises and directs activities of outpatient clinic and coordinates activities of clinic with those of other hospital departments: Establishes clinic policies and procedures in cooperation with other hospital officials. Interprets and administers personnel policies and provides for training program. Reviews clinic activities and recommends changes in, or better utilization of, facilities, services, and staff. Establishes and maintains work schedules and assignments of resident professional staff members. Authorizes purchase of supplies and equipment. Prepares and submits budget, records, reports, and statistical data to ADMINISTRATOR, HOSPITAL (medical ser.) 187.117-010. Meets with personnel of other local institutions and organizations to promote public health and educational services. Oversees operation of clinic and recommends procedures, treatments, or other course of action to assist medical staff. GOE 11.07.02 PD S 12 13 15 M5 L6 SVP 8 SOC 131

187.117-062 RADIOLOGY ADMINISTRATOR (medical ser.)

Plans, directs, and coordinates administrative activities of radiology department of hospital medical center: Conducts studies and implements changes to improve internal operations of department. Advises staff and supervisors on administrative changes. Assists hospital officials in preparation of department budget. Conducts specified classes and provides training material to assist in student training program. Directs and coordinates

personnel activities of department. Recommends cost saving methods and hospital supply changes to effect economy of department operations. Interprets, prepares, and distributes statistical data regarding department operations. GOE 11.07.02 PD S 12 13 15 M5 L5 SVP 7 SOC 131

187.117-066 EXECUTIVE DIRECTOR, RED CROSS (nonprofit organ.)

Directs and coordinates operations of nonprofit agency to provide blood, medical care, financial aid, and other special services: Oversees agency volunteer operations in areas such as blood donor program, nursing, and financial assistance to assure program adherence to agency charter. Participates in community activities to develop opportunities to ascertain needs, serve clients, and promote agency goals. Establishes and maintains close working relationships with cooperating agencies to avoid duplication of services. Prepares budget in consultation with departmental directors to allocate funds, control costs, and maintain operations at level consistent with agency guidelines. Recommends new policy and procedures to agency governing board. Advises volunteer leaders of potential problems and recommends alternative methods of providing service. Negotiates with community organizations to plan joint fund-raising campaigns. Hires paid staff in consultation with agency head. Confers with staff and disseminates written materials to inform staff of current developments. GOE 11.07.01 PD L 12 13 M4 L5 SVP 8 SOC 127

187.134-010 SUPERVISOR, CONTRACT-SHELTERED WORKSHOP (nonprofit organ.)

Supervises and coordinates activities of handicapped individuals in sheltered workshop to train and improve vocational skills for gainful employment through productive work: Assigns individual to specific tasks, such as cleaning, sorting, assembling, repairing, or hand packing products or components. Demonstrates job duties to handicapped individual and observes worker performing tasks to ensure understanding of job duties. Monitors work performance at each individual's work station to ensure compliance with procedures and safety regulations and to note behavior deviations. Examines workpiece visually to verify adherence to specifications. Confers with individuals to explain or to demonstrate task again to resolve work related difficulties. Reassigns individual to simpler tasks when worker cannot perform assigned tasks, or to tasks containing higher degrees of complexity as level of competence is reached. Performs other duties described under SUPERVISOR (any ind.) Master Title. GOE 11.07.03 PD L 08 09 12 13 M2 L2 SVP 7 SOC 127

187.167-202 DIRECTOR, CRAFT CENTER (profess. & kin.)

Plans, organizes, and directs activities of craft center operated by folk or history museum, historic or ethnic area or community, or historic or regional theme park: Consults with administrative personnel to plan activities, such as craft classes, exhibits, and other projects conducted in cooperation with sponsoring institution. Orders supplies needed for basketry, leatherwork, candlemaking, macrame, toile painting, beadwork, or other crafts compatible with institution theme. Plans and writes publicity material for craft classes, and coordinates presentation of craft shows and exhibits, arranging for participants, and overseeing installation of exhibit booths, distribution of publicity materials, and scheduling of craft demonstrations. Maintains inventory, personnel, and accounting records. Arranges for consignment of craft items for sale, directs sales personnel, and maintains records of operation. Reports operational activities to institution administrative staff or governing body, and confers with staff to plan and implement changes in operation of facilities. GOE 11.07.04 PD L 10 12 13 15 20 M4 L5 SVP 7 SOC 1352

187.167-206 DIETARY MANAGER (hotel & rest.)

Directs and coordinates food service activities of hospital, nursing home, or related facility: Confers with DIETITIAN, CHIEF (profess. & kin.) 077.117-010 to ensure that menus and department policies conform with nutritional standards and government and establishment regulations and procedures. Reviews patient diet information and discusses requests, changes, and inconsistencies with patient, professional staff, and/or resident food committee. Plans and coordinates through subordinate supervisors, such as KITCHEN SUPERVISOR (hotel & rest.) 319.137-030, standards and procedures of food storage, preparation, and service; equipment and department sanitation; employee safety; and personnel policies and procedures. Inspects food and food preparation and storage areas, using thermometers and knowledge of health and sanitation regulations. Tastes, smells, and observes food to ensure conformance with recipes and appearance standards. Attends meetings with employees, union, establishment, administrative, and/or regulatory personnel to discuss regulations, procedures, grievances, and recommendations for improving food service. Computes operating costs for own information and for information of administrative personnel. May be required to have competency certificate. GOE 11.11.04 PD S 12 13 15 17 18 M5 L5 SVP 8 SOC 1351

187.167-210 DIRECTOR, FOOD AND BEVERAGE (amuse. & rec.)

Directs and coordinates activities of food service facilities at amusement park, through subordinate managers: Reviews food and beverage lists submitted by each facility manager to determine that sufficient items are ordered weekly. Eliminates or adds items to list, utilizing experience and knowledge of facility operations. Inspects food service facilities to ensure that equipment and buildings meet company, state, and local health laws. Analyzes information concerning facility operation, such as daily food

sales, patron attendance, and labor costs to prepare budget and to maintain cost control of facility operations, using calculator and following standard business procedures. Inspects and tastes prepared foods to maintain quality standards and sanitation regulations. GOE 11.11.04 PD L 08 09 10 12 13 14 15 19 M4 L4 SVP 8 SOC 1351

187.167-214 DIRECTOR, SERVICE (nonprofit organ.)

Directs and coordinates regional program activities of nonprofit organization to provide specialized human services, such as water safety programs, disaster relief, and emergency transportation: Consults with cooperating agencies, such as police, firefighters, and emergency ambulance services, to coordinate efforts and define areas of jurisdiction. Participates in program activities to serve clients of agency. Prepares budgets to control costs and to allocate funds in accordance with provisions and agency charter. May instruct agency staff and volunteers in skills required to provide services. May requisition and arrange for maintenance of equipment, such as two-way radios and agency vehicles. May coordinate services to disaster victims and be designated as DISASTER DIRECTOR (nonprofit organ.). May coordinate safety programs, such as water safety and emergency first aid, and be designated as SAFETY DIRECTOR (nonprofit organ.). May coordinate transportation of agency clients, blood, and medical supplies and equipment and be designated as TRANSPORTATION DIRECTOR (nonprofit organ.). GOE 11.07.01 PD M 08 09 12 13 15 M3 L5 SVP 8 SOC 127

187.167-218 MANAGER, ANIMAL SHELTER (nonprofit organ.)

Manages animal shelter: Sets standards for and monitors conduct of shelter employees to ensure that humane philosophy is projected to public and implemented in care of animals: Develops work plans and assigns priorities for organizational units. Reviews shelter practices and procedures to ensure efficient and economical use of resources. Recommends to board of directors policy and personnel changes and budget expenditures. Directs actions to provide follow-up on animal neglect and cruelty complaints appearing to justify prosecution. Answers mail and maintains file of documents such as animal adoption and burial contracts and reports of shelter activities. Verifies cash receipts and deposits cash to shelter accounts. Delivers lectures, prepares materials for media broadcasts, and prepares and publishes newsletters to report agency activities and interpret organizational philosophy to public. GOE 11.07.01 PD L 08 09 12 13 15 M3 L5 SVP 6 SOC 1359

187.167-222 MANAGER, BOWLING ALLEY (amuse. & rec.)

Manages bowling alley: Directs activities of workers engaged in providing services to patrons and in maintaining facilities and equipment. Assigns alleys for use, issues score sheets, and pushes controls to actuate automatic game-scoring equipment. Records number of games played and collects payment. Inspects alleys to ensure equipment is operative and observes patrons to detect disruptive behavior and misuse of alleys and equipment. Rents bowling shoes to patrons. Organizes bowling leagues and informs members of league requirements. Prepares and distributes announcements of league activities, collects member fees, and distributes tournament prizes. May sell bowling equipment. May hire and train workers. GOE 11.11.02 PD L 08 09 10 12 13 15 16 20 M2 L3 SVP 5 SOC 1352

187.167-226 MANAGER, MARINA DRY DOCK (amuse. & rec.; water trans.)

Directs and coordinates dry docking activities at marina: Administers affairs of department, such as planning and coordinating work schedules, assigning storage crib for each boat, and maintaining department budget. Directs workers in maintenance of boats and trailers, such as painting or washing boats, lubricating and repairing motors, and retrofitting trailers and cars with lights and turn signals. Monitors fuel dock operation to ensure services to patrons. Operates, or supervises workers operating, equipment to lift boats from water and transport and dry dock boats, using crane or forklift. Hires, orients, and trains personnel in job duties, safety practices, employer policy, and performance requirements. GOE 05.02.07 PD H 08 09 10 12 13 16 17 20 EC 05 M3 L3 SVP 6 SOC 1359

187.167-230 MANAGER, RECREATION FACILITY (amuse. & rec.) I

Manages recreation facilities, such as tennis courts, golf courses, or arcade, and coordinates activities of workers engaged in providing services of facility: Determines work activities necessary to operate facility, hires workers, and assigns specific tasks and work hours, accordingly. Initiates projects, such as promotional mailing or telephone campaigns, to acquaint public with activities of facility. Discusses fees of facility with interested persons. Registers patrons and explains rules and regulations. Confers with patrons to resolve grievances. Hires craftsmen, such as carpenters, plumbers, and electricians to make needed facility repairs. Maintains financial records. Collects coins from arcade machines. Purchases items such as golf balls, tennis balls, and paper supplies. GOE 11.11.02 PD L 08 09 12 13 15 M3 L4 SVP 6 SOC 1352

188.117-130 COURT ADMINISTRATOR (gov. ser.)

Administers nonjudicial functions of court: Coordinates activities such as jury selection, notification, and utilization, case scheduling and tracking, personnel assignment, and space and equipment allocation to accomplish orderly processing of court cases. Investigates problems that affect case flow and recommends or implements corrective measures. Compiles and analyzes data on court activity to monitor management performance and prepare activity reports. Conducts research to analyze current and alterna-

tive personnel, facilities, and data management systems and consults with judicial staff of court to evaluate findings and recommendations. May oversee accounting of revenues and expenditures and prepare and justify budget. May resolve questions and complaints raised by court personnel, attorneys, and members of other organizations and public. GOE 11.05.03 PD L 12 13 15 M4 L5 SVP 8 SOC 1131

188.117-134 DIRECTOR, REGULATORY AGENCY (gov. ser.)

Directs agency, division, or major function of agency or division charged with investigating regulated activities to assure compliance with Federal, State, or municipal laws: Interprets and clarifies Federal, State, or municipal laws. Represents agency at meetings, conventions, and other forums to promote and explain agency objectives. Consults with other governmental agencies, business community, and private organizations to resolve problems. Plans and directs surveys and research studies to ensure effective program operation and to establish or modify standards. Recommends changes in legislation and administrative procedures to reflect technological and ecological changes and public sentiment. Confers with legislative liaison individuals or committees to develop legislative bills involving inspection procedures and to obtain wording for proposed inspection codes. Prepares or directs preparation and release of reports, studies, and other publications relating to program trends and accomplishments. Reviews and evaluates work of MANAGER, REGULATED PROGRAM (gov. ser.) 168.167-090 through conversations, meetings, and reports. Prepares or directs preparation of budget requests. May be required to testify in court or before control or review board. May be designated according to function or agency administered as ADMINISTRATOR, PESTICIDE (gov. ser.); ADMINISTRATOR, STRUCTURAL PEST CONTROL (gov. ser.); AGRICULTURAL COMMODITY GRADING SUPERVISOR (gov. ser.); DIRECTOR, REACTOR PROJECTS (gov. ser.); DIRECTOR, TRANSPORTATION UTILITIES REGULATION (gov. ser.); DIRECTOR, WEIGHTS AND MEASURES (gov. ser.); MANAGER FOR HEALTH, SAFETY, AND ENVIRONMENT (gov. ser.); PETROLEUM PRODUCTS INSPECTION SUPERVISOR (gov. ser.). GOE 11.05.03 PD S 12 13 15 M4 L5 SVP 8 SOC 1139

188.167-110 PLANNER, PROGRAM SERVICES (gov. ser.)

Conducts studies, prepares reports, and advises public and private sector administrators on feasibility, cost-effectiveness, and regulatory conformance of proposals for special projects or ongoing programs in such fields as transportation, conservation, or health care: Consults with administrators or planning councils to discuss overall intent of programs or projects, and determines broad guidelines for studies, utilizing knowledge of subject area, research techniques, and regulatory limitations. Reviews and evaluates materials provided with proposals, such as environmental impact statements, construction specifications, or budget or staffing estimates, to determine additional data requirements. Conducts field investigations, economic or public opinion surveys, demographic studies, or other appropriate research to gather required information. Organizes and analyzes data from all sources, using statistical methods to ensure validity of results. Evaluates information to determine feasibility of proposals or to identify factors requiring amendment. Develops alternate plans for program or project, incorporating recommendations, for review of officials. Maintains collection of socioeconomic, environmental, and regulatory data related to agency functions, for use by planning and administrative personnel in government and private sectors. Reviews plans and proposals submitted by other governmental planning commissions or private organizations to assist in formulation of overall plans for region. GOE 11.03.02 PD L 12 13 15 M5 L6 SVP 7 SOC 192

189.117-038 USER REPRESENTATIVE, INTERNATIONAL ACCOUNTING (electronics)

Directs activities of information systems group engaged in designing, developing, implementing, and maintaining worldwide integrated finance and accounting system utilized by multi-national organization: Studies and analyzes general plan proposal, confers with corporate officials to obtain details of general plan, and obtains systems requirements from corporate and international accounting and management personnel to compile raw data for plan development. Develops methods and procedures for project accomplishment, applying knowledge of foreign monetary and tax systems and international accounting conventions. Prepares specifications documenting systems and project requirements, including time frame, staffing, activity schedule, and methods and procedures. Interprets international finance and accounting policies and procedures to provide coding assistance to others engaged in systems design and coding. Oversees entering of source data and programs into computer, analyzes output to identify existence and nature of problems, and orders indicated corrections to design or program. Writes procedures manuals for users, reflecting and adapting individual accounting conventions and monetary and tax systems into overall integrated system. Prepares training plan and trains user staff prior to implementation of system. Edits and audits financial and accounting reports to identify problems in installed system and initiates corrective measures. GOE 11.05.02 PD S 12 13 15 M5 L5 SVP 8 SOC 139

189.117-042 DIRECTOR, QUALITY ASSURANCE (profess. & kin.) director, product assurance.

Participates, as member of management team, in formulating and establishing organizational policies and operating procedures for company and

develops, implements, and coordinates, through support staff and lower echelon managers, product assurance program to prevent or eliminate defects in new and/or existing products: Analyzes, evaluates, and presents information concerning factors, such as business situations, production capabilities, manufacturing problems, economic trends, and design and development of new products for consideration by other members of management team. Suggests and debates alternative methods and procedures in solving problems and meeting changing market opportunities. Cooperates with other top management personnel in formulating and establishing company policies, operating procedures, and goals. Develops initial and subsequent modifications of product assurance program to delineate areas of responsibility, personnel requirements, and operational procedures within program, according to and consistent with company goals and policies. Evaluates contents of reports from product assurance program department heads and confers with top management personnel preparatory to formulating fiscal budget for product assurance program. Conducts management meetings with product assurance program department heads to establish, delineate, and review program organizational policies, to coordinate functions and operations between departments, and to establish responsibilities and procedures for attaining objectives. Reviews technical problems and procedures of departments and recommends solutions to problems or changes in procedures. Visits and confers with representatives of material and component vendors to obtain information related to supply quality, capacity of vendor to meet orders, and vendor quality standards. Confers with engineers about quality assurance of new products designed and manufactured products on market to rectify problems. Reviews technical publications, articles, and abstracts to stay abreast of technical developments in industry. GOE 11.05.02 PD L 09 12 13 15 M5 L5 SVP 8 SOC 126

189.117-046 MANAGER, BAKERY (bake. prod.)

Directs and coordinates activities involved with production, sale, and distribution of bakery products: Determines variety and quantity of bakery products to be produced, according to orders and sales projections. Develops budget for bakery operation, utilizing experience and knowledge of current market conditions. Directs sales activities following standard business practices. Plans product distribution to customers, and negotiates with suppliers to arrange purchase and delivery of bakery supplies. Implements, through subordinate managerial personnel, policies to make productive use of manpower, machines, and materials. Hires and discharges employees. May manage bakery that produces only speciality products, such as bagels or pastries. May manage bakery that sells products to general public. GOE 11.05.01 PD S 12 13 15 M4 L4 SVP 8 SOC 121

189.167-046 SUPERINTENDENT, MAINTENANCE (any ind.)

Directs and coordinates, through subordinate supervisory personnel, activities of workers engaged in repair, maintenance, and installation of machines, tools, and equipment, and in maintenance of buildings, grounds, and utility systems of mill, industrial plant, or other establishment: Reviews job orders to determine work priorities. Schedules repair, maintenance, and installation of machines, tools, and equipment to ensure continuous production operations. Coordinates activities of workers fabricating or modifying machines, tools, or equipment to manufacture new products or improve existing products. Directs maintenance activities on utility systems to provide continuous supply of heat, steam, electric power, gas, or air required for operations. Develops preventive maintenance program in conjunction with engineering and maintenance staff. Reviews production, quality control, and maintenance reports and statistics to plan and modify maintenance activities. Inspects operating machines and equipment for conformance with operational standards. Plans, develops, and implements new methods and procedures designed to improve operations, minimize operating costs, and effect greater utilization of labor and materials. Reviews new product plans and discusses equipment needs and modifications with design engineers. Requisitions tools, equipment, and supplies required for operations. Directs training and indoctrination of workers to improve work performance and acquaint workers with company policies and procedures. Confers with management, engineering, and quality control personnel to resolve maintenance problems and recommend measures to improve operations and conditions of machines and equipment. May confer with workers' representatives to resolve grievances. May perform supervisory functions in establishments where subordinate supervisory personnel are not utilized. May prepare department budget and monitor expenditure of funds in budget. GOE 05.05.02 PD L 12 13 15 M5 L5 SVP 8 SOC 132

189.167-054 SECURITY CONSULTANT (bus. ser.; per. ser.)

Plans, directs, and oversees implementation of comprehensive security systems for protection of individuals and homes, and business, commercial, and industrial organizations, and investigates various crimes against client: Inspects premises to determine security needs. Studies physical conditions, observes activities, and confers with client's staff to obtain data regarding internal operations. Analyzes compiled data and plans and directs installation of electronic security systems, such as closed circuit surveillance, entry controls, burglar alarms, ultrasonic motion detectors, electric eyes, and outdoor perimeter and microwave alarms. Directs installation and checks operation of electronic security equipment. Plans and directs personal security and safety of individual, family, or group for contracted period. Provides bulletproof limousine and bodyguards to ensure client protection during trips and outings. Suggests wearing bulletproof vest

when appropriate. Plans and reviews client travel itinerary, mode of transportation, and accommodations. Travels with client and directs security operations. Investigates crimes committed against client, such as fraud, robbery, arson, and patent infringement. Reviews personnel records of client staff and conducts background investigation of selected members to obtain personal histories, character references, and financial status. Conducts or directs surveillance of suspects and premises to apprehend culprits. Notifies client of security weaknesses and implements procedures for handling, storing, safekeeping, and destroying classified materials. Reports criminal information to authorities and testifies in court. GOE 04.02.02 PD L 12 13 15 16 20 M3 L5 SVP 7 SOC 5144

194.062-010 TELEVISION TECHNICIAN (radio & tv broad.)

Performs combination of duties to record and transmit broadcasts, working as member of limited-staff television station: Operates studio and mini-television (portable, shoulder-mounted) cameras [CAMERA OPERATOR, TELEVISION (radio & tv broad.) 143.062-022]. Controls console to regulate transmission of television scenes [VIDEO OPERATOR (radio & tv broad.) 194.282-010]. Produces educational and training films and video tapes [COMMUNICATIONS TECHNICIAN (education) 962.362-010]. Sets up and controls lights [LIGHT TECHNICIAN (motion pic.; radio & tv broad.) 962.362-014], microphones and microphone booms [MICROPHONE-BOOM OPERATOR (motion pic.; radio & tv broad.) 962.384-010], and recording equipment [RECORDIST (motion pic.) 962.382-010]. May perform duties of other related occupations depending upon specific production needs of individual airwave or closed-circuit station where workers must be able to set up and operate most or all equipment due to limited size of staff. GOE 01.02.03 PD M 04 08 09 10 12 13 15 16 17 18 19 20 M4 L5 SVP 7 SOC 399

195.107-042 CORRECTIONAL-TREATMENT SPECIALIST (social ser.)

Provides casework services for inmates of penal or correctional institution: Interviews inmate and confers with attorneys, judges, and probation officers to compile social history reflecting such factors as nature and extent of inmate's criminality and current and prospective social problems. Analyzes collected data and develops and initiates treatment plan. Interviews inmate and consults with employees of institution, such as supervisory personnel, PSYCHOLOGIST, CLINICAL (profess. & kin.) 045.107-022, and CHAPLAIN (profess. & kin.) 120.007-010, to evaluate inmate's social progress, and counsels inmate concerning perceived problems. Reports inmate's progress and makes recommendations to parole officials. Assists inmate with matters concerning detainers, sentences in other jurisdictions, and writs. Confers with inmate's family to identify family needs prior to inmate's release. Occasionally conducts collective counseling for small groups of inmates. Lectures groups of newly admitted inmates to inform them of institution rules and regulations. GOE 10.01.02 PD S 12 13 M3 L5 SVP 7 SOC 2032

195.107-046 PROBATION-AND-PAROLE OFFICER (profess. & kin.)

Counsels juvenile or adult offenders in activities related to legal conditions of probation or parole: Reviews social history of institutionalized offenders due for parole, and talks with offenders regarding development of release plans by parole commission. Determines which juvenile cases fall within jurisdiction of courts and which should be adjusted informally or referred to other agencies. Confers with legal representatives, family, and other concerned persons to conduct prehearing or presentencing investigations. Compiles reports and testifies in courts when requested. Reviews file folders on assigned offenders to determine violation committed and legal stipulation of release. Explains legal requirements to offender, such as visits to office, payment of restitution, and employment requirements to inform offender of release conditions. Interviews offender to formulate release plan and to identify specific problems that hinder probation or parole, such as family indifference, need of employment, and health conditions in need of attention, utilizing interviewing and counseling techniques. Refers offender to other agencies to correct problems, such as drug addiction, educational deficiency, and personality adjustments. Visits and telephones business firms to develop jobs for unemployed offenders. Evaluates offender progress during release with visits to home and place of work. Secures remedial action, or requests leniency by courts, if necessary, when offender behavior justifies such action. GOE 10.01.02 PD L 08 09 10 12 13 15 M3 L5 SVP 7 SOC 2032

195.167-042 ALCOHOL-AND-DRUG-ABUSE-ASSISTANCE PROGRAM ADMINISTRATOR (gov. ser.)

Coordinates government programs dealing with prevention and treatment of alcohol and drug abuse problems affecting work performance of employees in private and public sectors of work force: Studies composition of industrial and business communities and state agencies to determine methods of promoting information concerning alcohol and drug abuse prevention and treatment programs to executives and administrators in industry and government. Confers with management personnel to explain purpose and benefits of Employee Assistance Program, and attempts to establish programs in establishments, organizations, and agencies. Consults with representatives of Area Service Providers (professionals in health care, counseling, and other special services) to develop participation in prevention and treatment programs. Instructs personnel in methods of recognizing and identifying employee problems, referring employee to community Area Service Providers, and maintaining records of program-related ac-

activities. Consults with management and administrators of participating organizations and Area Service Providers to evaluate progress of program and identify administrative problems. Implements corrective action plan to solve problems. Develops training materials to be used by participating organizations and Area Service Providers. Prepares articles for newspaper and other media to explain purpose of program. Lectures and participates in workshops, radio and television interviews, community meetings, and other organizational functions to promote acceptance and support of program. Prepares grant proposals and reports for submission to department supervisor. GOE 11.07.01 PD L 08 09 10 12 13 15 M3 L5 SVP 7 SOC 1139

195.227-018 TEACHER, HOME THERAPY (social ser.) child development specialist; development disability specialist; infant educator; parent trainer.

Instructs parent of mentally- and physically-handicapped children in therapy techniques and behavior modification: Observes and plays with child and confers with child's parents and other professionals periodically to obtain information relating to child's mental and physical development. Evaluates child's responses to determine levels of child's physical and mental development. Determines parent's ability to comprehend and apply therapeutic and behavior modification techniques and parent's social and emotional needs to formulate teaching plan. Develops individual teaching plan covering self-help, motor, social, cognitive, and language skills development for parents to implement in home. Instructs parents individually or in groups in behavior modification, physical development, language development, and conceptual learning exercises and activities. Revises teaching plan to correspond with child's rate of development. Counsels parents and organizes groups of parents in similar situations to provide social and emotional support for parents. Refers parents and child to social service agencies and facilities for additional services and financial assistance. Consults and coordinates plans with other professionals. Teaches preschool subjects, such as limited vocabulary sign language and color recognition, to children capable of learning such subjects. GOE 10.02.03 PD L 04 05 08 09 10 12 13 17 19 M3 L5 SVP 7 SOC 235

195.267-018 PATIENT-RESOURCES-AND-REIMBURSEMENT AGENT (gov. ser.)

Investigates financial assets, properties, and resources of hospitalized retarded and brain-damaged clients to protect financial interests and provide reimbursement of hospital costs: Visits and interviews or contacts by mail or telephone relatives, friends, former employers, pension funds, fraternal and veterans organizations and government agencies. Records documentation of financial resources in patient files. Analyzes data accumulated, such as disability allowances, medicare, medicaid, social security pension, dividends, interest, and insurance, and determines ability to pay for hospitalization. Determines additional sources from which reimbursements can be obtained. Prepares reports and enumerates amounts and sources of reimbursements, including public assistance from social agencies in behalf of patients and families. Reviews patients' records to ensure that reimbursements are maintained. Applies for appointment of conservators to financially protect patients with assets over statutory limits and submits names of appointees to courts. Occasionally attends court hearings to protect patient interests. GOE 10.01.02 PD L 08 09 10 12 13 15 M3 L5 SVP 7 SOC 2032

195.367-018 COMMUNITY WORKER (gov. ser.)

Investigates problems of residents of assigned neighborhood to determine needs of those disadvantaged because of income, age, or other economic or personal handicaps: Seeks out and assists persons in need of agency services, under direction of professional staff. Visits individuals and families, and addresses neighborhood groups to publicize supportive services available to the unemployed, parolees, or others needing special assistance. Follows-up all contacts and prepares and submits reports of activities. GOE 10.01.02 PD L 12 13 M4 L4 SVP 6 SOC 2032

195.367-022 FOOD-MANAGEMENT AIDE (gov. ser.) nutrition aide.

Advises low income family members how to plan, budget, shop, prepare balanced meals, and handle and store food, following prescribed standards: Advises clients of advantages of food stamps, how to obtain stamps, and use of stamps during shopping trips. Transports clients to shopping area, using automobile. Observes clients' food selections. Recommends alternate economical and nutritional food choices. Observes and discusses meal preparation. Suggests alternate methods of food preparation. Assists in planning of food budget, utilizing charts and sample budgets. Advises clients on preferred methods of sanitation. Consults with supervisor concerning programs for individual families. Maintains records concerning results of family visits. GOE 10.01.02 PD L 12 13 M2 L3 SVP 3 SOC 2032

195.367-026 PREPAROLE-COUNSELING AIDE (gov. ser.)

Provides individual and group guidance to inmates of correctional facility, who are eligible for parole, and assists in developing vocational and educational plans in preparing inmates for reentry into community life: Conducts inmate orientation sessions to explain programs and resources available to inmates and to induce inmates to join programs. Interviews inmates to record data on individual problems, needs, interests, and attitude. Holds individual and group counseling sessions to discuss programs available that affect inmate's reentry into community life, such as housing and financial aid, veteran's benefits, work release programs, vocational re-

habilitation, and job search assistance. Prepares and maintains case folder for each inmate and discusses findings with supervisor to obtain assistance in establishing goals and plan of action for inmates. Conducts followup interview to ascertain inmate progress. Prepares correspondence and applications for medicare, medicaid, veteran benefits, food stamps, and housing. Telephones and corresponds with persons and agencies outside facility to ensure that family and/or business matters are attended to. Meets with family members at facility to discuss and resolve problems prior to release of inmate. Develops and prepares informational packets for inmate, listing outside agencies and programs that could assist ex-offender upon release. GOE 10.01.02 PD S 12 13 M2 L4 SVP 6 SOC 5133

195.367-030 RECREATION AIDE (social ser.)

Assists RECREATION LEADER (social ser.) 195.227-014 in conducting recreation activities in community center or other voluntary recreation facility: Arranges chairs, tables, and sporting or exercise equipment in designated rooms or other areas for scheduled group activities, such as banquets, wedding receptions, parties, group meetings, or sports events. Welcomes visitors and answers incoming telephone calls. Notifies patrons of activity schedules and registration requirements. Monitors spectators and participants at sports events to ensure orderly conduct. Receives, stores, and issues sports equipment and supplies. May keep attendance records or scores at sporting events, operate audiovisual equipment, monitor activities of children during recreational trips or tours, or perform other duties as directed by RECREATION LEADER (social ser.) 195.227-014. GOE 09.01.01 PD L 08 09 12 13 15 16 18 M2 L3 SVP 2 SOC 5269

195.367-034 SOCIAL-SERVICES AIDE (social ser.)

Assists professional staff of public social service agency, performing any combination of following tasks: Interviews individuals and family members to compile information on social, educational, criminal, institutional, or drug history. Visits individuals in homes or attends group meetings to provide information on agency services, requirements, and procedures. Provides rudimentary counseling to agency clients. Oversees day-to-day group activities of residents in institution. Meets with youth groups to acquaint them with consequences of delinquent acts. Refers individuals to various public or private agencies for assistance. May care for children in client's home during client's appointments. May accompany handicapped individuals to appointments. GOE 10.01.02 PD L 12 13 M3 L4 SVP 6 SOC 2032

199.167-018 ENERGY-CONTROL OFFICER (education)

Monitors energy use and develops, promotes, implements, and coordinates energy conservation program in county school district facilities: Compiles monthly energy report on consumption of electricity, fuel, oil, coal, LP gas, and water in school facilities, listing units consumed and costs. Sets up energy monitoring devices in school facilities that graphically plot energy usage and temperature changes during extended periods of time. Visits school facilities on regular basis to inspect monitoring devices and utilities usage. Determines areas in which energy conservation measures are needed, and compiles needs-assessment report of all school facilities. Monitors energy usage of extracurricular activities in school facilities. Coordinates energy conservation activities in areas with those of local, State, and Federal conservation groups. Recommends energy conservation policies to board of education. Presents lectures on resource conservation at teachers' meetings and to civic groups. GOE 05.03.08 PD L 12 13 15 M4 L4 SVP 7 SOC 399

199.167-022 ENVIRONMENTAL ANALYST (gov. ser.)

Directs, develops, and administers State governmental program for assessment of environmental impact of proposed recreational projects: Directs assessment of environmental impact and preparation of impact statements required for final evaluation of proposed actions. Directs identification and analysis of alternative proposals for handling projects in environmentally sensitive manner. Plans for enhancement of environmental setting for each proposed recreational project. Designs and directs special studies to obtain technical environmental information regarding planned projects, contacting and utilizing various sources, such as regional engineering offices, park region laboratories, and other governmental agencies. Prepares and controls budget for functions of impact-statement preparation program. Attends meetings and represents department on subjects related to program. GOE 11.05.03 PD S 12 13 M3 L4 SVP 8 SOC 1133

199.224-010 TECHNICAL SUPPORT SPECIALIST (profess. & kin.)

Installs, modifies, and makes minor repairs to microcomputer hardware and software systems and provides technical assistance and training to system users: Installs or assists service personnel in installation of hardware and peripheral components, such as monitors, keyboards, printers, and disk drives on client's premises, following design or installation specifications. Loads specified software packages, such as operating systems, word processing, or spreadsheet programs into computer memory. Types commands on keyboard and observes system functions to verify correct system operation. Instructs clients in use of equipment, software, and manuals. Answers user's inquiries in person and via telephone concerning systems operation; diagnoses system hardware, software, and operator problems; and recommends or performs minor remedial actions to correct problems based on knowledge of system operation. Replaces defective or inadequate software packages. Refers major hardware problems to service

personnel for correction. Attends technical conferences and seminars to keep abreast of new software and hardware product developments. GOE 11.02.02 PD L 08 09 12 13 19 M4 L4 SVP 7 SOC 1719

199.261-014 PARKING ANALYST (gov. ser.) engineering technician, parking.

Develops plans for construction and utilization of revenue-producing vehicle parking facilities: Plans and conducts comprehensive field surveys to locate sites for new parking facilities. Analyzes factors such as capacity, turnover, rates, and required property changes relative to proposed sites, and prepares maps, graphs, tracings, and diagrams to illustrate findings. Designs parking lot facilities, including spaces, aisles, driveways, lighting, gates, landscaping, cashier booths, storm drains, grades, and paving details, and prepares cost estimates. Evaluates work performed by contractors to verify conformity to specifications. Keeps log of construction projects and prepares final reports. Reports maintenance problems occurring at facilities to supervisor. Prepares replies to public suggestions and complaints. GOE 05.03.06 PD L 08 09 10 12 13 15 M4 L5 SVP 7 SOC 399

199.267-034 RESEARCH ASSISTANT (profess. & kin.) II researcher.

Compiles and analyzes verbal or statistical data to prepare reports and studies for use by professional workers in variety of areas, such as science, social science, law, medicine, or politics: Searches sources, such as reference works, literature, documents, newspapers, and statistical records, to obtain data on assigned subject. Analyzes and evaluates applicability of collected data. Prepares statistical tabulations, using calculator or adding machine. Writes reports or presents data in formats, such as abstracts, bibliographies, graphs, or maps. May interview individuals to obtain data or draft correspondence to answer inquiries. When conducting studies to assist lawmakers may be designated LEGISLATIVE AIDE (gov. ser.). GOE 11.08.02 PD S 12 13 15 M3 L5 SVP 6 SOC 399

203.362-022 WORD-PROCESSING-MACHINE OPERATOR (clerical) word processor.

Operates word processing equipment to record, edit, store, and revise correspondence, reports, statistical tables, forms, and other materials, utilizing clerical skills and knowledge of word processing functions: Reads instructions to determine procedures to be followed regarding material to be prepared or revised and required format for finished copy. Depresses keys on word processing equipment to adjust controls for spacing, margins, and tabulation, and places tape cassette, diskette, or other magnetic recording medium in holder. Keyboards (types) original material into machine memory, typing from printed copy, machine dictation, or related sources. Reads proof copy of material entered into machine memory, and depresses keys to correct typographical errors, print out final copy, and record material onto magnetic medium. Locates medium in file when revisions are required, places medium in holder and presses keys to insert (type), delete, correct, reposition, or reformat designated material. May operate equipment that extends word processing capabilities, such as cathode ray tube (CRT) displays, single or multiple printers, or optical character recognition (OCR). Important variations are kinds (trade names) of word processing equipment operated. May operate electronic typewriters with limited editing capabilities. GOE 07.06.02 PD S 08 09 10 12 13 15 M1 L3 SVP 4 SOC 4624

203.582-074 ELECTRONIC-TYPESETTING-MACHINE OPERATOR (print. & pub.)

Operates terminal keyboard of electronic typesetting machine and auxiliary equipment, such as photocomposing and developing machines, to produce hard copy of text such as in-house publications: Measures lines of copy and size of type to be input to determine machine settings required, using printer's rule. Loads disk or tape into electronic typesetting machine and depresses keys to set length and thickness of printed lines. Depresses keys to input material and scans video screen to monitor input. Depresses keys to move cursor (indicator) to point where error occurs and to delete or correct error. Loads completed disk or tape and magazine of photosensitive paper into photocopying machine. Sets font selector controls to select type of specified face and size and starts machine that automatically prints text from disk or tape onto photosensitive paper. Removes magazine of photosensitive paper from photocopying machine at end of cycle, inserts magazine in developing machine, and starts machine. Proofreads developed copy to detect additional errors. Corrects errors on disk or tape, using typesetting machine and video screen, to prepare disk or tape to produce error-free copy. GOE 07.06.02 PD S 08 09 10 15 16 M3 L4 SVP 6 SOC 4793

203.582-078 NOTEREADER (clerical)

Operates typewriter to transcribe stenotyped notes of court proceedings, following standard formats for type of material transcribed: Reads work order to obtain information, such as type of case, case number, number of copies required, and spelling of participants' names. Reviews form books to ascertain format required for specified document, and adjusts typewriter settings for indentation, line spacing, and other style requirements. Operates typewriter to transcribe contractions and symbols of stenotyped text into standard language form. Proofreads typed copy to identify and correct errors and to verify format specifications. Copies typed documents, using copying machines. May use automatic or manual stenotype noteholder. GOE 07.06.02 PD S 08 09 10 15 M1 L3 SVP 5 SOC 4624

205.367-062 REFERRAL CLERK, TEMPORARY-HELP AGENCY (clerical) staffing clerk.

Compiles and records information about temporary job openings and refers qualified applicants from register of temporary help agency: Receives call from hospital, business, or other type of organization requesting temporary workers and obtains and records information regarding job requirements. Reviews records to locate registered workers who match organization requirements and are available for scheduled work shift. Notifies selected workers of job availability and records referral information on agency records. Sorts mail, files records, and performs related clerical duties. May give employment applications to applicants, schedule interviews with agency registration interviewers, or administer standard agency skill tests. May specialize in referring specific types of workers, such as nurses. GOE 07.05.03 PD S 12 13 15 16 M3 L3 SVP 3 SOC 4692

209.362-030 CONGRESSIONAL-DISTRICT AIDE (gov. ser.)

Provides information and assistance to public and performs variety of clerical tasks in office of congressional legislator: Answers requests for information and assistance from constituents and other members of public, by phone or in person, using knowledge of governmental agencies and programs and source materials, such as agency listings and directories. Transcribes reports and types letters, using electric typewriter. Operates telecopier to receive and send messages, reports, and other documents. Opens and sorts mail according to addressee or type of assistance or information requested. Maintains record of telephone calls. Files correspondence, reports, and documents. Occasionally composes correspondence in response to written requests. Occasionally contacts other governmental or private agencies to act as liaison on behalf of constituents. GOE 07.04.04 PD S 08 09 10 12 13 15 18 M3 L4 SVP 5 SOC 463

209.567-022 OFFICE CLERK (clerical)

Performs any combination of following and similar clerical tasks in office where typing is not required: Copies information from one record to another. Sorts, files, and retrieves records or other documents. Addresses and stuffs envelopes. Sorts and distributes mail. Proofreads records and reports. Duplicates records, using copying machine. Answers telephone and records or relays messages. GOE 07.07.03 PD L 08 09 10 12 13 15 M2 L3 SVP 2 SOC 463

210.382-066 GENERAL ACCOUNTING SYSTEMS OPERATOR (clerical)

Posts, calculates, and updates accounts payable, accounts receivable, and payroll records, using computer terminal and utilizing knowledge of bookkeeping principles, in accounting department of manufacturer: Receives list of cash deposits, purchase orders or invoices, and payroll records for entry into computer. Depresses keys on keyboard of computer to identify operator, according to predetermined procedure; to display specified programs, such as accounts receivable, accounts payable, and payroll, on display screen to select specific sections of requested programs; and to select original accounts within programs for visual review and updating, according to transaction information received. Keys in information, such as account numbers, amounts of checks, and invoice number to update accounts receivable; purchase order, invoice number, and quantity of items shipped to update accounts payable; and employee payroll information such as hours worked, number of dependents, and credit deductions to update records. Depresses keys to display specific programs and activates printer to print weekly or monthly printouts, such as outstanding customer accounts, payments to vendors, and employee paychecks. Inserts software cartridges in designated slot of computer and depresses keys to update program information onto cartridges to provide backup data source of computer programs. GOE 07.02.02 PD S 08 09 10 15 18 M3 L2 SVP 6 SOC 4718

211.467-034 CHANGE PERSON (amuse. & rec.)

Exchanges coins for customer's paper money in slot machine area of gambling establishment: Walks and carries money belt in assigned section to exchange size and value of coins desired by customers. Listens for jackpot alarm bell, issues payoffs, and obtains customer's signature on receipt when winnings exceed amount contained in machine. GOE 07.03.01 PD M 09 10 12 13 15 M2 L1 SVP 2 SOC 4364

213.582-010 DIGITIZER OPERATOR (bus. ser.; petrol. production)

Operates encoding machine to trace coordinates on documents, such as maps or drawings, and to encode document points into computer: Reads work order to determine document points to be digitized (encoded). Positions document on digitizer (encoding machine) table. Guides digitizer cursor over document to trace coordinates, stops at specified points, and punches cursor key to digitize points into computer memory unit. Observes monitor screen periodically to verify completeness of encoding. Types command on keyboard to transfer encoded data from memory unit to magnetic tape. Keeps record of work orders, time, and tape production. GOE 07.06.01 PD S 08 09 10 15 18 M3 L2 SVP 5 SOC 4613

214.362-042 BILLING CLERK (clerical)

Operates calculator and typewriter to compile and prepare customer charges, such as labor and material costs: Reads computer printout to ascertain monthly costs, schedule of work completed, and type of work performed for customer, such as plumbing, sheetmetal, and insulation. Computes costs and percentage of work completed, using calculator. Compiles

data for billing personnel. Types invoices indicating total items for project and cost amounts. GOE 07.02.04 PD S 08 09 10 15 M3 L3 SVP 4 SOC 4715

214.467-014 PRICER, MESSAGE AND DELIVERY SERVICE (bus. ser.)

Computes charges for pickup and delivery of items, such as documents, messages, and packages, using rate manuals and zone maps: Sorts dispatch tickets and reads postal zone maps and street directories to determine zone categories for pickup and delivery of items. Computes charges for services in various zones, using rate manuals, and quotes rates to customers upon request. Records charges on report form. GOE 07.02.04 PD S 08 09 10 12 13 15 M2 L2 SVP 3 SOC 4716

214.582-010 INVOICING SYSTEMS OPERATOR (clerical)

Prepares billing invoices and generates statements, such as daily sales and commissions, in accounting office of establishment, using computer terminals and printer: Receives order packing list that indicates which orders have been shipped. Depresses keys on keyboard of computer terminal to enter operator identification code to display specified program on display screen, to select specific section of program, and to select original orders for visual review and updating, according to data on packing list. Keys in information, such as quantities shipped and whether orders remain open. Repeats process for all orders listed on packing list. Depresses keys to display invoice program on display screen and activate printer to print invoices, daily sales reports and commission statements, and monthly printouts of invoices processed. Routes printouts of invoices, reports, and statements to designated persons for mailing. Reviews order packing list against invoices processed to verify that all invoices were printed. GOE 07.06.01 PD S 08 09 10 15 18 M2 L2 SVP 6 SOC 4718

219.362-070 TAX PREPARER (bus. ser.) income-tax-return preparer; tax form preparer.

Prepares income tax return forms for individuals and small businesses: Reviews financial records, such as prior tax return forms, income statements, and documentation of expenditures to determine forms needed to prepare return. Interviews client to obtain additional information on taxable income and deductible expenses and allowances. Computes taxes owed, using adding machine, and completes entries on forms, following tax form instructions and tax tables. Consults tax law handbooks or bulletins to determine procedure for preparation of atypical returns. Occasionally verifies totals on forms prepared by others to detect errors of arithmetic or procedure. Calculates form preparation fee according to complexity of return and amount of time required to prepare forms. GOE 07.02.02 PD S 12 13 15 M4 L3 SVP 4 SOC 4712

219.367-026 PROGRAMMER, DETAIL (clerical) program coder; programmer trainee.

Selects symbols from coding system peculiar to make or model of digital computer and codes II successive steps of completed program for conversion to machine instructions to process data or to control industrial processes: Reads and interprets sequence of alphabetic, numeric, or special characters from handbook or memory for each program step to translate into machine language or pseudo (symbolic) code that can be converted by computer processor into machine instructions. Records symbols on worksheet for transfer to punchcards or machine input tape. Marks code sheet to indicate relationship of code to program steps to simplify debugging of program. Confers with programming personnel to clarify intent of program steps. May work as understudy to PROGRAMMER, BUSINESS (profess. & kin.) 020.162-014 or PROGRAMMER, ENGINEERING AND SCIENTIFIC (profess. & kin.) 020.167-022 performing such additional tasks as converting flow charts and diagram of simple problem from rough to finished form or making minor changes in established programs to adapt programs to new requirements. May modify existing programs. May operate computer to run daily programs. GOE 11.01.01 PD S 08 09 10 12 13 15 M3 L4 SVP 5 SOC 4699

219.367-042 CANCELING-AND-CUTTING CONTROL CLERK (finan. inst.)

Verifies amounts and denominations of worn or mutilated currency for canceling and cutting in unit of Federal Reserve Bank: Counts amounts and denominations of unfit currency, using automatic counting machine. Verifies entries on delivery and debit tickets. Records amounts, denominations, and types (notes, certificates, old series) of unfit currency processed and shipped for destruction, using adding machine. Oversees cancelling and cutting operations to ensure custody of currency during process. Notifies U.S. Treasury Department of daily disposition and specified categories of unfit currency. Prepares corroborating statistical reports. GOE 07.03.01 PD S 08 09 10 12 15 M3 L3 SVP 7 SOC 4712

221.167-014 MATERIAL COORDINATOR (clerical) coordinator, material control; expediter; material control expediter; production control worker; scheduler; stock chaser; stock rustler.

Coordinates and expedites flow of material, parts, and assemblies within or between departments in accordance with production and shipping schedules or department supervisors' priorities: Reviews production schedules and confers with department supervisors to determine material required or overdue and to locate material. Requisitions material and establishes delivery sequences to departments according to job order priorities and anticipated availability of material. Arranges for in-plant transfer of

materials to meet production schedules. Arranges with department supervisors for repair and assembly of material and its transportation to various departments. Examines material delivered to production departments to verify if type specified. May monitor and control movement of material and parts along conveyor system, using remote-control panelboard. May compute amount of material needed for specific job orders, applying knowledge of product and manufacturing processes and using adding machine. May compile report of quantity and type of material on hand. May move or transport material from one department to another, using hand-truck or industrial truck. May compile perpetual production records in order to locate material in process of production, using manual or computerized system. May maintain employee records. GOE 05.09.02 PD L 08 09 10 12 13 15 M3 L4 SVP 6 SOC 4752

221.367-042 MATERIAL EXPEDITER (clerical) expediter; stock chaser.

Locates and moves materials and parts between work areas of plant to expedite processing of goods, according to predetermined schedules and priorities, and keeps related records: Reviews production schedules, inventory reports, and work orders to determine types, quantities, and availability of required material and priorities of customer orders. Confers with department supervisors to determine materials overdue and to inform them of location, availability, and condition of materials. Locates and moves materials to specified production areas, using cart or handtruck. Records quantity and type of materials distributed and on hand. May direct INDUSTRIAL-TRUCK OPERATOR (any ind.) 921.683-050 or MATERIAL HANDLER (any ind.) 929.687-030 to expedite movement of materials between storage and production areas. May compare work ticket specifications with material at work stations to verify appropriateness of material in use. May prepare worker production records and timecards. May update and maintain inventory records, using computer terminal. GOE 05.09.02 PD M 08 09 10 12 13 15 17 M3 L3 SVP 4 SOC 4752

221.367-086 CLERK, TELEVISION PRODUCTION (radio & tv broad.)

Schedules use of facility and equipment and compiles and maintains employee work schedules and equipment and facility usage records for public broadcasting station: Schedules personnel based on written or oral requisition for studio usage, equipment needed for television production, and availability of workers. Compiles leave and vacation schedules. Prepares daily and weekly charts that indicate worker assignment and usage of facilities and equipment. Duplicates charts for distribution to staff, using photocopy machine. Revises schedule charts to accommodate changing priorities and worker absences. Compiles and submits timesheet information to payroll office. GOE 07.05.01 PD S 08 09 10 15 M3 L3 SVP 6 SOC 4752

221.367-090 FORMULA CLERK (textile)

Adapts basic dye formulas for use in dyeing goods in accordance with customer specifications: Reads production orders scheduled for processing to determine number of pounds of yarn or fabric to be dyed. Reviews basic dye formula developed for dyeing specified customer lot to ascertain weights of dyes and chemicals used in basic formula. Computes amounts of dyes and chemicals required to dye specified number of pounds of goods in conformity with customer specifications, utilizing knowledge of machine capacity, applying mathematical formulas and using calculator. Records lot size and dye machine number onto adjusted formula and places formula in designated location for use by dye department personnel. Compiles department production records [PRODUCTION CLERK (clerical) 221.382-018]. GOE 05.09.02 PD S 09 10 15 18 M3 L3 SVP 3 SOC 4799

221.382-026 SAMPLE CLERK (furn.)

Operates pantograph, camera, and adding machine in pattern department of furniture plant to estimate upholstery costs: Places cardboard pattern on workbed and plastic sheet on mounting plate of reduction machine. Moves stylus on tracing arm of pantograph around edge of pattern to control movement of heated cutting needle that cuts reduced plastic pattern of upholstery part. Arranges pattern pieces on scaled table to facilitate maximum fabric usage from standard spread of cloth. Operates camera mounted on adjustable stand to photograph pattern layout. Files pattern parts and developed camera print for reference by other workers. Compiles cutting, sewing, and fabric cost data, using adding machine, standardized computation sheets and formulas, and pattern layout information. GOE 05.09.02 PD L 04 08 09 10 15 17 18 19 M3 L3 SVP 5 SOC 4752

221.387-046 ORDER DETAILER (clerical) job-order clerk; ticketer; work-order clerk; work-order detailer.

Compiles, from customer's order and other specifications, detailed worksheets or tickets for use in plant as guides in assembly or manufacture of products: Compares customer purchase order with specifications to determine method and materials needed. Enters on worksheet data, such as quantity, quality, type, and size of material, piecework wage rate, proposed production rate, and expected completion date. Obtains assembly instructions, blueprints, and tracings from files and attaches to worksheet. May keep inventory of stock on hand and requisition needed material and supplies. May compute data for workticket, such as quantity of material and production and piecework rates, using adding machine or calculator. May prepare worksheets pertaining to cloth printing and mixing of print-

ing colors and be designated **FORMULA CHECKER** (tex. prod., n.e.c.; textile). May prepare worksheets and order steel stock for rolling mill and be designated **PROVIDER** (iron & steel). May prepare work order and allocate silicon crystal ingots that meet customer specifications for use in manufacturing semiconductor wafers and be designated **ALLOCATIONS CLERK** (electronics). May compile process specification sheets and prepare and issue materials for use in semiconductor crystal growing and be designated **PRODUCTION MATERIAL COORDINATOR** (electronics). GOE 05.09.02 PD L 08 09 10 15 M3 L3 SVP 4 SOC 4752

221.387-054 BATCH-RECORDS CLERK (fabric. plastics prod.)

Compiles and maintains plastic-mixing and ingredient records, and prepares daily mixing instructions for use by **MATERIAL MIXERS** (fabric. plastics prod.) 550.685-130: Compiles and maintains daily mixing and perpetual inventory records from work orders, mixing logs, and formula cards that indicate production information, such as type and quantity of plastic ingredients mixed, ingredient formulas, number of products molded, and identification numbers of molds and molding machines utilized. Copies formula for each plastic mixture from specified formula card onto display card for use by **MATERIAL MIXER** (fabric. plastics prod.) 550.685-130. Determines and records amount of plastic mixture required for each molding machine in daily mixing log, based on amount of mixture stored at each machine and knowledge of machine's consumption rate. GOE 05.09.02 PD S 08 09 15 18 20 EC 05 M2 L2 SVP 3 SOC 4752

222.367-070 EXPEDITER, SERVICE ORDER (furn.)

Reviews and verifies information on bills of lading to expedite orders and to ensure that customer furniture orders are shipped in accordance with production and shipping schedules: Reads bills of lading to determine items being shipped, destination, priority of order, and shipping date. Confers with department personnel to ascertain items available for shipment and production shortages. Notifies shipping personnel and department supervisors of items listed on shipping orders as available, but not located, in attempt to expedite processing of items required for immediate shipment. Maintains bills of lading files. GOE 07.05.01 PD L 12 13 15 M3 L3 SVP 3 SOC 4758

222.387-026 INVENTORY CLERK (clerical)

Compiles records of amount, kind, and value of merchandise, material, or stock on hand in establishment or department of establishment: Counts stock, material, or merchandise on hand and posts totals to inventory records. Compares inventories taken by other workers with office records or computes figures from sales, equipment, shipping, production, purchase, or stock records to obtain current theoretical inventory. Verifies clerical computations against physical count of stock and adjusts errors in computation or count, or investigates and reports reasons for discrepancies. Compiles information on receipt or disbursement of goods and computes inventory balance, price, and costs. Prepares reports of inventory balance, prices, and shortages. May list depleted items. May recommend survey of broken or unusable items. May operate typewriter, adding machine, or calculating machine. May update and maintain inventory records, using computer terminal. May be designated according to item inventoried as **EQUIPMENT-INVENTORY CLERK** (aircraft-aerospace mfg.); **PROPERTY-AND-EQUIPMENT CLERK** (petrol. refin.) or type of inventory as **INVENTORY CLERK, PERPETUAL** (clerical); **INVENTORY CLERK, PHYSICAL** (clerical) or work location as **INVENTORY CLERK, STOCKROOM** (clerical). GOE 05.09.01 PD L 08 09 10 15 18 19 M3 L3 SVP 4 SOC 4754

222.387-066 SAMPLE CLERK (fabric. plastics prod.)

Receives and fills requisitions for samples of fabricated plastic products and inspects samples for conformance to company standards: Collects sample products from production lines and inspects samples for conformance to company standards, using specification sheets, gauges, and color standard chart. Stores selected samples in sample room, pending requests for samples from sales representatives and customers. Wraps and packs samples, upon request, for shipment. Maintains records of requests received and filled. Maintains perpetual inventory of samples and replenishes sample stock to maintain required levels. GOE 05.09.01 PD L 08 09 10 11 15 17 19 M3 L3 SVP 5 SOC 4757

222.387-070 TYPE-LIBRARY CLERK (mach. mfg.)

Issues and stores prints of type characters used in type photography: Reads work order specifications to determine type character prints required and selects prints from files. Examines prints for clarity and sharpness of characters, and measures characters to ensure correctness of size and accuracy of dimensions, using millimeter rule. Notifies **SUPERVISOR, TYPE PHOTOGRAPHY** (mach. mfg.) 976.131-026 of prints needing correction or replacement. Sorts and collates prints in order indicated on work order and forwards prints to photographer for processing. Examines letters on prints returned from photographer and adds precut adhesive-backed corners to letters as necessary to compensate for shrinkage of photographed image. Refiles prints in designated files. GOE 05.09.01 PD S 08 09 15 18 M2 L2 SVP 3 SOC 4754

222.687-042 INSPECTOR, HANDBAG FRAMES (leather prod.) frame opener.

Inspects metal or plastic frames used in manufacture of women's handbags: Removes frames from packing case and verifies order with invoice and shipping order. Examines frames for defects, such as scratches, discolorations, or missing hinge pins. Opens and closes frames to test frame construction and ease of fastening. Discards defective frames for repair or return to manufacturer. Compiles inventory of acceptable and unacceptable frames received. GOE 06.03.02 PD L 08 09 10 15 19 M2 L2 SVP 2 SOC 782

222.687-046 **PROTECTIVE-CLOTHING ISSUER (chem.)**
Sorts and issues protective clothing and related supplies to workers: Receives delivery of items such as coveralls, underwear, gloves, and towels from laundry, checks items against list to verify completeness of delivery, and sorts items by type and size. Opens workers' lockers, using master key, and places clean items in locker. Removes, sorts, and counts soiled items stored in hamper. Disposes of worn items. Maintains inventory of clean laundry received and issued. GOE 07.07.02 PD L 08 09 M2 L2 SVP 2 SOC 4754

230.363-010 RURAL MAIL CARRIER (gov. ser.)

Delivers mail along established route outside town or city corporate limits: Sorts mail for delivery according to location along route. Delivers mail over route by motor vehicle. Picks up outgoing mail, sells stamps, and issues money orders. GOE 07.05.04 PD M 08 09 10 15 16 17 18 19 20 EC 01 M3 L2 SVP 2 SOC 4743

230.367-010 MAIL CARRIER (gov. ser.) city carrier; letter carrier.

Sorts mail for delivery and delivers mail on established route: Inserts mail into slots of mail rack to sort for delivery. Delivers mail to residences and business establishments along route. Completes delivery forms, collects charges, and obtains signature on receipts for delivery of specified types of mail. Enters changes of address in route book and re-addresses mail to be forwarded. May drive vehicle over established route. May deliver specialized types of mail and be designated as **PARCEL-POST CARRIER** (gov. ser.) or **SPECIAL-DELIVERY CARRIER** (gov. ser.). GOE 07.05.04 PD M 08 09 10 15 16 17 18 19 EC 01 14 M2 L3 SVP 4 SOC 4743

230.647-010 SINGING MESSENGER (bus. ser.)

Performs song and dance routines to deliver messages and entertain specified individuals for customers of message delivery service: Practices song and dance routines with experienced worker to become familiar with routines offered by service. Receives customer instructions from dispatcher, selects standard message supplied by service, or records customer's personalized message on form, using typewriter or pen. Applies theatrical makeup and dresses in costume, when necessary, and travels to destination, using vehicle, maps, and customer instructions. Locates recipient of message and performs routine, basing time frame of routine on recipient's reaction. May play musical instruments, such as kazoo or finger cymbals, during routine. May present gift items at conclusion of performance. GOE 07.07.02 PD L 03 08 09 10 11 12 13 16 17 19 M2 L3 SVP 2 SOC 4745

238.367-034 SCHEDULER (museum) education department registrar; museum service scheduler.

Makes reservations and accepts payment for group tours, classes, field trips, and other educational activities offered by museum, zoo, or similar establishment: Provides information regarding tours for school, civic, or other groups, suggests tours on institution calendar, and contacts group leaders prior to scheduled dates to confirm reservations. Provides information regarding classes, workshops, field trips, and other educational programs designed for such special groups as school or college students, teachers, or handicapped persons. Registers groups and individuals for participation in programs, enters registration information in department records, and contacts participants prior to program dates to confirm registration and provide preparatory information. Prepares lists of groups scheduled for tours and persons registered for other activities for use of **DIRECTOR, EDUCATION** (museum) 099.117-030 or other personnel. Collects and records receipts of fees for tours, classes, and other activities. Maintains records of participating groups, fees received, and other data related to educational programs for use in preparation of department reports. May take reservations and sell advance tickets to exhibits, concerts, and other events sponsored by institution, prepare periodic summaries of department activities for review by administrative personnel, or arrange for various support services to facilitate presentation of special activities. GOE 07.05.01 PD S 08 09 10 12 13 15 18 M3 L3 SVP 3 SOC 4649

239.367-030 DISPATCHER, STREET DEPARTMENT (gov. ser.)

Receives and records public requests for street maintenance services and relays work orders to maintenance crews, using telephone and two-way radio: Receives telephone requests from public for services, such as street repair, repair of traffic signals, erection of traffic barricades, and snow removal. Relays work orders, messages, and information to or from work crews, supervisors, and field inspectors. Answers routine questions from public and directs requests for other information to designated personnel. Maintains daily log of work orders, messages, or reports received and relayed. GOE 07.04.05 PD S 12 13 M1 L2 SVP 3 SOC 4751

239.367-034 UTILITY CLERK (light, heat, & power)

Responds to telephone requests for information concerning location of underground utility distribution lines: Informs construction contractors and others excavating near company installations of buried line locations to prevent safety hazards and damage to company equipment, utilizing

plat and distribution line maps. Updates maps to indicate extensions and revisions of utility distribution lines within specified jurisdiction. May relay telephone reports of gas emergencies to specified personnel [GAS-DISTRIBUTION-AND-EMERGENCY CLERK (light, heat, & power) 249.367-042] or radio customer service requests to mobile service crews, using two-way radio. May issue tools and parts used by company work crews [STOCK CLERK (clerical) 222.387-058]. GOE 07.04.05 PD L 08 09 12 13 15 M3 L3 SVP 5 SOC 4649

241.137-018 SUPERVISOR, CLAIMS (insurance) claims administrator.

Supervises and coordinates activities of workers engaged in examining insurance claims for payment in claims division of insurance company. Analyzes and approves insurance and matured endowment claims. Conducts personal interviews with policy owners and beneficiaries to explain procedure for filing claims. Submits statement of claim liabilities to actuarial department for review. Informs departmental supervisors on claims status. Evaluates job performance of subordinates. Performs duties described under SUPERVISOR (clerical) Master Title. GOE 11.12.01 PD S 12 13 15 M3 L4 SVP 7 SOC 4782

241.367-038 INVESTIGATOR, DEALER ACCOUNTS (finan. inst.)

Visits dealers to verify purchases financed by bank against physical inventory of merchandise, using bank records: Reviews computer printouts listing customer names, addresses, and descriptions of merchandise financed through bank credit and chattel mortgage accounts to plan itinerary of unannounced visits to dealer premises. Explains purpose of visit and locates merchandise in areas, such as showroom, storage room, or car lot. Observes features of merchandise, such as size, color, model, and serial number, to verify item against computer printout. Examines records and questions dealer to determine disposition of items missing from inventory and to elicit information on dealer arrangement for payment to bank for merchandise sold. Records findings on printout and notifies supervisor of unusual findings. GOE 07.05.02 PD L 12 13 15 16 17 18 M3 L4 SVP 2 SOC 4783

241.367-042 PROPERTY-ASSESSMENT MONITOR (gov. ser.)

Gathers property assessment data at owner premises, verifies data against previously recorded data, and records discrepancies: Visits property, observes premises, and confers with owner to collect and verify property assessment data, using data cards (property assessment records) as guides. Measures and records size of land boundaries and house, using tape measure. Records type of exterior coverings and physical condition of exterior and interior of house. Counts and records number of bathrooms, stoves, and fireplaces. Verifies findings against recorded data and notes discrepancies. Occasionally attends town meetings to answer taxpayer questions regarding use of information contained on data cards. GOE 07.05.02 PD L 08 09 10 12 13 15 M4 L4 SVP 3 SOC 4799

249.137-030 SUPERVISOR, REAL-ESTATE OFFICE (real estate)

Supervises and coordinates activities of clerical personnel in real estate office: Interviews clerical applicants, gives performance tests, and evaluates applicant data to determine new hires. Verifies completeness, accuracy, and timeliness of clerical personnel production. Prepares or assists in preparing papers for closings of real estate transactions, such as sales contracts and purchase agreements. Analyzes financial activities of establishment and prepares reports for review of REAL-ESTATE BROKER (real estate) 250.357-018 or other personnel. Schedules government inspections of properties to ensure that offerings meet code regulations. Contacts mortgage companies to determine insurance status of properties. Notifies utility companies of transfer of property to new owners. Performs other duties as described under SUPERVISOR (clerical) Master Title. GOE 07.01.04 PD S 08 09 10 12 13 15 18 M3 L4 SVP 7 SOC 137

249.366-010 COUNTER CLERK (photofinish.)

Receives film for processing, loads film into equipment that automatically processes film for subsequent photo printing, and collects payment from customers of photofinishing establishment: Answers customer's questions regarding prices and services. Receives film to be processed from customer and enters identification data and printing instructions on service log and customer order envelope. Loads film into equipment that automatically processes film, and routes processed film for subsequent photo printing. Files processed film and photographic prints according to customer's name. Locates processed film and prints for customer. Totals charges, using cash register, collects payment, and returns prints and processed film to customer. Sells photo supplies, such as film, batteries, and flashcubes. GOE 07.03.01 PD L 08 09 10 12 13 15 M2 L3 SVP 2 SOC 4363

249.367-074 TEACHER AIDE (education) II

Assists teaching staff of public or private elementary or secondary school by performing any combination of following duties in classroom: Calls roll and prepares attendance records. Grades homework and objective examinations, using answer sheets, and records results. Distributes teaching materials to students, such as textbooks, workbooks, or writing paper and pencils. Keeps order in classroom, library, halls, and on school grounds. Sets up and operates equipment, such as film and slide projectors and tape recorders. Prepares requisitions for library materials and stockroom supplies. May type and operate duplicating equipment to reproduce instructional materials. May be designated by school level as TEACHER AIDE, ELEMENTARY SCHOOL (education); TEACHER AIDE, SECONDARY SCHOOL (education) II. GOE 07.01.02 PD L 08 09 10 12 13 15 18 19 20 M3 L3 SVP 3 SOC 4795

249.367-082 PARK AIDE (gov. ser.) park technician; ranger aide.

Assists PARK RANGER (gov. ser.) 169.167-042 or PARK SUPERINTENDENT (gov. ser.) 188.167-062 in operation of State or national park, monument, historic site, or recreational area through performance of any combination of clerical and other duties: Greets visitors at facility entrance and explains regulations. Assigns campground or recreational vehicle sites and collects fees at park offering camping facilities. Monitors campgrounds, cautions visitors against infractions of rules, and notifies PARK RANGER (gov. ser.) 169.167-042 of problems. Replenishes firewood and assists GROUNDSKEEPER, PARKS AND GROUNDS (gov. ser.) 406.687-010 to maintain camping and recreational areas in clean and orderly condition. Conducts tours of premises and answers visitors' questions when stationed at historic park, site, or monument. Operates projection and sound equipment and assists PARK RANGER (gov. ser.) 169.167-042 in presentation of interpretive programs. Provides simple first-aid treatment to visitors injured on premises and assists persons with more serious injuries to obtain appropriate medical care. Participates in carrying out fire-fighting or conservation activities. Assists other workers in activities concerned with restoration of buildings and other facilities, or excavation and preservation of artifacts when stationed at historic or archeological site. GOE 07.04.03 PD L 12 13 15 16 17 18 19 20 EC 01 M3 L4 SVP 3 SOC 4645

249.367-086 SATELLITE-INSTRUCTION FACILITATOR (education) satellite-project site monitor.

Monitors training programs transmitted by communication satellite from institution of higher learning to remote educational institution or facility: Registers students for satellite communication courses and sells and distributes textbooks and other classroom materials. Activates audiovisual receiver and monitors classroom viewing of live or recorded courses transmitted by communication satellite. Stimulates classroom discussion immediately after broadcast, following standardized format. Monitors live seminar transmittals from institute of higher learning, elicits responses from classroom students, and consolidates and transmits students' questions by teletype or telephone to seminar participants for direct response via satellite. Distributes homework assignments and test blanks to students. Collects completed assignments and tests and mails them to institute of higher learning. Maintains class attendance records. GOE 07.01.02 PD S 08 09 10 12 13 15 M2 L3 SVP 3 SOC 4795

249.367-090 ASSIGNMENT CLERK (clerical)

Compiles data to notify establishment personnel of position vacancies and identifies and assigns qualified applicants, following specified guidelines and procedures: Scans reports to detect listings of vacancies or receives telephone notices of vacancies from establishment personnel. Types or writes information, such as position titles, shifts, days off, and application deadlines, on vacancy advertisement forms. Reviews bid slips or similar application forms submitted by employees in response to advertisement and verifies relevant data on application against data in personnel records. Selects applicants meeting specified criterion, such as seniority, and notifies concerned personnel of selection. Compiles and disperses position assignment notices to notify other establishment personnel of applicants selected to fill vacancies. Records data on specified forms to update personnel and employment records. GOE 07.05.03 PD S 09 10 15 M2 L2 SVP 5 SOC 4692

249.587-018 DOCUMENT PREPARER, MICROFILMING (bus. ser.)

Prepares documents, such as brochures, pamphlets, and catalogs, for microfilming, using paper cutter, photocopying machine, rubber stamps, and other work devices: Cuts documents into individual pages of standard microfilming size and format when allowed by margin space, using paper cutter or razor knife. Reproduces document pages as necessary to improve clarity or to reduce one or more pages into single page of standard microfilming size, using photocopying machine. Stamps standard symbols on pages or inserts instruction cards between pages of material to notify MICROFILM-CAMERA OPERATOR (bus. ser.) 976.682-022 of special handling, such as manual repositioning, during microfilming. Prepares cover sheet and document folder for material and index card for company files indicating information, such as firm name and address, product category, and index code, to identify material. Inserts material to be filmed in document folder and files folder for processing according to index code and filming priority schedule. GOE 07.05.03 PD S 08 09 10 15 17 19 M1 L2 SVP 2 SOC 4759

251.157-014 SALES REPRESENTATIVE, DATA-PROCESSING SERVICES (bus. ser.)

Contacts representatives of government, business, and industrial organizations to solicit business for data-processing establishment: Calls on prospective clients to explain types of services provided by establishment, such as inventory control, payroll processing, data conversion, sales analysis, and financial reporting. Analyzes data-processing requirements of prospective client and draws up prospectus of data-processing plan designed specifically to serve client's needs. Consults SYSTEMS ANALYST, ELECTRONIC DATA PROCESSING (profess. & kin.) 012.167-066 and SYSTEMS ENGINEER, ELECTRONIC DATA PROCESSING (profess. & kin.) 003.167-062 employed by data-processing establishment to secure information concerning methodology for solving unusual problems. Quotes prices for services outlined in prospectus. Revises or expands pro-

spectus to meet client's needs. Writes order and schedules initiation of services. Periodically confers with clients and establishment personnel to verify satisfaction with service or to resolve complaints. GOE 08.01.02 PD L 12 13 15 M5 L5 SVP 7 SOC 4152

251.257-022 FINANCIAL PLANNER (profess. & kin.)

Develops and implements financial plans for individuals, businesses, and organizations, utilizing knowledge of tax and investment strategies, securities, insurance, pension plans, and real estate: Interviews client to determine client's assets, liabilities, cash flow, insurance coverage, tax status, and financial objectives. Analyzes client's financial status, develops financial plan based on analysis of data, and discusses financial options with client. Prepares and submits documents to implement plan selected by client. Maintains contact with client to revise plan based on modified needs of client or changes in investment market. May refer client to other establishments to obtain services outlined in financial plan. May sell insurance to client, recommending amount and type of coverage [SALES AGENT, INSURANCE (insurance) 250.257-010]. May buy and sell stocks and bonds for client [SALES AGENT, SECURITIES (finan. inst.) 251.157-010]. May rent, buy, and sell property for client [SALES AGENT, REAL ESTATE (real estate) 250.357-018]. May be registered with professional self-regulatory association and be designated as CERTIFIED FINANCIAL PLANNER (profess. & kin.). GOE 08.01.02 PD S 12 13 15 M3 L4 SVP 8 SOC 41

259.257-022 SALES REPRESENTATIVE, SECURITY SYSTEMS (bus. ser.)

Sells burglar, fire, and medical emergency alarm systems and security monitoring services to individuals and businesses: Contacts prospective customers to explain security monitoring services and to demonstrate alarm systems. Examines customer's home or business and analyzes customer's requirements to recommend security system to meet customer's needs. Explains operation of security system after installation. Performs other duties as described under SALES REPRESENTATIVE (ret. tr.; whole. tr.) Master Title. GOE 08.01.02 PD M 08 09 10 12 13 15 M3 L4 SVP 5 SOC 4152

261.357-074 SALESPERSON, LEATHER-AND-SUEDE APPAREL-AND-ACCESSORIES (ret. tr.)

Sells suede and leather apparel and accessories: Advises customer on selection of apparel and on coordination of accessories, such as handbags, belts, and boots. Answers questions regarding cleaning requirements, color fastness, and durability of article. Packs or wraps customer purchase. Checks merchandise deliveries against packing slips. Tickets merchandise, using ticket gun. Inventories stock. Posts daily sales from sales slips onto inventory sheet. Performs other duties as described under SALESPERSON (ret. tr.; whole. tr.) Master Title. GOE 08.02.02 PD L 08 09 12 13 19 M3 L3 SVP 5 SOC 4346

262.357-022 SALES REPRESENTATIVE, WATER-TREATMENT CHEMICALS (whole. tr.)

Contacts prospective customers to sell chemicals that treat water in boilers, cooling towers, and air wash systems: Schedules appointment to explain products and services available, inspects customer water system equipment, and prepares service estimates. Obtains sample of water to be analyzed, and ships sample to home office for analysis. Receives and reviews analysis, and contacts customers to recommend treatment to control levels of substances in water. Explains merits of program to persuade customer to purchase treatment. Attempts to resolve problems encountered with customer's water-treatment process. Sells water-treatment chemicals to customer. Performs follow-up test on water in customer water system, utilizing test kit, knowledge of chemical treatment, and reference manual. Explains test results to customers. Observes changes in water color and recommends to customer amount and type of chemical additives for necessary water treatment. GOE 08.02.01 PD S 08 09 10 12 13 15 16 17 19 20 EC 01 03 04 10 M3 L3 SVP 7 SOC 4237

295.357-018 FURNITURE-RENTAL CONSULTANT (ret. tr.) decorator consultant; rental clerk, furniture.

Rents furniture and accessories to customers: Talks to customer to determine furniture preferences and requirements. Guides or accompanies customer through showroom, answers questions, and advises customer on compatibility of various styles and colors of furniture items. Compiles list of customer-selected items. Computes rental fee, explains rental terms, and presents list to customer for approval. Prepares order form and lease agreement, explains terms of lease to customer, and obtains customer signature. Obtains credit information from customer. Forwards forms to credit office for verification of customer credit status and approval of order. Collects initial payment from customer. Contacts customers to encourage followup transactions. May visit commercial customer site to solicit rental contracts, or review floor plans of new construction and suggest suitable furnishings. May sell furniture or accessories [SALESPERSON, FURNITURE (ret. tr.) 270.357-030]. GOE 09.04.02 PD L 09 10 12 13 15 19 M2 L2 SVP 2 SOC 4363

295.367-026 STORAGE-FACILITY RENTAL CLERK (bus. ser.; ret. tr.)

Leases storage space to customers of rental storage facility: Informs customers of space availability, rental regulations, and rates. Assists customers in selection of storage unit size according to articles or material to be stored. Records terms of rental on rental agreement form and assists cus-

tomers in completing form. Photographs completed form and customer to establish identification record, using security camera. Computes rental fee and collects payment. Maintains rental status record and waiting list for storage units. Notifies customers when rental term is about to expire or rent is overdue. Inspects storage area periodically to ensure storage units are locked. Observes individuals entering storage area to prevent access to or tampering with storage units by unauthorized persons. Loads film into security and surveillance cameras, records dates of film changes, and monitors camera operations to ensure performance as required. Cleans facility and maintains premises in orderly condition. GOE 09.04.02 PD L 08 09 15 16 EC 01 M3 L3 SVP 2 SOC 4363

299.677-014 SALES ATTENDANT, BUILDING MATERIALS (ret. tr.) yard salesperson.

Assists customers and stocks merchandise in building materials and supplies department of self-service general store: Answers questions and advises customer in selection of building materials and supplies. Cuts lumber, screening, glass, and related materials to size requested by customer, using powersaws, holding fixtures, and various hand cutting tools. Assists customer in loading purchased materials into customer's vehicle. Moves materials and supplies from receiving area to display area, using forklift or handtruck. Marks prices on merchandise or price stickers, according to pricing guides, using marking devices. Straightens materials on display to maintain safe and orderly conditions in sales areas. Covers exposed materials when required to prevent weather damage. Counts materials and records totals on inventory sheets. GOE 09.04.02 PD H 04 06 08 09 10 12 13 16 17 20 EC 01 M2 L2 SVP 3 SOC 4362

301.474-010 HOUSE WORKER, GENERAL (dom. ser.) housekeeper, home.

Performs any combination of the following duties in keeping private home clean and orderly, in cooking and serving meals, and in rendering personal services to family members: Plans meals and purchases foodstuffs and household supplies. Prepares and cooks vegetables, meats, and other foods according to employer's instructions or following own methods. Serves meals and refreshments. Washes dishes and cleans silverware. Oversees activities of children, assisting them in dressing and bathing. Cleans furnishings, floors, and windows, using vacuum cleaner, mops, broom, cloths, and cleaning solutions. Changes linens and makes beds. Washes linens and other garments by hand or machine, and mends and irons clothing, linens, and other household articles, using hand iron or electric ironer. Performs additional duties, such as feeding pets and answering telephone and doorbell. Usually is only worker employed in household. GOE 05.12.18 PD M 04 05 08 09 10 M2 L2 SVP 3 SOC 507

309.367-010 HOUSE SITTER (dom. ser.)

Occupies and oversees house to maintain order and security of property and conduct necessary business transactions during temporary absence of owner, renter, or other occupant: Monitors entrances to property and secures locks and other devices to prevent access of unauthorized persons. Answers telephone and doorbell, takes messages, and forwards information to employer as requested. Forwards or files mail. Pays current bills from designated funds and makes deposits to accounts as required. Cleans, vacuums, and dusts house, using vacuum cleaner and other housecleaning aids. Feeds and waters pets and takes ill pets to veterinarian for treatment. Inspects utilities, such as plumbing and air conditioning, to detect problems requiring services of repairer and contacts repair establishment to arrange for necessary repairs. May care for swimming pool or grounds or perform other related duties. GOE 09.05.06 PD L 08 09 10 12 13 15 M2 L2 SVP 2 SOC 509

311.472-010 FAST-FOODS WORKER (hotel & rest.) cashier, fast foods restaurant.

Serves customer of fast food restaurant: Requests customer order and depresses keys of multi-counting machine to simultaneously record order and compute bill [FOOD TABULATOR, AUTOMATED SYSTEM (hotel & rest.) 211.582-010]. Selects requested food items from serving or storage areas and assembles items on serving tray or in takeout bag. Notifies kitchen personnel of shortages or special orders. Serves cold drinks, using drink-dispensing machine, or frozen milk drinks or desserts, using milkshake or frozen custard machine. Makes and serves hot beverages, using automatic water heater or coffeemaker. Presses lids onto beverages and places beverages on serving tray or in takeout container. Receives payment. May cook or apportion french-fries or perform other minor duties to prepare food, serve customers, or maintain orderly eating or serving areas. GOE 09.04.01 PD L 08 09 10 12 13 15 M2 L2 SVP 2 SOC 5216

319.137-030 KITCHEN SUPERVISOR (hotel & rest.) dietary assistant; manager, kitchen.

Supervises and coordinates activities of food preparation, kitchen, pantry, and storeroom personnel and purchases or requisitions foodstuffs and kitchen supplies: Plans or participates in planning menus, preparing and apportioning foods, and utilizing food surpluses and leftovers. Specifies number of servings to be made from any vegetable, meat, beverage, and dessert to control portion costs. Supervises noncooking personnel, such as KITCHEN HELPER (hotel & rest.) 318.687-010, to ensure cleanliness of kitchen and equipment. Supervises COOK (hotel & rest.) 313.361-

014 and tastes, smells, and observes food to ensure conformance with recipes and appearance standards. Supervises workers engaged in inventory, storage, and distribution of foodstuffs and supplies. Purchases foodstuffs, kitchen supplies, and equipment, or requisitions them from PURCHASING AGENT (profess. & kin.) 162.157-038. Hires and discharges employees. Trains new workers. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May set prices to be charged for food items. May meet with professional staff, customers, or client group to resolve menu inconsistencies or to plan menus for special occasions. May assist dietitian to plan, change, test, and standardize recipes to increase number of servings prepared. This job occurs typically in restaurants, cafeterias, and institutions as opposed to STEWARD/STEWARDESS (hotel & rest.) 310.137-018 which occurs typically in hotels. GOE 05.10.08 PD M 08 09 12 13 14 15 18 19 EC 04 M3 L4 SVP 7 SOC 5211

319.464-014 VENDING-MACHINE ATTENDANT (hotel & rest.)

Stocks machines and assists customers in facility where food is dispensed from coin-operated machines: Places food or drink items on shelves of vending machines and changes shelf labels as required to indicate selections. Makes change for customers and answers questions regarding selections. Adjusts temperature gauges to maintain food items at specified temperatures. Performs minor repairs or adjustments on machines to correct jams or similar malfunctions, using handtools. Prepares requisitions for food and drink supplies. Cleans interior and exterior of machines, using damp cloth. Maintains eating area in orderly condition. May sell pre-cooked foods from hot table. May remove money from vending machines and keep records of receipts. GOE 09.04.01 PD L 08 09 10 12 13 15 M2 L2 SVP 2 SOC 5219

320.137-014 MANAGER, LODGING FACILITIES (hotel & rest.)

Manages and maintains temporary or permanent lodging facilities, such as small apartment houses, motels, small hotels, trailer parks, and boat marinas: Shows and rents or assigns accommodations. Registers guests. Collects rents and records data pertaining to rent funds and expenditures. Resolves occupants' complaints. Purchases supplies and arranges for outside services, such as fuel delivery, laundry, maintenance and repair, and trash collection. Provides telephone answering service for tenants, delivers mail and packages, and answers inquiries concerning travel routes, recreational facilities, scenic attractions, and eating establishments. Cleans public areas, such as entrances, halls, and laundry rooms, and fires boilers. Makes minor electrical, plumbing, and structural repairs. Mows and waters lawns, and cultivates flower beds and shrubbery. Cleans accommodations after guests' departure. Provides daily maid service in overnight accommodations. May rent equipment, such as rowboats, water skis, and fishing tackle. May coordinate intramural activities of patrons of park. May arrange for medical aid for park patron. May sell light lunches, candy, tobacco, and other sundry items. May be designated according to type of establishment managed as MANAGER, APARTMENT HOUSE (hotel & rest.); MANAGER, HOTEL (hotel & rest.); MANAGER, MARINA (hotel & rest.); MANAGER, MOTEL (hotel & rest.); MANAGER, TOURIST CAMP (hotel & rest.); MANAGER, TRAILER PARK (hotel & rest.). GOE 11.11.01 PD M 08 09 12 13 M3 L4 SVP 7 SOC 1351

323.687-010 CLEANER, HOSPITAL (medical ser.)

Cleans hospital wards, rooms, baths, laboratories, offices and halls: Washes bedframes, brushes mattresses, and remakes beds after dismissal of patients. Keeps utility and storage rooms in neat and orderly condition. Distributes laundered articles and linens in wards. Replaces soiled drapes and cubicle curtains in wards. Performs other duties as described under CLEANER (any ind.) I Master Title. May serve patients' meals and remove trays and dishes. May disinfect and sterilize equipment and supplies, such as rubber gloves, syringes, and test tubes, using germicides and sterilizing equipment. GOE 05.12.18 PD M 04 05 06 09 10 EC 04 M1 L2 SVP 2 SOC 5242

329.161-010 MANAGER, CAMP (amuse. & rec.)

Directs operation of recreation camp and coordinates activities of staff: Inspects camp facilities prior to campers' arrival for condition of pool, buildings, and recreation equipment. Assigns staff to camp maintenance duties in area, such as painting, plumbing, and carpentry; and inspects completed work, utilizing experience and knowledge. Inspects facilities prior to campers' departure to determine damage assessments. Registers and informs campers about camp accommodations and regulations. Prepares and collects fees, and issues receipts. GOE 11.11.02 PD H 08 09 10 12 13 15 M3 L3 SVP 7 SOC 1352

331.674-014 FINGERNAIL FORMER (per. ser.)

Forms artificial fingernails on customer's fingers: Roughens surfaces of fingernails, using abrasive wheel. Attaches paper forms to tips of customer's fingers to support and shape artificial nails. Brushes coats of powder and solvent onto nails and paper forms with handbrush to extend nails to desired length. Removes paper forms and shapes and smooths edges of nails, using rotary abrasive wheel. Brushes additional powder and solvent onto new growth between cuticles and nails to maintain nail appearance. May soften, trim, or cut cuticles, using oil, water, knife, or scissors, to prepare customer's nails for application of artificial nails. GOE 09.05.01 PD S 08 09 10 11 15 17 M1 L2 SVP 3 SOC 5253

342.667-014 ATTENDANT, ARCADE (amuse. & rec.)

Assists patrons of amusement facility, and performs minor repairs on game machines: Explains operation of game machines to patrons and ex-

changes coins for paper currency. Listens to patron complaints regarding malfunction of machines. Removes coin acceptor mechanism of machines, using key, and observes mechanism to detect causes of malfunctions, such as bent coins, slugs, or foreign material. Removes obstructions, repositions mechanism, inserts coins, and observes machine operation to determine whether malfunctions are still present. Places out-of-order signs on defective machines and returns money lost in defective machines to patrons. Notifies maintenance department of defective machines, and records times of machine malfunctions and repairs to maintain required records. Observes conduct of patrons in facility to ensure orderliness, and asks disruptive patrons to leave. GOE 09.04.02 PD L 09 10 12 13 15 20 M2 L2 SVP 2 SOC 5254

343.467-018 GAMBLING DEALER (amuse. & rec.)

Conducts game at gambling table, such as dice, roulette, or cards, in gambling establishment: Exchanges paper currency for playing chips or coin money. Ensures that all wagers are placed before cards are dealt, roulette wheel is spun, or dice are tossed. Announces winning number or color to players. Computes payable odds to pay winning bets. Pays winning bets and collects losing bets. May be designated according to specialty as BACCARAT DEALER (amuse. & rec.); DICE DEALER (amuse. & rec.); ROULETTE DEALER (amuse. & rec.); TWENTY-ONE DEALER (amuse. & rec.). GOE 09.04.02 PD L 08 09 10 12 13 15 18 19 20 M3 L3 SVP 3 SOC 5254

343.467-022 KENO WRITER (amuse. & rec.)

Conducts keno game in gambling establishment: Receives, verifies, and records cash wagers of customers. Starts gaming equipment that randomly selects numbered balls. Announces number of each ball selected until number of balls specified for each game is selected. Scans winning tickets presented by customers, calculates amount of winnings, and pays customers, utilizing knowledge of rules and payoffs of game. GOE 09.04.02 PD L 08 09 10 12 13 15 17 18 M3 L3 SVP 4 SOC 5254

349.477-010 JINRIKISHA DRIVER (amuse. & rec.) rickshaw driver.

Conveys passengers to destinations, using three-wheeled vehicle: Pumps pedals and turns handlebars to propel and steer vehicle along roadway to attract and convey passengers for novelty rides. Assists passengers into carriage of vehicle and asks their destination. Records time or odometer reading at start of trip. Conveys passengers to specified destination. Computes fare according to miles traveled or time expended and collects payment. GOE 01.07.03 PD M 08 09 12 13 16 17 19 20 EC 01 M2 L2 SVP 1 SOC 5269

349.664-010 AMUSEMENT PARK WORKER (amuse. & rec.)

Performs any combination of following duties in amusement park: Escorts patrons on tours of park's points of interest. Takes pictures of patrons to impart pictures onto T-shirts, using camera, automatic printing equipment, and heating press. Maintains and distributes uniforms worn by park employees. Cleans park grounds, office facilities, and restroom areas, using broom, dust pan, or vacuum cleaner. Distributes literature, such as maps, show schedules, and pass information, to acquaint visitors with park facilities. Monitors activities of children using park playground area to ensure safe use of equipment. Directs patrons to seats for park attractions and opens doors to assist patrons' entry and exit from attractions. Receives cash for tickets or items sold to patrons and records sales, using cash register. GOE 09.01.01 PD M 08 09 12 13 M2 L2 SVP 2 SOC 5254

349.677-018 CHILDREN'S ATTENDANT (amuse. & rec.)

Monitors behavior of unaccompanied children in children's section of theater to maintain order: Escorts children who are unaccompanied by adult between theater entrance and children's section when children enter or leave theater. Maintains order among children and searches for lost articles. Notes when each child enters section and reminds child to go home after witnessing complete performance. GOE 09.05.08 PD L 12 13 16 20 M1 L1 SVP 2 SOC 5256

355.374-014 MEDICATION AIDE (medical ser.) pharmacy technician.

Administers prescribed medications to patients and maintains related medical records under supervision of NURSE, GENERAL DUTY (medical ser.) 075.374-010, PHARMACIST, HOSPITAL (profess.& kin.) 074.161-010, or similar personnel: Receives supply of ordered medications and apportion, mixes, or assembles drugs for administration to patients. Verifies identity of patient receiving medication and records name of drug, dosage, and time of administration on specified forms or records. Presents medication to patient and observes ingestion or other application, or administers medication, using specified procedures. Takes vital signs or observes patient to detect response to specified types of medications and prepares report or notifies designated personnel of unexpected reactions. Documents reasons for which prescribed drugs are not administered, such as discharge of patient. May record and restock medication inventories. May give direct patient care such as bathing, dressing, and feeding patients, and assisting in examinations and treatments [NURSE AIDE (medical ser.) 355.674-014]. GOE 10.03.02 PD L 08 09 10 11 12 13 15 17 18 19 M3 L3 SVP 4 SOC 5233

355.377-018 MENTAL-RETARDATION AIDE (medical ser.) resident care aide.

Assists in providing self-care training and therapeutic treatments to residents of mental retardation center: Demonstrates activities such as bathing and dressing to train residents in daily self-care practices. Converses with residents to reinforce positive behaviors and to promote social interaction. Serves meals and eats with residents to act as role model. Accompanies residents on shopping trips and instructs and counsels residents in purchase of personal items. Aids staff in administering therapeutic activities, such as physical exercises, occupational arts and crafts, and recreational games, to residents. Restrains disruptive residents to prevent injury to themselves and others. Observes and documents residents' behaviors, such as speech production, feeding patterns, and toilet training, to facilitate assessment and development of treatment goals. Attends to routine health-care needs of residents under supervision of medical personnel. May give medications as prescribed by PHYSICIAN (medical ser.). May train parents or guardians in care of deinstitutionalized residents. GOE 10.03.02 PD M 08 09 12 13 15 17 18 19 20 EC 14 M3 L3 SVP 6 SOC 5233

355.674-018 ORDERLY (medical ser.)

Performs any combination of following duties, as directed by nursing and medical staff, to care for hospitalized patients: Bathes patients and gives alcohol rubs. Cleans and shaves hair from skin area of operative cases. Measures and records intake and output of liquids, and takes and records temperature, and pulse and respiration rate. Gives enemas. Carries meal trays to patients. Lifts patients onto and from bed, and transports patients to hospital areas, such as operating and x-ray rooms, by rolling bed or using wheelchair or wheeled stretcher. Sets up equipment, such as oxygen tents, portable x-ray machines, and overhead irrigation bottles. Places anesthesia equipment near operating table, and assists in holding patient on table during administration of anesthetic. Sets up bone fracture equipment and assists PHYSICIAN (medical ser.) in putting on casts and braces. Maintains supply of hospital clothing for attending PHYSICIANS (medical ser.). Makes beds and collects soiled linen. Cleans rooms and corridors. Bathes deceased patients, accompanies body to morgue, and places personal belongings in mortuary box. May administer catheterizations and bladder irrigations. May accompany discharged mental patients home or those transferred to other institutions. GOE 10.03.02 PD H 04 08 09 10 11 12 13 15 17 18 19 EC 04 07 14 M2 L3 SVP 4 SOC 5236

355.674-022 RESPIRATORY-THERAPY AIDE (medical ser.)

Assists personnel in Respiratory Therapy Department of hospital, performing any or all of following tasks: Cleans, disinfects, and sterilizes equipment and supplies used in administration of respiratory therapy, using sponges, brushes, and cleaning solutions, and placing items in sterilization chamber for designated time period to ensure absence of contamination. Examines equipment to detect indications of disrepair, such as worn tubes or loose connections, and notifies supervisory staff when such indications are noted. Actuates equipment and observes gauges measuring pressure, rate of flow, and continuity to test equipment, and notifies supervisor when malfunctions are observed. Assists supervisory personnel in maintenance of inventory records. Delivers oxygen tanks and other equipment and supplies to specified hospital locations. Answers phone and takes and relays messages regarding department operations. Assists in administration of gas or aerosol therapy to patients. GOE 10.03.02 PD M 08 09 10 12 13 15 17 18 M3 L3 SVP 4 SOC 5233

355.674-026 GERIATRIC NURSE ASSISTANT (medical ser.)

Assists nursing staff in providing care to geriatric patients, applying knowledge of and techniques for dealing with problems associated with aging: Assists, instructs, or serves as role model for dysfunctional patients attempting to regain basic living skills, such as dressing, performing oral and personal hygiene, eating, grooming, communicating, ambulation, bladder and bowel control, and personal conduct. Gives direct patient care, such as bathing, dressing, and feeding patients, and assists in examinations and treatments. [NURSE AIDE (medical ser.) 355.674-014]. May perform range of motion exercises with patients, such as flexing arms, legs, hands, feet, and neck, to prevent contraction of muscles and to maintain flexibility of joints. GOE 10.03.02 PD M 08 09 12 13 15 M2 L3 SVP 3 SOC 5236

359.363-010 HEALTH-EQUIPMENT SERVICER (medical ser.)

Delivers, installs, demonstrates, and maintains rental medical equipment, such as respirator, oxygen equipment, hospital beds, and wheelchairs, for use in private residences: Loads medical equipment on truck and delivers equipment to renter's or patient's residence. Unloads, installs, and sets up equipment, using handtools. Inspects and maintains rental oxygen equipment, performing such tasks as inspecting hoses and water traps to detect leaks and condensation; observing gauges of oxygen analyzer, pressure gauges, and other monitoring equipment to determine pressure and oxygen content of air output of compressors and concentrators; and changing filters. Maintains record on oxygen equipment by hours of usage to determine need for maintenance. GOE 05.08.03 PD V 08 09 10 12 13 15 16 17 18 20 EC 14 M2 L3 SVP 5 SOC 8214

359.367-014 WEIGHT-REDUCTION SPECIALIST (per. ser.) nutrition educator.

Assists clients in devising and carrying out weight-loss plan, using established dietary programs and positive reinforcement procedures: Interviews

client to obtain information on weight development history, eating habits, medical restrictions, and nutritional objectives. Weighs and measures client, using measuring instruments, and enters data on client record. Discusses eating habits with client to identify dispensable food items and to encourage increased consumption of high nutrition, low calorie food items, or selects established diet program which matches client goals and restrictions. Explains program and procedures which should be followed to lose desired amount of weight, and answers client questions. Reviews client food diary at regular intervals to identify eating habits which do not coincide with established or agreed upon dietary program, and reviews weight loss statistics to determine progress. Counsels client to promote established goals and to reinforce positive results. May photograph client during therapy to provide visual record of progress. May conduct aversion therapy, utilizing electric shock, rancid odors, and other physical or visual stimuli to promote negative association with food designated for elimination from diet. May conduct positive conditioning therapy sessions, utilizing physical and visual stimuli to promote positive association with foods designated for increase in diet. May give client weight-loss aids, such as calorie counters, or sell nutritional products to be used in conjunction with diet program. GOE 09.05.01 PD L 09 10 12 13 15 M2 L3 SVP 3 SOC 5269

359.677-030 RESEARCH SUBJECT (any ind.) subject, scientific research.

Submits to scientifically conducted research relating to such fields as medicine, psychology, or consumer-product testing: Participates in activities such as performing physical tasks, taking psychological tests, or using experimental products, following instructions of researcher. Replies verbally or records responses to questionnaire to provide researcher with data for evaluation. GOE 09.05.06 PD L 12 13 M2 L3 SVP 1 SOC 5269

372.667-018 CORRECTION OFFICER (gov. ser.) guard.

Guards inmates in penal institution in accordance with established policies, regulations, and procedures: Observes conduct and behavior of inmates to prevent disturbances and escapes. Inspects locks, window bars, grills, doors, and gates for tampering. Searches inmates and cells for contraband articles. Guards and directs inmates during work assignments. Patrols assigned areas for evidence of forbidden activities, infraction of rules, and unsatisfactory attitude or adjustment of prisoners. Reports observations to superior. Employs weapons or force to maintain discipline and order among prisoners, if necessary. May escort inmates to and from visiting room, medical office, and religious services. May guard entrance of jail to screen visitors. May prepare written report concerning incidences of inmate disturbances or injuries. May be designated according to institution as CORRECTION OFFICER, CITY OR COUNTY JAIL (gov. ser.); CORRECTION OFFICER, PENITENTIARY (gov. ser.); CORRECTION OFFICER, REFORMATORY (gov. ser.). May guard prisoners in transit between jail, courtroom, prison, or other point, traveling by automobile or public transportation and be designated GUARD, DEPUTY (gov. ser.). GOE 04.02.01 PD M 08 09 12 13 16 17 20 EC 14 M2 L2 SVP 4 SOC 5133

375.137-030 COMMANDER, POLICE RESERVES (gov. ser.)

Supervises and coordinates activities of police reserve officers to support police personnel at special functions: Writes news releases for press, radio, and television and speaks before community and business groups to recruit police reserve volunteers. Confers with potential reservists to explain policies, duties, responsibilities, and working conditions, and to provide other pertinent information. Reviews applications, results of physical and psychological examinations, oral interviews, and background information to determine suitability of candidates. Plans and coordinates instruction to train reservists in basic police techniques. Issues uniforms, arms, and equipment to reservists. Reviews schedules to determine areas of need and coordinates assignments of reservists to support police personnel at special functions, such as parades and sporting events. Observes reservists at work to evaluate work performance. GOE 04.01.01 PD L 12 13 M3 L3 SVP 8 SOC 5112

375.137-034 COMMANDING OFFICER, POLICE OFFICER (gov. ser.) III

Supervises and coordinates activities of personnel engaged in locating and apprehending fugitives and others sought for various reasons and in locating missing persons: Supervises work of POLICE OFFICER (gov. ser.) III 375.267-038. Inspects vehicles to detect damage and determine maintenance needs. Prepares reports to document personnel activities and budget requirements. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 04.01.01 PD L 12 13 M3 L4 SVP 8 SOC 5112

375.137-038 COMPLAINT EVALUATION SUPERVISOR (gov. ser.)

Supervises and coordinates activities of workers engaged in receiving telephone requests for police services: Supervises work of COMPLAINT EVALUATION OFFICER (gov. ser.) 375.367-014. Confers with workers to resolve problems when decision involving procedure or action to be taken is questionable. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 07.04.05 PD L 08 09 10 12 13 M2 L3 SVP 8 SOC 5112

375.167-050 COMMANDER, INTERNAL AFFAIRS (gov. ser.)

Directs activities of workers engaged in investigating accusations against police personnel, administering disciplinary actions and inspecting police personnel and equipment: Directs investigative work of internal affairs personnel to gather information for presentation at hearings in response to accusations against police personnel or deficiencies in performance. Schedules hearings to permit complainant or accused officer to appeal recommended disciplinary action. Supervises work of POLICE INSPECTOR (gov. ser.) I 375.267-026. GOE 04.01.01 PD L 12 13 M3 L4 SVP 8 SOC 5112

375.167-054 POLICE ACADEMY PROGRAM COORDINATOR (gov. ser.)

Plans and coordinates training programs for recruits, in-service police officers, licensed security guards, and other law enforcement personnel: Reviews police technology and law enforcement literature, surveys agency personnel, and confers with Police Academy and Police Department administrators to determine training needs, assess current programs, and propose new courses. Determines feasibility of proposed courses based on factors such as number of registrants, availability of instructors, and funds allocation. Arranges for course instructors, allocates space, and ensures availability of training materials and equipment. Assists instructors during training sessions and evaluates course effectiveness. Maintains enrollee records. May specialize in coordinating training in specific area, such as security, police vehicle driving, or firearms. GOE 04.01.01 PD L 08 09 12 13 15 16 20 M3 L4 SVP 7 SOC 5132

375.264-010 POLICE OFFICER, CRIME PREVENTION (gov. ser.)

Inspects dwellings and public buildings to evaluate security needs and to recommend measures to make premises less vulnerable to crime, and installs burglar alarm systems: Inspects locks, window barriers, alarms, lighting, and other features to evaluate needs and to recommend actions to strengthen security. Lends etching tools to individuals to inscribe identifying information on personal and household articles. Installs portable self-contained protective signal systems and positions sensing devices at strategic locations to detect burglary or other irregularities and to notify police. Inspects equipment to detect malfunctions. Addresses community groups to inform citizens of crime prevention and security methods. May compile and analyze data from patrol unit reports to identify patterns of crime and to recommend changes in police patrols to prevent further crimes. GOE 04.01.02 PD M 08 09 12 13 M3 L4 SVP 7 SOC 5132

375.267-034 INVESTIGATOR, INTERNAL AFFAIRS (gov. ser.)

Investigates complaints filed against police officers by citizens: Interviews complainant to identify officers being accused and to obtain facts concerning complaints. Interviews accused officers to obtain responses to accusations. Records interviews, using recording device, and prepares charges and responses to charges, using recorded information as reference. Conducts investigations to establish facts supporting complainant or accused, using supportive information from witnesses or tangible evidence. Schedules polygraph test for consenting parties, and records results of test interpretations for presentation with findings. Writes report of findings from results of investigation and submits reports to commanding officer for review. Testifies at hearings as requested. GOE 07.01.06 PD L 08 09 10 12 13 15 M3 L4 SVP 7 SOC 1473

375.267-038 POLICE OFFICER (gov. ser.) III

Conducts investigations to locate, arrest, and return fugitives, persons wanted for non-payment of support payments and unemployment insurance compensation fraud, and to locate missing persons: Reviews files and criminal records to develop possible leads, such as previous addresses and aliases. Contacts employers, neighbors, relatives, law enforcement agencies, and other persons to locate person sought. Obtains necessary legal documents, such as warrants or extradition papers, to bring about return of fugitive. Serves warrants and makes arrests to return persons sought. Examines medical and dental x rays, fingerprints, and other information to identify bodies held in morgue. Completes reports to document information acquired and actions taken. Testifies in court to present evidence regarding cases. GOE 04.01.02 PD M 12 13 EC 14 M2 L3 SVP 7 SOC 5132

375.267-042 POLICE OFFICER, SAFETY INSTRUCTION (gov. ser.)

Conducts training programs to enhance public and personal safety and law enforcement: Collects and organizes materials, prepares and delivers lectures, and plans and implements activities to educate and advise school students, teachers, parents, and civic and business groups on such topics as personal and public safety, drugs, safe driving, and law enforcement. Coordinates activities between schools, clubs and other organizations, and police department to administer crime prevention programs. Talks with students, teachers, parents, and other individuals to establish rapport, identify problems, offer assistance, and to aid students in danger of becoming delinquent. Carries out investigations to prevent crimes and solve criminal cases [DETECTIVE (gov. ser.) 375.267-010]. May survey premises of homes, businesses, and other establishments to evaluate needs and to recommend safety and security measures. GOE 04.01.02 PD L 12 13 M2 L3 SVP 6 SOC 5132

375.362-010 POLICE CLERK (gov. ser.)

Compiles daily duty roster and types and maintains various records and reports in municipal police department to document information, such as daily work assignments, equipment issued, vacation scheduled, training

records, and personnel data: Prepares duty roster to indicate such personnel information as days on, days off, equipment assigned, and watch. Arranges schedule to most efficiently use personnel and equipment and ensure availability of personnel for court dates. Submits roster to superior for approval. Compiles and records data to maintain personnel folders. Reviews duty roster, personnel folders, and training schedules to schedule training for police personnel. Performs other duties as described under POLICE AIDE (gov. ser.) 243.362-014. GOE 07.05.01 PD S 08 09 10 15 M3 L3 SVP 6 SOC 463

375.367-014 COMPLAINT EVALUATION OFFICER (gov. ser.)

Evaluates telephone requests for police services and monitors alarm systems to determine urgency of requests and need to dispatch patrol car: Converses with telephone caller to obtain information and respond to requests for police services. Evaluates information received to determine if patrol car should be dispatched immediately, dispatched on delayed basis, or if situation can be resolved without patrol car being dispatched. Observes light and sound signals on wall panel to monitor alarm systems of fire department, private protective agencies, citizen band radio, city hall, and/or other buildings. Relays information to DISPATCHER, RADIO (gov. ser.) 379.362-010 when patrol car is to be dispatched. GOE 07.04.05 PD S 10 12 13 15 16 19 20 M2 L3 SVP 6 SOC 5132

375.367-018 POLICE OFFICER, BOOKING (gov. ser.)

Completes and maintains various records to book and process prisoners: Prepares reports to document arrest information, such as name, address, charge, and arresting officer. Fingerprints and searches prisoners. Records personal property of prisoners and seals property in envelope. Logs and forwards arrest registers to teleprocessing unit to enter information into computer-based information system. Monitors arrest registers, using computer-based information system to ensure timely processing of prisoners in accordance with procedural requirements. Reviews booking reports of prisoners arrested in other districts to verify completeness and accuracy of reports. Schedules pre-trial interviews, prepares court dockets, and releases prisoners in response to bail being posted to process prisoners. Answers inquiries to explain procedures, give status of individuals, verify information, and expedite processing of prisoners. GOE 04.02.01 PD L 08 09 10 12 13 15 M3 L3 SVP 4 SOC 5132

377.267-010 DEPUTY UNITED STATES MARSHAL (gov. ser.)

Enforces law and order under jurisdiction of Federal courts: Receives prisoners into Federal custody. Escorts prisoners to and from jails and courts, and guards prisoners during hospitalization. Provides protection to court personnel, jurors, and witnesses or their families. Serves civil and criminal writs. Reviews records, gathers information, and traces and arrests individuals named in criminal warrants. Assists Federal agencies in matters such as investigations, raids, and arrests as directed. Seizes property pursuant to court orders. GOE 04.01.02 PD M 08 09 12 13 15 16 18 20 EC 01 14 M2 L3 SVP 5 SOC 5134

379.132-010 SUPERVISOR, TELECOMMUNICATOR (gov. ser.)

Supervises and coordinates activities of workers engaged in receiving emergency or non-emergency calls, dispatching personnel and equipment, and providing pre-arrival instructions to callers: Prepares work schedules to ensure that sufficient shift personnel are available for work load demands, using knowledge of supervisory techniques, department regulations, and procedures. Teaches emergency medical dispatch course to new employees, using dispatch simulator. Reviews dispatch office operations to identify technical and operational training needs. Teaches courses dealing with hazardous materials, highrise fires, and medical triage to update training for TELECOMMUNICATOR (gov. ser.) 379.362-018. Meets with committees composed of representatives from fire and police departments, public, and other interested groups to develop, review, and up date policies and procedures for dispatch office. Pushes buttons, flips power switches, and reads gauges to determine serviceability of backup emergency equipment. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 07.04.05 PD S 08 09 10 12 13 15 18 19 M2 L4 SVP 7 SOC 4751

379.137-022 SUPERVISOR, PROTECTIVE-SIGNAL OPERATIONS (bus. ser.)

Supervises and coordinates activities of workers engaged in monitoring protective-signaling system controls and investigating alarm signals transmitted from subscriber premises: Confers with workers to help resolve difficulties encountered during monitoring of system controls and investigation of alarms. Monitors system equipment displays, scans system operations reports, and talks to subscribers to ensure that systems operate according to company and subscriber specifications. Schedules repair of defective installations and equipment. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 07.04.05 PD L 08 09 12 13 15 20 M3 L3 SVP 7 SOC 501

379.227-010 INSTRUCTOR-TRAINER, CANINE SERVICE (gov. ser.)

Instructs police officers in handling of dogs for police work in canine training facility: Instructs police officers in dog training techniques, such as obedience training, tracking, and crowd control. Demonstrates dog handling techniques with dog on and off leash, using trained dog. Instructs officers on subjects related to use of dogs in police work, such as theory of scent and narcotics and bomb detection. Informs officers (handlers) of

health care of dogs and responsibilities of handlers. Observes officer and dog teams during practice sessions, and offers suggestions to improve handling techniques when necessary. Contacts representatives of other police departments and law enforcement agencies throughout country to keep training updated and to schedule training sessions. Conducts tours of facility and explains importance of dogs in police work. Purchases dog food and supplies and directs maintenance of facility. GOE 03.03.01 PD L 08 09 10 12 13 20 M2 L3 SVP 7 SOC 5149

379.263-014 PUBLIC-SAFETY OFFICER (gov. ser.)

Patrols assigned beat and responds to emergency calls to protect persons or property from crimes, fires, or other hazards: Patrols assigned area on foot or horseback or using vehicle to regulate traffic, control crowds, prevent crime, or arrest violators. Responds to crimes in progress, initiating actions such as aid to victims and interrogation of suspects. Attends public gatherings to maintain order. Responds to fire alarms or other emergency calls. Forces openings in buildings for ventilation of fire or for entry, using ax or crowbar. Controls and extinguishes fires, using water and chemicals. Administers first aid and artificial respiration to injured persons. Participates in drills and emergency precautionary demonstrations. May inspect establishments for compliance with local regulations. May drive and operate firefighting and other emergency equipment. GOE 04.01.02 PD V 02 03 08 09 12 13 15 16 17 18 19 20 EC 01 03 04 05 07 09 10 12 14 M3 L3 SVP 7 SOC 5149

379.362-018 TELECOMMUNICATOR (gov. ser.) dispatcher.

Operates communication equipment to receive incoming calls for assistance and dispatches personnel and equipment to scene of emergency: Operates telephone console to receive incoming calls for assistance. Questions caller to determine nature of problem and type and number of personnel and equipment needed, following established guidelines. Scans status charts and computer screen to determine units available. Monitors alarm system signals that indicate location of fire or other emergency. Operates two-way radio to dispatch police, fire, medical, and other personnel and equipment and to relay instructions or information to remove units. Types commands on computer keyboard to update files and maintain logs. Tests communications and alarm equipment and backup systems to ensure serviceability. May provide pre-arrival instructions to caller, utilizing knowledge of emergency medical techniques. May activate alarm system to notify fire stations. GOE 07.04.05 PD S 08 09 10 12 13 15 18 19 M2 L4 SVP 5 SOC 4751

379.364-014 BEACH LIFEGUARD (amuse. & rec.)

Patrols public beach area to monitor activities of swimmers and prevent illegal conduct: Observes activities in assigned area on foot, in vehicle, or from tower or headquarters building with binoculars to detect hazardous conditions, such as swimmers in distress, disturbances, or safety infractions. Cautions people against use of unsafe beach areas or illegal conduct, such as drinking or fighting, using megaphone. Rescues distressed persons from ocean or adjacent cliffs, using rescue techniques and equipment. Examines injured individuals, administers first aid, and monitors vital signs, utilizing training, antiseptics, bandages, and instruments, such as stethoscope and sphygmomanometer. Administers artificial respiration, utilizing cardiopulmonary or mouth-to-mouth methods, or oxygen, to revive persons. Compiles emergency and medical treatment report forms and maintains daily information on weather and beach conditions. Occasionally operates switchboard or two-way radio system to maintain contact and coordinate activities between emergency rescue units. GOE 04.02.03 PD V 02 03 08 09 10 11 12 13 15 16 17 18 20 EC 01 14 M2 L2 SVP 4 SOC 5149

379.367-010 SURVEILLANCE-SYSTEM MONITOR (gov. ser.)

Monitors premises of public transportation terminals to detect crimes or disturbances, using closed circuit television monitors, and notifies authorities by telephone of need for corrective action: Observes television screens that transmit in sequence views of transportation facility sites. Pushes hold button to maintain surveillance of location where incident is developing, and telephones police or other designated agency to notify authorities of location of disruptive activity. Adjusts monitor controls when required to improve reception, and notifies repair service of equipment malfunctions. GOE 04.02.03 PD S 12 13 18 20 M1 L3 SVP 2 SOC 5149

383.684-010 EXTERMINATOR HELPER (any ind.) pest control worker helper.

Assists EXTERMINATOR (any ind.) 389.684-010 in destroying and controlling field rodents, noxious weeds, or other pests in or around buildings, performing any combination of following tasks: Sets traps and places poisonous bait in rodent infested areas. Fumigates burrows, using toxic gas, or kills rodents, using firearms. Secures tarpaulins over building to be fumigated, using ladder. Applies insecticides to buildings and grounds, using spray pumps and other equipment. Digs up, sprays with herbicides, or burns noxious weeds. Identifies and reports evidence of pest infestation. May drive service vehicles or equipment. Performs other duties as described under HELPER (any ind.) Master Title. GOE 05.10.09 PD M 04 05 08 09 15 16 17 18 19 20 EC 03 07 M2 L2 SVP 4 SOC 5246

389.137-010 SUPERVISOR, HOME RESTORATION SERVICE (any ind.)

Supervises and coordinates activities of workers engaged in cleaning and restoring interiors of homes damaged by fire, smoke, or water: Schedules work crews according to type and extent of interior damage to home.

Inventories, requisitions, and issues supplies and equipment. Trains and supervises workers in methods of cleaning and restoring interiors of homes, including floors, walls, ceilings, carpet, upholstery, and draperies. Inspects completed work and work in progress for conformance to standards. Resolves workers' problems or refers matters to management. Explains methods of restoration and attempts to persuade prospective customers to contract for services. GOE 05.12.18 PD M 08 09 12 13 15 18 M3 L3 SVP 7 SOC 5241

389.664-010 CLEANER, HOME RESTORATION SERVICE (any ind.) cleaner, carpet and upholstery.

Cleans and restores interiors of homes damaged by fire, smoke, or water, using commercial cleaning equipment: Receives work orders and schedules from supervisor. Drives van equipped with floor-mounted or portable commercial carpet, upholstery, and interior cleaning machines, tools, and supplies to worksite. Cleans carpet, upholstery, floors, walls, ceilings, draperies, windows, and room accessories to remove effects of smoke and water damage such as dirt, soot, stains, mildew, and excess water and moisture, using commercial cleaning machines mounted in van with extension hoses or portable cleaning machines and variety of work aids, such as vacuum cleaners, chemical cleaning solutions, ladders, drop cloths, sponges, buckets, mops, and brushes. Places fans and dehumidifiers in strategic room locations to remove moisture from carpet, upholstery, and air. Verifies moisture presence and removal with moisture sensor. Sprays or fogs carpet, upholstery, and accessories with fabric conditioners and protectors, deodorizers, and disinfectants, using hand and power sprayers and electric foggers, applying knowledge of types of fabrics, dyes, and chemical sprays. Inspects completed restoration to ensure conformance to standards. Collects payments and discusses results of work with customers. GOE 05.12.18 PD H 08 09 19 M1 L2 SVP 3 SOC 5244

406.684-018 GARDEN WORKER (agric.; museum) gardener-florist.

Cultivates and cares for ornamental plants and installs floral displays in indoor or outdoor settings through performance of any combination of following duties as directed by supervisory personnel: Conditions and prepares soils and plants seeds, seedlings, or bulbs in greenhouse or outdoor growing area, using spades, trowels, sprayers, sprinklers, cultivators, and other gardening handtools and equipment. Fertilizes, waters, weeds, transplants, or thins plants in growing areas. Mixes and applies pesticides to maintain health of plants and prepare plants for installation in greenhouse or outdoor display areas. Lays sod or artificial grass and builds framework for indoor floral displays, or prepares outdoor display beds according to work plan. Transplants plants from growing area to display beds, or places potted plants in beds according to work plans. Attends display beds to maintain health of plants and beauty of display. Maintains and repairs gardening handtools and equipment and structures, such as greenhouses and hot beds, using maintenance and carpentry tools. May mow lawns, prune trees, and perform other duties to maintain grounds. GOE 03.04.04 PD M 06 08 09 15 19 EC 01 M2 L3 SVP 4 SOC 5622

408.364-010 PLANT-CARE WORKER (agric.) interior horticulturist; plant tender.

Cares for ornamental plants on various customer premises, applying knowledge of horticultural requirements, and using items such as insecticides, fertilizers, and gardening tools: Reads work orders and supply requisitions to determine job requirements, and confers with supervisor to clarify work procedures. Loads plants and supplies onto truck in order of scheduled stops, using handtruck. Drives truck to premises and carries needed supplies to work area. Examines plants and soil to determine moisture level, using water sensor gauge, and waters plants according to requirements of species, using hose and watering can. Sponges plant leaves to apply moisture and remove dust. Observes plants under magnifying glass to detect insects and disease, and consults plant care books or confers with supervisor to identify problems and determine treatments. Selects and applies specified chemical solutions to feed plants, kill insects, and treat diseases, using hose or mist-sprayer. Transplants rootbound plants into larger containers. Pinches and prunes stems and leaves to remove dead and diseased leaves, to shape plants, and to induce growth, using shears. Removes diseased and dying plants from premises and replaces them with healthy plants. Informs customer of plant care needs. Enters record of actions taken at each stop in route book and prepares requisitions for materials needed on subsequent visit. Returns diseased, dying, and unused plants and supplies to employer premises. GOE 03.04.05 PD M 08 09 10 11 12 13 15 19 M2 L3 SVP 3 SOC 5619

410.134-018 SUPERVISOR, KENNEL (nonprofit organ.) animal shelter supervisor.

Supervises and coordinates activities of animal shelter workers, and performs maintenance on buildings and equipment: Establishes and coordinates work schedule to expedite accomplishment of essential and emergency tasks, issues instructions to workers, examines work results, and provides training to improve performance. Examines ailing animals to determine need of services from VETERINARIAN (medical ser.) 073.101-010. Replaces faulty electrical and plumbing fixtures, builds shelves, and paints structures and equipment to maintain shelter facilities. Greases water pump and observes water pumping system and pressure gauge for signs of leakage and desire pressure. Tunes-up, replaces parts, and maintains ambulance, pick-up truck, lawnmower, and edger, using handtools, spare parts,

410.134-022

and maintenance manuals. Cleans and disinfects shelter area, using high pressure waterhose and bleach, to prepare shelter to receive visitors. Operates shelter euthanasia equipment to destroy designated animals. Drives ambulance and pick-up truck in response to emergency calls and to investigate complaints of animal neglect or cruelty. Assists workers in interring coffins of heavy animals. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 03.02.04 PD H 08 09 10 11 12 15 EC 01 07 M2 L3 SVP 4 SOC 5621

410.134-022 SUPERVISOR, RESEARCH DAIRY FARM (agric.)

Supervises and coordinates activities of workers engaged in caring for bulls, cows, and young animal stock on research dairy farm: Demonstrates work methods of animal care, such as feeding, barn cleaning, milking, and tagging animals for identification to workers. Transports hay and grain from storage area to barn, using tractor or electric cart. Observes animals for signs of illness, injury, nervousness, or unnatural behavior. Notifies veterinarian when serious injury or illness occurs. Maintains records on medical care, breeding, and milk production. Observes living conditions of animal environment and informs workers of remedial actions to be taken. Informs maintenance crew of needed repairs on tractors and carts. May perform duties of caring for animals in absence of workers. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 03.02.01 PD H 04 06 08 09 10 11 12 13 15 16 17 18 19 20 EC 01 14 M2 L3 SVP 6 SOC 5611

410.137-018 SUPERVISOR, ANIMAL MAINTENANCE (drug, prep. & rel. prod.)

Supervises and coordinates activities of workers engaged in raising and caring for animals used in development of pharmaceutical products in pharmaceutical research and manufacturing facility: Visits animal maintenance areas and observes and discusses animal care, such as feeding, treatment, and breeding, with workers to identify problems or recommend changes. Prepares reports that indicate activity of unit, such as purchases, absenteeism of workers, and animal treatment. Contacts approved vendors to order and schedule arrival of animals, animal food, and equipment. Trains and observes workers in job duties and safety precautions. Contacts designated personnel to recruit new personnel or for repair of equipment. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 03.03.02 PD L 08 09 10 12 13 15 EC 07 M3 L3 SVP 6 SOC 5621

410.161-022 HOG-CONFINEMENT-SYSTEM MANAGER (agric.)

Breeds and raises swine in confinement buildings for purpose of selling pork to meatpacking establishments: Selects and breeds swine according to knowledge of animals, genealogy, characteristics, and offspring desired. Regulates breeding of sow herd to produce maximum number of litters. Attends sows during farrowing and helps baby pigs to survive birth and infancy. Castrates and docks pigs. Notches ears to identify animals. Determines weaning dates for pigs based on factors such as condition of sows, cost of feed, and available space in nursery. Vaccinates swine for disease and administers antibiotics and iron supplements, using syringes and hypodermic needles. Formulates rations for swine according to nutritional needs of animals and cost and availability of feeds. Grinds and mixes feed and adds supplements to satisfy dietary requirements. Stores and periodically examines feeds to ensure maintenance of appropriate temperatures and moisture levels. Operates water foggers, air conditioners, fans, and heaters to maintain optimal temperature in swine confinement buildings. Flushes hog wastes into holding pit. Repairs and maintains machinery, plumbing, physical structures, and electrical wiring and fixtures in swine farrowing, nursery, and finishing buildings. May hire and supervise worker to assist in swine production activities. GOE 03.01.01 PD M 08 09 10 11 15 17 18 M4 L4 SVP 7 SOC 5514

412.674-014 ANIMAL-NURSERY WORKER (amuse. & rec.; museum) children's zoo caretaker.

Cares for newborn and young animals in zoo nursery and exhibit area: Prepares liquid formula, cereal, and other foods for young animals according to direction of ZOO VETERINARIAN (medical ser.) 073.101-018 and prepares standard diet foods for mothers of newborn animals according to requirements of species. Fills sterilized nursing bottles with formula and feeds animals that have been orphaned or deserted, or that require food in addition to that provided by mother. Observes newborn animals to detect indications of abnormality or disease, and notifies ZOO VETERINARIAN (medical ser.) 073.101-018 when such indications are evident. Periodically conducts physical examination of young animals, performing such tasks as taking temperatures, blood pressure, and pulse rate, and weighing and measuring animals. Maintains records of animal weights, sizes, and physical conditions to be used in zoo account of animals born in captivity. Adjusts humidity and temperature controls to maintain specified environmental conditions in nursery or exhibit area. Installs equipment such as infrared light stands, cribs, or feeding devices in young animal exhibit area. Explains to visitors procedures for care and feeding of young animals, and answers questions concerning factors such as native habitats and breeding habits. Observes children petting or feeding animals in designated area and cautions children against activities that might be harmful to animals. GOE 03.03.02 PD M 09 12 13 15 16 17 18 19 20 M2 L3 SVP 4 SOC 5624

412.687-010 COMMISSARY ASSISTANT (amuse. & rec.; museum) commissary helper; food preparer.

Stores, prepares, and delivers foods for zoo or aquarium animals: Unloads meats, produce, fodder, and other food items from delivery vehicle, using handtruck. Sorts and stores items on shelves, in bins, or in refrigerated storage room of commissary. Assembles food items needed for diet of various animals as directed by supervisory personnel. Measures, weighs, or counts items to obtain amount of food specified for diet plans. Bundles fodder, washes produce, and cuts away defects. Sorts assembled items according to destinations, loads items into truck, and drives truck to animal quarters. Assists ANIMAL KEEPER (amuse. & rec.) 412.674-010 in carrying food to preparation areas or in selecting and loading food into truck or cart. GOE 03.03.02 PD H 08 09 M2 L1 SVP 2 SOC 5624

413.687-018 BEE WORKER (agric.)

Attends bee colony to produce queen bees: Fits bar containing cell cups grafted with bee larvae into notched hive frame to prepare frame for placement in cell building hive in which bees form queen cells on cup base. Blows smoke into hive to quiet bees, using smoke producing device. Reads grafting date, opens hive, and inserts frame in sequence by date. Pulls out queen cell frame of specified age and places frame in incubator to continue maturation process. Opens hive and pours sugar on tops of frames to feed bees. Mixes and kneads specified types and quantities of ingredients to make bee candy. Presses piece of candy into end of queen shipping cage to provide food for queen and workers during shipping. May construct shipping cages. May select and collect queen bees meeting specified criteria for shipping. GOE 03.04.01 PD M 08 09 10 EC 14 M1 L1 SVP 2 SOC 5617

418.137-010 SUPERVISOR, LABORATORY ANIMAL FACILITY (agric.)

Supervises and coordinates activities of workers involved in operations of animal research facility: Plans budget and arranges purchase of items, such as animal feed, medicines, and research instruments. Advises workers regarding requirements of research projects and requirements for compliance with Federal guidelines for operation of research facility. Instructs workers regarding procedures, such as feeding and cleaning schedules and compilation of data for research reports. Monitors care and health of animals. Reviews work of personnel to verify accuracy of research and reports and to determine established procedures are followed. GOE 02.04.02 PD L 08 09 12 13 15 M3 L4 SVP 7 SOC 5621

418.137-014 SUPERVISOR, RESEARCH KENNEL (agric.)

Supervises and coordinates activities of workers engaged in caring for domestic animals in research kennel: Directs and assists workers in maintaining kennel in prescribed condition and in feeding and caring for animals in conformance with research study requirements. Monitors progress of studies, such as animal food palatability and drug effectiveness tests, to verify adherence to study guidelines. Prepares activity charts to assist subordinates in performing duties. Observes animals to detect signs of illness or injury and notifies designated personnel of unusual conditions. Compiles research study reports from log entries to prepare data for use by researchers, using calculator. GOE 03.02.01 PD M 08 09 12 13 15 M3 L3 SVP 4 SOC 5621

429.587-010 COTTON CLASSER AIDE (agric.)

Performs any combination of following duties to assist COTTON CLASSER (agric.; textile) 429.387-010: Records grades called out by COTTON CLASSER (agric.; textile) 429.387-010 on sample classification certificates and related documents. Summarizes and tabulates classification results, using specified numeric symbols. Assembles classification certificates and other records for mailing to growers, government officials, and other designated recipients. Carries cotton samples to and from storage and grading areas. May assist in testing cotton samples. GOE 06.03.02 PD L 13 15 M1 L2 SVP 2 SOC 5625

441.132-010 BOATSWAIN, OTTER TRAWLER (fish.)

Supervises and coordinates activities of fishing vessel crew engaged in deploying, retrieving, and repairing otter trawl net to catch fish, and operates winches to launch, tow, haul, hoist, and dump net: Confers with CAPTAIN, FISHING VESSEL (fish.) 197.133-010 or MATE, FISHING VESSEL (fish.) 197.133-018 to ascertain specified fishing depth, terrain of ocean floor, and location of fish concentrations, and selects required otter trawl net and other fishing gear accordingly. Directs crew in attachment of floats, weights, otter boards (net guides), and other gear to trawl net preparatory to net deployment. Directs lowering of net over side of vessel, and moves winch controls to release otter boards and tow cables into sea. Observes action of otter boards to ensure that net is tangle free and in desired position, and moves winch controls to maintain even alignment and designated depth of net behind vessel, according to markings on tow cables. Monitors tension on tow cables during tow and moves winch controls as necessary to free net when snagged on obstructions, such as rough bottom, rock pinnacles, or sunken ships. Moves winch controls to haul filled trawl net from sea bottom to ship's stern, and directs crew to specified stations for retrieval of net and dumping of fish onto deck. Trains and directs crew in maintenance of fishing gear, such as reinforcing or replacing frayed or missing sections of trawl net and splicing frayed or

weakened tow cables. GOE 03.04.03 PD H 02 03 04 05 06 08 09 10 11 12 13 15 16 17 18 20 EC 01 02 04 14 M2 L3 SVP 7 SOC 583

500.665-010 PLATER, PRODUCTION (electroplating) electroplater, automatic.

Tends automatic equipment that conveys objects through series of cleaning, rinsing, and electrolytic plating solutions to plate objects with decorative or protective metallic coating: Starts equipment and regulates flow of electricity through plating solution, and immersion time of objects in solutions, following oral instructions or written specifications. Observes plating operation to ensure conformance with company standards. Adds water or other materials according to specifications to maintain mixture and level of cleaning, rinsing, and plating solutions. Observes temperature gauges and turns steam valves to maintain specified temperatures of cleaning and rinsing solutions. Lubricates moving parts of plating conveyor. Cleans plating and cleaning tanks. May test plating solution, using hydrometer and litmus paper, or gather random sample of solution for laboratory analysis. May replace anodes and cathodes of plating equipment. May fasten objects to hooks, racks, or place them in containers of plating equipment. May start and monitor plating process, using computer equipment. GOE 06.04.21 PD M 08 09 10 17 19 M2 L2 SVP 3 SOC 7543

500.684-026 PLATER, PRINTED CIRCUIT BOARD PANELS (electronics)

Electroplates printed circuit board (PCB) panels with metals, such as copper, tin, gold, nickel, or solder, to resist corrosion, improve electrical conductivity, and facilitate solder connections: Dip panels in cleaning solutions or wipes panels with cloth to clean panels. Clamps panels or rack of panels to overhead bar above tanks to complete electrolytic current. Immerses panels in plating solution. Sets timer for specified plating time and turns on electrical current. Observes meter and turns dial to maintain specified current in plating solution. Removes plated panels and immerses panels in rinsing tank. Examines plated panels for defects. May test thickness of plating, using gauge or test equipment. May tape areas to be excluded from plating, using tape machine. May trim excess material from PCB panels, using shearing machine. May calculate amperage setting, following specified formula. May be designated according to plating material used as GOLD PLATER (electronics) or NICKEL PLATER (electronics). GOE 06.02.21 PD H 08 09 10 15 17 EC 07 13 M1 L2 SVP 3 SOC 7543

500.684-030 PLATER, SEMICONDUCTOR WAFERS AND COMPONENTS (electronics)

Electroplates semiconductor wafers and electronic components, such as copper leads and rectifiers, with metals, such as gold, silver, and lead: Reads processing sheet to determine plating time and specifications. Places components or wafers in basket or fixture, using tweezers, and immerses components or wafers in chemical solution baths for specified time to clean and plate components or wafers. May measure thickness of photoresist and metal on wafer surface, using micrometer, and test electrical circuitry of individual die on wafer, using test probe equipment. May measure anode width on wafer surface, using microscope measuring equipment. GOE 06.04.19 PD L 08 09 10 12 13 15 17 19 EC 07 13 M2 L2 SVP 3 SOC 7679

501.685-018 BLACK OXIDE COATING EQUIPMENT TENDER (electronics) black oxide operator.

Tends computerized equipment that applies black oxide coating to printed circuit board (PCB) panels to prevent electrical contact between layers and to aid adhesion of layers of multilayer PCBs: Loads PCB panels into racks and positions racks under equipment crane. Pushes button to activate crane that automatically lifts racks of panels and immerses racks into series of tanks that coat panels with black oxide. Measures temperature of solutions with pyrometer and turns equipment knobs and valves to adjust temperature and regulate liquid volume. Places panels in oven to dry. GOE 06.04.21 PD M 08 09 10 EC 13 M2 L2 SVP 2 SOC 7543

501.685-022 ELECTROLESS PLATER, PRINTED CIRCUIT BOARD PANELS (electronics) deposition operator.

Tends electroless plating equipment that immerses printed circuit board (PCB) panels into series of chemical tanks to clean, rinse, and deposit metal plating on panels to improve electrical conductivity and facilitate solder connections in production of PCBs: Turns valves to fill tanks with solutions to specified levels. Loads panels onto dipping racks and attaches racks to bar, hoist, overhead crane, or holding fixture. Sets timer for deposition cycle. Keys data into computer keyboard, presses buttons or pulls levers to activate equipment that moves racks of panels through tanks, or lowers racks into tanks manually. Observes gauges and adjusts valves on tanks to maintain required temperature. Removes PCB upon completion of deposition cycle. May compute length of deposition cycle, using calculator. May add chemicals to tanks. May be designated according to type of coating applied as COPPER DEPOSITION OPERATOR (electronics). GOE 06.04.21 PD H 08 09 10 17 18 M2 L2 SVP 2 SOC 7543

502.384-010 PEWTER CASTER (silverware)

Casts pewter alloy to form parts for goblets, candlesticks, and other pewterware: Places pewter ingots into cauldron and turns controls to heat cauldron to specified temperature. Stirs molten alloy and skims off impurities, using skimmer. Sands inside of mold parts to remove glaze residue, using emery cloth; applies new glaze, using paint brush; and sets mold

parts aside to dry. Assembles mold, wraps mold in heat-resistant cloth, and ladles molten alloy into mold opening. Manually rotates mold to distribute alloy in mold and prevent formation of air pockets. Strikes mold to separate dried casting from mold, using knocker. Repeats casting process until specified number of parts are cast. Trims gates and sharp joints from cast parts, using bandsaw. Carries trimmed castings to storage area. Periodically weighs and mixes alloy ingredients according to formulas and knowledge of ingredient chemical qualities, heats mixture to specified temperature, and fills molds to form ingots from which parts are cast. May cast items, using other equipment, such as temporary molds or casting machines. GOE 06.02.24 PD H 08 09 15 EC 03 M2 L2 SVP 6 SOC 6822

503.362-014 SHOTBLAST-EQUIPMENT OPERATOR (found.)

Operates equipment to clean dirt, scale, and core materials from steel castings with blasts of steel shot: Presses control-panel buttons to adjust equipment settings for manual or automatic operations, length of cycle, sequence and timing of various operations, and position of oscillator. Moves control to activate tow-mechanism drive to transport trolley loaded with castings into shotblast chamber, and watches operation to ensure that hydraulic doors close completely, trolley and oscillator positions are correct, and that air turbine and shotblast wheels start in sequence. Monitors control-panel dials and listens to equipment operations to detect jams or malfunctions. Stops equipment to clear jams, replace fallen castings, reposition oscillator, and adjust hydraulic equipment. Notifies machine repairer when unable to correct malfunction. Greases equipment, maintains hydraulic fluid levels, and performs minor maintenance, using grease gun and hand-tools. GOE 06.02.10 PD H 08 09 13 17 20 EC 05 08 M2 L3 SVP 5 SOC 7549

504.686-022 HEAT TREATER (electronics)

Feeds and offbears furnace that heats semiconductor wafers to relieve stress caused by sawing and to stabilize resistivity: Transfers wafers from storage container to quartz boat. Places boat on conveyor belt that automatically moves wafers through furnace. Removes boat from conveyor belt at furnace exit. Transfers wafers from boat to storage container after cooling. Records production information on work order. GOE 06.04.19 PD L 08 09 10 13 15 EC 14 M1 L1 SVP 1 SOC 7675

515.686-010 BATTERY-WRECKER OPERATOR (nonfer. metal alloys)

Loads conveyor of battery-crushing machine: Lifts batteries from stockpile. Loads conveyor of machine that crushes batteries and separates plastic, metal, and lead-bearing acid. Listens for machine jams and other malfunctions. Dislodges jams, using metal bar or air compressor. Notifies designated worker of major malfunctions. May operate industrial truck to move pallets of batteries from storage area to work area. GOE 06.04.40 PD V 08 09 13 16 17 EC 07 13 M1 L1 SVP 2 SOC 8725

520.685-230 MIXER OPERATOR, SNACK FOODS (food prep., n.e.c.)

Tends numerically-controlled equipment that automatically mixes oil, water, and mixture of grain products to make dough used in production of snack foods: Reads chart to determine time intervals and sequence for adding oil and water and length of mixing cycle. Pulls knobs to activate control panel and observes lights and dials to verify that panel is functioning. Inspects sections of mixing equipment, such as agitator blades, drum of mixer, and feed hopper to verify that equipment is clean. Adds emulsifier and contents of oil drum into reservoir prior to mixing process, using air-powered pump. Selects and pushes wheeled container of preweighed mixture of grain products or dough scrap into automatic locking device of mixer elevator. Presses specified buttons on control panel to purge air from oil and water lines, open drum door of mixer, raise and dump contents of container into mixer, and activate mixer. Observes digital timer and presses buttons at specified intervals to add predetermined amounts of oil and water, stop mixing process, and dispense dough onto conveyor for further processing. Observes oil and water pipes during mixing process to ensure that oil and water are flowing into mixer. Feels dough on conveyor to detect defects, such as excessively dry, moist, or lumpy dough. Scoops cup of dough from initial batch of mix for quality assurance testing. Notifies supervisor of dough not meeting mixing standards and of equipment malfunction. GOE 06.04.15 PD M 08 09 M1 L1 SVP 2 SOC 7664

520.687-066 BLENDING-TANK TENDER HELPER (can. & preserv.)

Assists BLENDING-TANK TENDER (can. & preserv.; flav. ext. & sirup) 520.685-030 by directing filling of holding tanks and performing related duties: Pulls latch of lid-locking hinge or clips metal band holding lid on barrel of juice concentrate, using clippers, to remove lid from barrel. Signals INDUSTRIAL-TRUCK OPERATOR (any ind.) 921.683-050 by hand to guide lifting and positioning of barrel adjacent to opening of holding tank. Manually holds barrel in contact with tank opening as barrel is tilted to dump juice concentrate into tank. Sprays inside of barrel to wash remaining concentrate into tank, using hose. Turns valve of holding tank as directed by BLENDING-TANK TENDER (can. & preserv.; flav. ext. & sirup) 520.685-030 to open flow of concentrate into blending tank and to fill blending tank to specified capacity. Cleans residue and film from equipment and floors following processing, using waterhose, cleaning solution, brushes, and rags. GOE 06.04.40 PD L 08 09 M1 L1 SVP 2 SOC 8618

521.685-378 DEBONER, PET FOOD (can. & preserv.)

Tends deboning-grinder machine that separates flesh from bones to make boneless ground pet food: Positions and secures hopper, screw, and disk assemblies in deboning-grinder machine housings, using wrench, and depresses buttons to activate machine and conveyor. Observes volume of meat parts moving on conveyor into hopper, and adds or removes parts, using shovel, and spreads parts in hopper, using stick to ensure steady supply of parts to machine. Picks bones and similar matter from parts on conveyor to assist in separating process. Observes processing and adjusts disk assembly when required to maintain specified consistency and volume of ground parts, using ratchet lever. Shovels separated bones and foreign matter into disposal drum. Cleans machine and work area, using hose, brush, and shovel. GOE 06.04.15 PD M 08 09 10 20 EC 04 M1 L2 SVP 2 SOC 7677

521.685-382 FLAVORING OIL FILTERER (flav. ext. & sirup)

Tends filtering equipment that removes wax from citrus oil used to make flavoring: Selects formula card according to work order specifications and pours oil and other ingredients into mixing tank. Inserts clean filter pad into filter pump and attaches hoses from mixing tank to filter in prescribed order. Depresses button to activate pump that moves mixture from mixing tank through filtering mechanism to filter and clarify oil. Opens valve of holding tank to collect sample of filtered oil and refilters oil when sample does not meet clarity and color standards. At end of processing, opens valve of holding tank to draw filtered oil into containers. Maintains records of kinds and quantities of materials used and amount of oil processed. GOE 06.04.15 PD H 02 08 09 16 19 EC 05 07 M1 L2 SVP 4 SOC 7666

521.685-386 SCALING MACHINE OPERATOR (can. & preserv.)

Tends machine that removes scales from fish: Turns valve to start spray of water over spiked rollers of scaling machine. Pushes buttons to start and stop conveyor that feeds fish from holding tank into tray at feeding end of machine and to start scaling machine. Feeds fish onto conveyor that moves fish through spiked rollers that remove scales from sides of fish and that dumps fish into containers. GOE 06.04.15 PD L 08 09 EC 04 M1 L1 SVP 2 SOC 7678

522.264-010 TRAINING TECHNICIAN (can. & preserv.)

Trains and directs workers in methods of processing fish roe in canning and preserving industry: Teaches FISH ROE PROCESSOR (can. & preserv.) 522.687-046 characteristics, such as color, maturity, and outer appearance of membrane, of egg skeins (membrane-enclosed ovaries, tissue, and fish roe) to enable worker to recognize skeins of different species, appearance of unacceptable skeins, and commercial grades of skeins. Demonstrates packing procedures, such as method of lining boxes, placement patterns of processed skeins in boxes, and amount of salt to apply to each layer. Directs workers to change brine solution used to preserve skeins and sets timer that controls processing times of skeins in brining vats. Retrains workers as necessary. Sorts, salts, grades, and packs skeins of fish roe [FISH ROE TECHNICIAN (can. & preserv.) 522.384-010]. May supervise and direct activities of other workers. May test processed egg skeins for nitrate content, using prepared chemical kit, comparison charts, and following kit instructions. GOE 06.04.15 PD M 04 08 09 10 11 12 15 17 18 19 20 EC 04 14 M2 L2 SVP 6 SOC 7679

522.384-010 FISH ROE TECHNICIAN (can. & preserv.)

Sorts, grades, and packs egg skeins containing fish roe for canning and preserving industry: Examines egg skeins (membrane-enclosed ovaries, tissue, and fish roe) for unacceptable conditions, such as immaturity, bruises, or blood saturation. Discards unacceptable skeins and places acceptable skeins in containers for weighing and to await further processing. Dissolves specified salts in water, following brining formula; tests specific gravity of solution, using hydrometer; and pours brining solution into agitation vat. Flips switches to start vat agitators, pours preweighed amount of egg skeins into vat, and turns knob on timer to set brining cycle. Feels skeins for firmness and texture to determine effect of brine on skeins. Removes processed skeins from vat, using wooden-handled seine, and places skeins in container to drain. Tests brine in vat, using hydrometer, and adds specified salts when required to maintain salinity of brining solution at specified level. Examines, grades, and separates processed egg skeins, according to factors such as color, length, and width, utilizing product experience. Selects boxes marked for prescribed grade of egg skeins, places plastic sheets across bottom of boxes as liner, and sprinkles salt over liners prior to packing skeins. Positions layers of skeins in boxes to ensure preservation and seasoning in boxes. Weighs boxes on scales after packing, and adds or removes skeins to obtain specified weight. Folds plastic liner over filled boxes, positions lids on boxes, and stacks packed boxes for storage during aging process. GOE 06.02.28 PD M 04 08 09 10 11 15 17 18 19 EC 04 07 M2 L2 SVP 6 SOC 7679

522.687-046 FISH ROE PROCESSOR (can. & preserv.)

Performs any combination of following tasks concerned with cannery processing of fish roe: Presses headless fish against work surface to ascertain sex of fish by presence or absence of milt. Inserts hand into body cavity of female fish, feels along ventral area of body to locate vent, and cups hand to remove viscera and egg skeins (membrane-enclosed ovaries, tissue, and fish roe). Separates viscera and organs from egg skeins by hand. Discards viscera and organs and places egg skeins in baskets for

weighing. Weighs baskets containing egg skeins, using scales, and records totals on tally sheets. Dumps basket of egg skeins on work surface, and examines egg skeins for imperfections, such as blood saturation, immature eggs, and torn membranes. Separates egg skeins, according to size and species of fish. Places acceptable egg skeins in containers for reweighing. Rinses containers of egg skeins with water, using waterhose, and dips containers in mild saline solution to rinse egg skeins prior to brining. Works under direction of FISH ROE TECHNICIAN (can. & preserv.) 522.384-010 to fill brining tanks, dump egg skeins into tanks, remove processed egg skeins, and pack egg skeins for shipment, following prescribed procedures. May slit underside of fish before removing egg skeins, using knife. GOE 06.04.28 PD M 04 08 09 10 15 17 EC 04 M1 L1 SVP 2 SOC 8769

523.382-022 PROCESSOR, INSTANT POTATO (food prep., n.e.c.)

Controls equipment to process potatoes into instant potato granules: Reads laboratory reports to stay apprised of laboratory test results of potato samples taken during processing. Observes lights, gauges, and meters on panelboard controls to determine temperature readings of equipment, such as pre-cookers, pre-coolers, cookers, and driers. Turns dials on panelboard to maintain operating temperature ranges as required to meet company standards. Flips switches and presses buttons on panelboard to start potato processing equipment, such as feed screws, mixers, cookers, and granule driers. Walks through processing areas and observes product consistency and product level in equipment, such as feed screws and cookers. Turns equipment controls on panelboard to adjust temperatures of cookers or airflow through driers, utilizing knowledge of product processing. Listens for alarms that indicate malfunctions of processing units and takes required steps, such as shutting down equipment and notifying supervisor. Records shift activities in log. GOE 06.02.15 PD L 02 04 05 08 09 10 13 15 16 19 EC 03 04 05 M2 L2 SVP 3 SOC 7679

524.687-018 BAKERY WORKER, CONVEYOR LINE (bake. prod.)

Performs any combination of following tasks in preparation of cakes along conveyor line: Reads production schedule or receives instructions regarding bakery products that require filling and icing. Inspects cakes moving along conveyor to detect defects and removes defective cakes from conveyor to reject bins. Positions cakes on conveyor for application of filling or icing by machine, observes filling or icing application to ensure uniform coverage, and places additional cake layers on coated layers, depending on number of cake layers in product. Observes cakes moving under automatic topping shaker and cake cutting machine to ensure uniform topping application and cutting. Smooths iced edges of cake, using spatula, and moves decorating tool over top of designated cakes to apply specified appearance. Notifies supervisor of malfunctions. GOE 06.04.28 PD L 08 09 M1 L1 SVP 2 SOC 7759

525.687-126 CRAB MEAT PROCESSOR (can. & preserv.)

Performs any combination of following tasks in processing crab meat for canning, freezing, or packing: Separates claws from crabs, positions claws in metal holder used to facilitate breaking claw shells, and breaks shells of claws and crabs, using knife or metal rod. Picks meat from shells, using knife and fingers. Feels meat for presence of shell and removes shell pieces by hand. Inspects meat for discoloration and discards meat not meeting company requirements. Places meat in containers for further processing. Gathers filled containers of meat, places containers on scale, and adds or removes meat from containers to obtain specified weight. Closes lids of containers, places containers in cartons, and seals cartons, using tape. May disjoint legs and body of large crabs, using power saw and be known as SAWYER (can. & preserv.). May remove crab meat from smaller ends of leg segments, using pedal-controlled air jet, and be known as BLOWER (can. & preserv.). GOE 06.04.28 PD L 08 09 10 11 15 19 EC 04 M1 L1 SVP 2 SOC 8769

526.684-014 LUMPIA WRAPPER MAKER (food prep., n.e.c.)

Mixes and fries dough to prepare lumpia wrappers in establishment processing Philippine food specialties: Mixes premeasured ingredients by hand to prepare dough. Kneads dough to required consistency. Places griddle on stove to heat griddle. Shapes and spreads, by hand, specified amount of dough on heated griddle to cook and form lumpia wrappers. Removes cooked lumpia wrappers from griddle, using fingers, and stores wrappers for further processing or packaging. Periodically returns dough to freezer to maintain dough consistency. Cleans equipment and work area. GOE 05.10.08 PD H 08 09 10 11 EC 03 M1 L1 SVP 2 SOC 5219

529.132-110 SUPERVISOR (macaroni & rel. prod.)

Supervises and coordinates activities of workers engaged in mixing, pressing, and drying macaroni products: Confers with supervisor of previous shift and management to determine production needs, such as changes of press dies, production rate increases, or changes in dryer temperatures as recommended by quality control personnel. Informs workers of production changes, and monitors control panels of mixing, pressing, and drying machines and equipment to determine whether control settings meet company specifications. Observes products in various stages of process to determine whether products meet requirements for size, color, texture, and smoothness; and reads temperature and humidity charts, drying chamber charts, and entries in daily reports to determine compliance with company standards. Informs workers involved with specific steps in process to bring products into compliance with standards. Performs other duties as

described under SUPERVISOR (any ind.) Master Title. May be designated according to process supervised as SUPERVISOR, LONG GOODS (macaroni & rel. prod.); SUPERVISOR, SHORT GOODS (macaroni & rel. prod.). GOE 06.02.01 PD L 08 09 11 12 13 15 17 19 M2 L2 SVP 6 SOC 71

529.137-074 SUPERVISOR, INSPECTION (chew. gum)

Supervises and coordinates activities of workers engaged in inspecting chewing gum to ensure product conformance to processing standards: Reads production schedule and assigns duties to workers. Observes inspection process to detect defective operations. Reviews inspection reports to determine type and cause of product deviations from company standards. Periodically reads instructions on batch cards to ensure ingredients meet formula specifications. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 12 13 15 M3 L3 SVP 7 SOC 71

529.137-078 SUPERVISOR, INSTANT POTATO PROCESSING (food prep., n.e.c.)

Supervises and coordinates activities of workers engaged in cooking, blending, screening, and drying instant potato granules: Reviews shift specifications with supervisor to determine production goals, additives to be mixed with potato granules, and schedule for cleaning machinery. Reviews shift logs to ascertain production delays encountered, such as machinery breakdown, production lines involved, and action taken. Completes shift reports, and submits reports to management. Instructs workers to fill storage tanks with instant potato granules according to type of granules produced, type of additives mixed with granules, and tank capacity. Approves employee requests for vacation and forwards leave forms to personnel department. Requests personnel department to provide substitute workers when regular workers are absent. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 10 12 13 15 EC 03 05 M3 L3 SVP 7 SOC 71

529.137-082 SUPERVISOR, PROCESSING (chew. gum)

Supervises and coordinates activities of workers engaged in processing raw ingredients into chewing gum: Coordinates washing, melting, blending, mixing, and cooking of ingredients; rolling and scoring of gum into sheets; and coating of sheets with powdered sugar. Trains new workers in operation of equipment. Maintains inventory records and requisitions ingredients as necessary to meet production schedules. Inspects and weighs ingredients to maintain establishment standards. Confers with SUPERVISOR (chew. gum) 920.137-018 to coordinate activities between departments. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 12 13 16 17 EC 03 04 M3 L3 SVP 7 SOC 71

529.367-034 QUALITY CONTROL INSPECTOR (sugar)

Inspects bagging, storage, and shipping facilities for conformance to company sanitation and safety standards in beet sugar refinery: Monitors indicator lights and weighs randomly selected sugar bags from packaging line conveyor to verify accuracy of automatic weighing equipment. Pulls lever to adjust fill rate of equipment when sample bags are over or under specified weight. Inspects boxcars for cleanliness and to ascertain valves and hatches are closed and sealed. Obtains sugar samples from bulk car for laboratory analysis, using probe. Inspects warehouse areas to detect unsafe or unsanitary conditions, such as lubricants on walkways and cracks in storage bins. Informs designated person of conditions requiring immediate repair, such as unsanitary condition of boxcars and warehouse areas. Completes reports that indicate condition of boxcars, warehouse area, and incoming shipments of brown sugar and starch. GOE 06.03.01 PD H 02 04 05 06 08 09 10 12 13 15 EC 03 07 M2 L2 SVP 7 SOC 782

529.682-038 EGG PASTEURIZER (agric.)

Controls and monitors equipment that pasteurizes liquid egg product: Connects pipes between holding tanks and processing equipment and assembles equipment parts, such as fittings and valves, using wrench. Turns control to set timer for pumping cycle, records starting time on processing record, and adjusts temperature controls to bring temperatures to specified level. Places container under discharge outlet to collect initial flow of water and liquid egg product through equipment. Turns valves to admit liquid egg product from holding tank into collection pot and to start pump that propels product and water through equipment. Turns bypass valve to direct flow into discharge containers until mix of water and egg product reaches desired density. Turns valve to shut off bypass and to direct liquid egg product to containerization room. Monitors product flow and adjusts controls to maintain temperature and pressure at specified levels. Turns bypass valve to shut off flow to containerization room when mixture thins. Drains remaining flow into discharge containers. GOE 06.02.15 PD M 08 09 15 16 EC 04 M2 L3 SVP 4 SOC 7676

529.685-282 CAN-FILLING-AND-CLOSING-MACHINE TENDER (can. & preserv.)

Tends machines that automatically wash, fill, and seal cans in cannery: Pushes buttons and levers on control panel to start machines and monitors machine operations to verify that can washer, can food and liquid filler, can sealer, and conveyor mechanisms function in prescribed sequence. Observes cans leaving machines to detect defects such as overfilled cans or misaligned lids. Pushes buttons to stop machines when machines malfunction and notifies MAINTENANCE MECHANIC (any ind.) 638.281-014

of detected defects. GOE 06.04.15 PD L 08 09 10 17 EC 04 05 06 M1 L1 SVP 2 SOC 7662

529.685-286 CIGAR-WRAPPER TENDER, AUTOMATIC (tobacco)

Tends machines that automatically encase tobacco filler in layers of homogenized leaf tobacco to form cigars: Places rolls of homogenized leaf on spindles and guides leaf through tension guides and rollers of machine. Starts machine that automatically wraps filler with binder, mouth end of cigar with reinforcing band, and bunch with wrapper leaf to form cigar. Observes machine operation to detect malfunctions. Turns setscrews to adjust feed rate and stops and clears machine when jam-up occurs. Examines cigars discharged from machine for defects, such as holes, tears, and insufficient filler, and for conformity to size specifications. Loads inspected cigars into storage containers. GOE 06.04.15 PD L 08 09 10 17 M1 L2 SVP 2 SOC 7662

529.685-290 COOK, SOYBEAN SPECIALTIES (food prep., n.e.c.)

Tends equipment that processes soybeans to make soymilk, tofu, tempeh, and related products: Pours specified quantity of presoaked soybeans into mill hopper and depresses button to start grinding of beans and flow of bean mash into steam-jacketed cooker. Adds specified amount of water to mash and stirs mash to prevent burns and boilovers, using paddle. Sprays cooker exterior with water to maintain temperature in acceptable range. At end of prescribed time, turns valve to allow mash to flow into filter-lined hydraulic press tub. Depresses controls to actuate press that expresses soymilk from mash and pumps milk into vats. Heats and injects additives into soymilk to form curd, using syringe, skims off and discards surface residue, using ladle, and places weights on curd to express whey from curd to form tofu. Adds flavorings and stabilizers to soymilk and cooks and freezes mix, using steam cooker and freezing machine, to make soy ice cream. Cooks whole soybeans, mixes tempeh mold with cooked rice to make tempeh starter, and mixes incubated starter with cooked soybeans to form tempeh. Fills packaging containers with product, following prescribed procedures. May blend and cook bean mash or processed soy products with other ingredients to prepare ready-to-eat packaged foods. May be designated according to product prepared as SOYFREEZE OPERATOR (food prep., n.e.c.); TEMPEH MAKER (food prep., n.e.c.); TOFU MAKER (food prep., n.e.c.). GOE 06.04.15 PD M 04 08 09 15 19 EC 04 14 M1 L2 SVP 2 SOC 7679

529.687-226 INSPECTOR, PROCESSING (chew. gum)

Examines, weighs, and measures sheets and strips of unwrapped finished chewing gum to ensure conformity to specifications and standards: Examines trays of rolled and scored gum to verify that finished gum is free of caked sugar, indentations, and foreign matter. Inspects gum surface for uniformity of sugar coating and for prescribed scoring and trimming. Weighs and measures thickness and length of gum strips, using scale, micrometer, and length gauge. Notifies supervisory personnel of deviations from prescribed standards. GOE 06.03.02 PD L 08 09 15 M2 L2 SVP 4 SOC 782

539.137-014 PRODUCTION SUPERVISOR (build. mat., n.e.c.)

Supervises workers engaged in tending machines that process and package recycled newspapers into cellulose insulation: Observes sorting, equipment loading, processing, and packaging operations for conformance to establishment specifications. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 12 13 M3 L4 SVP 6 SOC 71

543.684-010 QUALITY-CONTROL TESTER (fuel briquettes)

Tests charcoal briquettes at end of processing to verify conformance to specifications: Removes bag of briquettes from packaging line periodically and carries briquettes to testing laboratory. Grinds specified quantity of briquettes, using hand grinder, places grounds into moisture-testing equipment, and observes moisture meter to determine moisture content of sample. Saturates stacked briquettes with fire-starter fluid, ignites briquettes, and observes burning characteristics of briquettes and time required for white ash to form over briquette surfaces. Places prescribed number of briquettes in burner pot, ignites briquettes, and observes heat sensor dial to determine temperature released by burning briquettes. Weighs briquettes. Records test results on test report forms. GOE 06.03.02 PD L 08 09 10 11 15 18 M2 L3 SVP 3 SOC 783

549.685-042 UTILITY OPERATOR (comp. & liquefied gases)

Tends pumps that refill air and hydrogen purification filters with water and solutions to maintain operating levels: Reads gauges to check levels of water, liquid nitrogen, and caustic solution in air and hydrogen purification filters. Starts pumps that refill purification filters with water or other solutions to maintain specified levels. Cleans and changes filters of air and hydrogen driers. Records pressure and temperature readings of compressors, filters, and driers. GOE 06.04.11 PD M 02 08 09 15 EC 05 M1 L1 SVP 3 SOC 7666

550.135-014 MIXING SUPERVISOR (fabric. plastics prod.)

Supervises and coordinates activities of workers engaged in mixing plastic resins, color pigments, and additives for use in machine molding of plastic items: Reviews production records for each molding machine to determine amount of plastic mixture used and whether amount available is sufficient to fill existing orders, and notifies production control personnel

of findings. Determines amount of virgin plastic needed to combine with regrind material and reformulates mixing order to meet production requirements. Examines samples of rejected products to determine cause of defect and recommends corrective action, based on knowledge of ingredients and molding machine operations. Trains new employees. Confers with management and subordinates to resolve production problems. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 12 13 15 EC 05 M3 L3 SVP 5 SOC 71

550.685-130 MATERIAL MIXER (fabric. plastics prod.)

Tends drum-tumbling machine that mixes ingredients, such as resins, color pigments, and additives, for use in fabrication of plastic cosmetic packaging: Lines drum with plastic bag. Presses control to activate hopper that automatically fills drum with specified ingredients, or dumps measured ingredients into drum according to formula, using hand scoop and scale. Conveys filled drum to tumbling machine, using handtruck. Mounts and secures drum in holding device of machine, turns knob to set timing control, and presses button to actuate drum-tumbling action. Removes drum from machine at end of cycle and conveys drum to specified production machine, using handtruck. GOE 06.04.13 PD V 08 09 17 20 EC 05 M2 L2 SVP 2 SOC 7664

553.685-114 CADMIUM BURNER (chem.)

Tends furnace and auxiliary equipment that heat cadmium to produce cadmium oxide: Turns handwheel to tilt and lower mouth of crucible for initial loading, and dumps cadmium balls into crucible until scale indicator reaches specified weight. Returns crucible to upright position and turns control to activate automatic pilot that fires furnace. Positions empty drum under oxide collector discharge outlet, clamps discharge cover over drum, and turns switch that starts flow of cadmium oxide from collector into drum. Periodically scrapes molten accumulation from mouth of crucible, using metal rod. Dumps additional cadmium balls into crucible when indicator falls below prescribed weight, using pipe carrier. Turns switch to stop flow of cadmium oxide when drum is filled. Removes drum from under discharge cover, and closes drum with lid and sealing collar. Weighs drum, records weight on shipping tag, and attaches tag to sealing collar. Periodically scrapes and chips accumulations of cadmium oxide from floor and from crucibles not in use. Sifts scrapings, weighs, and stores solids. Maintains production logs. GOE 06.04.11 PD H 02 03 08 09 EC 07 14 M1 L2 SVP 2 SOC 7675

554.685-030 LAMINATOR (build. board)

Tends laminating machine that bonds decorative material, such as plastic or paper, to face of hardboard panels: Conveys rolls of materials specified in work order from storage area to laminating machine, using forklift truck. Positions roll on machine carriage, using chain hoist. Pulls end of material from roll onto takeup rollers of machine and turns handwheel that moves carriage to align material with panels. Turns dials and moves levers to set machine roller speed, roller pressure, and heating unit temperature, following processing specifications. Turns valve to replenish glue supply. Depresses buttons to start machine. Inspects and measures first panels discharged from machine to verify correct alignment of bonded material on panel, using tape measure. Adjusts controls to correct machine operations such as speed of machine units. Severs material between laminated panels, using cutter to free panels discharging onto offbearing conveyor. Refills glue reservoir as required. Performs routine maintenance. GOE 06.04.34 PD L 08 09 15 M1 L2 SVP 3 SOC 7639

556.130-018 MOLDING SUPERVISOR (fabric. plastics prod.)

Supervises and coordinates activities of workers engaged in molding plastic products: Reads operating log from previous shift to determine causes for idle injection and blow molding machines, and prepares and distributes work orders for machine setup or repairs. Reads quality control reports to identify types of defects produced at each station and directs machine operators to make machine adjustments to eliminate flaws. Periodically examines molded products at each machine to verify that products meet order specifications. Directs training of new employees. Confers with management and other supervisors to resolve problems related to production. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 12 13 15 16 18 19 EC 05 M3 L3 SVP 5 SOC 71

556.684-030 LOADER-DEMOLDER (furn.)

Attaches plastic furniture molds to furniture pieces, such as tabletops and bed headboards, and discharges plastic compound into molds, using molder gun: Moves pallets loaded with furniture pieces, using industrial truck, and carries molds from storage racks to work area. Places furniture pieces inside specified molds, clamps molds to furniture pieces, using hinged clamps attached to molds, and places assembled pieces on conveyor. Inserts nozzle of molder gun between molds and furniture pieces and squeezes trigger to emit plastic compound. Unclamps and removes molds after specified setup time, using chisel and knife. Places molded furniture pieces on worktable for inspection. GOE 06.04.32 PD M 08 09 15 17 EC 13 M1 L1 SVP 3 SOC 8725

556.685-086 BLOW-MOLDING-MACHINE TENDER (toys & games)

Tends blow molding machine that automatically forms plastic toy parts: Observes continuous operation of automatic molding machine, adjusts plastic flow, and notifies supervisor of machine malfunctions. Removes molded part from conveyor or mold and trims flash from part, using knife,

hammer, and file. Examines part for defects, such as bubbles, splits, or thin areas, and weighs part on scale to ensure specifications are maintained. Stacks molded parts in boxes for subsequent processing. Throws flash and rejected parts into regrinder machine to be recycled. GOE 06.04.13 PD L 08 09 17 EC 05 M1 L1 SVP 2 SOC 7542

556.685-090 CENTRIFUGAL-CASTING-MACHINE TENDER (fabric. plastics prod.) molder operator.

Tends machine that casts plastic containers: Fills tubs with prescribed amounts of colored thermoplastic powder and zinc compound, using scoop and scale. Positions tubs containing mixture to facilitate loading of molds. Fills molds with specified amount of mixture, closes mold covers, and depresses toggle latches to lock covers in place. Presses buttons to start centrifugal-casting machine that automatically heats, spreads, hardens, and shapes mixture into plastic molds to form refuse containers. Pulls toggle latches to release mold covers and removes covers. Breaks seals that hold plastic containers in molds and removes containers from molds, using handtool. Wipes moisture from inside of molds, using cloth rag. Trims flashing (excess plastic) from containers, using utility knife. GOE 06.04.19 PD M 08 09 17 19 EC 03 07 M1 L1 SVP 2 SOC 7542

556.687-030 MOLD FILLER (sports equip.)

Fills bowling ball molds: Lifts mold from supply cart, places mold on holding fixture, and positions filler hole of mold under spigot of resin tank. Turns valve to open spigot and control flow of resin from tank into mold. Turns valve to stop resin flow when mold is filled. Lifts filled mold from holding fixture onto storage cart. GOE 06.04.32 PD M 08 09 17 M1 L1 SVP 1 SOC 7754

557.685-034 TAKE-UP OPERATOR (synthetic fibers)

Tends machine that applies finish to and winds up newly extruded polyester fibers onto takeup bobbins: Turns valves on vacuum lines to activate aspirators that break and suck up yarn ends during doffing process. Grasps yarn lines at each bobbin position to gather and guide moving yarn to aspirator. Pushes filled bobbins of yarn away from bobbin drive rollers on takeup machine to stop spinning takeup bobbins. Lifts filled bobbins from machine and places bobbins on cart. Places empty bobbins on bobbin shafts of takeup machine. Pushes bobbin shafts with empty bobbins next to spinning drive rollers to power rotation of bobbins preparatory to takeup of yarn on bobbins. Pulls specified lines of yarn down from aspirator over rollers on takeup unit that guide and advance newly extruded yarn and throws yarn ends down against empty, spinning bobbins to takeup lines of bobbins. Separates yarn ends along specified guide notches of machine to facilitate takeup of yarn on separate bobbins. Aligns yarn taken up on bobbin, using wire brush. GOE 06.04.13 PD M 04 08 09 10 15 17 19 20 EC 05 M1 L1 SVP 3 SOC 7663

558.685-058 CHEMICAL RECLAMATION EQUIPMENT OPERATOR (electronics)

Tends equipment that distills printed circuit board (PCB) processing solvents from PCB processing waste solutions and etches gold from PCBs to reclaim gold and solvents: Places gold covered board section in drum and inserts drum in agitation system of rinse tank manually, and presses button to start and stop agitation at specified interval to rinse boards. Removes drum from rinse tank and places drum in agitator system of reclamation tank. Pushes button to start and stop agitator at specified interval to remove gold from boards. Removes drum from reclamation tank and places drum in agitator system of rinse tank. Pushes button to start and stop agitation system at specified interval to rinse boards. Removes drum from rinse tank and places PCBs into barrel. Pushes switch on rinse tank to pump gold solution from tank into empty barrel. Pushes buttons on still to start pumps and equipment that distills PCB processing solvents from solutions. Observes gauges on panel indicating collection barrels are full and presses button to shut off system. GOE 06.04.11 PD H 08 09 10 M1 L2 SVP 3 SOC 7676

559.130-026 SUPERVISOR, SPINNING AND WINDING (synthetic fibers)

Supervises and coordinates activities of workers engaged in spinning and winding synthetic fibers, and sets up take-up machines that wind newly extruded synthetic fibers onto pirns: Observes machines, equipment, personnel, and work areas to detect faulty work habits, and to examine synthetic fibers for conformance to standards. Inspects machine parts cleaned and assembled by designated worker to ensure conformance of parts to standard. Confers with specified supervisory personnel regarding production and possible changes in process, personnel, or machines. Interviews vendors and consults catalogs to obtain information on price and availability of parts and equipment. Prepares and submits purchase orders to designated personnel. Checks level of nitrogen in tanks outside plant and telephones supplier to order more nitrogen to maintain nitrogen at specified level. Develops training manual to be used in training of workers. Times roller and chuck speeds of take-up machines that wind newly extruded synthetic fibers onto pirns, using timing light and stopwatch. Confers with and assists other workers in changing gear ratios of winding drive mechanism, using handtools, according to style of yarn to be processed and setup specifications. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 02 04 08 09 10 11 12 13 15 16 17 19 20 EC 05 14 M2 L3 SVP 7 SOC 71

559.134-010 QUALITY-CONTROL SUPERVISOR (fabric, plastics prod.)

Supervises and coordinates activities of workers engaged in inspecting incoming materials, inprocess molded plastic components, and finished fabricated plastic products to ensure adherence to company quality standards and customer specifications: Draws sketch and writes inspection procedure for each new item to be fabricated, indicating areas to be examined, measuring devices to be used, and maximum and minimum acceptable dimensions. Distributes sketch and procedure to engineering, production control, and inspection work stations. Inspects molded components following first-run production of new item, using gauges and shadow comparator, and advises technician of type of defects noted and need for machine adjustment. Repeats inspection procedure until product meets quality standards and specifications are attained. Confers with customer representative to resolve complaints. Notifies suppliers and subcontractors of reasons for rejection of materials and parts received. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD S 12 13 15 17 M2 L4 SVP 4 SOC 71

559.134-014 SUPERVISOR, DRYING AND WINDING (synthetic fibers)

Supervises and coordinates activities of workers engaged in drying polyester chips and winding synthetic fibers: Observes machines, equipment, personnel, and work areas to detect potential safety hazards, and enforces company safety rules. Inspects yarn on takeup machines for defects, such as unspecified yarn diameter. Confers with designated supervisory personnel to discuss matters related to takeup of yarn and drying of chips. Summons maintenance personnel to inspect machine for malfunctions or to repair machine. Usually inspects takeup unit at specified intervals to verify conformance to standard of polymer extrusion characteristics and yarn takeup characteristics. Turns valve and thermostat knobs to adjust polymer melt zone of extruders to conform to standard temperature. Prepares reports on areas, such as yarn waste, accidents, employee absenteeism, and work time records. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 02 04 09 10 11 12 13 15 17 19 20 EC 05 14 M2 L2 SVP 6 SOC 71

559.384-010 LABORATORY ASSISTANT, CULTURE MEDIA (drug, prep. & rel. prod.) laboratory aide; technical assistant.

Prepares culture media used to develop vaccines and toxoids or to conduct chemical, microscopic, and bacteriologic tests: Measures and weighs ingredients, such as food source, chemicals, preservatives, and vitamins, to prepare growth medium, using scales, graduated flasks, syringes, pipettes, and standard formulas. Adjusts controls of equipment, such as pumps, filters, steam kettles, and autoclaves, to obtain uniform consistency of sterile medium. Removes sample of medium from batch and tests sample for consistency, potency, and sterility, according to standardized procedures. Pours medium or adjusts controls on automatic equipment that dispenses medium into containers, such as petri dishes, test tubes, or storage drums. Seals containers and prepares and affixes identification labels to containers. Maintains production and test records. May order supplies. May mix ingredients to prepare stains used in tests. GOE 02.04.02 PD L 08 09 10 15 19 M3 L3 SVP 5 SOC 382

559.387-014 INSPECTOR (drug, prep. & rel. prod.)

Inspects pharmaceutical ingredients and products to detect deviations from manufacturing standards: Selects samples of in-process pharmaceutical ingredients, capsules, tablets, and related products for testing, according to prescribed procedures. Weighs samples, using scales, and measures samples, using micrometer. Places specified samples in disintegration baths and observes and times rate of dissolution. Records inspection results on designated forms. Checks incoming purchased pharmaceutical ingredients against invoice to verify conformity of product name, count, and labeling. Carries samples of incoming products to analytical laboratory for quality assurance testing. GOE 06.03.02 PD L 08 09 10 15 M2 L3 SVP 4 SOC 783

559.682-070 SCREEN-MACHINE OPERATOR (house furn.)

Operates screen machine that folds and bonds edges of vinyl sheets to reinforcing strips and punches holes in strips to form shower curtains: Selects roll of vinyl specified on work order, inserts metal cylinder in roll, positions roll in holding brackets of machine, and turns knobs to secure cylinder. Fills cylinder with air to prevent slippage of roll during machine operation, using air hose. Cuts lead end of vinyl with scissors to straighten end and attaches end to material in machine, using tape. Adjusts guides that fold edges of vinyl and solvent release mechanism that seals folded edges, using handtools. Turns knobs to set heat level of rollers that press and seal folded edges of vinyl. Inserts roll of vinyl reinforcing strip in holder above press of machine, and pushes end of strip onto chain that automatically positions strip for bonding to and reinforcing lead end of vinyl sheet. Pushes button to start machine and measures vinyl in machine to verify width specified on work order, using tape measure. Flips switches to activate feed chains that automatically pull vinyl and reinforcing strip into position under press and to lower press that cuts, punches holes in, and presses and bonds strips against vinyl to form shower curtains. Observes movement of vinyl through machine and adjusts machine periodically to eliminate detected defects. GOE 06.02.13 PD H 08 09 15 EC 05 M1 L2 SVP 5 SOC 7549

559.684-026 UTILITY WORKER, MOLDING (fabric, plastics prod.)

Performs any combination of following and related tasks in molding department of plastics fabricating establishment: Examines plastic products

for defects, such as scratches, *flash*, and discoloration, and discards defective items into reject box. Packs finished products into cartons and affixes content labels. Conveys supplies from storage to work stations, using handtruck. Opens collapsed cartons, folds and seals carton bottoms, using moistened gummed tape, and inserts nesting into cartons. Unloads plastic mixture from machine hoppers into barrels upon completion of job order, affixes identification labels on barrels, and conveys barrels to mixing department. Dumps cleaning solution into hopper and actuates molding machine to purge internal sections of unused plastic mixture. Dismantles hopper and drying unit of machine, using handtools, and cleans internal sections, using rags, cleaning solution, and air hose. Sweeps and mops production floor. GOE 06.04.24 PD L 08 09 15 18 19 EC 05 M1 L2 SVP 3 SOC 8769

559.684-030 HAT-FINISHING-MATERIALS PREPARER (hat & cap)

Mixes and blends finishing grease and coloring powders used in manufacture of felt hats: Pours specified amounts of ingredients, such as oil and lanolin into blending pot, following formulas and using measuring containers. Places pot on heated range and stirs ingredients to blend mixture, using paddle. Places rolls of greasing or pouncing (smoothing) cloth in processing pan and pours mixture over rolls. Turns knobs to activate oven and places processing pans in oven to heat rolls of cloth in mixture for specified period. Removes pans from oven at end of processing, affixes batch labels to rolls, and carries rolls to specified storage area. Refines dye powders, using powder-refining tumbler machine, and weighs and blends refined powders according to formulas and work order specifications, using scale and automatic mixing machine. Labels and stores blended powders, according to color, in specified storage areas. GOE 06.04.34 PD M 08 09 15 19 M2 L2 SVP 5 SOC 7759

559.684-034 UTILITY WORKER, PRODUCTION (drug, prep. & rel. prod.) utility worker, virus.

Performs any combination of following duties in production of vaccines or toxoids: Adds chemical solutions, disease virus, or bacteria to and removes culture fluids from glass vessels, using pump. Connects pumping equipment to storage, filtration, fermentation, and refrigeration containers to transfer and refrigerate chemical ingredients or to flush containers. Conveys chemical ingredients, disease bacteria, and disease viruses in drums, containers, jars, or vials to and from storage or refrigeration rooms, using handtruck. Carries samples of chemical broth, vaccine, or toxoid to quality control unit. Tends sterilizers, oven, and autoclave that sterilize glassware, instruments, and portable equipment. Washes designated equipment by hand, using brushes, rags, and detergent. Thaws frozen ingredients used in developing vaccines or toxoids, using thawing equipment. GOE 06.04.19 PD M 08 09 10 M2 L3 SVP 4 SOC 8319

559.687-074 INSPECTOR AND HAND PACKAGER (fabric, plastics prod.)

Inspects molded plastic products, such as bottle caps or tops, for defects, and packs inspected products into shipping cartons: Visually examines molded products for defects, such as scratches, discoloration, and *flash*, and discards defective products. Packs inspected product in cartons according to customer specifications and carries cartons to storage area. May attach metal bands to bottle tops prior to packing to form necks for bottles and measure necks to ensure specified length, using gauge. GOE 06.03.02 PD L 08 10 15 18 19 EC 05 M1 L2 SVP 2 SOC 782

562.685-022 COATER, SMOKING PIPE (smoking pipe)

Tends machine that sprays and coats interior of smoking pipe bowls with mixture of charcoal, shellac, and alcohol: Pours specified amounts of charcoal, shellac, and alcohol into agitator and mixes solution for specified period to prepare coating solution. Pours solution through filter into tank, replaces tank top, pulls lever to start machine pump, and turns handles to regulate pump pressure to specified setting. Attaches hose and spray nozzle to machine, using wrench and pliers. Reads work ticket to determine shape and size of pipe bowl to be processed. Places corresponding size of collar on machine spray nozzle. Positions and holds pipe bowl on collar and depresses pedal to spray and coat inside of bowl with coating solution. Places coated pipe bowls in box for storage. Disassembles and cleans spray nozzle and hose, using wrench, pliers, methanol, rag, and brush. GOE 06.04.21 PD M 08 09 10 M2 L2 SVP 3 SOC 7669

563.686-018 OFFBEARER, PIPE SMOKING MACHINE (smoking pipe) pipe smoking machine operator.

Offbears smoking pipes from smoking machine used to break-in (char) new pipe bowls: Removes pipe bowls from suction tubes of pipe smoking machine. Examines pipes to determine tobacco has been burned and places aside pipes containing unburned tobacco. Empties ashes into water bucket and inspects interior of charred bowls to verify conformance to company standards. Cleans smoker tubes, using wire pipe cleaner. GOE 06.04.03 PD M 08 09 10 15 M1 L1 SVP 1 SOC 8769

564.686-010 WOOD SCRAP HANDLER (veneer & plywood)

Feeds *hog mill* that grinds wood scraps into chips for use as fuel: Loads container, such as push cart or handcart, with wood scrap, and pushes or pulls container to hog mill. Lifts and throws wood chips from container onto conveyor that feeds hog mill. Spreads wood scraps evenly across conveyor to regulate flow of wood scraps to prevent machine damage or malfunction, such as clogged or damaged mill knives. May assist machine

operators in cleaning work area. GOE 06.04.03 PD H 04 06 08 09 EC 05 07 M1 L1 SVP 2 SOC 825

569.384-010 QUALITY-CONTROL TESTER (build. board)

Tests samples of wood products to determine fiber content and strength, using test equipment and standardized formula: Gathers samples, such as particleboard and wood shavings, from production areas. Weighs wood shavings before and after drying process and computes weight variances for cost analysis purposes, using scale, calculator, and formula. Conducts pressure and strength tests on particleboard to determine quality control standards, such as moisture content, strength, and resistance, using test equipment. Records test results on company chart. GOE 06.03.01 PD L 08 09 10 15 M3 L3 SVP 6 SOC 783

569.565-010 CREW LEADER, GLUING (veneer & plywood)

Leads workers in gluing, assembling, and pressing veneer sheets into plywood panels, and tends glue mixing tanks: Reads work order to determine quantity, type, and dimensions of veneer sheets needed. Notifies FORK-LIFT-TRUCK OPERATOR (any ind.) 921.683-050 to deliver veneer sheets from storage to gluing area. Observes glue application and panel layering, pressing, and conveying processes to maintain establishment specifications. Assists GLUING-MACHINE OPERATOR, ELECTRONIC (woodworking) 569.685-050, using wrenches and handtools, in replacement of forms that shape panels to customer specifications. Notifies MAINTENANCE REPAIRER, INDUSTRIAL (any ind.) 899.261-014 of machine malfunctions. Dumps measured dry ingredients into glue mixing tanks. Turns valves to admit specified amounts of liquid ingredients and presses button to begin agitators that automatically mix ingredients into glue. GOE 06.04.03 PD M 02 04 06 08 09 10 12 13 16 17 M3 L3 SVP 4 SOC 7639

569.684-010 LOG PEELER (sawmill)

Peels bark from logs by hand, using two-handled drawknife: Pulls log from storage area and positions log for peeling, using cant hook. Secures log, using log-dog (wedge), and pulls drawknife lengthwise along log to strip bark from log. Rotates log and repeats stripping action until bark is removed from log. Chops branch stumps from log, using hatchet. Stacks stripped logs between spacing boards to facilitate drying of wood. Straps specified number of logs together, using steel banding tape and strapping tools. GOE 06.04.25 PD V 04 08 09 EC 01 M1 L1 SVP 2 SOC 7759

569.685-078 WOOD-FUEL PELLETIZER (fuel briquettes)

Tends machines and equipment that automatically extrude, pelletize, and cool mixture of ground wood and bark to form wood-fuel pellets: Moves controls to adjust temperature and steam pressure gauges, according to type of wood and bark mixture being processed, regulate conveyor speed, and start machine. Periodically tests samples of extruded mixture for moisture content, using electronic moisture tester, and readjusts steam pressure gauges as required. Listens to machines and equipment and monitors control panel to detect malfunctions and to ensure production flow. Clears jams, using paddle. Removes and replaces worn dies, using wrench and screwdriver. Washes, cleans, lubricates, and greases machines and equipment, using water, detergent, brushes, rags, oilcan, and grease gun. Records control panel readings in operating log. GOE 06.04.03 PD M 08 09 13 19 M2 L2 SVP 4 SOC 7663

569.686-038 GLUING-MACHINE FEEDER (woodworking)

Feeds woodstock onto conveyerized glue wheel that applies glue to edges of woodstock preparatory to bonding: Locates specified woodstock in storage area and conveys woodstock to work station. Lifts woodstock pieces from stock in prescribed sequence, following assembly sequence reference marks on woodstock pieces, and loads woodstock onto conveyer that conveys woodstock across glue-applying mechanism. Places final piece in assembly sequence at specified angle on conveyor or marks piece, using pencil, to signal GLUING-MACHINE OPERATOR, ELECTRONIC (woodworking) 569.685-050 or worker bonding woodstock by other methods of end of sequence. GOE 06.04.03 PD M 08 09 M1 L1 SVP 2 SOC 8725

569.686-042 LAMINATING-MACHINE FEEDER (build. board) board handler.

Feeds laminating machine that bonds coating material, such as paper or plastic to hardboard panels: Pulls panel from supply pallet, centers panel on machine feed conveyor, and pushes panel between power rollers of machine that automatically applies coating to panel, bonds material to panel with glue, heat, and pressure, and discharges laminated panel onto off-feed conveyor. GOE 06.04.09 PD M 08 09 M1 L1 SVP 1 SOC 8725

569.686-046 LAMINATING-MACHINE OFFBEARER (build. board) laminator grader.

Offbears laminating machine and inspects and sorts processed products: Depresses buttons to activate offbearing conveyors and to start action of panel edge sanders along sides of conveyors. Turns dial to synchronize offbearing conveyor speed with offbearing rate of laminating machine. Observes laminated panels to detect processing flaws, such as loose corners, damaged edges, or discolorations. Grades panels according to prescribed standards and routes graded panels onto designated conveyors for delivery to assigned storage areas. GOE 06.03.02 PD L 08 09 11 15 19 EC 05 M1 L2 SVP 2 SOC 782

569.686-050 PRESS BREAKER (build. board)

Unloads pressed hardboard panels from hardboard pressing machine: Pushes buttons that activate elevator platform to facilitate worker access to tiers of hardboard pressing machine. Inspects wood fiber mats to ensure specified position in pressing machine. Breaks seals of pressed hardboard from pressing plates, using pry bar, and activates drive chain motors to eject hardboard panels from press into tiers of unloading machine. Activates conveyor to unload hardboard panels onto panel stacker that stands panels on edge in humidifier cars. Removes and weighs randomly selected hardboard panels from conveyor belt, and records weights on tally sheet to facilitate quality control. Replaces weighed panels onto conveyor belt. Pushes loaded humidifier carts into humidifier cabinet. GOE 06.04.40 PD V 03 04 05 06 08 09 15 18 20 EC 05 07 08 M1 L1 SVP 2 SOC 8726

569.686-054 VENEER-TAPING-MACHINE OFFBEARER (veneer & plywood) tape machine tailer.

Offbears veneer taping machine: Lifts taped face veneer sheets from discharge bed of veneer-taping machine and stacks sheets on storage cart. Hands veneer sheets that are not taped according to specifications to VENEER TAPER (veneer & plywood) 569.685-074 for retaping. Pushes loaded cart from machine to specified processing area. GOE 06.04.03 PD M 08 09 EC 05 M1 L1 SVP 2 SOC 825

569.687-030 QUALITY CONTROL INSPECTOR (furn.; veneer & plywood)

Inspects veneer during processing phases to verify that veneer meets specified quality standards: Reads work cards at processing stations to determine specifications for veneer being processed. Observes clipping and splicing operations and examines veneer sheets to ensure veneer is processed according to company standards. Inspects random sheets of spliced veneer to detect gluing defects and to ensure veneer grain is matched in prescribed manner. Measures length and width of veneer for conformance to specifications, using tape ruler. Tests moisture content of veneer according to wood type, using portable moisture meter. Discards veneer that deviates from specified standards. Observes activities of VENEER GRADER (veneer & plywood) 569.587-010 to ensure that grading of veneer conforms to quality standards. Records inspection data and submits reports to designated personnel. GOE 06.03.02 PD L 08 09 15 19 M2 L2 SVP 3 SOC 785

570.132-022 SUPERVISOR (brick & tile)

Supervises and coordinates activities of workers engaged in operation of equipment to scrape clay and shale from open pits: Assigns duties and demonstrates methods of work and use of equipment to maintain production schedule and ensure safe operations. Determines needed repairs of pit roadways and of equipment used to scrape, load, and haul clay and shale. May supervise and coordinate activities of workers engaged in crushing, grinding, and screening clay and shale [MILLING SUPERVISOR (brick & tile) 570.132-014]. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.04.01 PD L 08 09 10 11 12 13 15 M2 L3 SVP 6 SOC 711

573.685-038 BURNER (brick & tile)

Tends kilns that fire magnesium materials, such as filter cake and briquettes to remove specified impurities: Observes influx of material into kiln and movement of material through kiln stages to verify that material passes through kiln at prescribed rate. Monitors console dials and gauges and adjusts controls to maintain specified temperatures and other processing parameters. May be designated according to type of kiln tended as BURNER, HEARTH (brick & tile); BURNER, SHAFT (brick & tile). GOE 06.04.17 PD L 02 08 09 M1 L1 SVP 2 SOC 7675

573.685-042 OVEN-PRESS TENDER (asbestos prod.) I

Tends hot press and related equipment that hardens asbestos disc pads for use as brake linings: Positions metal die plate on roller-type conveyor, picks up stack of asbestos disc pads from table, and places individual pads into wells of die plate. Discards broken or defective pads. Pushes filled die plates onto racks of hot press. Starts machine that automatically closes press to heat treat pads for specified time and opens press at end of press cycle. Pulls die plates from press onto conveyor. Removes cured disc pads from die plates, using knockout device that forces pads from plates. Loosens stuck pads with rubber mallet and tosses pads into storage container. Sprays empty die plates with silicone solution, using spray gun, to prevent pads from sticking to plates during heat-treating process. GOE 06.04.19 PD M 08 09 15 17 EC 07 M1 L1 SVP 4 SOC 7675

573.685-046 OVEN-PRESS TENDER (asbestos prod.) II

Tends hot press that hardens asbestos disc pads for use as brake linings: Pushes metal die plates filled with asbestos disc pads onto feed elevator of machine. Presses buttons to open press, move die plates from elevator into press, and close press. Observes timer lights, dials, and pressure gauges on control panel of machine to determine end of press cycle. Presses buttons at end of cycle to simultaneously open press and move cured disc pads from press onto discharge elevator. Pushes die plates from elevator onto roller-type conveyor, using metal rake. GOE 06.04.19 PD M 08 09 15 EC 07 M1 L1 SVP 4 SOC 7675

575.684-050 CULTURED-MARBLE-PRODUCTS MAKER (stonework)

Cast and molds cultured marble products, such as sink basins and wall panels: Calculates amount of material, such as ground marble, resin, and catalyst, needed to make products, utilizing specifications on work order. Weighs materials, using scales, and pours materials into mixing machine. Pours specified amount of material into pail, adds color, and mixes ingredients to impart color to products, using wood paddle. Applies wax to mold sections to facilitate separation of products from molds, using cloth. Assembles cast, using bolts, and attaches sink mold to cast, using clamps. Sprays smoothing agent on mold and cast prior to pouring material. Pours material from mixing machine into cast on vibrating table, and applies colored mix randomly to material to impart marble appearance to product. Positions sink mold on previously cast product, and applies layers of mix by hand to form sinks. Disassembles mold, using handtools, and places products on racks for curing. Trims *flash* from molds, using portable sander or grinding wheel. Polishes surfaces of products to remove blemishes, using pumice and powered polisher. GOE 06.02.30 PD H 08 09 17 19 EC 07 13 M2 L3 SVP 5 SOC 7754

575.687-034 INSPECTOR (pottery & porc.)

Examines automatically cast toilet bowls for molding defects: Moves toilet bowls from casting and drying area to inspecting area, using hand-truck. Examines exterior and interior surfaces of bowls for defects, such as shape distortion, chips, or cracks. Marks defective bowls to indicate type and location of defects, using marking pencil. Applies glaze to specified areas of bowls, using paint brush, to prevent cracking during subsequent finishing. Records number and types of defects on product identification tags for inventory and production records. Places boards on roller conveyor to support bowls, positions bowls on boards, and pushes inspected bowls along conveyor for further finishing. Returns defective bowls to casting area for reworking. GOE 06.03.02 PD H 08 09 15 M1 L1 SVP 2 SOC 782

575.687-038 TIP-OUT WORKER (conc. prod.)

Removes concrete pipes from steam-curing chamber, with assistance of another worker, using hydraulic lifting device: Presses button to activate chain mechanism that conveys kiln cars containing cured pipes from curing chamber into position under lifting device. Presses button to activate lifting device that lowers, grips, and lifts pipes from vertical to horizontal position on kiln car. Strikes metal pallets around bell end of pipes to remove pallet from pipes, using sledgehammer. Rolls pipes from kiln cars onto metal rack to facilitate transporting of pipes to storage yard. Removes couplings that join kiln cars, pushes kiln cars onto chain conveyor, and activates conveyor to return cars and pallets to pipe making section. GOE 05.12.04 PD V 08 09 M1 L1 SVP 2 SOC 8726

579.134-014 SUPERVISOR, EPOXY FABRICATION (brick & tile)

Supervises and coordinates activities of workers engaged in production of clay sewer pipe junction fittings and assembly of pipe couplings: Observes pipe preparation, epoxy fabrication, ceramic sawing, coupling assembly, and palletizing of products to ensure workers follow prescribed production methods and procedures. Inspects products in all stages of production to detect cracks, pipe distortion, or assemblies which do not meet prescribed standards. Confers with supervisor to resolve personnel or production problems. Trains workers in production tasks and evaluates performance. Moves equipment, supplies, or products, using forklift truck. Perform minor repairs or adjustments to equipment, using handtools. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 10 11 12 13 15 16 18 20 EC 05 M2 L2 SVP 6 SOC 71

579.134-018 SUPERVISOR, REFRACTORY PRODUCTS (brick & tile)

Supervises and coordinates activities of workers engaged in production of refractory products, such as brick, slabs, and posts: Trains and observes workers to ensure job performance meets standards and that safety procedures are followed. Observes operation of machinery and equipment, such as kilns, extruder, and mixing machine, to detect malfunctions. Examines extruded clay and shale columns, cut green brick, and fired brick to detect defects and for adherence to production standards. Maintains record of ingredients used in preparing finishing mixture and requisitions ingredients as needed. May assist workers in setting up, operating, and repairing machinery and equipment in department. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 04 08 09 12 13 15 17 18 19 M2 L3 SVP 6 SOC 711

579.137-030 DISPATCHER, CONCRETE PRODUCTS (conc. prod.)

Coordinates sales and shipping activities in office of concrete products manufacturing establishment: Quotes prices and receives orders for company products such as cement blocks, pipes, utility vaults, or septic tanks. Confers with plant production and yard personnel to establish delivery schedules. Prepares invoices, delivery tickets, and related shipping documents and assigns drivers for scheduled deliveries. Receives cash payments for shipments from drivers and prepares reports of cash and charge sales. Posts transactions to customer accounts and issues customer account statements to customers. Maintains payroll and driver expense records. Talks to drivers en route to resolve delivery problems or give additional instructions. May direct production workers to cast concrete products according to customer specifications. GOE 07.05.01 PD L 12 13 15 M3 L3 SVP 5 SOC 4751

579.364-010 QUALITY CONTROL TECHNICIAN (build. board)

Tests and inspects gypsum and gypsum wallboard during manufacture, using variety of testing devices and procedures to maintain product quality: Collects, measures, and weighs samples of minerals and chemical additives, such as gypsum and vermiculite. Performs tests on samples, using such equipment as ovens and molds, and performs calculations to measure such factors as gypsum purity, particle size, and hardness, applying arithmetic formulas. Tests wallboard panels to verify factors, such as adhesion of paper to gypsum, edge hardness, and strength of panels. Observes designated worker performing standard wallboard tests and measurements, reads results, duplicates tests, and compares test results and measurements to verify accuracy of measurement. Collects and records results of sampling and testing to maintain record of product quality. Inspects wallboard at job sites to substantiate customer's claim of product defects. Formulates compensation offers to resolve claims and submits offer to management for approval. GOE 06.03.01 PD M 02 03 08 09 10 11 12 13 15 17 EC 05 07 M3 L3 SVP 6 SOC 783

579.382-022 BLANKMAKER (glass mfg.)

Operates glass lathe to form glass tubes into glass blanks used in fabrication of laser light conductors: Reads work orders and technical manuals to determine lathe setup procedures, and pushes buttons and turns knobs to adjust lathe gas-injection and temperature controls. Locks glass tube into spindle chuck, using wrench. Trues and flares glass tube, using lathe carriage burner, ruler, and calipers. Attaches chemical spray nozzle to glass tube to coat interior of tube with gases, and inserts auger into tube to remove chemical residue. Lowers and locks spindle shield to form dust-free chamber. Presses keys on keyboard to transmit production specifications to computer and to transfer lathe operation from manual to automatic control for duration of blankmaking process. Observes lathe dials and gauges, computer display panel, and color of flame on lathe carriage burner to verify adherence to manufacturing specifications. Calculates data, such as blank weights, diameters, and densities, using calculator, and enters data on record sheet. Repairs lathe, using wrenches, pliers, and screwdrivers to correct malfunctions. GOE 06.02.13 PD L 08 09 10 15 17 19 M3 L3 SVP 6 SOC 7679

579.684-026 CASTER (brick & tile) castables worker.

Mixes slurry, fills molds, and conveys filled molds to drier to cast refractory brick, using mixer, vibrating table, chain hoist, and related equipment: Reads work order to determine product to be cast and bolts specified mold parts together, using impact wrench. Attaches chain hoist to assembled mold and moves mold to vibrating table. Empties pre-measured ingredients into mixer according to formula, adds water, and starts mixer. Observes mixture and adds additional water, as required, to achieve prescribed consistency, utilizing acquired experience. Fills bucket with slurry and pours slurry into mold. Presses switch to start vibrating device on table and adds slurry to fill mold as mixture settles during vibration. Draws metal bar across surface of mixture to level casting. Stacks filled molds in drier car, using chain hoist, and pushes loaded car along rail into drier. Sets drier controls to dry castings according to specifications, and pulls drier car from drier at end of cycle. Removes molds from dried products, using impact wrench. Cleans mold parts, using brush. GOE 06.04.32 PD H 08 09 10 15 17 EC 05 06 M1 L2 SVP 3 SOC 774

579.684-030 CUTTER (brick & tile)

Cuts kiln furniture, bricks, or other clay and shale products to specified shape and size, using one of the following methods: (1) Adjusts cutting jig of table-mounted handsaw to the specified setting, using tape measure and allen wrench. Positions casting in jig and pulls saw blade to cut ware to specified size. (2) Places pressed ware into table-mounted form. Lowers die or wire cutter onto ware to cut ware into specified shape and size. GOE 06.04.30 PD M 08 09 M1 L1 SVP 2 SOC 7753

579.685-058 BRICK SETTER OPERATOR (brick & tile) stacker operator.

Tends machine that cuts columns of extruded clay and shale into brick and stacks layers of brick onto kilncars for firing: Depresses buttons on panelboard to start conveyor that moves columns of clay and shale from extruder through cutter that cuts column into brick and assembles layer of brick on platform of machine. Depresses button to activate hydraulic pickup head of machine that picks up layer of brick from platform and stacks brick on kilncar. Straightens uneven brick on stack, using hands. Clears jammed conveyor and machine, using metal bar and scraper. Discards broken columns of clay and shale or damaged brick onto conveyor for recycling. Activates control on panelboard to tie (set at right angles) two top layers of brick on kilncar. Replaces broken cutter wires on machine cutter, using handtools. Dusts conveyor, cutter, and pickup head, using airhose. Oils and greases specified parts of machinery, using oilcan and grease gun. GOE 06.04.08 PD M 02 04 08 09 10 15 16 17 18 20 M1 L2 SVP 3 SOC 7678

579.685-062 BRICK UNLOADER TENDER (brick & tile)

Tends equipment that automatically unloads brick from kilncars after firing: Depresses buttons on control panels to activate equipment that moves loaded kilncars along rails into unloading position, lowers hydraulic pickup head that lifts stacks of brick from kilncar onto conveyor, and conveys brick to subsequent processing area. Depresses buttons to stop

equipment when rows of brick are unevenly stacked, damaged bricks are detected, or jamming or other malfunctions occur. Replaces damaged bricks and straightens rows. Removes jammed bricks, using iron bar. May unload stacked bricks from conveyor, using hydraulic ram. May manually remove rows of stacked brick to create time course (open spaces) to facilitate handling by forklift during packaging. GOE 06.04.40 PD L 08 09 M2 L2 SVP 3 SOC 8319

579.685-066 BRIQUETTE OPERATOR (brick & tile)

Tends vacuum screen that screens magnesium liquor and briquette press equipment that presses screened residue (filter cake) to form briquettes of periclase (refractory material). Flips control panel switches to start multi-level arrangement of vacuum screen feeder wheel, vacuum screen hearth kiln, and briquette press. Observes vacuum screen feeder wheel to verify that cups positioned on feeder wheel are full of magnesium liquor for emptying onto vacuum screen. Turns dials on control panel to adjust speed of vacuum screen feeder wheel and vacuum screen to control thickness of filter cake, following prescribed procedure. Reads counter on feeder wheel to determine revolutions per hour and records totals in log-book. Moves control knobs to adjust amount of filter cake fed from hearth furnace onto conveyor and into briquette press. Turns knobs to regulate speed and pressure of briquette rollers that form briquettes. Observes indicator lights and gauges on control panels to detect equipment malfunction and notifies supervisor. Records equipment downtime in logbook. GOE 06.04.19 PD L 08 09 M1 L1 SVP 2 SOC 7663

579.685-070 MARKER MACHINE ATTENDANT (glass mfg.)

Tends equipment that automatically detects and marks defects in glass ribbon (continuous sheet of flat glass) on conveyor line in glass manufacturing establishment: Observes indicator lights on equipment to ensure activation of all inspection zones. Activates marker at each inspection zone and observes operation of markers to test marker operation. Draws line across glass ribbon, using chalk, to simulate glass defects, and observes equipment operation to verify inspection process. Replenishes chalk in marker mechanism and sheets of paper beneath glass ribbon. Observes lighted panel to determine frequency of marking, according to company standards, and notifies designated personnel if overmarking or undermarking occurs. Inspects glass from catwalk to ensure defects are marked by machine. Cleans and removes dirt, dust, and broken glass from machine and work area, using broom, shovel, vacuum cleaner, and dust cloths. GOE 06.04.08 PD L 08 09 10 15 16 EC 05 M1 L1 SVP 3 SOC 7679

579.685-074 MIXER (brick & tile)

Tends machines that dry and mix ingredients, such as clay, chromite, shale, and sand to form finishing mixture used in making brick: Reads batch card and notifies helper to assemble ingredients specified on card. Opens bags and weighs specified quantities of ingredients, using scale and bucket. Pours weighed ingredients into storage bins prior to mixing. Turns knob to set temperature of dryer and pulls lever to start mixer. Shovels or pours ingredients into dryer that automatically dries and feeds ingredients into mixer, and dumps mixture into bin for further processing. Observes operation of machines and notifies supervisor of malfunctions. Oils and greases machinery. Removes caked ingredients from dryer and mixer, using metal bar and scraper. GOE 06.04.17 PD H 04 08 09 EC 14 M1 L1 SVP 2 SOC 7664

579.686-030 PRESS OFFBEARER (brick & tile)

Unloads pressed clay products from forming press in establishment manufacturing refractory products: Lifts and carries clay products from press to holding rack. Measures product to verify thickness conforms to standards, using calipers. Marks date on products, using pencil, and places products on holding rack. Pushes filled holding rack to drying area and empty rack to press area. Cleans press die of clay residue and dust, using handtools and airhose. GOE 06.04.30 PD H 08 09 15 EC 05 07 M1 L1 SVP 1 SOC 8725

579.687-034 DISC-PAD KNOCKOUT WORKER (asbestos prod.)

Removes cured asbestos disc brake pads from metal die plates, using knockout device: Positions die plate on roller-type conveyor, removes lid from plate, and scrapes asbestos residue from lid, using putty knife. Pushes plate onto revolving tray and pulls lever to flip plate over to facilitate knockout of disc pads. Presses button to activate knockout device that forces metal rods into wells of die plate to punch pads from plate. Pushes empty plate along conveyor for subsequent re-use in heat-treating process. GOE 06.04.34 PD M 08 09 EC 07 M1 L1 SVP 3 SOC 8769

579.687-038 DISC-PAD-PLATE FILLER (asbestos prod.)

Places asbestos disc pads into wells of die plates prior to heat-treating process: Sprays die plate to prevent pads from adhering to plate during heat-treating process, using spray gun and silicone solution. Positions individual pads into wells of die plates and pushes filled plate along roller-type conveyor to oven of hot press. Discards broken or defective pads. GOE 06.04.34 PD M 08 09 10 15 17 EC 07 M1 L1 SVP 3 SOC 8769

580.687-014 HIDE STRETCHER, HAND (leather mfg.) laborer, drying department.

Smooths, stretches, and dries cowhides, using slicker (squeeze-type device) and steam-heated tables, to extend and thin hides for further processing: Carries wet hide from rack to steam-heated table and manually extends and smooths hide on table. Rubs hide with slicker to stretch and

smooth hide and to remove excess water. Stretches hides on additional tables and observes steam rising from hides to determine when hides are dry. Loads dry hides onto rack to store hides for further processing. Counts and records number of hides stretched and dried to maintain production record. Cleans steam-heated tables, using waterhose and broom. GOE 06.04.27 PD L 04 08 09 EC 04 M1 L1 SVP 1 SOC 7759

581.685-082 DRUM-DRIER OPERATOR (synthetic fibers)

Tends drum-drier that removes moisture from polyester chips prior to processing chips into synthetic fibers: Pushes button and turns lever to start and rotate drum-drier into position for loading. Positions specified number of boxes of polyester chips on hydraulic loader, and pushes button to dump chips into loader bin. Spreads chips evenly in bin while vacuum system sucks chips into drum-drier. Presses button to rotate drum-drier for specified time to dry polyester chips. Opens tops of portable storage bins, using wrench, positions bins underneath unloading spout of drum-drier, using forklift, and opens spout to fill bins with chips, using wrench. Secures tops of bins, and attaches nozzles of nitrogen gas supply to filled bins to maintain chips moisture-free while in bins. Transports bins to storage, using forklift; or places bins on elevator to raise bin to upper floor, removes top of chip silo, lowers bins into silo, using hoist, and opens valves on bins to empty chips into silo for further processing. Obtains chip samples at specified times for chemical analysis. Fills out inventory cards and attaches cards to side of bins. Removes cards when emptying bins, and submits cards to supervisor. Maintains log of drum-drier start-up times, type of chips loaded, and name for plant record. GOE 06.04.16 PD V 02 04 08 09 10 16 17 20 EC 14 M1 L1 SVP 3 SOC 7659

581.685-078 FLAT DRIER (felt goods)

Tends equipment that dries felt strips, assisted by another worker: Removes work ticket from rolls of felt and records on ticket drying time and temperature required to dry felt. Places felt rolls on holding fixture of drying chamber, and turns handcrank to adjust carrier rack of chamber to width of felt. Unrolls felt and attaches edges of entire roll to spikes on both sides of carrier rack, using wooden hammer. Pushes carrier rack with felt into drying chamber, closes chamber door, and turns valves to obtain specified steam pressure and temperature. Presses button to start fan to circulate heat evenly in chamber, and turns dial of timer to set length of drying cycle, according to thickness of felt. Observes gauges to maintain specified chamber temperature and steam pressure. Closes steam valve and opens chamber door to cool drying chamber. Feels felt to ascertain dryness. Rerolls felt for further processing. GOE 06.04.16 PD M 08 09 M1 L2 SVP 4 SOC 7659

582.362-014 DYE AUTOMATION OPERATOR (textile)

Controls and monitors programmed electronic equipment to bleach, dye, and finish cotton and synthetic sewing threads: Confers with operator of dye machines to obtain information needed to process customer orders, and records data, such as number of dyeing machines to be used, production order numbers, and color numbers specified for dye orders. Selects programmed procedures based on knowledge of dyeing processes and familiarity with affinity of dyes to specific thread types, or consults procedural manuals for data. Depresses keys of data-entry unit to enter required data into computer. Observes display screen to verify data entered, to ascertain computer response to instruction entered, and to determine compliance with procedural steps. Depresses keys to edit instructions when necessary and to input answers for primary or alternate steps in procedure. Hangs tags on dye board, during shift, to indicate steps in dyeing process for each machine. Confers with workers to determine reasons for delays in dyeing process, and examines dyeing machines and equipment to ascertain reason for malfunctions. Notifies supervisor of malfunctions, and records reasons for delays in log. Receives instructions from supervisor, such as alteration of dyeing temperature, omission of specific steps in dyeing process, or repetition of specific steps. Keys in dyeing instruction changes. Confers with operator on previous shift to ascertain drying steps to complete dyeing in progress. GOE 06.02.16 PD L 08 09 10 12 13 15 16 18 M3 L3 SVP 5 SOC 7659

582.384-010 DYE-LAB TECHNICIAN (hosiery)

Dyes knitted socks and sample cloth, according to dye formulae, using sample dyeing equipment and steam table for verification that products conform to company specifications: Computes quantity of dyes required for machine of specified capacity, using desk calculator and dye formula. Gathers, weighs, measures, and mixes dyes and chemicals, using scales, graduated cylinders, measuring cup, and titration cylinder. Dyes individual socks, using steam table. Flips switches and turns valves and hand-wheel to prepare sample tub dye bath and adds specified quantities of acid and dye, to achieve required pH level and specifications for dye contrast and color intensity, to prepare sample cloth and sock to be inspected. Presses buttons to activate and deactivate drum of extractor to remove excess moisture from machine and dyed sample cloth. Submits dyed sample to supervisor for inspection. GOE 02.04.01 PD M 04 08 09 10 15 19 EC 04 05 14 M3 L2 SVP 5 SOC 7659

584.382-014 QUILTING-MACHINE OPERATOR (coated fabrics)

Sets up and operates machine to heat-seal vinyl film to cotton and synthetic filler in specified patterns to produce quilted fabric: Reads work order to determine specifications, such as type of vinyl film and batting

(filler), die pattern, and total yardage to be fabricated. Bolts die to underside of machine ram with assistance of other worker, tapes insulating paper to bumper plate of machine, and mounts bumper plate onto machine bed under die. Loads vinyl film and batting onto roller bar with assistance of other worker, using hoist, and lowers roller bar onto machine feed-off winder. Adjusts ram stroke and pull-away arm to specified positions, using wrench. Adjusts thermo-seal unit controls for radio-wave frequency, sealing time, and electrical current, applying knowledge of product specifications and machine operations. Buffs die surfaces to remove burs, using emery cloth. Adjusts slitter knives to specified width of finished material, using rule and hex key. Pushes buttons to activate machine for trial run, inspects quilted fabric for defects such as die cutting through material, and adjusts control settings to correct defects. Restarts machine and observes feeding, positioning, heat-sealing, and winding operations to detect malfunctions. Continuously observes light signal that indicates drainage of residual current from die and machine bed after die-sealing operation. Pushes buttons to stop machine when signal is not emitted and notifies designated personnel. Attaches red tape to fabric to mark defects, such as burns, smudges, and printing errors. Positions and tapes end of quilted fabric emerging from machine onto takeup roller, pushes knob to set automatic yardage counter to zero, and pulls lever to stop winder when specified yardage has been reached. Cuts off material, using knife, tapes material end to roll, and wraps and labels roll, following prescribed procedures. Carries finished rolls to specified storage area. GOE 06.02.09 PD H 08 09 15 17 19 EC 09 M2 L2 SVP 5 SOC 7679

586.130-010 SUPERVISOR (felt goods)

Supervises and coordinates activities of workers engaged in shrinking and hardening felt: Estimates processing requirements such as amounts of chemicals and length of processing cycles based on knowledge of working characteristics of materials and machine capability. Sets up felt-processing machines, assigns workers to duties, and assists workers in solving work-related problems. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May be designated according to process supervised as SUPERVISOR, FELTING (felt goods); SUPERVISOR, FULLING (felt goods). GOE 06.04.01 PD M 08 09 12 13 15 EC 04 07 M2 L2 SVP 6 SOC 71

589.137-014 SUPERVISOR, BONDING (textile)

Supervises and coordinates activities of workers engaged in bonding, stretching, and applying finishing solution to synthetic sewing threads to improve their sewing quality: Observes production activities to ensure that work progresses according to schedule and that work methods meet prescribed standards. Feels bonded thread to verify that moisture content and surface smoothness of thread meet processing specifications. Confers with company personnel to identify and resolve processing problems. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.01.01 PD L 08 09 11 12 13 15 16 19 M2 L3 SVP 7 SOC 711

589.387-022 INSPECTOR, FINISHING (felt goods)

Inspects finished felt for processing flaws, such as random thickness, grease spots, and dye marks, and grades felt, following grading specifications: Places roll of felt onto holding fixture at end of glass-top inspection table, assisted by another worker. Threads front end of felt strip between hold-down bar and table. Activates fluorescent light inside table and sets table gauges to measure length, width, and thickness of felt. Feeds felt onto takeup roller that pulls felt across lighted table. Depresses button to activate takeup roller. Examines felt for lint, grease spots, discolorations, and dye marks. Reads thickness and width gauges to verify conformity to specifications. Depresses button to stop takeup roller when felt meets length specification. Cuts felt from roll and weighs felt piece to detect deviation from prescribed weight. Marks ticket and attaches ticket to portion of felt that needs to be reworked or discarded. Records thickness, width, length, and weight of felt on mill ticket. Grades felt according to grading specifications. GOE 06.03.02 PD M 08 09 15 19 M2 L2 SVP 5 SOC 783

589.687-058 SHAKER (hosiery)

Shakes out, aligns, and folds surgical hose following wet processing to prepare hose for wrinkle-free drying in hot house: Empties bag of hose on worktable, unrolls bundle of hose, and extends hose on worktable. Pulls and aligns heels, toes, and toe openings of hose, and lifts, extends, and smooths hose to dewrinkle and flatten edges and folds of hose legs. Lifts and shakes hose of specified styles, and slaps thigh pouches of hose against front edge of worktable to dewrinkle hose. Turns and straightens elastic welts inserted during bundling, bagging, or wet processing. Opens and flattens panel seams to prepare hose for drying in conformity with quality standards. Stacks specified quantity of hose on storage tray, and completes and attaches work ticket to tray. Shakes, aligns, and folds leotards to prevent setting of wrinkles. Stores irregular hose or pantyhose in specified storage areas. Inspects, mends, or pairs hose or pantyhose, following processing specifications. GOE 06.04.35 PD L 04 08 09 10 11 M1 L1 SVP 2 SOC 8769

590.130-010 SUPERVISOR, ELECTRONICS PROCESSING (electronics)

Supervises and coordinates activities of workers engaged in processing electronic components and parts, such as printed circuit boards (PCBs), electron tubes, and semiconductor devices: Analyzes production schedule to plan crew assignments for section. Assigns duties to workers. Examines

product according to knowledge of manufacturing and quality standards to determine acceptability. Demonstrates method and sequence for performing duties, and trains workers in operation and control of machines and equipment. Initiates or recommends personnel actions, such as hiring, transferring, promoting, or disciplining. Maintains records and prepares cost, yield and breakage, and maintenance reports. Inventories and requisitions tools, equipment, and supplies for department activities. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May be required to participate in work of subordinates by performing such duties as machine and equipment setup, adjustment, and minor repair. May be designated according to product assembled or department function as SUPERVISOR, CAPACITOR PROCESSING (electronics); SUPERVISOR, ELECTRON-TUBE PROCESSING (electronics); SUPERVISOR, INTEGRATED CIRCUIT MANUFACTURING (electronics); SUPERVISOR, PRINTED CIRCUIT BOARD PROCESSING (electronics); SUPERVISOR, SEMICONDUCTOR WAFER MANUFACTURING (electronics) or according to department function as SUPERVISOR, PROCESS TESTING (electronics). GOE 06.01.01 PD L 08 09 10 12 13 14 15 19 M3 L3 SVP 7 SOC 71

590.262-010 CRYSTAL GROWING TECHNICIAN (electronics)

Analyzes processing procedures and equipment functions to identify and resolve problems in growing semiconductor crystals, utilizing knowledge of crystal growing and trains other workers to grow crystals: Observes furnace operation and crystal growth and reads logbook entries to identify deviations from specifications and procedures and advises CRYSTAL GROWER (electronics) 590.382-014 on techniques to adjust furnace controls to alter crystal growth to meet company specifications. Demonstrates and explains crystal growing procedures to train CRYSTAL GROWER (electronics) 590.382-014 and to improve worker's crystal growing techniques. Inspects furnaces for gas leaks, diagnoses equipment malfunctions, and requests equipment repairs. Sets up and operates furnaces in absence of CRYSTAL GROWER (electronics) 590.382-014. GOE 06.02.18 PD M 08 09 10 12 13 15 17 19 M3 L3 SVP 6 SOC 7479

590.262-014 TEST TECHNICIAN, SEMICONDUCTOR PROCESSING EQUIPMENT (electronics)

Operates machines and equipment used in production of semiconductor wafers, such as alignment equipment, automatic developer, and diffusion furnaces, and tests processed wafers to evaluate performance of machines and equipment: Operates machines and equipment to process test wafer. Inspects and measures test wafer, using electronic measuring equipment and microscope, to determine that machines and equipment are processing wafers according to company specifications. Records test results in logbooks. Discusses production problems with workers. Analyzes test results, using engineering specifications and calculator, and writes report on equipment repair or re-calibration recommendations and on operator procedure violations. GOE 06.01.05 PD L 08 09 10 12 13 15 17 18 EC 13 M3 L4 SVP 7 SOC 6881

590.282-010 EPITAXIAL REACTOR TECHNICIAN (electronics)

Sets up and operates computer-controlled epitaxial reactor to grow layer of semiconductor material on wafer surface, following written specifications, in wafer fabricating plant: Removes wafers from tray, using vacuum wand, and cleans wafer, using nitrogen blow-off wand. Positions wafers on carousel and aligns carousel on baseplate of reactor. Keys information into computer, using keyboard, to start rotation of base plate, and to activate vacuum pump and epitaxial growth process program. Observes display screen to monitor progress of process and informs supervisory or engineering personnel of problems. Inspects wafers for defects, such as scratches, growths, and pits, and calculates defects per square inch, using calculator. Measures thickness and bow (warp) of wafer and thickness and photo-luminescence of epitaxial layer, using gauges and test equipment. Calculates surface area of wafer, using calculator. Inscribe line on wafer and breaks off section (light bar sample) of wafer, using metal scribe. Cuts line on light bar sample, using wafer saw to isolate die. Measures brightness of die, using probe tester. Reads blueprints and specifications and constructs sheet metal housing to repair reactor, using handtools and power tools. Installs and repairs electrical wiring, water and gas lines, switches, and gauges on reactor, using handtools and power tools, under direction of supervisory personnel. Checks replacement gas cylinder for leaks, using liquid leak detector and replaces empty gas cylinder at back of reactor. Connects reactor to computer, using power and handtools such as drills, pliers, and monkey wrench. Cleans and replaces reactor accessories, such as bell jar and carousel. Keys information into computer, using keyboard, to activate program to clean reactor. Maintains production records. GOE 06.02.18 PD M 02 08 09 10 12 13 15 17 18 19 EC 13 M4 L4 SVP 6 SOC 7679

590.362-018 GROUP LEADER, SEMICONDUCTOR PROCESSING (electronics) production aide.

Assists SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010 in coordinating and monitoring activities of workers engaged in fabricating electronic devices (components), such as integrated circuits, transistors, and diodes, on semiconductor wafers, utilizing knowledge of semiconductor processing equipment and processing procedures: Receives and answers questions from workers pertaining to production processes and/or equipment/machine operation. Monitors and expedites flow of ma-

terials within production area. Notifies maintenance workers of equipment/machine malfunctions. Tends or operates machines or equipment on production line to substitute for absentee workers. Maintains product workflow records. Trains workers in equipment/machine operation and in processing and safety procedures. May inspect processed wafers, using microscope, to detect processing defects. GOE 06.02.18 PD L 08 09 10 12 13 15 17 EC 13 M2 L2 SVP 7 SOC 7679

590.362-022 MICROELECTRONICS TECHNICIAN (electronics)

Operates variety of semiconductor processing, testing, and assembly equipment to assist engineering staff in development and fabrication of prototype, custom-designed, electronic circuitry chips in research laboratory, using knowledge of microelectronic processing equipment, procedures, and specifications: Operates equipment to convert integrated circuit layout designs into working photo masks; clean, coat, bake, align, expose, develop, and cure photoresist on wafers; grow layers of dielectric, metal, and semiconductor material on masked areas of wafers; clean, etch, or remove materials on areas not covered by photoresist; and implant chemicals to selective areas of wafer substrate to alter substrate electrical characteristics. Operates various test equipment to verify product conformance to processing and company specifications. Operates equipment to assemble, dice, clean, mount, bond, and package integrated circuit devices. May perform some assembly and packaging operations manually. May assist in interpretation and evaluation of processing data and in preparation of related reports. May assist in technical writing of semiconductor processing specifications. GOE 06.01.03 PD L 08 09 10 15 17 18 EC 03 07 13 M4 L3 SVP 6 SOC 3711

590.364-010 LEAD WORKER, WAFER PRODUCTION (electronics)

Assists supervisor in coordinating activities of workers engaged in abraded, cleaning, etching, heattreating, testing, inspecting, sawing, and other processes in manufacturing semiconductor wafers, utilizing knowledge of equipment, procedures, and specifications for wafer manufacture: Assigns workers to work stations to meet production requirements. Interprets process specifications for workers. Monitors production and adjusts work assignments, supply of material, and machine operation when necessary. Transports materials between production and storage areas. Repairs various machines, using handtools and power tools. Refers extensive machine repairs to maintenance personnel. Confers with supervisor to receive instructions and exchange production information. Tests random samples of silicon wafers, using various test equipment, to verify wafers meet specifications. Periodically recalibrates test equipment. Trains workers in equipment operation. May perform duties of absent workers to maintain production. GOE 06.02.01 PD M 08 09 12 13 15 EC 08 M2 L3 SVP 6 SOC 7679

590.382-014 CRYSTAL GROWER (electronics) crystal growing furnace operator.

Sets up and operates furnaces to grow semiconductor crystals from materials, such as silicon or gallium arsenide: Loads furnace with seed crystal, dopant, and crystal growing materials, such as polysilicon, gallium arsenide, or *remelt*. Reads work order and adjusts furnace controls to regulate operating conditions, such as power level, temperature, vacuum, and rotation speed, according to crystal growing specifications. Monitors melt-down of growing material and crystal growth, and adjusts furnace controls. Shuts down furnace and unloads crystal ingot after cooling. May clean inside furnace, using vacuum cleaner and cleaning supplies, and replace furnace liner and other parts. May weigh and crop crystal ingot, slice sample wafer, measure and test ingot for resistivity, and determine *crystal orientation* [INSPECTOR, CRYSTAL (electronics) 726.684-054]. May operate computer controls to regulate furnace conditions. May be designated according to type of crystal grown as GALLIUM ARSE-NIDE CRYSTAL GROWER (electronics) or SILICON CRYSTAL GROWER (electronics). GOE 06.02.18 PD M 08 09 10 13 15 17 19 M2 L2 SVP 5 SOC 7675

590.382-018 EPITAXIAL REACTOR OPERATOR (electronics)

Controls and monitors operation of epitaxial reactor to deposit layer of semiconductor material, such as gallium arsenide or silicon, onto semiconductor wafer surface in production of electronic components, such as transistors, diodes, and integrated circuits, and tests sample processed wafers to evaluate epitaxial layer properties, such as thickness and resistivity, using testing equipment: Cleans semiconductor wafers, using cleaning equipment such as chemical baths and automatic wafer cleaners, to prepare wafers for deposit of epitaxial layer. Places wafers on wafer holder (susceptor), using tweezers or vacuum wand, to load reactor. Pushes buttons, flips switches, turns dials, and observes gauges to set and adjust reactor temperature and gas pressure to specified levels and to start reactor cycle. Monitors temperature and gas gauges during processing cycle and turns dials to adjust temperature and gas levels. Tests epitaxial layer on wafers, using testing equipment, to evaluate thickness and resistivity of layer. Records production data in logbook and processing documents. Cleans and maintains equipment and work area. May compute production statistics, using calculator. GOE 06.02.18 PD L 08 09 10 15 17 18 M3 L3 SVP 4 SOC 7679

590.382-022 ION IMPLANT MACHINE OPERATOR (electronics)

Operates ion implanting machine to implant semiconductor wafers with gases, such as arsenic, boron, or phosphorus, to implant electrical proper-

ties in wafers: Turns valves, flips switches, and presses buttons to start and regulate flow of gases into implant machine. Places semiconductor wafers in holders, such as carousel, wheels, or *boats*, using tweezers. Places loaded holder in machine and secures clamps. Presses buttons to start feeding and implanting process. Monitors gas gauges and meters and turns dials to adjust gases, following specifications, if required. Maintains processing reports. May test semiconductor wafers, using test equipment, to verify that voltage, current, and resistivity of implantation meet company specifications. GOE 06.02.18 PD L 08 09 10 15 17 18 EC 11 M3 L3 SVP 4 SOC 7679

590.384-010 CHARGE PREPARATION TECHNICIAN (electronics)

Prepares ampoule containing charge (specified amounts of materials for crystal growing process) to grow gallium arsenide crystal ingot in crystal growing furnace: Cleans ampoules, plugs, and *boats*, using etch tanks and/or sandblasting equipment. Operates saw to cut *remelt* into sections of specified size. Immerses remelt into etch tank to remove contaminants, and dries remelt in oven. Measures and weighs specified amounts of crystal growing material, such as seed, seed powder, remelt, and dopant, and loads material into boat and ampoule, following prescribed procedure. Attaches ampoule to diffusion pump to remove air from ampoule, and seals ampoule, using blowtorch. Transports sealed ampoule to holding rack in furnace room for further processing by CRYSTAL GROWER (electronics) 590.382-014. Records production information. GOE 06.02.32 PD L 08 09 10 15 17 EC 13 M2 L2 SVP 4 SOC 7759

590.384-014 PRODUCTION TECHNICIAN, SEMICONDUCTOR PROCESSING EQUIPMENT (electronics)

Cleans and maintains wafer processing machines and equipment and mixes chemical solutions, following production specifications: Reads work orders and specifications to determine machines and equipment requiring replenishment of chemical solutions. Measures and mixes chemical solutions, using graduated beakers and funnels. Pours chemical solutions into wafer processing machine tanks to replenish machine supplies. Cleans furnace accessories, such as quartz tubes and stainless steel tubing, using chemical solutions. Removes broken quartzware and wafers from furnace and vacuums interior of furnace. Cleans processing machines and equipment, using cleaning solvent and cloth. Removes and replaces empty machine and equipment gas tanks. Measures furnace temperatures, using thermal rod or thermocouple, and turns knobs on furnace control panel to adjust temperature. May re-stock storage shelves and work station with supplies, such as chemicals, alcohol, and rubber gloves. May maintain log records of machine and equipment processing readings. GOE 05.09.01 PD V 04 08 09 10 14 15 17 18 EC 07 13 M2 L2 SVP 5 SOC 875

590.684-014 ELECTRONIC-COMPONENT PROCESSOR (electronics)

Performs any combination of following duties to process materials into finished or semi-finished electronic components: Reads work orders, formulas, and processing charts and receives verbal instructions to determine specifications and sequence of operations to be followed. Weighs or measures specified ingredients and binding agents, using scales and graduates. Mixes and grinds material, using manual or automatic machines and equipment. Loads, unloads, monitors operation, and adjusts controls of various processing machines and equipment that bake, diffuse, cast, xray, cut, polish, coat, plate, silk-screen, and perform other similar operations to prepare, combine, or change structure of materials to produce compositions with specific electronics properties. Cleans materials as required prior to processing operations, using solvents. May inspect, measure, and test components according to specifications, using measuring instruments and test equipment. May enclose components in housings. May stamp or etch identifying information on finished component. May count, sort, and weigh processed items. May be designated according to duties performed as BAKER BEADS (electronics); FIRER (electronics); PELLET-PREPARATION OPERATOR (electronics); PREFORMING-MACHINE OPERATOR (electronics); VACUUM-EVAPORATION OPERATOR (electronics); WEIGHT-COUNT OPERATOR (electronics). Assembly of processed materials, parts, and components is covered under ELECTRONICS ASSEMBLER (electronics) 726.684-018 and ELECTRONICS ASSEMBLER, DEVELOPMENTAL (electronics) 726.261-010. GOE 06.04.19 PD L 08 09 10 15 17 18 M2 L2 SVP 3 SOC 7679

590.684-018 ETCHED-CIRCUIT PROCESSOR (electronics)

Performs any combination of following duties to print and etch conductive patterns on copper-faced plastic, fiberglass, or epoxy board to fabricate printed circuit boards (PCBs): Cuts board to designated size, using sheet metal shears, following work order, shop sheet, or verbal instructions. Sands board, places it in vapor degreaser, or immerses it in chemical solution to clean and remove oxides or other contaminants. Sprays or brushes light-sensitive enamel on copper surface and places board in whirler machine to spread enamel evenly or tends machine that flows light-sensitive resist over board. Laminates light-sensitive dry film to board, using heat and pressure. Positions board and circuit negative in contact printer and exposes them to light for specified period of time to transfer image of circuit to board. Immerses exposed board in solution to develop acid-resistant circuit pattern on surface. Examines board to verify development of pattern by comparing it to sample. Touches up board, using brush to apply acid resist over sections of pattern not developed. Immerses board in acid or tends etching machine to etch conductive pat-

tern on copper surface. Immerses board in solution to dissolve enamel. Drills holes in board, using drill press, following work sample, drawing, and diagrams. Installs hardware, such as brackets, eyelets, and terminals, using eyelet machine and hand arbors. May reduce circuit artwork prior to printing onto board, using reduction camera. May use silk-printing device to print conductive pattern onto board. May fabricate PCB used as prototype of production model. GOE 06.02.32 PD L 08 09 15 17 18 19 M3 L3 SVP 4 SOC 7757

590.684-022 SEMICONDUCTOR PROCESSOR (electronics) wafer fab operator.

Processes materials used in manufacture of electronic semiconductors: Loads semiconductor material into furnace to fuse and form ingot. Saws ingot into segments, using power saw. Loads individual segment into crystal growing chamber and monitors controls to produce specified crystalline structure in ingot. Locates crystal axis in ingot, using x-ray equipment and saws ingot into wafers, using power saw. Cleans, polishes, and loads wafer into series of special purpose furnaces, chemical baths, and equipment used to form circuitry and change conductive properties of individual segments of wafer. May scribe or separate wafer into dice (segments). GOE 06.04.19 PD L 08 09 10 15 17 18 M2 L2 SVP 3 SOC 7679

590.684-026 ETCHER-STRIPPER, SEMICONDUCTOR WAFERS (electronics)

Immerses semiconductor wafers in series of chemical baths to etch circuitry patterns onto or to strip excess photoresist from wafer surfaces: Places semiconductor wafers in containers, such as boats or cassettes, using vacuum wand or tweezers. Immerses loaded containers in series of chemical and water baths to etch circuitry patterns or to strip excess photoresist from wafer surfaces. Places loaded container in spin dryer and pushes buttons to activate drying cycle. Maintains production records. May visually inspect etched and stripped wafer, using microscope, to detect scratching, contamination, and incomplete etching and stripping. May tend plasma (gas) etch machine to etch circuitry patterns in wafer surfaces. May clean and maintain chemical baths. GOE 06.04.19 PD L 08 09 10 15 17 19 EC 13 M1 L2 SVP 2 SOC 7679

590.684-030 MATERIAL PREPARATION WORKER (electronics)

Performs any combination of following tasks involved in cleaning, sorting, breaking, weighing, and packaging chunks of silicon for crystal growing: Sandblasts chunks of silicon or immerses chunks in cleaning tanks to remove contaminants. Breaks chunks of silicon into pieces of specified size, using hammer. Tests and sorts silicon pieces according to resistivity type and level, using resistivity device or meter. Weighs out specified amounts of silicon to prepare charges (specified amounts of materials) for crystal growing process, loads silicon into charge can, and records identifying information on label of charge can. May transport charges to crystal growing department. GOE 06.03.02 PD M 08 09 10 13 15 17 19 EC 07 14 M2 L2 SVP 4 SOC 7759

590.684-034 PHOTO MASK CLEANER (electronics)

Performs any combination of following tasks to clean production photo mask plates used in fabrication of semiconductor devices: Reads specifications sheet to verify type of photo mask plate and number of production runs for each plate. Marks number of production runs on border of each photo mask plate, using diamond scribe. Immerses photo mask plates into series of chemical baths to strip photoresist from photo mask. Places photo mask plates in chamber of specified cleaning machine and starts machine that automatically cleans and dries photo mask plates. Places photo mask plates in chamber of coating machine and starts machine that automatically deposits specified coating onto photo mask. Monitors operation of machines. Inspects photo mask plates for defects or insufficient cleaning, using microscope. Records process and inspection information in logbook. GOE 06.04.34 PD L 08 09 10 15 M1 L2 SVP 2 SOC 7759

590.684-038 POLYSILICON PREPARATION WORKER (electronics)

Performs any combination of following tasks to prepare polysilicon for crystal growing process: Operates drilling machine to remove core sample from polysilicon rod for evaluation. Breaks polysilicon rod into chunks, using hammer. Removes tungsten filament from chunks, using circular saw or drill. Immerses polysilicon chunks into series of vats containing chemical solutions to remove contaminants, using steel basket and hoist. Breaks chunks of polysilicon into pieces, using hammer, to prepare polysilicon for meltdown in crystal growing process. Records production information. GOE 06.04.19 PD V 08 09 10 13 15 17 19 EC 08 M2 L2 SVP 2 SOC 7679

590.685-062 CLEANING MACHINE TENDER, SEMICONDUCTOR WAFERS (electronics)

Tends equipment that chemically cleans semiconductor wafers used in manufacture of semiconductor components, such as transistors, diodes, and integrated circuits: Places specified program card into cleaning equipment. Places wafers in cleaning trays, using tweezers. Loads trays into cleaning equipment. Pours cleaning solutions, such as hydrogen peroxide, sulfuric acid, and hydrochloric acid into specified tank of cleaning equipment. Presses buttons to activate cleaning cycle. Removes semiconductor wafers from trays, using tweezers. Visually inspects semiconductor wafers for blemishes. Maintains production reports. GOE 06.04.39 PD L 08 09 10 15 18 EC 13 M2 L2 SVP 2 SOC 7673

590.685-066 COATED EQUIPMENT OPERATOR, PRINTED CIRCUIT BOARDS (electronics)

Tends automated equipment that applies photosensitive coating of masking ink to printed circuit board (PCB) panels to facilitate development of circuit design on boards in fabrication of PCBs: Pushes buttons and switches to start heater, conveyor, and coating equipment. Measures conveyor travel time of sample panel, using stopwatch, and weighs sample panel, using digital scale, to ensure that specifications are met. Turns dials to adjust conveyor speed and to add or delete masking ink in solution, as needed. Feeds panels onto conveyor of automated equipment that cleans, heats, and applies masking ink to panels. Removes panels from unloading rack upon completion of coating process and dries panels in oven. Records production data. GOE 06.04.19 PD M 08 09 10 M2 L2 SVP 3 SOC 7669

590.685-070 DIFFUSION FURNACE OPERATOR, SEMICONDUCTOR WAFERS (electronics)

Tends furnaces that diffuse chemicals into semiconductor wafer surface to alter electrical characteristics of wafer or to protect wafer surfaces: Places semiconductor wafers in containers, such as boat or cassette, using vacuum wand or tweezers. Places loaded container on furnace loader, such as conveyor, track, sled, or tube. Pushes button to advance wafer containers into furnace or pushes wafer container into furnace tube, using quartz rod. Pushes buttons or keys commands on control panel keyboard to activate furnace diffusion cycle. Observes gauges and meters to verify that furnace gases and temperature meet specifications. Maintains production records. Turns dials to adjust furnace gases and temperature, if required. May clean semiconductor wafers, using cleaning equipment, to remove contaminants prior to diffusion. May test and inspect wafer, using testing equipment, to measure resistivity and thickness. GOE 06.04.19 PD L 08 09 10 15 17 18 EC 03 13 M2 L2 SVP 4 SOC 7675

590.685-074 ETCH OPERATOR, SEMICONDUCTOR WAFERS (electronics)

Tends etch machine and equipment that removes metal and photoresist and etches electronic circuitry into wafer surface, using heat and gas and following processing specifications: Places wafers in boats, using tweezers or vacuum wand. Places boats in etch machine or equipment. Turns dials, sets timer and gauges on equipment, or presses buttons on machine to activate etch cycle to etch or remove materials, such as metal or photoresist, from wafer surface. Inspects wafer to verify that wafers are not over-etched and that photoresist has been removed, using microscope. Maintains production records. May measure specified dimensions of wafers, using microscope measuring attachment. May immerse loaded boats into chemical solution baths to etch circuitry into wafer surface. GOE 06.04.19 PD L 08 09 10 17 18 19 M1 L2 SVP 2 SOC 7679

590.685-078 ETCHER (electronics) wafer etcher.

Tends etching equipment that reduces thickness of semiconductor wafers: Transfers wafers from storage container to chemical-resistant boat. Monitors control panel of etching equipment to verify that etching solution temperatures meet processing specifications. Immerses boat of wafers into series of sinks containing etching solutions and water rinses and sets timers. Measures wafer thickness before and after etching, using thickness gauge, and calculates wafer thickness removed by etching. Tends machine that rinses and dries etched wafers. Records production details on work order. Replaces etching and rinsing solutions in equipment and cleans work area. May measure wafer flatness, using flatness gauge. May measure diameter of semiconductor crystals, using micrometer, and tend etching equipment that reduces crystal diameter. May calculate etching time based on thickness of material to be removed from wafers on crystals. GOE 06.04.19 PD M 08 09 10 13 15 17 EC 13 M2 L2 SVP 2 SOC 7679

590.685-082 ETCHER-STRIPPER, PRINTED CIRCUIT BOARDS (electronics)

Tends equipment that automatically acid-etches away unprotected copper and strips etch-resistant coating (photoresist) from substrate boards or panels, leaving conductive copper pattern to form printed circuit boards (PCBs): Reads process specifications and sets equipment controls to regulate conveyor speed, spray intensity, and solution temperatures and strengths. Places copper clad boards or panels with etch-resistant coating protecting circuitry pattern on motorized conveyor leading into series of processing units, such as sprayers, rinsers, scrubbers, and dryers, that acid-etch copper from unprotected areas and chemically strip off etch-resistant coating. Monitors equipment operation, gauges, and meters to detect malfunctions or variance from specifications. Visually examines sample boards during and after processing for completeness of etching and stripping. Notifies supervisor when equipment malfunctions or when boards fail to meet specifications. May adjust machine controls or alignment of boards on conveyor rollers to correct defects. May reroute boards through processing units to complete etching or stripping process. May periodically change or adjust chemicals and solutions. May test acid solution, using pH meter. May immerse boards in tanks of chemicals and solutions when equipment malfunctions. May use microscope to examine boards. May tend developing unit attached to etching-stripping equipment. May immerse boards in acid solution or tend machine that etches conductive pattern on copper surface and be designated ETCHER, PRINTED CIR-

CUITS (electronics). GOE 06.04.19 PD M 08 09 15 EC 07 13 M2 L2 SVP 3 SOC 7549

590.685-086 METALLIZATION EQUIPMENT OPERATOR, SEMI-CONDUCTOR WAFERS (electronics)

Tends machines that deposit layer of metal, such as aluminum, gold, or platinum, on semiconductor wafer surfaces to provide electrical contact between circuit components: Places semiconductor wafers in container, such as boat or cassette, using vacuum wand or tweezers. Cleans wafers, using chemical baths or automatic cleaning equipment, to remove contaminants prior to metal deposition. Loads wafers into metallization equipment holders, using vacuum wand or tweezers. Places loaded holders in equipment chamber. Pushes buttons, turns dials, and flips switches to start and adjust metallization process, following processing specifications. Tests and inspects processed wafers, using testing equipment, to measure electrical conductivity and thickness of metal layer. Maintains production records. Maintains chemicals and metals for equipment. Cleans work area. GOE 06.04.19 PD L 08 09 10 15 17 18 M2 L2 SVP 3 SOC 7679

590.685-090 OVEN CURING ATTENDANT (electronics)

Tends electric ovens that bake screened ink patterns on printed circuit boards (PCBs) to cure and set ink: Reads settings on pre-set timer on control box and stacks carts containing PCBs in oven designated for specific pattern type and temperature. Pushes button on control box to start heating and cooling cycle in oven. Observes control panel lights to determine completion of cycle. Removes carts from oven and pushes carts to transfer area. Records process identification information to maintain production record. Vacuums and sweeps oven at end of shift and periodically scrubs interior of oven, using brushes and cleaning solution. May use chain hoist to move and stack carts. GOE 06.04.19 PD M 08 09 17 EC 03 13 14 M1 L1 SVP 2 SOC 7675

590.685-094 PLASMA ETCHER, PRINTED CIRCUIT BOARDS (electronics)

Tends plasma equipment that dry etches unprotected copper from substrate boards or panels to form circuit patterns on printed circuit boards (PCBs): Hangs boards or panels on racks in plasma tank and locks door. Adjusts controls, according to process specifications, to set time, wattage, and percentage of oxygen and nitrogen gases in plasma tank. Pushes button to activate equipment that automatically plasma-etches excess copper from boards or panels to form circuit pattern. Removes boards or panels after processing and inspects boards for completeness of etching process, using microscope. May tend computer-controlled plasma etch equipment that automatically computes and adjusts control settings for time, wattage, and gas content based on data entered, such as quantity of boards and lot number. GOE 06.04.19 PD L 08 09 15 18 EC 03 M2 L2 SVP 4 SOC 7549

590.685-098 ROOFING-MACHINE TENDER (build. mat., n.e.c.)

Tends machine that cools and dries coatings applied to roofing material prior to cutting process: Reads work schedule to determine type, amount, and color of roofing material to be processed. Selects machine attachments, such as paint rollers or embosser, depending on material to be processed, and places attachments in designated slots on machine. Places hoses connected to paint tank on machine into paint barrels to circulate paint through tank, or turns handwheel to lower embosser that presses design onto roofing material. Flips switches, turns dials, or pushes buttons to activate pumps that recycle paint, to circulate water to spray system and cooling drums, to raise or lower rollers to flatten and smooth granules on roofing material, to control length of roofing material in cooling or drying sections, and to start hot or cool air blowers. Patrols cooling section of machine to detect sand stuck on rollers or cooling drums, and scrapes off sand to prevent puncture damage to roofing material, using scraper. Observes hand signals of other workers and adjusts speed of rollers, temperature of air, or distance between rollers in drying section of machine, depending on type of signal. Rethreads roofing material through machine after break, assisted by other workers. GOE 06.04.09 PD L 08 09 15 16 M1 L1 SVP 3 SOC 7679

590.685-102 WAFER CLEANER (electronics)

Tends equipment that cleans surface of semiconductor wafers after slicing and/or polishing: Reviews work orders to determine processing steps. Sets temperature controls on automatic chemical cleaning machine or sinks of chemical cleaning station. Places containers of semiconductor wafers into drum of cleaning machine or into heated sinks of solutions in cleaning station to remove dust, oil, wax, slurry, or debris from surface of wafers. May load containers of wafers into scrubbing machine that brushes and sprays contaminants from wafers and dries wafers. May tend machine that dries wafers. GOE 06.04.19 PD L 08 09 10 15 M2 L2 SVP 2 SOC 7679

599.137-010 SUPERINTENDENT, SEED MILL (agric.)

Supervises and coordinates activities of workers engaged in drying, cleaning, sorting, treating, and packaging seeds in seed processing plant: Observes and feels incoming seed shipments to determine cleaning and drying requirements, utilizing knowledge of seed characteristics and processing standards. Instructs and monitors workers in use of equipment that sifts debris from seeds, removes moisture from seeds, scrapes off outer layers of seed cover, and sorts seeds according to weight and size. Oversees treatment of seeds with specified chemicals to fill customer orders.

Assists and directs workers in loading, unloading, and conveying seeds in warehouse and processing area, using forklift, and in boxing seeds for storage or shipment. Performs routine equipment maintenance, such as lubrication and replacement of parts. GOE 06.02.01 PD M 08 09 10 11 12 13 15 17 19 EC 08 M2 L3 SVP 6 SOC 711

599.685-126 SEED PELLETER (agric.)

Tends equipment that applies coating to agricultural seeds and separates coated seeds according to size specifications to allow for uniform planting: Dumps seeds into rotary drum and presses buttons to start drum rotation. Adds water, powder, and glue for specified period, using spray guns and scoop and following work order specifications. Stops drum and scoops coated seeds (pellets) from drum, dumps pellets into electric sizing mill or onto manual sizing screen to remove undersized pellets. Returns undersized pellets to drums for additional coating. Dumps and spreads pellets on trays in drying tunnel for drying. Repeats sizing procedure for dried pellets to ensure that pellets meet sizing specifications. Fills pails with pellets specified on shipping order, using scoop, covers pails with lids, and places pails on pallet for shipment. Cleans interior and exterior of drums and work area, using brushes, rags, mop, detergent, and water. GOE 06.04.21 PD L 08 09 17 EC 04 M1 L2 SVP 2 SOC 7669

599.685-130 PAINT STRIPPER (petrol. refin.)

Tends equipment that strips paint from steel drums preparatory to repainting: Turns valves to start flow of paint-removing solvent and steam to outlets in respective sections of cleaning equipment. Starts pump that re-circulates solvent, and conveyor that carries drums through paint stripping process. Observes drums passing through paint stripping section, and adjusts speed of conveyor to obtain maximum efficiency during stripping process. Inspects drums to determine whether additional stripping is required, and recycles drums needing more stripping. GOE 06.04.39 PD H 08 09 M1 L1 SVP 5 SOC 7679

599.687-034 DRUM CLEANER (petrol. refin.) drum chainer.

Cleans rust, scale, and other residue from interiors of empty steel drums, using one of following methods: (1) Inserts lighted rod through bunghole of drum to inspect drum interior for rust or residue, and selects chain of length and weight required to clean drum. Threads one end of chain through bunghole into drum, secures other end of chain to drum, using wire, and positions drum on power roller device. Depresses button to start rollers that tumble drum until chain dislodges matter. (2) Inserts steam nozzle into drum, pushes control to activate steam, and shakes nozzle about inside of drum to dislodge residue with blasts of steam. Draws out loose materials, using vacuum. Dries steam condensate, using warm-air hose. GOE 06.04.39 PD H 04 08 09 16 EC 05 14 M1 L1 SVP 2 SOC 8769

599.687-038 DRUM TESTER (petrol. refin.)

Inspects empty steel drums to detect leaks, using airhose and immersion tank: Fills immersion tank to designated level, using hose. Pulls drum from conveyor and screws bung into bunghole of drum, using wrench. Presses airhose nozzle onto valve of bung to release air into drum and monitors airhose gauge to raise pressure in drum to specified level. Lifts pressurized drum into tank and depresses pedal to actuate sprocket wheel of tank assembly that forces drum under water. Observes water to detect bubbles that indicate drum leak. Returns drum to surface, marks leak with waterproof crayon, and sets drum aside for repair. Replaces bung and gasket of drums not requiring repair and pushes drums onto conveyor. GOE 06.03.02 PD H 04 16 M1 L1 SVP 2 SOC 782

601.280-042 TOOL MAKER (mach. shop)

Analyzes variety of specifications, lays out metal stock, sets up and operates machine tools, and fits and assembles parts to make or repair cutting tools, jigs and fixtures, gauges, or machinists' handtools, applying knowledge of tool design, shop mathematics, metal properties, and layout, machining, and assembly procedures: Studies specifications, such as blueprint, sketch, or verbal description, and plans sequence of operations. Measures, marks, and scribes metal stock to lay out workpieces for machining [LAY-OUT WORKER (mach. shop) 600.281-018]. Sets up and operates machine tools, such as lathe, milling machine, shaper, and grinder, to machine parts to specifications, and verifies conformance of machined parts to specifications [TOOL-MACHINE SET-UP OPERATOR (mach. shop) 601.280-054]. Positions and secures parts on surface plate or worktable, using devices, such as vises, V-blocks, and angle plates. Fits and assembles parts into assemblies or mechanisms, using handtools. Verifies dimensions and alignment, using measuring instruments, such as micrometers, height gauges, and gage blocks. May heat-treat tools or parts [HEAT TREATER (heat treat.) II 504.682-018]. May examine standard tools and determine modifications to be made. May develop specifications from general descriptions and make drawing or sketch of tool to be made, using drafting tools or computer and software programs. May be designated according to special materials used as CARBIDE-TOOL MAKER (clock & watch); DIAMOND-TOOL MAKER (clock & watch). May only repair tools and be designated TOOL REPAIRER (mach. shop). May install, test, and adjust tools, jigs, and fixtures following machining and assembly, using general or computerized equipment, working alone or as part of a maintenance team and be designated TOOL MAKER, MAINTENANCE (mach. shop). GOE 05.05.07 PD H 08 09 10 15 17 20 EC 08 09 M4 L3 SVP 7 SOC 6811

601.281-030 TOOL, GAUGE, AND FIXTURE REPAIRER (auto. mfg.)

Replaces tools and fixtures of production machines and parts of transfer devices and adjusts machines and transfer devices in industrial establishment, using handtools and precision-measuring instruments and following specifications and blueprints: Observes production machines, such as lathes and milling machines, to detect machine malfunction and need for adjustment or replacement of tools and fixtures. Removes and replaces worn or broken tools, tool holders, and fixtures, using handtools. Disassembles, cleans, and polishes tool holder, using handtools, rags, solvent, and polishing wheel attached to pedestal grinder. Adjusts fixtures to hold work in specified position, using shims and hand held grinder and following specifications and blueprints. Replaces worn pads and bushings on fixtures, using handtools. Aligns tool with work-holding chuck, using precision-measuring instruments and handtools. Operates machine to verify repair. Observes transfer devices, such as conveyors and material-handling robots, to detect malfunction. Removes and replaces clamps, pads, and wedges on transfer devices to ensure that work pieces are aligned and oriented as specified, using handtools and following specifications and blueprints. Types instructions on *programmable controller* or *robot controller* to change speed or motion of machine, applying knowledge of machine operation and production process. Removes and replaces worn robot gripper pads, using handtools. Informs supervisor of machine malfunction requiring repair by other maintenance workers such as ELECTRICIAN, MAINTENANCE (any ind.) 829.261-018. Repairs and calibrates electronic measuring gauges, using electrical test equipment, master gauge, and handtools and following specifications. May set up and operate machine tools, such as lathe, mill, and surface grinder, to repair worn or broken tools and fixtures. GOE 05.05.09 PD M 08 09 15 17 18 20 EC 08 M4 L4 SVP 7 SOC 613

601.381-042 DIE MAKER, ELECTRONIC (mach. shop)

Lays out, machines, fits, and assembles metal parts to fabricate electronic (heat-sealing) dies used to form plastic products, working from blueprints or drawings and using milling machine, tools, and precision instruments: Studies blueprints, drawings, and specifications to plan machine operations applying knowledge of metal properties and machine shop math. Selects and positions brass or steel stock on milling table, by hand or using hoist. Sets up and operates milling machine to machine channels of specified width and depth in stock to form electrodes. Measures, marks, and cuts electrodes to specified sizes, using rule, scribe, and cutoff knife. Sets aside electrodes for further processing by other workers. Positions completed electrodes on die board template to locate reference points for lugs and die parts, and marks reference points, using hammer and punch. Drills and taps holes in aluminum plate that serves as base for die, using power drill with tapping attachment, and mounts dies to base with screws, using screwdriver. Operates milling machine to reduce electrode altitude from die bottom to top of electrodes, working to tolerances of plus or minus .001 inch. Measures dies to verify conformance to specifications, using vernier gage, micrometer, and ruler. GOE 05.05.07 PD M 08 09 10 15 18 EC 05 M3 L2 SVP 7 SOC 6811

603.682-030 DRILL-BIT SHARPENER (electronics) drill sharpener.

Sets up and operates drill-sharpening machine (sharpener) to sharpen drill bits used in numerically-controlled drill for fabricating printed circuit boards (PCBs): Reads work order to determine number and size of drill bits to be sharpened. Inserts drill bits into cleaning machine point-side down that automatically starts brushes rotating to clean and remove debris from dull bits. Removes drill bit from cleaning machine and measures bit to verify specified size, using micrometer. Selects corresponding size bushing (brass sleeve) and mounts bushing into chuck of sharpener, using handtools. Inserts drill bit in chuck of sharpener and activates table that moves chuck and bit assembly through rotating abrading wheels to sharpen both sides of drill bit. Flips switch to release chuck and drill bit and removes bit. Observes sharpened bits under optical microscope to detect defects, such as chips or breaks. Discards defective drill bits. Places sharpened drill bits in box, point-end up. May clean sharpener. GOE 06.04.02 PD L 08 09 15 17 18 M2 L2 SVP 3 SOC 7522

603.686-014 DEBURRER, PRINTED CIRCUIT BOARD PANELS (electronics)

Feeds and offbears machine that automatically cleans and removes burrs from panels for production of printed circuit boards (PCBs): Loads panels into automatic feeder device that conveys panels into deburring machine. Flips switch or presses button to start deburring machine that automatically cleans and deburrs panels. Removes cleaned and deburred panels from machine and examines panels for scratches. Records production data. May turn crank to adjust pressure of steel brushes that deburr panels. May buff scratches on panels, using hand buffer. May replace machine filter, using wrench. GOE 06.04.09 PD H 08 09 15 M1 L1 SVP 2 SOC 8725

605.382-046 NUMERICAL-CONTROL ROUTER OPERATOR, PRINTED CIRCUIT BOARDS (electronics)

Sets up and operates computer-assisted, *numerically-controlled* routing machine to automatically rout (cut) individual printed circuit boards (PCBs) from printed circuit panels: Reviews setup instructions and specifications. Inserts or threads specified pre-programmed tape containing machine instructions into reader of machine. Selects specified cutting tools and installs routing bit in machine spindle or magazine. Positions and secures panels of PCBs to *indexing* table of machine. Pushes button or keys

in commands on keyboard to activate machine that automatically aligns indexing table with printed circuit panels under tool spindle and routs or notches individual circuit boards that separate boards from circuit panels according to programmed instruction. Monitors machine operation and display readouts to detect malfunction. Measures dimensions of routed PCB samples to verify conformance to specification, using calipers. Notifies supervisor when boards do not meet specifications or machine malfunctions. May make machine adjustments, such as cleaning machine bed, inspecting router bits, and replacing worn or damaged bits. May maintain production records. GOE 06.02.09 PD L 08 09 10 15 17 18 M3 L2 SVP 4 SOC 7326

605.682-034 ROUTER, PRINTED CIRCUIT BOARDS (electronics)

Operates routing machine to cut and shape individual printed circuit boards (PCBs) according to specifications: Positions and secures PCBs between dies or on templates. Positions secured PCB on router platform to align connector edges with machine cutter. Adjusts cutter spindle, using wrenches, and installs cutter of specified size on spindle. Flips switch to activate routing machine. Turns calibrated dials on routing machines to specified markings on dials to adjust milling dimensions of router. Manually guides edges of board against cutter to rout connector edges. Measures dimensions of board, using vernier calipers, to verify that board is routed according to specifications. Separates dies or removes template from PCB. May operate shearing machine to separate PCB from panels. May operate slotting machine to mill slots in PCBs. GOE 06.02.02 PD L 08 09 10 15 17 EC 08 M1 L2 SVP 4 SOC 7513

605.685-054 ROUTER MACHINE OPERATOR (fabric. plastics prod.)

Tends routing machine that trims edges of plastic drafting scales: Places and secures router tool in chuck. Places and clamps scale on holding pin of routing machine conveyor belt. Starts machine and observes movement of scale under router. Removes trimmed scale from conveyor and inspects completed work to maintain establishment standards. May tend routing machine that re-routes graduation lines removed accidentally during previous operations and be known as REWORK MACHINE OPERATOR (fabric. plastics prod.). GOE 06.04.02 PD L 08 09 10 11 15 M1 L1 SVP 2 SOC 7513

606.382-018 NUMERICAL-CONTROL DRILL OPERATOR, PRINTED CIRCUIT BOARDS (electronics)

Sets up and operates computer-assisted, *numerically-controlled* drilling machine to automatically drill circuit component mounting holes of specified dimension, location, and sequence on printed circuit boards (PCBs): Reviews setup instructions and specifications. Inserts or threads specified pre-programmed tape containing machine instructions into reader of machine. Attaches depth collars to drill bits and measures bit depth, using depth gauge, to verify specified drill bit cutting depth. Measures drill bit sizes, using micrometer, and installs specified drill bits in tool magazine of machine. Positions and secures PCBs to *indexing* table of machine. Pushes button or keys in commands on keyboard to activate machine that automatically aligns indexing table with boards under spindle, selects drill bit, and drills holes of specified dimension, location, and sequence on PCBs according to programmed instructions. Monitors machine operation and display readouts to detect malfunctions. Compares display data with specifications and notifies supervisor of machine malfunctions. Inspects and measures drilled PCBs to verify conformance to specifications, using measuring devices, such as micrometer, plug gauges, and test board. May make machine adjustments and perform minor maintenance, such as setting speed and feed rates, cleaning machine parts, and replacing worn or damaged drill bits. May operate machine on trial run to verify conformance to specifications or detect errors on programmed tape. May maintain production records. GOE 06.02.09 PD L 08 09 10 15 17 18 M3 L3 SVP 4 SOC 7326

607.685-014 DEBRIDGING-MACHINE OPERATOR (nonfer. metal alloys)

Tends debridging machine (circular saw) that cuts metal bridge from bottom length of cement-filled aluminum extrusions used in manufacturing windows and doors: Installs cutting blades in machine, using wrenches. Turns controls to set machine cutting speed, blade height, and feed roller position. Places extrusions on intake conveyor and guides extrusions into contact with feed roller for automatic cutting. Removes cut extrusion from off-feed conveyor, and examines exposed cement along cut to detect overlapping metal. Adjusts machine settings to remove metal according to company standards. Stacks extrusions on cart and places cardboard sections between layers. GOE 06.04.02 PD M 08 09 10 15 17 18 20 M1 L2 SVP 3 SOC 7529

609.262-010 TOOL PROGRAMMER, NUMERICAL CONTROL (electronics) programmer operator, numerical control; soft tooling technician.

Operates optical programming (digitizing) equipment to generate *numerical control* (NC) tape program used to control NC machine tools that drill, mill, rout, or notch printed circuit boards (PCBs): Analyzes drawings, specifications and phototool (photographic film copy of printed circuit pattern) to determine program input data, such as hole sizes, tool sizes, reference points, and direction of machine cutting paths, and calculates data, such as starting point coordinates (location), size of panels or

boards, and number of boards per panel. Draws machine tool paths on phototool, using colored markers, and following guidelines for tool speed and efficiency, to prepare phototool for use as tool programming aid. Aligns and secures phototool on reference table of optical programmer. Observes enlarger scope of programmer that projects image of circuit board pattern from phototool. Moves reference table, following previously marked paths to align phototool circuit pattern holes with reference marks on enlarger scope. Depresses pedal or pushes button of programmer to enter coordinates of hole locations into program memory. Repeats process for each hole location on phototool to enter NC machine instructions, such as hole locations, machine paths, and reference points. Keys in additional instructions, such as tool size, machine feed and speed rates, and starting point coordinates, basing entries on specifications, calculations, and knowledge of machine capabilities and programming techniques. Types commands on keyboard to generate NC tape. Observes trial run of NC machine to verify tape program accuracy. Revises NC tape program to eliminate instruction errors. May operate NC machine tools on production basis. GOE 05.01.06 PD S 08 09 10 15 19 M3 L3 SVP 5 SOC 3974

611.682-014 AUTOMATIC CASTING-FORGING MACHINE OPERATOR (forging)

Controls and monitors operation of automatic casting-forging machine to cast, forge, and trim non-ferrous molten metal into finished forgings: Starts hydraulic pumps and sets timers and heater controls. Turns automatic controls, such as shot weight and pouring speed, to set sequence of operation. Notifies forklift operator to pour molten metal into container. Pours molten metal into pre-form mold, using ladle, and starts manual operation for trial run. Activates automatic pouring device to fill mold, and depresses controls to initiate automatic casting and forging operations. Observes indexing mechanism that moves casting through sequence of operations, such as die press, quenching, and trimming. Observes castings and forgings for imperfections, such as discolorations and distortions. Realigns dies, castings, or forgings to correct out-of-tolerance conditions. Observes lights on control panel to detect machine malfunctions and corrects conditions causing malfunctions, such as clogged filters and sticking valves. GOE 06.02.10 PD L 08 09 10 15 17 19 EC 08 M2 L3 SVP 5 SOC 7519

612.260-010 FASTENER TECHNOLOGIST (nut & bolt)

Sets up and operates variety of machines to head, trim, drill, and tap metal stock to fabricate machine tools and form metal parts and fasteners, such as screws, bolts, and nuts, according to blueprint specifications and using precision measuring devices, machinist manuals, and handtools: Reads and interprets blueprints to determine specified tolerances and sequence of operations to be used in machining metal parts. Selects and installs cutting tools in machines, using handtools. Selects cutting speeds, depth of cut, and adjusts guides, using handtools. Installs workpiece in vise, marks layout, and verifies dimensions, using precision gauges and machinist manuals. Operates machines to tool specified parts and inspects parts to ensure conformity to blueprint specifications, using gauges and applying knowledge of fractions and decimals. Sharpens cutting tools and drill bits, using bench grinders. GOE 06.02.02 PD H 04 08 09 15 17 EC 05 08 M3 L3 SVP 7 SOC 7319

615.685-030 PUNCH-PRESS OPERATOR (any ind.) II

Tends one or more power presses that trim, punch, shape, notch, draw, or crimp metal or plastic stock between preset dies: Places workpiece against *fixtures* or stops on machine bed, positions it under die, or threads roll of metal into *jig* and starts press. May inspect parts visually or with fixed gauges. May tend press that imprints identifying information on product or product part. May be designated according to product worked on as FIN-MACHINE OPERATOR (auto. mfg.); SPRUE-CUTTING-PRESS OPERATOR (found.); or according to type of press as MULTIPLE-PUNCH-PRESS OPERATOR (any ind.) II; or function of machine as COLD-TRIMMING-PRESS OPERATOR (forging); DRAW-PRESS OPERATOR (any ind.) II; FORMING-PRESS OPERATOR (any ind.) II; HOT-TRIMMING-PRESS OPERATOR (forging). May tend press that pierces pivot holes and reduces watch hands to specified thickness and be designated SWAGER AND PIERCER (clock & watch). May tend press that cuts fiberglass panels or sheets to produce printed circuit boards and be designated PUNCH-PRESS OPERATOR, PRINTED CIRCUIT BOARDS (electronics). GOE 06.04.02 PD M 08 09 15 17 M1 L1 SVP 3 SOC 7514

615.685-046 CUTTER-MACHINE TENDER (electronics) shearer, printed circuit boards.

Tends machine that cuts copper or aluminum laminated fiberglass sheets, hardboard, and cardboard backers for production of printed circuit boards (PCBs): Reads work orders to determine type, size, and quantity of PCB materials to be cut. Adjusts guides on machine to regulate width of cut, using ruler or following calibrated scale on machine bed. Positions and aligns sheets against guides, and depresses pedal to activate blade that cuts material. Adjusts guides and repositions material to trim or square edges to specifications. Records production data. May mount material on spindle of machine that automatically feeds material onto bed of machine for cutting. May tend pinning machine that inserts metal pins into laminated boards and related backing material prior to drilling operation. May replace machine blades, using handtools. May bake cut boards in oven to remove excess moisture. May clean machines. GOE 06.04.09 PD M 08 09 15 17 EC 08 M2 L2 SVP 2 SOC 7678

615.687-010 HELPER, SHEAR OPERATOR (iron & steel) sidehand.

Assists side shear crew to move, position, and hold hot-rolled steel plate for shearing operations, using push bar and plate wrench: Pushes steel plate over caster bed equipped with goose neck rollers to align plate under knife blade, using long handle push bar. Positions and holds steel plate on shear block to prevent movement during shearing operation, using plate wrench. Assists crew in charging shear knife blade, using handtools. May lubricate knife blade and shear table, using oilcan. GOE 06.04.24 PD H 08 09 EC 03 05 14 M1 L1 SVP 3 SOC 7514

616.382-018 TYPING-ELEMENT-MACHINE OPERATOR (office mach.)

Sets up, controls, and monitors machine that automatically assembles component parts, such as caps, shims, levers, and springs, to fabricate *typing elements* used in electric typewriters: Reads work order and engineering specifications to determine components needed for assembly. Loads parts into hoppers of automatic feed mechanism of machine. Flips switches on control panel to start machine. Observes panel lights and machine operation to detect malfunctions and ensure prescribed sequence of operation. Fills grease containers on machine and maintains supply of parts in feed mechanism. Inspects assembled typing element to detect defects, such as mislocated springs, chipped characters, and insufficient grease. Adjusts and calibrates machine to adapt machine to processing requirements, following specified procedures and using handtools. GOE 06.01.03 PD L 08 09 10 15 17 18 M3 L3 SVP 6 SOC 7679

619.130-046 SUPERVISOR (electronics)

Supervises and coordinates activities of workers engaged in fabrication of sheet metal chassis, cabinet components, and assemblies in television manufacturing facility: Reviews work orders to ascertain production goals and sequence of operations. Confers with members of management staff to arrange for assignment of workers required to meet production demands. Observes workers performing duties, reviews production reports, and confers with quality control personnel to evaluate work performance. Explains and demonstrates machine setup and inspection procedures, and assigns experienced worker to continue training. Conducts periodic inventories, and directs preparation of purchase orders according to company policy. Performs duties described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 10 12-13 15 16 20 M3 L3 SVP 7 SOC 71

619.381-014 EDDY-CURRENT INSPECTOR (iron & steel)

Inspects stainless steel tubes for conformance to customer specifications, using eddy current testing equipment: Reads work order to determine tube tolerance specifications required by customer and type of electric inspection coil to use for tube inspecting. Positions and secures specified inspection coil in coil holder, and turns cranks to align rollers on which tubes pass through coil for inspection. Turns knobs to activate testing equipment. Observes pattern on CRT (cathode ray tube) screen and turns knobs to calibrate equipment settings in accordance with customer specifications, using knowledge of equipment operation and experience. Selects sample tube with known defects and passes it through coil to test equipment settings. Listens for defect detection alarm, depresses button to stop rollers, and observes patterns on CRT screen to ensure that equipment signals and reflects known defects in sample tube. Positions tubes to be inspected on rollers, marks locations of detected defects on rejected tubes with marker, and places defective tubes aside. Periodically cycles sample tube through coil to verify standard operation of equipment. Records information, such as control settings and number of tubes tested, on inspection and production reports. Cuts through defective sections of tubing or rubs nicks on tubing to expose internal or remove surface defects, using abrasive saw and paper. GOE 06.03.01 PD M 08 09 10 13 15 EC 05 M2 L3 SVP 4 SOC 6881

619.662-014 SKELP PROCESSOR (iron & steel) pipe processor.

Controls operation of machinery and equipment, such as coil car, uncoiler, rollers, power shears, and hoist, using console, from pulpit in welding mill to form skelp (metal coil) into metal pipe: Receives signal through intercom to begin machine operation. Moves levers and presses buttons on control console to position coil car under overhead hoist and receive supply of skelp. Observes operation of car that transports skelp through series of processing operations, such as uncoiling skelp, rolling coil into sheets, and shearing sheets into specified size prior to welding and forming metal into pipe. Observes operation from pulpit to detect camber (curves in skelp sheet) and machine malfunctions, such as jam-ups. Stops machinery when malfunctions occur and removes sections of cobble (damaged defective skelp), using acetylene torch. Assists workers in setting up and adjusting machines and equipment, using handtools and measuring instruments. Signals CRANE OPERATOR (found.; iron & steel) I 921.663-010 to restock or remove skelp and cobble from operating pit. GOE 06.02.10 PD L 08 09 10 15 16 17 18 20 EC 05 M2 L2 SVP 4 SOC 7529

619.685-094 CUT-OFF-MACHINE OPERATOR (iron & steel)

Tends cutoff machine that automatically cuts sample sections of metal pipes for testing, and bevels, faces, and reams ends of pipes: Reviews pipe specifications to ascertain length of pipes and pressure setting of hydraulic press used for testing pipe sections. Positions pipe stops on machine and beveling, facing, and reaming heads, according to pipe length specified,

using handtools. Turns knob on hydraulic press to pressure specified. Pushes button controls to divert pipes to cutoff machine, to cut sample sections of each pipe, and to turn each pipe for beveling, facing, and reaming of pipe ends. Positions sample sections of pipes under hydraulic press, pulls lever to crush pipe sections, and examines sections for broken welds. Cuts additional sample sections of pipes not passing test, repeats test, and either accepts or rejects pipes according to test results. Diverts defective pipes for further processing, and notifies supervisor. Removes pipes that become wedged on conveyor, using cables, chains, and hoist. Maintains tally of work done and oils machine as needed. GOE 06.04.02 PD M 08 09 15 EC 05 M2 L2 SVP 3 SOC 7529

620.261-030 AUTOMOBILE-SERVICE-STATION MECHANIC (auto. ser.)

Repairs and services vehicles of service station customers through performance of any of following tasks: Examines vehicles and confers with customers to determine malfunction and repairs desired. Refers customer with major vehicle repairs to garage. Removes and replaces parts of ignition system, such as spark plugs, points, coil, or alternator to complete tune-up or replace malfunctioning part of system, using mechanic's handtools, gauges, and test meters. Turns adjustment screws of carburetor to set idle speed of engine, using screwdriver. Replaces defective chassis parts, such as shock absorbers, balljoint suspension, brakeshoes, and wheel bearings. Services vehicles [AUTOMOBILE-SERVICE-STATION ATTENDANT (auto ser.) 915.467-010]. GOE 05.05.09 PD M 04 05 06 08 09 10 12 13 15-18 M2 L3 SVP 5 SOC 6111

620.261-034 AUTOMOTIVE-COOLING-SYSTEM DIAGNOSTIC TECHNICIAN (auto. ser.)

Inspects and tests automotive cooling systems to diagnose malfunctions and estimates cost of repairs: Questions customer and examines cooling system, hoses, and connections to determine nature and extent of malfunctions. Tests and analyzes electrical, vacuum, pressure, and related functions of system components to locate cause of malfunctions, using vacuum tester, pressure tester, voltmeter, and other specialized test equipment and handtools. Compiles estimate of system repair costs and secures customer approval to perform repairs. Occasionally assists AUTOMOBILE-RADIATOR MECHANIC (auto. ser.) 620.381-010 in repair of cooling system components, using mechanic's handtools. Computes parts and labor charges and routes customer bill to office. GOE 05.05.09 PD M 04 06 08 09 10 11 12 13 15 17 18 19 M3 L3 SVP 7 SOC 6111

622.137-010 SUPERVISOR, BRAKE REPAIR (r.r. trans.)

Supervises and coordinates activities of workers engaged in maintenance and repair of braking devices on railroad tracks in classification yard: Patrols work area to observe operation and condition of braking device and to note and record defects, such as loose bolts, escaping air, and worn brake shoes. Assigns tasks and plans and coordinates activities of BRAKE REPAIRER, RAILROAD (r.r. trans.) 622.261-010 to maximize work performed and utilization of work force, based on knowledge of worker ability and experience and tasks to be performed. Patrols worksites to resolve problems relative to work and to suggest changes in work procedure to improve efficiency. Examines completed repair of maintenance to ensure conformance to company standards, applying knowledge of operation of braking device and of railroad regulations. Walks throughout yard to detect unsafe conditions or violations of safety rules. Apprises workers of violations to instruct workers in safe work methods and records repeated violations or commendable work methods on specified forms. Maintains records, such as employee timecards, materials used for maintenance and repair of braking device, and summaries of work performed. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.02.02 PD L 04 12 13 15 16 EC 01 05 14 M2 L2 SVP 7 SOC 60

622.137-014 SUPERVISOR, CAR AND YARD (r.r. trans.)

Supervises and coordinates activities of workers engaged in repair and maintenance of railroad cars in freight yard, and workers engaged in inspecting incoming and outbound freight cars for malfunctions: Inspects railroad cars and reviews worksheet to determine type and priority of repairs to be performed on cars, such as replacing hand holds, couplers, or wheels. Marks side of car, using chalk, to inform workers of work to be performed, such as type of repair, servicing, or inspection. Requests parts from stockroom needed by workers to repair cars. Assigns workers to repair cars in shop, to perform minor repairs in yard, such as bent grab irons, and to inspect incoming and outbound trains for defects, such as worn brake pads and broken doors. Examines work in progress and completed work to correct faulty work procedures and to ensure that repairs meet specified standards. Patrols work area to observe work methods and ensure compliance with safety regulations. Instructs workers in safe use of equipment in shop and yard. Prepares forms that detail work performed, such as car number, number of man-hours spent on work, and type of maintenance or repairs performed. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.06 PD L 08 09 12 13 16 M2 L2 SVP 6 SOC 60

622.261-010 BRAKE REPAIRER, RAILROAD (r.r. trans.)

Repairs and maintains braking devices on railroad tracks leading into yard of terminal to ensure specified performance of braking device, using handtools: Gathers specified tools, such as gauges, grease gun, and handtools, required to complete work assignment, such as greasing fittings or

replacing brake shoes. Adjusts and measures distances between brake shoes to specified standards, using handtools, gauge, and steel rule. Removes bolts, screws, and metal plates to access parts of braking device, following blueprints. Examines broken device to isolate defect or verify repairs needed. Removes designated part, places new part in braking device and adjusts fit to ensure accurate placement, working as member of team. Replaces bolts, screws, and metal plates, using hand and pneumatic tools. Inspects braking device for conformance to standards. Greases fittings of braking device to maintain and prevent excessive wear of parts. Loosens and lifts braking device from rail, using handtools and crane, and replaces broken or deteriorated track beams, working as member of team. GOE 05.05.09 PD V 04 06 08 09 10 12 13 15 17 20 EC 01 05 14 M2 L2 SVP 6 SOC 6775

625.137-010 SUPERVISOR, LOCOMOTIVE (r.r. trans.)

Supervises and coordinates activities of workers engaged in repair and maintenance of railroad locomotives: Reads management and engineering reports of locomotive problems or malfunctions to determine repairs to be made. Assigns duties to workers based on worker abilities and nature of required repairs. Observes progress of work to ensure adherence to prescribed procedures and adherence to company and governmental standards. Directs workers to perform preventive maintenance of locomotive components, such as diesel engine, frame and housing, electrical system, and air brakes. Monitors stock of replacement parts to detect shortages of parts needed for future repair and maintenance, and requisitions needed parts. Examines shop equipment, such as welding machine and engine simulators, to verify that equipment meets safety and performance standards. Notifies specified personnel of shop equipment malfunctions. Patrols work sites to observe methods, to inspect safety equipment, and to ensure compliance with company, union, and governmental regulations. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.09 PD L 12 13 15 EC 09 14 M4 L4 SVP 7 SOC 60

626.137-010 SUPERVISOR, WELDING EQUIPMENT REPAIRER (welding)

Supervises and coordinates activities of workers engaged in repairing, maintaining, and programming automated and manual welding machines and equipment in industrial establishment: Confers with engineering, quality control, and supervisory personnel, and SUPERINTENDENT, MAINTENANCE (any ind.) 189.167-046 to analyze and resolve scheduling, production, and quality control problems. Trains and assists workers in trouble-shooting, maintenance, and repair of robots and automated and manual welding equipment. Directs workers engaged in programming welding robots, *programmable controllers*, and other automated equipment. Maintains parts inventory. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.10 PD L 12 13 15 16 17 18 19 20 M4 L4 SVP 8 SOC 60

626.261-014 REPAIRER, WELDING SYSTEMS AND EQUIPMENT (welding)

Programs, maintains, and repairs production welding systems and equipment, using handtools, power tools, and test instruments, applying knowledge of welding technology and equipment operation, and following blueprints, specifications, and manufacturers' manuals: Analyzes welding diagrams, blueprints, templates, or other specifications and inspects components to be welded to determine weld program requirements for production welding robots. Presses buttons on *teach pendant* to program travel speeds and positions of robot arm, applying knowledge of robot programming. Presses buttons on *weld controller* to program amperage, pressure, and dwell time of welding gun attached to robot arm, following specifications and applying knowledge of welding technology. Presses buttons on *programmable controller* to coordinate and sequence operations of robots with production line. Inspects welded components and tests strength of welds to verify accuracy of programming, using hammer and applying knowledge gained from experience. Modifies weld program to bring weld quality up to specified standards, using teach pendant and weld controller. Observes and listens to operating robots to detect abnormal movements or sounds. Observes diagnostic lights or codes on video display monitors of programmable controller, *robot controller*, and weld controller to determine nature of malfunction, applying knowledge of diagnostic code and using manufacturers' manuals. Tests electrical and electronic components and circuits of system to determine source of malfunction, using test instruments such as oscilloscopes and voltmeters. Visually inspects printed circuit boards for defects, such as loose or broken pin connections. Replaces defective controller components, such as printed circuit boards, control units, and fuses. Repairs or replaces other system components [REPAIRER, WELDING EQUIPMENT (welding) 626.381-022]. May perform preventive maintenance, such as lubricating parts, changing oil filters, and replenishing fluid levels. May install, set up, adjust, and maintain production welding and brazing machinery, equipment, and devices, such as MIG brazers, press welders, fixtures, shuttles, and safety devices. May rebuild defective parts, such as pressure switches and hydraulic valves. May repair electrical components, such as teach pendants, timers, and control units. GOE 05.05.09 PD M 08 09 10 15 16 17 18 19 20 EC 08 09 M4 L4 SVP 7 SOC 613

626.384-010 REPAIRER, WELDING EQUIPMENT (welding)

Repairs welding, burning, and brazing equipment, according to sketches, catalogs, parts lists, and charts: Examines equipment and observes operation to detect malfunction. Dismantles equipment to remove and replace worn or damaged parts, such as regulator diaphragms, torch tips, pressure springs, gauges, pneumatic cylinders, shunts, hoses, cables, and non-consumable electrodes, using handtools. Selects new parts from stock. Screws, solders, or brazes parts together to reassemble unit. Tests repaired equipment to ensure specified performance. Dresses and replaces non-consumable electrodes, using grinding and lapping wheel or tip dressing machine. May replace or repair worn or damaged parts of welding and flame cutting machines. May issue supplies, such as electrodes, torch tips, weld rods, and fluxes, to welders. May change tubes and electrodes of resistance-welding machines. May monitor weld current to ensure weld quality. May fabricate steel hangers to support manually-operated welding guns. GOE 05.10.02 PD M 08 09 10 15 17 EC 08 M2 L2 SVP 4 SOC 613

628.684-042 SPINDLE REPAIRER (textile)

Repairs and maintains pin spindles and refills oil containers on yarn texturing machines: Inspects spindles previously removed from machines for worn-out pin shafts and cracked or worn eyelet. Discards spindles with worn-out pin shaft. Glues eyelet onto bottom of spindle shaft or inserts cleaned or new pinhead on spindle, using allen wrench, to repair or restore spindle. Cleans spindle, spindle shaft, and inside of pinhead, using cloth and cleaning fluid. Removes empty oil container from machine and fills container with oil from barrel, using hand pump. Replaces container on machine when full. Checks oil level in oil box and fills box with oil, using hand pump. GOE 05.12.15 PD L 02 08 09 10 15 18 EC 05 M1 L1 SVP 2 SOC 614

628.684-046 TEXTURING-MACHINE FIXER (textile)

Repairs yarn texturing machine malfunctions, utilizing knowledge of machine operation: Patrols assigned area to observe cards that indicate malfunctions of specific sections of multi-unit machine. Slides cover on suction line behind machine sections with malfunction, breaks yarn, and feeds yarn into suction opening to maintain flow of yarn. Removes unevenly wound packages of yarn, places takeup tube in cradle of machine sections, and observes takeup of yarn onto tubes to determine cause of malfunctions. Feels yarn running from creel through machine sections, such as sensors, rollers, friction units, and guides, to detect excess tension on yarn and replaces defective parts, using handtools. Inspects drive belts on feed rollers and replaces worn belts, using handtools. Observes machine for other defects, such as missing guides and oil leaks. Requisitions replacement parts needed for machine repair. Cleans and removes waste from cutter sensors and friction units. Removes yarn wrapper around feed rolls or power shafts of machine. GOE 05.10.02 PD M 04 06 08 09 11 M1 L2 SVP 4 SOC 614

637.261-030 SOLAR-ENERGY-SYSTEM INSTALLER (any ind.)

Installs and repairs solar-energy systems designed to collect, store, and circulate solar-heated water or other medium for residential, commercial, or industrial use: Locates and marks position of collectors, holding tank, and distribution system on structure, according to specifications and blueprints. Cuts holes in roof, walls, and ceiling to install equipment and plumbing, using power saws and drills. Installs supports and brackets to anchor solar collectors and holding tank, using carpenter's handtools. Cuts, threads, and fits plumbing according to specifications for connecting circulation system, using plumber's handtools. Lays out and connects electrical wiring between controls and pumps according to wiring diagram and knowledge of standard industry practice, using electrician's handtools. Tests electrical circuits and components for continuity, using electrical test equipment. Tests plumbing for leaks, using pressure gauge. Pushes control buttons to activate pumps and observes system to detect malfunctions. Repairs or replaces defective equipment. GOE 05.05.09 PD H 08 09 15 16 18 M4 L4 SVP 7 SOC 616

637.261-034 AIR AND HYDRONIC BALANCING TECHNICIAN (any ind.)

Inspects, tests, adjusts, and *balances* heating, cooling, and ventilating systems in residential, commercial, and industrial buildings, using specialized tools and test equipment, to attain performance standards specified in system design: Studies system blueprints, specifications, and performance data to determine configuration and purpose of system components, such as motors, pumps, fans, switches, ducts, or pipes. Discusses system malfunctions with users to isolate problems. Inspects system to verify system compliance with plans and specifications and to detect malfunctions in system component parts. Adjusts system controls to settings recommended by vendor to prepare to perform tests. Tests performance of air and hydronic systems, using specialized tools and test equipment, such as pitot tube, manometer, anemometer, velometer, tachometer, psychrometer, and thermometer, to isolate problems and determine where adjustments are necessary. Opens or closes louvers in system ductwork or adjusts flow control valves in piping to balance system, using handtools such as pliers, screwdriver, or wrenches. Discusses system operation with users to verify that malfunctions have been corrected. GOE 05.05.09 PD M 02 03 04 05 06 07 08 09 10 12 13 15 17 18 EC 09 10 M3 L3 SVP 7 SOC 616

637.687-018 SOLAR-ENERGY-SYSTEM-INSTALLER HELPER (any ind.)

Assists SOLAR-ENERGY-SYSTEM INSTALLER (any ind.) 637.261-030 in installing and repairing solar-energy systems for residential, com-

mercial, or industrial use: Saws and drills holes in roof and walls for placement of equipment, plumbing, and wiring as directed. Loads and unloads truck. Attaches plumbing and electrical wiring to structure, using handtools. Cuts pipe threads and wraps insulation around pipes. Performs other duties as described under HELPER (any ind.) Master Title. GOE 05.10.01 PD H 02 03 04 05 06 07 08 09 15 17 EC 01 08 14 M2 L2 SVP 4 SOC 616

**638.131-022 MAINTENANCE-MECHANIC SUPERVISOR (any ind.)
craft supervisor; maintenance advisor; maintenance supervisor.**

Supervises and coordinates activities of workers engaged in setting up, installing, repairing, and maintaining machinery and equipment, and in fabricating metal parts and tools: Directs workers engaged in repairing and maintaining parts of equipment and machines. Coordinates activities of workers engaged in installation of machinery and equipment. Directs workers in electrical, electronic, mechanical, hydraulic, and pneumatic maintenance and repair of machinery and equipment. Assists workers in diagnosing malfunctions in machinery and equipment based on observation of machinery and applying knowledge from past experience. Directs workers engaged in dismantling, assembling, and installing industrial machinery [MILLWRIGHT SUPERVISOR (any ind.) 638.131-030]. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May requisition and keep supply of spare parts. May modify programming of robots and related equipment, such as *robot controllers* and *programmable controllers*. May coordinate activities of workers engaged in programming machinery and equipment. May supervise and coordinate activities of workers engaged in making structural repairs to buildings [MAINTENANCE SUPERVISOR (any ind.) 891.137-010]. GOE 05.05.09 PD M 08 09 10 11 12 13 15 16 17 18 19 20 EC 05 08 09 M4 L4 SVP 8 SOC 60

638.131-034 MAINTENANCE SUPERVISOR, MOBILE BATTERY EQUIPMENT (mining & quarrying)

Supervises and coordinates activities of workers engaged in maintenance and repair of mobile battery-powered mining equipment: Reviews list of mobile battery-powered equipment needing repairs. Examines defective equipment and equipment batteries to determine malfunctions, using electrical and hydraulic schematics. Assigns personnel to perform repairs. Inspects repaired equipment for conformance to company and Federal safety standards. Notifies supervisor when equipment is back in service. Trains new employees. Tests air in mine shafts for presence of methane or lack of oxygen, using hand held testing devices, and notifies shift supervisors of hazards. Observes work area for defective equipment and hazardous electrical conditions, according to Federal and State regulations. Completes accident reports. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.09 PD M 08 09 10 12 13 15 17 19 EC 14 M3 L3 SVP 7 SOC 60

638.261-026 FIELD SERVICE TECHNICIAN (mach. mfg.) robot technician.

Installs, programs, and repairs robots and related equipment, such as *programmable controllers*, *robot controllers*, end-of-arm tools, conveyors, and parts orienters, applying knowledge of electronics, electrical circuits, mechanics, pneumatics, hydraulics, and programming, using power tools, handtools, and testing instruments and following manuals, schematic diagrams, and blueprints: Reviews work order and related manuals, blueprints, and schematic diagrams to determine tasks to be performed and tools, equipment, and parts needed for installation of repair assignment. Discusses assignment with customer's representative and inspects installation site to verify that electrical supply wires, conduit, switches, and circuit breakers are installed according to specifications. Positions and secures robot and related equipment to floor, assisted by customer's staff, using crane, handtools, and power tools and following manuals and blueprints, or inspects installation site to ensure that robot has been installed according to specifications. Attaches electrical wires to robot controller and programmable controller and connects cables between robot, robot controller, programmable controller, and hydraulic power unit, using handtools. Connects hoses between hydraulic power unit and robot, using handtools. Verifies that electrical power is reaching robot and that voltage is as specified, using testing instruments. Pushes buttons, flips switches, and moves levers to start robot and related equipment to verify that operation is as specified. Programs robot to perform specified tasks, applying knowledge of programming language, using *teach pendant* and keyboard or control panel on robot controller. Modifies program to refine movement of robot, using teach pendant. Observes and listens to robot and related equipment to detect malfunction and repairs or replaces defective parts, using handtools and power tools [MAINTENANCE MECHANIC (any ind.) 638.281-014]. Tests electrical components, such as wiring, switches, and relays, using testing instruments, and replaces faulty components, using handtools. Locates and replaces faulty printed circuit boards in robot controller, applying knowledge of circuit board function, using computer display screen on robot controller and following schematic diagram. May train customer's staff in operation of robot and related equipment. May install electric or pneumatic end-of-arm tools on robot. May repair faulty printed circuit boards. GOE 05.05.09 PD H 08 09 10 12 13 15 16 17 19 20 EC 08 09 M4 L4 SVP 7 SOC 6178

638.261-030 MACHINE REPAIRER, MAINTENANCE (any ind.)

Repairs and maintains mechanical and hydraulic components of production machines and equipment, such as metal fabricating machine tools, material handling system, and automated lubrication system, following blueprints and specifications and using handtools, power tools, and precision measuring instruments: Visually inspects and listens to machines and equipment to locate causes of malfunctions. Dismantles machines and equipment to gain access to problem area, using handtools and power tools. Inspects and measures parts to detect wear, misalignment, or other problems. Removes and replaces worn or defective parts of drive mechanism or hydraulic system, using handtools and power tools, and following blueprints, diagrams, and service manuals. Realigns and adjusts components, such as spindles and clutches, using handtools and following diagrams. Locates damaged air and hydraulic pipes on machine, and measures, cuts, threads, and installs new pipe. Starts machines and equipment to test operation following repair. Repairs broken parts, using brazing, soldering, and welding equipment and handtools. May modify computer-controlled motion of robot, applying knowledge of program commands and using *robot controller* and *teach pendant*. May set up and operate metal-working tools, such as lathe, drill press, or grinder, to make or repair parts. May assist MECHANICAL ENGINEER (profess. & kin.) 007.061-014 to modify sketches or computer-generated designs of machine components, such as hydraulic system and drive mechanism, applying knowledge of shop mathematics, hydraulics, and mechanics, and using computer keyboard and software programs. May work as part of a team including such workers as ELECTRICIAN, MAINTENANCE (any ind.) 829.261-018; MILLWRIGHT (any ind.) 638.281-018; PIPE FITTER (any ind.) 862.281-022; or TOOL MAKER, MAINTENANCE (mach. shop) 601.280-042. May be designated according to type of machine repaired as BROACHING-MACHINE REPAIRER (mach. tool & access.); CENTERLESS-GRINDING-MACHINE ADJUSTER (ammunition); SCREW-MACHINE ADJUSTER, AUTOMATIC (ammunition); or SCREW-MACHINE REPAIRER (mach. shop). GOE 05.05.09 PD H 04 05 06 08 09 12 13 15 17 EC 08 09 M4 L4 SVP 7 SOC 613

638.281-018 MILLWRIGHT (any ind.)

Installs machinery and equipment according to layout plans, blueprints, and other drawings in industrial establishment, using hoists, lift trucks, handtools, and power tools: Reads blueprints and schematic drawings to determine work procedures. Dismantles machines, using hammers, wrenches, crowbars, and other handtools. Moves machinery and equipment, using hoists, dollies, rollers, and trucks. Assembles and installs equipment, such as shafting, conveyors, and tram rails, using handtools and power tools. Constructs foundation for machines, using handtools and building materials, such as wood, cement, and steel. Aligns machines and equipment, using hoists, jacks, handtools, squares, rules, micrometers, and plumb bobs. Assembles machines and bolts, welds, rivets, or otherwise fastens them to foundation or other structures, using handtools and power tools. May operate *engine lathe* to grind, file, and turn machine parts to dimensional specifications. May repair and lubricate machines and equipment. May install robot and modify its program, using *teach pendant*. May perform installation and maintenance work as part of a team of skilled trades workers. GOE 05.05.06 PD H 02 03 04 05 06 08 09 10 12 13 15 17 20 EC 05 08 09 10 M3 L3 SVP 7 SOC 6178

638.281-030 HYDRAULIC-RUBBISH-COMPACTOR MECHANIC (sanitary ser.)

Installs and repairs hydraulic rubbish compactors, using tools and equipment: Installs new compactors, utilizing knowledge of electrical wiring and hydraulic-pneumatic functions and using handtools and power tools. Diagnoses hydraulic and mechanical malfunctions of compactors to determine required repairs. Adjusts, replaces, or repairs faulty hydraulic units, such as pistons, cylinders, and conveyors. Installs or replaces damaged shafts, guards, casings, and metal frame of compactor units, using electric welding, brazing, or soldering equipment and tools. Diagnoses electrical-electronic system malfunction, and replaces or repairs parts, such as electric motors, switches, and starting and stopping units, using knowledge of wiring, wiring diagrams, voltage systems, and electric-electronic components. Loads compactors and parts onto truck, using forklift. GOE 05.05.09 PD M 08 09 10 15 19 EC 08 M3 L3 SVP 8 SOC 6179

638.281-034 HYDRAULIC REPAIRER (any ind.)

Maintains and repairs hydraulic systems of machinery and equipment, such as robots, applying knowledge of hydraulics and mechanics and using handtools: Observes and listens to operating machinery to detect malfunctions. Visually inspects hydraulic lines and components to detect leaks, damage, and wear. Reads pressure gauges to detect abnormal oil pressure and smells to detect overheated oil. Depresses buttons and switches to turn off machinery. Turns valve to release pressure from hydraulic system and disconnects hydraulic supply and return lines, using handtools. Removes and replaces defective *accumulator*, using handtools. Connects charging assembly to accumulator and fills accumulator bladder with nitrogen gas to recharge accumulator, following manufacturer's specifications. Replaces worn or damaged hydraulic components, such as oil lines, fittings, cylinders, servo-valves, pressure release valves, gaskets, and seals, using handtools. Disassembles hydraulic system and removes and replaces defective actuator, pump bearings, and pump motor, using handtools and hoist. Observes operation of machinery and equipment to verify

repair. Performs routine maintenance, such as changing filters, following schedule, using handtools. May observe readout on display screen of *robot controller* to determine nature of system malfunction. May disassemble defective hydraulic components, such as pumps and accumulator, at workbench and rebuilds or repairs components. May install hydraulic oil lines on new machinery and equipment. GOE 05.05.09 PD H 02 03 04 05 06 08 09 10 15 17 EC 08 09 M3 L3 SVP 7 SOC 613

639.281-022 MEDICAL-EQUIPMENT REPAIRER (per. protect. & med. dev.; ret. tr.) durable medical equipment repairer; wheelchair repairer.

Repairs medical equipment, such as manual or powered wheelchairs, hospital beds, and suction equipment, using knowledge of equipment function and handtools: Test operates and examines malfunctioning equipment to determine cause of malfunction. Disassembles and inspects equipment to locate defective components, such as motors, valves, and electrical controls, using test instruments and handtools. Replaces defective parts, and solders, tightens, and aligns parts which have become loose or out of adjustment, using handtools and soldering iron. Cleans, lubricates, and polishes equipment components to restore surface, using solvent, polish, rags, and grease gun. Test operates unit to ensure equipment functions according to manufacturer's specifications. Occasionally installs modified parts, such as respirator equipment or foot rest, onto wheelchairs, according to customer specification, and fills parts orders from customers. GOE 05.10.02 PD H 04 08 09 10 15 M2 L3 SVP 5 SOC 6179

640.685-090 BAND-SAW OPERATOR (paper goods)

Tends bandsaw that cuts or slots sheets of paperboard for box blanks or partitions: Reads work order for specifications of box blanks, partitions, or pads. Stacks sheets of paperboard on work surface of bandsaw, squares edges of sheets, and fastens sheets together, using clamps. Marks top sheet of stack according to specifications, using ruler and marking pencil. Presses button to activate bandsaw, and pushes stacks of paperboard against blade, following markings on top sheet to cut out box blanks, partitions, or pads. Places box blanks, partitions, or pads on pallets for further processing. GOE 06.04.04 PD H 08 09 15 17 EC 03 05 M2 L2 SVP 4 SOC 7678

649.685-130 TABLET-MAKING-MACHINE-OPERATOR HELPER (paper goods)

Tends machine that cuts, rules, punches, binds, and stacks materials to produce looseleaf filler, tablets, and wire bound notebooks: Assists TABLET-MAKING-MACHINE OPERATOR (paper goods) 649.682-042 to set up machine. Presses buttons to activate hydraulic lift that positions rolls of paper in feed position. Pours powdered ink and water into container and mixes ingredients with hand stirrer. Loads backing and cover material on inserter platforms. Inspects finished products to determine required machine adjustments and eliminate machine malfunctions. Notifies MACHINE SET-UP OPERATOR, PAPER GOODS (paper goods) 649.380-010 of unresolved problems. GOE 06.04.04 PD M 04 08 09 15 17 18 M2 L2 SVP 3 SOC 8619

651.362-038 OFFSET-DUPLICATING-MACHINE OPERATOR, INSTANT PRINT (print. & pub.)

Operates offset-duplicating machine, photocopier, process camera, and related machines and equipment to produce copies of original materials, and provides customer service at instant printing shop: Accepts printing orders from customers and records specifications on order forms. Quotes prices to customers, using company price list, and computes cost according to base price for items, quantity, and special services ordered. Adjusts time and exposure settings and calculates and sets reduction in copy on camera plate maker to produce plastic or paper plates for use in offset duplicating. Operates process camera to prepare negatives used to produce metal plates for use in offset duplicating. Develops negatives, using chemical solution. Exposes negatives to positive film to develop positives for transfer to metal offset printing plates. Completes steps in printing process to develop offset printing plates, using darkroom equipment. Reads job orders to determine quantity of materials to be printed, stock and ink specifications, and press time required to complete job. Operates offset duplicating machine to reproduce single or multicolor copies of text, drawings, graphs, or similar materials [OFFSET-DUPLICATING-MACHINE OPERATOR (print. & pub.) 651.682-014]. Examines proof copy to assure accurate reproduction of color, centering of print, and conformance to layout specifications. Operates copier to produce single or multiple photocopies of materials [PHOTOCOPYING-MACHINE OPERATOR (clerical) 207.685-014]. Operates auxiliary machines such as collator, pad and tablet making machine, stapler, and paper punching, folding, cutting, and perforating machines to assemble materials. May receive payment from customers and box or wrap printed materials. May operate computerized typesetting machine to set type for printing [ELECTRONIC-TYPESETTING-MACHINE OPERATOR (print. & pub.) 203.582-074]. GOE 05.10.05 PD M 08 09 10 15 18 19 M2 L3 SVP 6 SOC 7643

652.132-010 SUPERVISOR, PRINT LINE (furn.) supervisor, engraving.

Supervises and coordinates activities of workers engaged in finishing wood or wood composition panels with artificial wood grain print for use in furniture manufacture: Assigns duties to workers at sanding, filling, coating, and printing stations of panel-printing and drying equipment, according to production priorities. Patrols work areas to detect faulty proc-

essing and directs workers to correct substandard products, utilizing knowledge of machine functions and processing standards. Assigns new workers to work with PRINT-LINE OPERATOR (build. board.; furn.) 652.562-010 to learn job duties. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 12 13 15 16 17 18 19 M3 L3 SVP 7 SOC 71

652.685-106 TYPE-PROOF REPRODUCER (mach. mfg.)

Tends phototypesetting machine and photo processor that print and develop proof of phototypesetting type disk in disk manufacturing establishment: Selects roll of programmed tape from file, secures roll onto reel of phototypesetting machine, and threads tape through machine rollers and into reader to prepare machine for automatic operation. Cleans dust and lint from disk and places disk in phototypesetting machine. Depresses keys to enter command codes for projection of type images from type disk onto film cassette in photo unit of machine and onto screen of cathode ray tube. Scans images on screen to detect type defects and notifies SUPERVISOR, TYPE-DISK QUALITY CONTROL (mach. mfg.) 979.137-026 of irregularities. Removes film cassette from machine, places cassette on receiving platform of photo processor, and depresses switch to begin developing cycle. Depresses switch to stop machine when runoff (proof-sheet) emerges. Removes disk from phototypesetting machine, and places disk and runoff in specified storage area. GOE 05.10.05 PD L 08 09 10 12 13 M1 L2 SVP 2 SOC 7642

652.685-110 SYMBOL STAMPER, SEMICONDUCTOR PACKAGES (electronics) marker.

Tends automatic printing machine that prints identifying symbols and numbers on semiconductor packages: Refills ink or paint reservoir. Inserts printing plate or type block in printing machine. Places semiconductor package on holding fixture in printing machine or places tube containing semiconductor packages in loading device of automatic printing machine. Flips switch or depresses pedal to print symbols and numbers on semiconductor circuit packages. Visually inspects package markings to identify misprints. Cleans and reprints packages, using cleaning solution and cotton swabs. Places printed semiconductor packages in trays. May set type on type block, using tweezers. May place printed packages in oven to dry or set ink. GOE 06.04.09 PD L 08 09 10 15 17 M1 L2 SVP 2 SOC 7643

659.685-026 MILL STENCILER (iron & steel)

Tends machine that prints identification data on fabricated pipe: Positions and secures type in holder on printing machine, using handtools. Examines test impression to ensure printing of specified information, such as heat and lot numbers; size, gauge, and grade of pipe; and shift and initials of welder. Turns dial on number printer that prints designated consecutive number on each pipe in turn. Monitors and adjusts printer to maintain clarity of print. Cleans printing machine, using solvents and rags. GOE 06.04.10 PD L 08 09 15 16 18 20 EC 05 08 M1 L1 SVP 2 SOC 7649

661.137-010 SUPERVISOR, FRAME SAMPLE AND PATTERN (furn.)

Supervises and coordinates activities of workers engaged in machining and building sample furniture frames and patterns: Analyzes production forms to verify accuracy of figures and to estimate cost factors, such as raw materials and production time, using calculator. Studies blueprints to determine style, type, and dimensions of sample frames and patterns to be fabricated. Directs activities of workers in machining operations. Inspects completed units for compliance with specifications of blueprints and production order, using precision-measuring tools. Initiates changes or adjustments in machine setup or sequence of operations, utilizing knowledge of woodworking and engineering. Performs duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 10 12 13 15 M4 L4 SVP 8 SOC 711

661.280-010 PATTERNMAKER (furn.) II

Lays out and cuts wooden furniture patterns following blueprints, specifications, or drawings, using handtools and woodworking machines: Consults blueprints, drawings, or written specifications to determine size and shape of pattern and machine setup required to cut pattern to specifications. Draws outline of pattern on stock with drawing instruments or transfers outline to stock by tracing over drawing on woodstock, using pencil. Sets up and operates woodworking machines, such as bandsaw, variety saw, planer, shaper, borer, lathe, router, or mortiser to cut, shape, and smooth pattern to specified shape. Measures and compares cut pattern with specifications, using rule and caliper. Adjusts woodworking machines to change shape or size of cut pattern to ensure cut stock conforms to drawings and specifications, using various handtools. Marks part number on pattern, using hand stamp or marking pencil, and maintains record of patterns for references. Issues patterns to designated machine operators. GOE 05.05.08 PD M 04 08 09 10 11 12 13 15 17 18 EC 05 08 M4 L4 SVP 7 SOC 6831

664.382-018 TRIMMING MACHINE SET-UP OPERATOR (smoking pipe)

Sets up and operates machines to cut and shape bottom of smoking pipe bowls: Sharpens trimming machine knives, using grinding wheel. Inserts and secures knives in cutterhead of trimming machine, using wrench. Positions and secures clamp and carriage stops in specified location, using wrench and tape measure. Places pipe bowl blank on clamp and moves lever to secure blank in place. Pushes machine carriage forward and rotates carriage handle to move and revolve bowl blank against rotating

knives to cut and shape all surfaces of pipe bowl bottom. Moves lever to release pipe bowl blank from machine clamp. GOE 06.02.03 PD M 08 09 10 15 EC 07 M2 L2 SVP 4 SOC 7431

664.685-034 TURNING LATHE TENDER (furn.)

Tends turning lathe that shapes furniture parts: Positions workpiece against stops on lathe carriage rests. Moves lever to drive tailstock and headstock centers into workpiece. Pushes lever to start spindle drive and move turning workpiece into turning centerhead of lathe to shape workpiece. Pulls lever to pull workpiece back from cutterhead and disengage drive clutch. Removes and inspects workpieces for smoothness and defects and places finished pieces onto cart. Discards defective pieces. Pushes cart of turned pieces to next operation. Sharpens blade, using whetstone. GOE 06.04.23 PD M 04 08 09 10 11 13 15 17 18 EC 05 M1 L1 SVP 2 SOC 7631

665.665-010 ROUGH PLANER TENDER (woodworking)

Tends machine that smooths surface and sizes rough lumber in woodworking establishment: Turns handwheels to adjust cutting depth and feed rate according to thickness and species of lumber to be planed. Presses buttons to start planer and feed conveyor. Depresses pedal to actuate hydraulic load bed that raises lumber stack to level with machine feed conveyor to facilitate loading. Loads boards in consecutive sequence onto feed conveyor that conveys boards through machine planing operation. Periodically attaches sharpening device to planer blade assembly, using wrench, and turns lever to guide abrasive surface of device along blade surface to sharpen blade. GOE 06.04.03 PD H 08 09 10 15 17 20 EC 05 M3 L2 SVP 3 SOC 7632

665.685-038 RODDING MACHINE TENDER (furn.)

Tends machine that cuts spiral grooves in wood dowel-rods and shaves circumference of rod to specified size: Starts rodding machine. Inserts dowel rods into feed trough and between feed rollers of rodding machine that cuts spiral groove in rods and trims diameter of rods to specified size. Observes cutting action of rodding machine and stops machine when malfunctions are noted. Removes spiraled rods from tail end chute and stacks rods on handtruck for removal to subsequent processing. Notifies specified personnel of malfunction of machine. GOE 06.04.03 PD M 08 09 10 EC 05 M1 L1 SVP 2 SOC 7639

665.685-042 ROUTER TENDER (furn.)

Tends automatic tape route to cut designs in woodstock: Lifts and positions stock in guides on bed of router. Secures stock to machine bed, using C-clamps. Turns dial to position cutterhead to begin cycle and starts router. Observes router during cycle to detect malfunctions, and notifies specified personnel when malfunctions occur. Blows wood shavings from router stock, using air hose. Unscrews C-clamps and lifts and stacks stock on handtruck. GOE 06.04.03 PD H 08 09 10 EC 05 08 M1 L1 SVP 2 SOC 7639

665.685-046 SHAPING MACHINE TENDER (furn.)

Tends bandsaw and double-spindle shaping machine that cut veneer into curved shapes for use in furniture manufacture: Flips switch and presses buttons to activate machines. Places stack of veneer on bed of bandsaw, positions pattern on top veneer sheet and marks cutting line. Guides stack of veneer against blade of bandsaw to rough-cut veneer. Positions and secures stock of rough-cut veneer on form of double-spindle shaping machine, and guides loaded form between revolving cutterheads, using form as guide, to smooth-cut veneer to shape of pattern. GOE 06.04.03 PD H 04 08 09 10 15 17 18 EC 05 M1 L2 SVP 3 SOC 7633

666.685-014 BORING-MACHINE OPERATOR (furn.)

Tends single- or multiple-spindle boring machine that bores holes in wooden furniture stock: Lifts and places woodstock against preset guides of machine bed and presses button to start rotating boring bits of previously set up machine. Holds woodstock against guides and presses button to lower rotating bits that bore holes into woodstock. Removes stock from machine and examines workpiece for boring defects, such as splits. May place woodstock in hopper that automatically feeds piece under bits of machine. May cut defects from sections of woodstock prior to boring, using cut-off saw. GOE 06.04.03 PD M 04 08 09 15 M2 L2 SVP 2 SOC 7639

667.137-010 SUPERVISOR, STAVE CUTTING (cooperage)

Supervises and coordinates activities of workers engaged in cutting barrel staves: Coordinates movement of bolts between yard, cutting area, and drying area. Examines staves and bolts to ensure products meet company standards. Directs workers to sharpen saw blades or to adjust cutting of staves to maintain production standards. Examines bolts to detect defects, such as knots and splits. Grades bolts, using factors such as ratio of sapwood to heartwood. Calculates value of bolts and writes pay voucher for purchases. Performs duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 12 13 15 17 18 19 EC 05 M2 L2 SVP 7 SOC 71

667.685-070 AUTOMATIC BANDSAW TENDER (furn.)

Tends bandsaw that automatically cuts curved or irregular designs on woodstock or saws stock to size: Compares sample piece of stock with prefabricated templates to select template. Positions and secures template on machine bed, turns dials, and positions stock clamps to set up automat-

ic bandsaw. Places stock on machine bed, pulls lever to clamp stock in position, and presses buttons to activate automatic machine cycle. Pushes lever to release stock clamps, removes cut stock from machine, and stacks stock on handtruck. GOE 06.04.03 PD M 02 08 09 10 15 17 18 EC 05 07 M2 L2 SVP 4 SOC 7633

667.685-074 CUT-OFF-SAW OPERATOR (furn.; sawmill; woodworking)

Tends circular saw that saws kiln-dried lumber, rough lumber, or woodstock to standard lengths in sawmills, furniture plants, or woodworking establishments: Examines boards of rough lumber or finished woodstock for defects, such as excessive warping, knots, and cracks, to determine where to cut boards to minimize waste. Pushes boards against stop guides on saw table, and depresses button or pedal to activate saw to cut boards to specified length. Places cut boards on conveyor for further processing. May tend equipment with multiple saws. GOE 06.04.03 PD M 08 09 15 EC 05 08 M1 L1 SVP 2 SOC 7633

667.686-014 SAWMILL WORKER (sawmill) swamper.

Performs any combination of following duties in preparing logs for cutting into lumber and storing cut lumber in sawmill: Unloads logs from trucks or cars. Rolls logs onto sawmill deck. Examines logs for defects, such as imbedded pieces of iron or stone, decayed wood from splits, and marks defects for removal by other workers. Rolls logs from deck onto log or carriage. Rides log carriage of head saw and adjusts position of logs on carriage to cut planks of required thickness. Sorts and guides planks emerging from saw onto roller tables or conveyors for trimming edges. Straightens lumber on moving conveyors. May straighten edges of rough lumber, using saw. May operate and maintain donkey engines. May sharpen and adjust teeth of woodworking saws. May tend fires in donkey engine. May relieve designated workers engaged in preparing or cutting logs into lumber and be designated SAWMILL-RELIEF WORKER (sawmill). GOE 06.04.40 PD M 02 03 04 08 09 10 16 20 EC 05 14 M1 L1 SVP 3 SOC 7633

669.132-010 SUPERVISOR, SAWING AND ASSEMBLY (furn.)

Supervises and coordinates activities of workers engaged in sawing, shaping, and assembling woodstock to form furniture frames and mock-ups: Reviews production schedules and confers with department head to determine production priorities, availability of equipment and personnel, and processing changes. Examines furniture parts during machining and assembly, and directs workers to change machine setup or work techniques to eliminate defects. Reassigns workers or performs duties of absentee workers. Operates woodworking machines, such as bandsaw, rip saw, and boring machine to cut woodstock to specifications. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 10 12 13 15 16 17 18 20 EC 05 07 08 M3 L3 SVP 7 SOC 711

669.364-010 INSPECTOR, ASSEMBLY (furn.)

Assembles and inspects samples of furniture parts to determine conformity to specifications prior to mass production of parts: Inspects and measures samples of furniture parts to determine conformity to specifications, using ruler, caliper, protractor, and square. Discusses alternate machine setup to correct defects with SUPERVISOR, FINISH-END (furn.) 669.130-022, utilizing knowledge of wood and woodworking machines. Fits and knocks parts together to form furniture, using mallet. Secures parts together, using clamps. Examines assembled furniture to determine conformity of appearance to finish sketch of furniture. Notifies PRODUCTION SUPERINTENDENT (any ind.) 183.117-014 when parts and assembled furniture meet production specifications. GOE 06.02.22 PD L 08 09 10 11 12 13 15 EC 05 M2 L2 SVP 6 SOC 772

669.382-022 MULTI-PURPOSE MACHINE OPERATOR (furn.)

Sets up and operates machine with multiple cutterheads to simultaneously saw, bore, groove, shape, and sand woodstock to form furniture parts: Reads work ticket to determine machining operations required to form specified furniture parts. Selects, installs, and adjusts blades, bits, cutter knives, and sanding belts, according to specifications, using handtools. Attaches specified forms that hold woodstock during machining operations to automatic carriage holding device of machine, using handtools. Selects and installs punch cards into machine control panel that determine sequence and duration of machining operations. Presses buttons to start machine, positions woodstock in holding forms, and adjusts clamps to secure woodstock in form. Presses button to activate automatic machining cycle. Removes processed parts from holding form and verifies finished dimensions, using steel tape rule, gauges, and calipers. Stacks finished parts in storage area. GOE 06.02.03 PD M 04 15 16 17 M3 L3 SVP 6 SOC 763

669.382-026 TURNING MACHINE SET-UP OPERATOR (smoking pipe)

Sets up and operates turning machines to shape and bore smoking pipe bowls: Sharpens turning machine cutting knives, using grinding wheel. Inserts and secures knives in cutterhead, using socket wrench. Turns handwheels and moves levers to adjust turning machine carriage stops and cutting depth of machine. Places block in clamp on machine carriage and moves lever to secure block in clamp. Pushes machine carriage handle to move block into cutterhead to shape and bore sample pipe bowl. Examines sample pipe bowl to verify shape and dimension against specifications, using caliper and gauges. Performs other duties as described under BRIAR CUTTER (smoking pipe) 664.685-010. GOE 06.02.03 PD M 08 09 10 11 15 EC 07 M2 L2 SVP 4 SOC 7431

669.682-070 UTILITY OPERATOR (sawmill)

Operates and controls barkers, saws, edgers, planers, trimmers, and chippers in sawmill to relieve other operators during rest and meal periods, emergencies, and vacations: Receives assignment to operate specific machine from SUPERVISOR, SAWMILL (sawmill) 669.130-026. Moves levers, turns handwheels, depresses pedals, and pushes console buttons to activate machines and to observe, rotate, and move logs and boards on conveyors and adjustable tables to shape boards for optimum market value. Changes cutting blades, adjusts machines, and clears machine jams, using handtools. Lubricates and cleans machine parts. GOE 06.02.03 PD M 08 09 15 16 17 18 19 EC 05 07 08 M2 L2 SVP 6 SOC 7633

669.685-050 DOWELING-MACHINE OPERATOR (woodworking) doweler; dowel-setting-machine operator.

Tends machine that glues and drives dowel pins into holes in parts of wooden articles preparatory to assembly: Slides stops on machine to align grooves, through which dowels are fed, with holes in wooden part. Dumps dowel pins into hopper and pours glue into glue reservoir. Turns valve to regulate amount of glue injected into holes to prevent wood from splitting when dowels are driven into holes. Positions part against stop and depresses pedal to inject glue and drive dowels into holes. Releases pedal and removes wooden part from machine. May mix glue. GOE 06.04.20 PD M 04 08 09 10 15 17 18 20 EC 08 M1 L1 SVP 3 SOC 7639

669.685-102 GROOVER-AND-STRIPER OPERATOR (build. board)

Tends machines in tandem that groove, paint, seal, and dry surfaces of hardboard panels: Positions grooving blades and striping wheels according to panel specifications, using handtools and tape measure. Pours paint and sealer into designated reservoirs to supply coating rollers and wheels. Moves controls on console panel to start and synchronize machines. Inspects and feels finished panels, and adjusts controls to conform with production specifications. GOE 06.04.03 PD L 04 06 08 09 10 11 15 17 EC 08 M2 L2 SVP 2 SOC 7639

669.685-106 PUNCH PRESS OPERATOR (build. board)

Tends punch press machine that punches holes in hardboard panels to make pegboard panels: Reads work schedule to ascertain production information, such as size, type, and quantity of panels to be processed. Adjusts panel guides on machine table, according to production information, using handtools. Presses buttons to start machine, pulls panels from stack, aligns panels against guides on machine table, and pushes panels against feed rollers of machine. Measures first panel of each stack of hardboards to verify specified measurements, and feels edges of holes in pegboard panels to determine sharpness of punch press. Observes machine operation to detect malfunction of machine parts and notifies supervisor when punch dies need changing or machine malfunctions occur. Lubricates specified sections of machine, using grease gun and oilcan. Bands stacks of pegboards for storage, using steel banding ribbons, clips, and strapping tool. GOE 06.04.03 PD M 08 09 17 EC 05 08 M2 L2 SVP 2 SOC 7514

673.364-010 LEAD WORKER, WAFER POLISHING (electronics) group leader, wafer polishing.

Assists SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010 in coordinating activities of workers engaged in polishing wafers for use in manufacturing semiconductor devices: Reviews production goals with SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010, prioritizes wafers to be polished, and assigns workers to stations. Monitors production and adjusts work assignments when necessary. Inspects polished wafers and measures wafer thickness, using gauge, to ensure conformance to customer specifications. Trains workers in equipment operation and wafer inspection. Observes workers to ensure compliance with safety rules and production standards. Completes work schedules and daily production reports. May tend polishing machines [POLISHING MACHINE TENDER (electronics) 673.685-094] and demounting machines [WAFER MOUNTER (electronics) 726.685-058] to substitute for workers during worker absence or to relieve bottlenecks in work congested areas. GOE 06.02.09 PD M 08 09 10 12 13 15 M3 L3 SVP 6 SOC 7677

673.382-026 CRYSTAL GRINDER (electronics) grinding machine operator.

Operates grinding machine to abrade semiconductor crystal ingot to improve cylindrical shape of ingot and attain specified diameter: Reads work order to determine target diameter of ingot. Measures ingot diameter, using calipers or micrometer, and calculates thickness of material to be removed from ingot and length of grinding time. Positions and secures ingot in trunnions or brackets on grinding machine. Adjusts machine controls for position of grinding tool and speed of grinding. Pushes buttons to activate coolant flow, rotation of ingot, grinding tool, and timer. Measures ingot diameter after grinding and continues grinding to attain specifications for diameter. May change worn grinding tools and other parts and adjust machine, using handtools. May attach graphite pieces to ends of ingot before grinding, using epoxy, and remove graphite and epoxy from ingot after grinding, using radiant oven and solvent. May operate saw to cut sample wafer from ingot for inspection. May perform routine maintenance on grinding machine, such as adding oil and cleaning machine. May operate flat grinding machine to grind flat along length of ingot and be

designated CRYSTAL FLAT GRINDER (electronics). GOE 06.02.02 PD H 08 09 10 15 17 EC 08 M2 L2 SVP 5 SOC 6816

673.685-086 DISC-PAD GRINDER (asbestos prod.)

Tends machine that smooths and polishes asbestos disc pads for brake linings: Places disc pads on automatic feed tray of machine. Adjusts grinding head of machine according to specified thickness of polished pads. Starts machine that automatically feeds pads through enclosed grinding and washing units. Observes operation to detect machine malfunctions. Stops machine and clears detected jams. Measures random sample of polished disc pads to determine if pads are ground according to specifications, using caliper. Adjusts grinding mechanism as required, using handtools. Records data, such as production and downtime when machine breakdown occurs. GOE 06.04.08 PD L 08 09 10 15 EC 07 M1 L1 SVP 4 SOC 7677

673.685-094 POLISHING MACHINE TENDER (electronics) lapper; wafer polisher.

Tends abrading machines that polish or lap surface of semiconductor wafers: Reads work order to determine specifications. Loads wafers or carriers containing wafers onto polishing or lapping machine. Turns knobs or inserts computer program card to adjust machine controls for pressure, time, and slurry flow. Starts lapping machine that removes saw marks and reduces wafer thickness or starts polishing machine that polishes wafers. Observes machine operation and listens for sounds of belts, cams, and abrading wheel to detect machine malfunctions. Adjusts mechanisms or requests repairs as necessary. Stops machine at prescribed time, removes wafers from machine, and rinses wafers with water to cool wafers and remove slurry. Examines wafers for defects, and measures wafer thickness, using gauge. May clean wafers, using chemical solutions, water, or gases, to remove contaminants from wafer surface. May mount wafers onto carriers. May mix slurry. May record production information. May tend machine that rounds wafer edges and inspect rounded wafer edges, using optical microscope, and be designated EDGE-ROUND TENDER (electronics). May be designated according to machine tended as LAPPING MACHINE TENDER (electronics). GOE 06.04.09 PD M 08 09 10 15 17 M2 L2 SVP 3 SOC 7677

673.685-098 RADIUS CORNER MACHINE OPERATOR (mirror)

Tends machine that grinds and polishes corner edges of flat glass to specified radius: Turns dials to set timer of grinding and polishing wheels to specified settings. Moves lever, turns knob, and presses button to open water valve to start flow of water against grinding wheel, open air pressure valve, and start air pump of machine. Breaks off specified amount of each corner of glass sheets, using glass pliers, positions glass sheets against stops on padded table surface of machine, and presses button to start automatic grinding and polishing cycles of machine. Turns glass sheets to position each corner for processing. Observes and feels corner edges to determine whether reprocessing is necessary. Places processed glass on racks, and separates glass with pieces of cardboard. GOE 06.04.08 PD H 08 09 11 15 EC 14 M1 L1 SVP 2 SOC 7522

673.685-102 WAFER ABRADING MACHINE TENDER (electronics) abrading machine tender.

Tends abrading machines that roughen surface of semiconductor wafers to distinguish front from back: Adjusts controls to set speed, time, and pressure of abrading belts according to specifications. Loads container of wafers into abrading machine and starts machine that automatically abrades surface of wafer. Removes abraded wafers from machine and inspects wafers to detect abrading defects, such as cracks, using microscope. Replaces worn abrading belts. GOE 06.04.09 PD L 08 09 10 15 M1 L2 SVP 2 SOC 7679

673.686-030 DISC-PAD GRINDING MACHINE FEEDER (asbestos prod.)

Feeds asbestos disc pads onto automatic feed platform of grinding machine that polishes pads: Strikes pads against one another to remove excess asbestos particles. Breaks flange from rims of pads by hand and stacks pads onto automatic feed platform of grinding machine. GOE 06.04.09 PD L 08 09 10 EC 07 M1 L1 SVP 2 SOC 8725

676.382-010 DRILL-PRESS OPERATOR, PRINTED CIRCUIT BOARDS (electronics)

Sets up and operates single- or multi-spindle drill press to bore holes in fiberglass boards used in production of printed circuit boards (PCBs): Studies drill drawing and product specifications to determine hole locations and dimensions, drill speed, and feed rate. Selects and installs bits in spindles, using handtools. Moves controls to set drill speed, feed rate, and depth of cut. Positions board(s) to be drilled over registration pins on machine bed. Views enlarged image of artwork on lighted scope to position and align single-spindle drill and board and depresses pedal or moves lever to operate drill press to bore holes. Positions template on registration pins under stylus of multi-spindle drill press and guides stylus that automatically depresses bit to activate drill press to bore holes. May operate single-spindle drill press to bore holes in metal template. May measure hole size, using micrometer gauge. May sand finished boards or template, using sander. GOE 06.02.02 PD L 08 09 10 15 18 19 M2 L2 SVP 3 SOC 7318

676.686-014 DRILLER AND DEBURRER, REFLECTOR (light. fix.)

Feeds and unloads machine that heats and drills holes in light bulb reflectors for lead wires: Removes and places glass reflectors from cartons

onto conveyor that feeds drilling machine. Removes drilled reflectors from discharge conveyor and places reflectors in tray and carries reflectors to deburrer. Aligns and places reflector holes over deburrer bit that smooths edges of holes. Inspects reflector to ensure that holes conform to specifications. Places reflectors in carton for shipment. GOE 06.04.08 PD L 08 09 15 EC 14 M1 L1 SVP 2 SOC 8725

677.382-018 CRYSTAL SLICER (electronics) crystal cutter; saw operator; wafer slicer.

Operates precision saws to slice wafers from semiconductor crystal ingots, such as silicon or gallium arsenide: Attaches mounted crystal to holding fixture of automatic feed on saw, using clamps. Adjusts saw controls to set speed and angle of saw blade, thickness of cut, and angle of holding fixture. Operates saw to cut sample wafer from crystal ingot. Measures crystal orientation of sample wafer, using x-ray machine, and measures thickness of sample wafer, using calipers or thickness gauge. Inspects sample wafer for flaws, such as saw marks, chips, bow, and taper. Readjusts saw controls based on measurements and inspection. Starts saw and observes operation of saw to ensure wafers are sliced according to specifications. Removes sliced wafers from saw and cleans wafers in sink or ultrasonic cleaner. May mount crystal ingot to mounting block [CRYSTAL MOUNTER (electronics) 677.687-014]. May be designated according to type of saw operated as V-BLOCK SAW OPERATOR (electronics); WIRE SAW OPERATOR (electronics). GOE 06.02.09 PD M 08 09 10 15 17 M2 L2 SVP 4 SOC 7678

677.685-054 SAW OPERATOR (brick & tile)

Tends saw that cuts ceramic kiln furniture, such as posts and slabs to specified size: Reads work order to determine size according to customer specifications. Measures product, using tape measure, and marks cutting line with pencil. Positions kiln furniture on worktable and aligns cutting line with saw blade. Pulls switch to activate saw and pushes product against saw blade along cutting line. Stacks cut kiln furniture on storage pallet. GOE 06.04.08 PD M 08 09 15 EC 05 07 08 M1 L1 SVP 2 SOC 7678

677.686-014 GLASS-CUTTING-MACHINE FEEDER (mirror) statler operator.

Feeds sheet glass into machine that scores and cuts glass to specified size: Positions glass onto feed rollers and against guides to align glass with cutters. Pushes glass into feed end of machine that conveys glass under cutters and cuts glass to specified size. GOE 06.04.08 PD M 08 09 15 17 M1 L1 SVP 2 SOC 8725

677.687-014 CRYSTAL MOUNTER (electronics)

Mounts crystal ingot onto mounting block of crystal saw preparatory to slicing semiconductor wafers from ingot: Sorts semiconductor crystal ingots according to size and crystal orientation. Mixes resin and hardening agent to form epoxy adhesive and spreads adhesive on graphite backing, using putty knife. Attaches crystal ingot(s) to adhesive and backing. Mounts crystal ingot attached to graphite backing onto mounting block of crystal saw, using epoxy adhesive. May mount crystal ingot directly onto mounting block, using epoxy as backing and adhesive. May mount crystal ingot to backing and mounting block, using wax. GOE 06.04.34 PD H 08 09 10 15 17 M2 L1 SVP 2 SOC 774

679.362-010 CRYSTAL MACHINING COORDINATOR (electronics) machine operator technician.

Leads workers engaged in grinding, sawing, flattening, and inspecting crystal ingots used in semiconductor wafer manufacturing under direction of SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010: Discusses production objectives, work priorities, and workflow progress with SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010. Reviews daily production logs, inventories ingots in each production stage, and assigns tasks to workers according to priorities. Trains new workers in equipment operation, company procedures, and safety practices and observes workers to ensure compliance with rules and policies. Occasionally operates grinding and sawing machines. Inspects crystal ingots for machining defects and machine malfunctions. Performs minor repairs and maintenance on grinding and sawing machines. GOE 06.02.09 PD H 08 09 10 12 13 15 17 M3 L3 SVP 6 SOC 7679

679.384-010 SEED CORE OPERATOR (electronics)

Performs following duties to produce seed cores from silicon crystal ingots for use in crystal growing process: Tends saw that cuts ingot into specified lengths. Determines crystal orientation of ingot sections, using x-ray equipment, and draws orientation lines on ingot. Positions ingot sections on chuck of drill according to crystal orientation and activates drill that automatically removes seed core from ingot. Grinds seed core to smooth rough edges, using sanding machine, and x rays and marks seed core to indicate crystal orientation. Tends machine that cuts groove in seed core. Cleans seed core to remove contaminants, using ultrasonic and etching equipment. Wraps finished crystal in protective paper. Records production information. GOE 06.02.09 PD M 08 09 10 15 17 EC 08 M3 L2 SVP 5 SOC 7679

680.684-010 CARD GRINDER HELPER (textile)

Assists CARD GRINDER (asbestos prod.; textile) 680.380-010 in setting up and repairing cotton and synthetic fiber carding machines and picking machines; Cleans machines of waste and excess fibers from previous run, using airhose. Inspects machines and machine parts to detect wearing of or damage to parts. Replaces defective parts, such as rollers, belts and gears, using handtools. Adjusts clearance between carding and doffing cylinder and between flats, using leaf, flat, and pen gauges, and listening for contact of surfaces. Adjusts machine parts, such as prefeeders, evenfeeders, and levers, to regulate speed of machine, flow of fiber, and length of lap. Grinds wire teeth of flats and carding and doffing cylinders, using grinding device. Inspects teeth to verify grinding meets specifications. Lubricates wearing surfaces of machine, using oilcan. GOE 06.01.02 PD V 04 05 06 08 09 10 11 12 13 15 17 18 EC 05 M2 L2 SVP 3 SOC 7216

681.387-010 QUALITY CONTROL CHECKER, TEXTURING PROCESS (textile)

Inspects yarn texturing machines and packages of textured yarn to appraise quality of texturing process: Inspects doff yarn to ensure processing of yarn by texturing machines meets company performance standards. Reads temperature from gauges on thermal unit of texturing machines, records number of malfunctioning thermal units, and calibrates temperature gauges, using thermometer. Monitors spindle speed on texturing machines, using strobe tester, and notifies MACHINE FIXER (textile) 689.260-010 or SUPERVISOR, TWISTING DEPARTMENT (textile) 681.130-014 of malfunctioning spindle speed. Transports defective yarn package to YARN CLEANER (textile) 681.687-026 for salvaging of yarn. Fabricates needles used by YARN-TEXTURING-MACHINE OPERATOR (textile) I 681.685-158, using handtools. GOE 06.03.01 PD L 08 09 10 15 19 EC 05 M2 L2 SVP 7 SOC 782

681.585-014 BOBBIN WINDER, MACHINE (cord. & twine; textile)

Tends machine that transfers yarn, thread, or twine from spools to large bobbins used on knitting and weaving machinery: Mounts spools on spindles over winding arbors of machine. Unwinds length of yarn, thread, or twine from spool and winds onto bobbin. Places bobbin on winding arbor and rotates bobbin to take up slack. Slides thread into eye of winding traveler and starts arbors rotating to wind thread onto bobbins. Observes bobbins as they are winding and cuts thread to remove loaded bobbins. Records number and types of bobbins wound. GOE 06.04.06 PD M 08 09 10 EC 05 M1 L1 SVP 2 SOC 7651

684.687-022 COLLECTOR (hosiery)

Removes collection bags filled with knitted hosiery from knitting machines: Marks work tickets with information, such as style and size of hosiery being knitted on machines, and attaches tickets to machines. Scans collection bags to detect bags filled with hosiery, removes bags from machines, and ties bags, using knitted loops attached to tickets. Places full bags in handcart and attaches empty bags to machines. Pushes handcarts containing full bags to designated area for further processing. GOE 06.04.40 PD M 04 08 09 M1 L1 SVP 2 SOC 8726

689.130-034 SUPERVISOR, YARN PREPARATION (textile)

Supervises and coordinates activities of workers engaged in processing cotton and synthetic raw stock fibers into yarn, applying knowledge of fiber and yarn types, machines, and any combination of processes, such as picking, carding, combing, drawing, roving, spinning, twisting, spooling, and winding: Confers with other department heads to coordinate activities of different departments, determine processes underway and possible changes in production schedule, and availability of workers for shifts. Examines yarn at various processing stages to detect variations from standards and inspects machines to detect malfunctions and damage to weaving surfaces. Directs repair personnel to alter machine setup or to repair or overhaul processing machines to maintain product standards. May creel and doff machines. May set up, adjust, and repair machines. Performs other duties as described under SUPERVISOR (any ind.) Master Title. Supervisors of workers engaged in specific yarn processing activities are classified accordingly [SUPERVISOR, CARDING (textile) 680.130-010; SUPERVISOR, PREPARATION DEPARTMENT (textile) 681.130-010; SUPERVISOR, ROVING DEPARTMENT (textile) 689.130-026; SUPERVISOR, SPINNING (textile) 682.130-010; SUPERVISOR, WINDING AND TWISTING DEPARTMENT (textile) 681.130-014]. GOE 06.01.01 PD L 04 05 06 08 09 10 12 13 15 16 17 18 EC 05 M3 L4 SVP 7 SOC 711

689.132-010 SUPERVISOR, BURLING AND JOINING (textile)

Supervises and coordinates activities of workers engaged in inspecting base cloth for weaving defects, and in manually weaving ends of length of papermaker's felt together to facilitate further processing: Trains workers in burling cloth, hand weaving cloth, and operating sewing machine to join ends together. Reviews production schedules to determine felt type to be joined or base cloth to be inspected. Confers with other supervisors to resolve work problems that slow production. Pulls cloth length over roller and examines cloth for defects, such as mispicks and filling breaks. Pulls defective yarn from cloth and reweaves defective area, using needle, yarn, and scissors. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 04 05 06 08 09 10 12 13 15 18 M3 L4 SVP 6 SOC 71

689.132-014 SUPERVISOR, FIBER-LOCKING (textile)

Supervises and coordinates activities of workers engaged in fiberlocking (needle punching) materials, such as batting and base cloth, to produce papermaker's felt: Reviews production schedule to determine processing priorities. Trains workers in operation of equipment, such as *Garnett machines*, blending machines, and fiberlock machines. Patrols work area to ensure processing of fabric is according to specifications. Listens to machines to detect malfunctioning parts and reports malfunction to maintenance personnel. Confers with other supervisory personnel to ensure even flow of work through departments. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 04 10 12 13 15 16 17 M3 L4 SVP 6 SOC 71

689.134-026 SUPERVISOR, LABORATORY (textile)

Supervises and coordinates activities of workers engaged in testing lap, sliver, roving, and yarn for conformance to processing standards and assists workers in performing laboratory tests: Confers with plant personnel to develop testing schedule and to modify processing standards for producing new yarn types requested by customer. Coordinates activities, such as resolving customer complaints of defective yarn, inspecting, calibrating, and maintaining laboratory equipment, and identifying causes of substandard lap, roving, sliver, and yarn. Performs laboratory procedures to test lap, sliver, roving, and yarn for conformance to processing standards, such as evenness of lap and tensile strength of yarn. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 02.04.01 PD M 08 09 10 12 13 15 17 18 EC 05 M3 L4 SVP 6 SOC 1845

689.137-014 SUPERVISOR, TUBING (textile)

Supervises and coordinates activities of workers engaged in inspecting and winding printed fabric in tubing department: Confers with PRODUCTION PLANNER (profess. & kin.) 012.167-050 and consults work order to determine sequence of cloth styles to process. Directs delivery of specified fabric to work stations. Informs CLOTH EXAMINER, MACHINE (textile) 689.685-038 of quantity of cloth to wind onto tubes and of customer quality specifications. Oversees inspection of cloth being processed to ensure detection of defects, such as wrinkles, seams, and color variations. Submits samples of cloth to COLORIST (profess. & kin.) 022.161-014 for shade matching. Occasionally weighs and labels special orders for shipping. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD H 04 09 12 13 15 19 M2 L2 SVP 6 SOC 71

689.364-014 PROCESS CONTROLLER (textile)

Verifies performance of yarn texturing machines for conformance to specifications, using test equipment and instruments: Reviews work order to determine machine to be checked and type of inspection required. Inspects machines for threading problems, such as incorrect placement of yarn and opened feed rollers. Measures operation of machine components, such as oil roller, transverse bar, and rotating shaft of feed roll, to measure operation of machine, using counter, speed indicator, and stopwatch. Observes and records factors, such as heat setting and package tube color of yarn. Determines amount of tension on yarn, using tensioner. Examines friction unit to ensure positioning of belt and to identify defects on unit, and measures speed of unit, using stroboscope. Measures level of humidity, using psychrometer. Compiles data of measurements taken of machine and machine operations and compares actual measurement with measurements from specifications book. Notifies specified personnel of deviations from specifications. GOE 06.03.01 PD L 06 08 09 10 12 13 15 19 EC 05 M3 L3 SVP 4 SOC 783

689.366-010 HEAD DOFFER (textile)

Leads activities of workers engaged in doffing spinning frames, applying knowledge of yarn types and duration of spinning process: Transmits instructions from supervisor to workers and observes workers to ensure that procedures, rules, and regulations are followed. Reports work rule infractions to supervisory personnel for resolution. Explains and demonstrates doffing techniques to train new employees, and assists workers in resolving problems. Patrols work area to determine frames requiring doffing. Observes taper (build-up) of yarn on bobbins to determine frame doffing priority, utilizing knowledge of yarn types being processed and length of processing cycle. Posts frame numbers on chalkboard to inform workers of doffing schedule. Verifies accuracy of doffing production reports and submits report to supervisory personnel. *Pieces up* yarn breaks detected. Maintains supply of spinning bobbins and doff boxes (attachments for handtrucks) for workers to facilitate doffing of frames. May perform duties of absent workers. GOE 06.01.01 PD L 04 06 08 09 10 12 13 15 18 EC 05 M2 L3 SVP 4 SOC 71

689.684-018 LEASE PICKER (textile)

Separates sections of tangled threads from salvaged *beams* to establish *lease* and strips defective *filling* from *quills*: Positions beam onto holding rack, using electric overhead chain hoist. Pulls and cuts knotted sections of yarn to align and separate layers of yarn on beam, using hand shears. Tapes yarn ends to secure alignment on beam prior to establishing lease. Separates alternating strands of yarn between thumb and index finger and places *lease strings* between *sheds* and repeats process to establish specified lease. Ties lease strings to secure yarn. Wraps protective paper around beam and attaches identifying tag to beam. Removes defective filling from

quills [BOBBIN-CLEANING-MACHINE OPERATOR (textile) 689.686-014]. GOE 06.04.27 PD M 08 09 10 15 17 EC 05 M1 L2 SVP 3 SOC 7759

689.685-162 TOE PUNCHER (hosiery)

Tends toe-punching machine that flattens toe seams of knitted seamless socks, and turns socks right-side out: Slides socks over machine mandrel wrong-side out, aligns toe seam of socks across end of mandrel, and moves lever to activate punch that strikes end of mandrel to flatten toe seam of socks. Inserts hand through opening at end of mandrel, and strips socks from mandrel right-side out. Inserts socks into pneumatic tube for collection in bags. GOE 06.04.06 PD L 08 09 10 M1 L1 SVP 2 SOC 7659

689.685-166 UTILITY TENDER, CARDING (textile) spare hand, carding.

Tends any machine in carding department used in converting cotton and synthetic raw stock into laps, sliver, and roving, working as replacement for absent worker: Tends picking machine that cleans and transforms cotton raw stock into laps [PICKER TENDER (textile) 680.685-074]. Tends cotton carding machine that cleans lap and transforms remaining fibers into sliver [CARD TENDER (asbestos prod.; textile) 680.685-018]. Tends breaker and finish drawing frame that draws out and combines sliver into one of uniform size and weight [DRAWING-FRAME TENDER (textile) 680.685-038]. Tends lap winder that combines several slivers into lap roll for use on combing machines [DRAWING-FRAME TENDER (textile) 680.685-038]. Tends synthetic fiber carding machine that opens and transforms raw stock into sliver [CARD TENDER (asbestos prod.; textile) 680.685-018]. Tends combing machine that cleans lap rolls and transforms remaining fibers into sliver [COMBER TENDER (textile) 680.665-010]. Tends roving frame that draws out and slightly twists sliver into roving [SLUBBER TENDER (textile) 680.685-098]. Feeds bobbin-stripping machine that strips excess roving from bobbins. GOE 06.04.06 PD M 08 09 10 15 16 18 EC 05 M1 L2 SVP 3 SOC 7659

689.687-090 LAPPER (textile)

Cuts and removes waste yarn entangled around machine parts of yarn texturing machine, using knife: Observes machine positions to ensure yarn ends are running through automatic cutters and that drop wires are set, and to detect defective cutters or uncut waste yarn left from previous shift. Cuts waste yarn caused by yarn breaks from machine parts, such as feed rollers and takeup packages, using knife. Removes feed rollers to cut waste yarn, and realigns and tightens rollers, using wrench. Sweeps waste yarn from around machines and catwalks, using broom, and deposits yarn in receptacles. Pushes cart loaded with textured yarn to yarn cleaning area. Transports boxes filled with empty color-coded takeup rolls from storage area to machine area, using handtruck. GOE 06.04.16 PD M 04 06 08 09 10 15 19 EC 05 M1 L1 SVP 2 SOC 7659

690.130-018 SUPERVISOR (fabric, plastics prod.)

Supervises and coordinates activities of workers engaged in setting up and tending machinery and equipment that punches, stamps, screen-prints, and paints plastic products: Inspects production operations to verify conformance with establishment specifications, using precision measuring instruments and blueprints. Trains new workers. Requisitions materials, supplies, and replacement parts. Repairs machinery and equipment, using power tools and handtools. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 10 12 13 15 16 17 18 19 20 EC 08 09 M3 L4 SVP 6 SOC 71

690.130-022 SUPERVISOR, FOAM CUTTING (house furn.)

Supervises and coordinates activities of workers engaged in cutting foam rubber used in manufacture of furniture cushions, and sets up and operates foam cutting machines to cut loaves of foam into specified sizes: Explains and demonstrates work procedures and material saving techniques to new workers. Confers with plant personnel to expedite flow of foam products. Transports loaves of foam to and from machines, using dolly, and positions loaves of foam on table of machine. Turns handwheels, setscrews, and bolts, using handtools, to set stops and position patterns under ram of machine and to set up and operate cutting machines, such as vertical slicing and horizontal slicing machine, to cut loaves of foam into specified sizes. Examines sliced foam to verify product size and conformance to product specifications, using tape measure. Records information on work order, such as date of cut, quantity of products, and time of order. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD H 04 08 09 10 12 13 15 17 M2 L2 SVP 6 SOC 711

690.280-010 DEBURRING-AND-TOOLING-MACHINE OPERATOR (office mach.)

Sets up and controls operation of computerized deburring and tooling machine to perform series of machining operations, such as drilling, chamfering, and deburring, on ball-shaped plastic *typing element* for use in electric typewriters: Reads blueprints, job order, and tooling instructions to determine cutting tools and sequence of operations. Positions and secures deburring and cutting tools onto holding fixtures of machine, using handtools. Loads plastic elements into feed mechanism of machine. Depresses switch to actuate machine and observes machining operation to detect feeding and tooling malfunctions as typing element is automatically fed through series of tooling stations. Adjusts and changes machine tools to ensure deburring meets company specifications. Repairs or replaces parts, such as cylinders and air lines, using handtools. Inspects machined typing elements at discharge end of machine to ensure conformance to quality

specifications, using gauges and microscope. Notifies engineering personnel when corrective action is required. Maintains stock of machined parts and cutting tools. GOE 06.01.03 PD M 08 09 15 M4 L3 SVP 8 SOC 7329

690.380-014 MACHINE SETTER-AND-REPAIRER (fabric, plastics prod.)

Sets up and repairs variety of plastic fabricating machines that weld and assemble components into plastic products and print decorative logos onto products: Mounts, aligns, and bolts fixtures, dies, and welding heads onto plastic fabricating machines, such as hot-stamping, silk-screening, ultrasonic welding, and automatic assembling and stamping machines, following verbal instructions and using variety of wrenches. Turns knobs or dials to set controls, such as pneumatic stamping pressure, dwell time, conveyor speed, and ram and horizontal stroke of machines. Positions rolls of foil onto feed reels and threads foil around guides onto takeup reels to secure foil on machines. Starts machines to obtain sample products, and examines samples for production defects. Readjusts machine controls or realigns dies or fixtures as necessary to correct detected defects in products, utilizing knowledge and experience of machine operations. Examines moving machine parts during production operations and removes and replaces worn and frayed machine parts as needed to ensure that machines function smoothly. May fabricate replacement dies, using bandsaw, knife, hand file, and drill press. GOE 06.01.02 PD H 08 09 10 15 M2 L2 SVP 4 SOC 7329

690.885-494 STITCHER, TAPE-CONTROLLED MACHINE (boot & shoe)

Tends battery of automatic stitching machines that stitch decorative designs on shoe parts, according to instructions encoded on tape cassettes: Receives bundles of shoe parts with tags that identify instruction cassette and style and color of thread to be used in stitching shoe parts. Places specified spools of thread on spindle of each machine, draws thread through machine guides and needles, and inserts prewound bobbin in shuttle. Positions shoe parts, such as upper or vamp, on holding device of machines, and depresses machine clamps to secure parts on device for stitching. Selects and inserts specified cassette in console of stitching machine, and presses buttons to activate machines that automatically stitch design according to encoded instructions on cassette. Removes shoe parts and examines design to verify conformance to specification. GOE 06.02.05 PD L 08 09 10 15 18 20 EC 05 M1 L1 SVP 2 SOC 7656

690.685-498 PLASTIC ROLLER (fabric, plastics prod.)

Tends machine that winds drop cloths from precut lengths of plastic: Places end of plastic around takeup cylinder of machine, and overlaps plastic to secure plastic to cylinder. Depresses pedal to activate cylinder and wind plastic onto cylinder. Applies pressure by hand to edge of plastic to ensure evenness of plastic around cylinder. Stops machine, slips rolled plastic drop cloths off cylinder, and folds cloths for further processing. Pushes lever of counter to tally number of drop cloths folded. GOE 06.04.02 PD L 08 09 M1 L1 SVP 1 SOC 7679

690.685-502 ROLLER MAKER (rubber goods)

Tends machine that applies layers of vulcanized rubber onto metal rollers to fabricate or recondition rubber rollers used in industrial machines: Reviews work order to identify type of roller to be covered and type, color, and thickness of vulcanized rubber to be applied onto metal roller. Measures metal roller, using tape measure, to verify dimensions with work order. Transports and mounts roller between holding devices of roller building machine, by hand or using overhead crane, working as team member. Carries, mounts, and loads roll of vulcanized rubber stock onto feed mechanism of machine. Depresses floor pedals to start feed mechanism and to start building machine that applies layers of vulcanized rubber around metal roller. Observes application of rubber around roller to detect air bubbles. Releases floor pedals to stop application of rubber, punctures air bubbles using knife, and applies pieces of rubber to airholes to seal holes. Measures thickness of rubber application, using calipers. Cuts rubber between roller and feed mechanism, using hot knife, and seals seam to roller, using stitching wheel. Trims rubber that laps over edges of roller, using knife. GOE 06.04.07 PD M 08 09 10 17 20 M2 L2 SVP 3 SOC 7679

690.685-506 SAMPLE MAKER (boot & shoe)

Tends variety of machines that trim, shape, smooth, join, and finish shoe parts to fabricate footwear samples: Reads work order to determine type and style of shoe. Aligns precut components on bed of machine, positions components against machine guides, or feeds components between rollers. Flips switches, pushes buttons, depresses pedals, and moves levers to activate machines. Removes partially assembled component from machine and carries component to next machine in sequence of operation according to specifications. Changes and adjusts guides, cutting blades, buffing wheels, and heating irons, using handtools. GOE 06.04.05 PD L 08 09 15 18 M2 L2 SVP 4 SOC 7679

690.685-510 TRADE MARKER (smoking pipe)

Tends machine that drills hole and presses trademark into hole on stem of smoking pipes: Inserts and secures specified size drill in machine drill chuck, using chuck wrench. Places plastic tape of specified color in die press element of machine and adjusts die pressure, using wrench. Turns knobs to adjust operation speed of moving elements of machine. Presses button to start machine and depresses pedal to activate rotation of ma-

chine drum with clamps. Inserts pipe stems in clamps as clamps rotate by work station. Observes operation of machine that drills holes in stem and presses trademark into drilled hole to detect defects. Presses button and depresses pedal to stop machine when defects are noted. Turns handle to align drill and adjust pressure to correct defects. GOE 06.04.02 PD M 08 09 10 15 19 M1 L2 SVP 3 SOC 7529

692.130-038 SUPERVISOR, KEYMODULE ASSEMBLY (office mach.)

Supervises and coordinates activities of workers engaged in assembling components to form modules used in keyboards of electronic computer equipment: Monitors production operations and inspects in-process and completed modules for conformity to specifications. Directs workers in machine setup, adjustment, or repair, using machine blueprints and diagrams and applying knowledge of machine functions. Confers with designated plant personnel to determine corrective action when quality or volume of production does not meet prescribed standard. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 10 11 12 13 15 16 20 M3 L3 SVP 7 SOC 71

692.130-042 SUPERVISOR, SHOP (brush & broom)

Supervises and coordinates activities of workers engaged in fabrication of metal paint trays and paint-roller cover frames, applying knowledge of product, machine functions, and properties of metal: Confers with plant personnel to determine customer orders, assign workers to duties, and to determine need for additional workers to meet production requirements. Maintains quantities of materials at each work station. Examines paint-roller cover frames or paint trays to determine that frames and trays meet specifications. Assists workers in setting up machines, such as ram-press, bending press, riveting, and punch-press. Performs work activities of subordinate workers to overcome personnel shortages or to relieve workers. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 04 08 09 10 12 13 15 20 EC 05 M3 L3 SVP 5 SOC 71

692.137-014 SUPERVISOR (per. protect. & med. dev.)

Supervises and coordinates activities of workers engaged in fabricating and packaging disposable diapers: Reviews production schedule to determine diaper quantities and sizes to be fabricated during shift. Confers with shift supervisor of previous shift regarding condition of machines and production materials available. Completes requisition forms to request materials needed for diaper fabrication or packaging. Directs workers engaged in fabrication, packaging, and moving packaged diapers to shipping area. Assigns new workers to experienced workers for training. Maintains daily production sheets and quality control checklist of diaper defects for company records. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.04.01 PD L 08 09 10 12 13 15 M3 L4 SVP 7 SOC 71

692.665-018 DRY-CELL-ASSEMBLY-MACHINE TENDER (elec. equip.)

Tends variety of machines that automatically assemble dry-cell components: Dumps parts and materials, such as top assemblies and electrolyte gel, into hoppers of assembly machines. Places cans (containers) that hold critical parts during assembly operations onto conveyor. Starts machines and conveyor system. Observes operation and movement of units at various stages of assembly to ensure units are assembled according to specifications. Adjusts machines as necessary to correct malfunctions when jams occur. Inspects finished cells to detect defects and missing parts. GOE 06.04.20 PD H 08 09 15 17 18 M2 L3 SVP 4 SOC 7679

692.685-274 KEYMODULE-ASSEMBLY-MACHINE TENDER (office mach.)

Tends machine that automatically assembles components to form modules used in keyboards of electronic computer equipment: Observes machine operations to detect defective parts and to ensure continuous movement of parts, subassemblies, and final assemblies along feed tracks. Removes defective parts from feed tracks and repositions disoriented parts, using pick. Pries jammed parts from track, using pick, or replenishes supply of parts in feeder bowl to remedy machine stoppage. Packs completed assemblies into containers. Notifies mechanic when machine malfunctions repeatedly occur. Periodically cleans feed tracks, machine surface, and work area, using handbrush, broom, air hose, or vacuum cleaner. GOE 06.04.09 PD L 08 09 10 15 17 20 EC 08 M2 L2 SVP 2 SOC 7679

692.685-278 DIAPER MACHINE TENDER (per. protect. & med. dev.)

Tends automatic machine that forms disposable diapers: Threads rolls of wood pulp, plastic backing, and nonwoven fabric facing in specified sequence through guides of machine. Fills glue reservoir and fragrance receptacle, and loads diaper tape tabs into dispensing bins. Flips switch to start machine that automatically crushes wood pulp into fiber; sprays fiber to impart fragrance; applies glue to join layers of diapers into continuous strip; affixes tape tabs to strip at designated intervals; applies glue to shape form-fit diapers; cuts strip into individual diapers; and folds diapers in half for packing. Observes operation of machine and examines diapers to detect machine malfunctions. Turns knobs or screws to make minor adjustments to sections of machine, such as rollers, cutting blades, and folding device, using handtools. Notifies maintenance personnel when welding or parts replacement is required. GOE 06.04.09 PD L 08 09 15 18 EC 05 M2 L3 SVP 4 SOC 7659

692.685-282 LAMINATOR, PRINTED CIRCUIT BOARDS (electronics)

Tends laminating machine that automatically bonds assembled layers of laminating materials and printed circuit board (PCB) panels to form multi-

layer PCB panels: Reads instruction sheet to determine specified materials and laminating procedures. Assembles inner and outer layers of PCB panels and laminating materials over guide pins of holding fixture. Places assembled boards on bay (shelf) of machine. Turns controls to set time, pressure, and temperature of laminating machine according to specifications. Starts laminating machine that applies pressure and heat to bond materials and form multi-layer PCB panels. Monitors machine operation and adjusts machine controls to maintain specified temperature and pressure. May compute pressure level for laminating machine. May heat materials in oven to remove moisture or condition materials prior to laminating process. GOE 06.04.09 PD M 08 09 10 15 17 EC 03 14 M1 L2 SVP 3 SOC 7667

692.685-286 MOLDER, AUTOMOBILE CARPETS (tex. prod., n.e.c.) molder-trimmer; molder.

Tends machines that mold nonwoven carpet used in automobiles: Places carpet blank (pre-cut section of nonwoven carpet) into oven that heats carpet to prepare carpet for molding. Sprays insides of stationary mold with silicone fluid, using pump sprayer, to prevent sticking. Places jute backing over steel pins in stationary mold. Removes heated carpet from oven, smooths carpet over mold, and secures carpet over jute on stationary mold. Observes carpet to detect defects, such as wrinkling and drawn edges, that indicate overheating of carpet. Turns dial on oven to adjust heating cycle. Presses button to lower upper mold onto stationary mold to press, cool, shape, and bond carpet and jute backing to fit sections of automobile. Removes carpet from mold and places carpet on trim buck. Presses button to lower holding device that secures carpet in position for trimming. Trims carpet along trim line, using utility knife. Hammers carpet, using mallet, to remove knockout sections on trim buck. Sprays adhesive onto bottom of exposed carpet to reattach loose jute, using spray can. GOE 06.04.09 PD L 04 08 09 10 17 20 EC 08 14 M1 L1 SVP 3 SOC 7659

692.686-070 PASTER, HAT LINING (hat & cap)

Feeds satin and cardboard squares into gluing machine to assemble hat linings: Presses switch to start gluing machine. Inserts satin and cardboard squares in corresponding feed slot of gluing machine that glues items together. Pours glue into glue trough of machine to maintain required level. Empties hat linings from machine hopper, stacks linings, and places linings in storage for further processing. GOE 06.02.27 PD L 08 09 M1 L1 SVP 3 SOC 774

692.687-014 LAMINATING MACHINE WORKER (inst. & app.)

Cuts vinyl-covered section of aluminum track, used in drafting machines, to separate sections of track: Observes vinyl-covered sections of aluminum track that emerge from laminating machine to locate joints where vinyl laminate covers adjacent section of track. Cuts vinyl at joint to separate section of track, using knife. Examines track to detect flaws, such as air bubbles, in vinyl covering. Presses out air bubbles to smooth laminate. Rejects defective track. May trim excess vinyl, using knife. GOE 06.04.34 PD L 08 09 10 11 15 M1 L1 SVP 1 SOC 7753

693.280-014 PATTERNMAKER, ALL-AROUND (fabric. plastics prod.; found.)

Fabricates foundry patterns from various materials, such as wood, metal, and plastic, for use in forming molds for castings, according to blueprint specifications and using various machine tools, power tools, and handtools: Studies blueprint of part to be cast, computes dimensions, and plans sequence of operations depending upon material specified for pattern. Measures, marks, and scribes layout on metal casting or woodstock. Sets up and operates various wood and metal machine tools and other power tools to machine, cut, and shape stock or casting to specifications. Pours or spreads materials into mold or over model of pattern or builds laminations of fiberglass cloth and plastic resin to fabricate patterns from assorted materials, such as plastic, plaster, or clay. Assembles pattern sections, using fasteners, such as nails, screws, bolts, glue, or glass cloth and resin. Shapes workpiece to specified finish, using handtools and power tools, such as scrapers, files, sanders, grinders, rasps, and planer. Verifies conformance of finished pattern to blueprint specifications, using templates and measuring instruments, such as scales, calipers, micrometer, and protractor. Applies protective finish or paints pattern sections to indicate method of assembly. Repairs broken or damaged patterns and corrects patterns to compensate for defects in castings. Constructs templates for layout and inspection. GOE 05.05.07 PD M 08 09 10 11 15 17 18 EC 05 08 M4 L3 SVP 8 SOC 6862

699.380-010 DIE SET-UP OPERATOR, PRINTED CIRCUIT BOARDS (electronics)

Sets up and adjusts punching dies in blanking and piercing machines used to fabricate printed circuit boards (PCBs): Reads job order to determine specified dies to be installed. Removes face block from shaft assembly and installs dies according to specifications, using handtools. Replaces face block and aligns shaft assembly with die. Tightens bolts to secure die base and to prevent movement during machine operation. Turns flywheel by hand to ensure complete compression and expansion cycles. Adjusts shaft height as required and locks shaft assembly in verticle position, using handtools. Starts and stops machine and observes operation to detect machine malfunctions. GOE 06.01.02 PD H 08 09 11 15 17 EC 08 M2 L2 SVP 3 SOC 7314

699.682-034 BEVELER, PRINTED CIRCUIT BOARDS (electronics) finisher.

Operates machine to bevel printed circuit board (PCB) connectors: Reads work order to determine specified angle and depth of bevel. Turns knobs to adjust machine cutting tool. Slides PCB along guide over cutting tool to bevel PCB connector. Views beveled edge of sample board connector through magnifying scope to verify angle and depth of cut meet company specifications. Operates machine to bevel all connector edges. Inspects PCBs to detect rough edges, dirty surfaces, and closed holes. Smooths rough edges, using hand file. Cleans dust and deposits from PCB, using air hose, toothbrush, or rag. Scrapes excess plating from holes, using utility knife. GOE 06.04.09 PD L 08 09 10 11 15 17 EC 05 M1 L2 SVP 2 SOC 7322

699.685-038 FILLING-MACHINE OPERATOR (nonfer. metal alloys)

Tends machine that fills cavities of aluminum extrusions with cement to form thermal-conduction barriers for use in manufacturing windows and doors: Moves machine controls to regulate extrusion feed rate and speed of cement flow. Adjusts drive wheels, pressure rollers, and cement needle according to extrusion size and cavity to be filled, using wrenches. Starts machine that conveys extrusion on rollers through machine for filling operation. Observes operation to ensure cavity filling meets company standards. Readjusts settings when cavity filling falls below specifications. Stacks filled extrusions discharged from machine into cart with assistance from coworker. Places separator blocks and sticks between extrusion layers to prevent sticking and facilitate cement drying. GOE 06.04.36 PD L 08 09 10 15 M1 L2 SVP 3 SOC 7667

699.685-042 PHOTORESIST LAMINATOR, PRINTED CIRCUIT BOARD (electronics) hot roll laminator.

Tends machine that laminates dry photoresist film to surfaces of panels used in the manufacture of printed circuit boards (PCBs): Mounts rolls of photoresist film and plastic protective film on machine spindles. Threads film through machine rollers and secures film to takeup spindles. Presses button to activate machine. Adjusts controls to regulate speed, temperature, and pressure of laminating rollers. Moves levers and adjusts control to align panels with edge of film. Feeds panels into roller, or positions panels on conveyor that feeds laminating machine. Observes lamination process, monitors speed and temperature gauges, and adjusts controls to ensure compliance with standards. Removes laminated panels from machine. Cuts excess photoresist and protective plastic film from panel edges, using knife. May tend scrubber machine that cleans PCB panels prior to laminating process. May count and record number of panels completed. May examine laminated panels to detect defects. GOE 06.04.09 PD L 08 09 10 15 M1 L1 SVP 2 SOC 7679

699.685-046 PINNER, PRINTED CIRCUIT BOARDS (electronics)

Tends machine that drills pinning holes and inserts metal pins into sets of copper laminated fiberglass boards and backing material preparatory to fabrication of printed circuit boards (PCBs): Fills pinning machine hopper with metal pins. Reads work orders to determine specified PCBs. Positions PCBs on bed of machine. Turns machine levers and handwheels to adjust, align, and hold PCBs for drilling and pinning. Activates machine that drills pinning holes and inserts pins into PCBs to stabilize PCBs during numerical-controlled drilling of component mounting holes. Stacks pinned PCBs for transfer to next work station. May assemble sets of fiberglass PCBs and backing material prior to pinning operation. GOE 06.04.09 PD M 08 09 10 15 17 18 M2 L1 SVP 2 SOC 7679

699.685-050 PRODUCTION SET-UP WORKER (auto. mfg.)

Tends production machines and equipment that perform operations such as machining, stamping, welding, forming, moving, or applying adhesives to metal or plastic auto parts: Pushes buttons on control panel to start production machines and equipment in assigned area. Observes machine operations to verify that processing conforms to specifications and pushes buttons to activate automatic cycle. Adjusts alignment of parts on transfer devices and fixtures, using wrench, screwdriver, or control panel. Pushes buttons on *teach pendant* to adjust position of robots' end-of-arm tool or to reset program that controls robot movement according to specifications. Lubricates machine parts, using grease gun and oilcan. Removes weld slag from fixtures, using chisel, hammer, or file. Inspects welds of arc welding robots and adjusts weld position, amount of electrode wire, or heat setting, using teach pendant. Replenishes workpieces for spot welding robots, adhesive supply for adhesive applying robots, and welding wire for arc welding robots. May be assigned to one type of machine, such as material handling, spot welding, or arc welding robots; automatic spot welder; or punch or drill press. GOE 06.04.02 PD M 08 09 10 17 20 M1 L2 SVP 2 SOC 7529

699.685-054 TRIMMER, PRINTED CIRCUIT BOARD PANELS (electronics)

Tends machines that trim and bevel edges of copper laminated fiberglass panels used in fabrication of printed circuit boards (PCBs): Flips switches to activate machines. Positions panel over pegs on bed of trimming (shearing) machine. Presses buttons to lower cutting blade that trims excess edges from fiberglass panel. Removes panel from bed of trimming machine and positions edge of panel against guide on bed of beveling machine. Moves panel along guide and under rotating cutting blade that bevels edges of panel. May clean machines, using air hose, to remove shav-

ings. May count and record number of panels completed. GOE 06.04.09 PD M 08 09 15 17 EC 05 06 M1 L1 SVP 2 SOC 7678

699.686-014 SCRUBBER MACHINE FEEDER-OFFBEARER (electronics)

Feeds and offbears scrubbing machine that cleans and removes residue from printed circuit boards (PCBs): Pushes button or flips switch to activate conveyor and automatic scrubber/dryer machine. Loads PCBs onto conveyor that carries PCBs through scrubbing, washing, and drying cycles of machine. Removes cleaned PCBs from discharge end of machine. May turn dials to adjust speed of conveyor or to regulate pressure of scrubbing mechanism. May monitor machine operation to detect mechanical malfunctions. May examine cleaned boards to verify conformance to standards. May clean and perform minor maintenance on machine. May be designated according to point in production when scrubbing process occurs as FINAL CLEANER (electronics); SCRUBBER, PLATING (electronics). GOE 06.04.39 PD M 08 09 10 15 M1 L1 SVP 2 SOC 8725

699.687-014 MACHINE CLEANER (any ind.) machine brusher; machine rubber; wiper.

Cleans dust, dirt, grease, and lint from machines and auxiliary equipment, such as tanks and pipelines, in industrial plant or aboard ship, using cleaning solutions, waste, rags, waterhose, pumps, lint vacuum system, airhose, brushes, and scraping tools: Cleans screen on lint vacuum system and replaces worn screen. May clean plant sewage treatment system and water supply wells. May remove machine guards and accessories, using handtools. May paint exposed surfaces of machines to prevent rust. May oil moving parts or wearing surfaces. May clean floors around machine, using broom or vacuum cleaner. May be designated according to machine or part of machine cleaned as BOTTLE-PACKING-MACHINE CLEANER (any ind.); CREEL CLEANER (textile); OPENING-MACHINE CLEANER (textile); PIN CLEANER (textile); RACK CLEANER (textile); SHAFTING CLEANER (any ind.). Additional titles: CARD CLEANER (textile); GUIDE-RAIL CLEANER (textile); LOOM BLOWER (textile). GOE 06.04.39 PD M 02 03 08 09 10 15 18 EC 04 05 07 M1 L1 SVP 2 SOC 875

700.261-010 PEWTERER (silverware)

Designs and fabricates pewter products, applying knowledge of metallurgy, mold-making, and pewter casting and finishing: Researches reference materials and consults with interested parties to develop ideas for new products. Designs, drafts, and fabricates models of new casting molds, using drafting tools, lathe, and handtools. Fabricates lathe accessories and modifies handtools to facilitate turning and finishing of cast pieces. Mixes and heats alloy and fills casting molds [PEWTER CASTER (silverware) 502.384-010]. Joins cast parts to form product, using solder and blowtorch, and shapes, engraves, and polishes product, using lathe and cutting and polishing tools [PEWTER FINISHER (silverware) 700.281-026]. Analyzes production data to determine deviations from standards necessitating replacement of molds or modification of equipment. GOE 01.06.02 PD M 04 08 09 10 12 13 15 17 18 19 EC 03 M3 L3 SVP 8 SOC 6861

700.281-026 PEWTER FINISHER (silverware)

Shapes, joins, engraves, and polishes pewter items following casting, using machine and handtools and applying knowledge of finishing processes: Secures cast pewter item onto chuck of lathe, depresses button to activate lathe, and pares inner and outer surfaces of items to remove rough edges and excess material, to shape piece to style specifications, and to impart luster to finish, depending on processing stage, using variety of chipping and cutting tools. Engraves decorative lines on item, using engraving tool. Polishes finished surfaces, using abrasive pad. Determines placement on item of auxiliary parts, such as spouts and handles, using paper facsimile, and marks solder path on item, using grease pencil. Routes out solder path, following marked lines and using routing machine. Places part on jig to stabilize part, aligns auxiliary part with part of jig, and joins parts, using solder and blowtorch. Weighs completed pieces to determine deviation from target weight and records weight and processing time required on production records. Carries pieces to next work station. Occasionally fabricates chipping and turning tools, using machine and handtools. GOE 01.06.02 PD M 04 08 09 10 13 15 17 18 19 EC 06 14 M2 L2 SVP 7 SOC 6861

705.381-014 EXTRUSION-DIE REPAIRER (nonfer. metal alloys)

Repairs aluminum extrusion dies, according to specifications, using powered handtools: Examines exterior of dies for defects, such as cracks or excessive wear, and observes exterior surface of extrusion samples to determine whether inside of dies need resurfacing or polishing. Secures dies in vise, and determines amount of metal to remove from die opening to restore die to specifications, using diagram and gauges. Selects abrasive bit and secures it in electric tool, and moves tool over die opening surface to remove, polish, or angle surface to specifications, utilizing experience and knowledge of dies. Heats dies with stress cracks in oven to soften metal and taps sides of dies to close cracks, using hammer and bit. Removes rough spots from exterior of repaired dies, using electric deburring tool. Verifies openings of new dies, using calipers and gauges, and monitors sample extrusions to determine whether press dies need repair. GOE 05.05.06 PD L 08 09 10 11 15 17 18 M3 L3 SVP 6 SOC 6829

706.131-018 CHIEF INSPECTOR (office mach.)

Supervises and coordinates activities of workers engaged in inspecting office machine parts and assembled mechanical and electro-mechanical tape-moistening machines, and inspects materials and purchased machine parts, using precision measuring devices: Confers with assembly supervisors to determine staff assignments at assembly inspection stations and to discuss ongoing inspection results. Alerts supervisors when reports indicate major or consistent assembly discrepancies, and meets with punch press supervisor to discuss rejection findings on parts production. Examines raw materials for smoothness and to detect surface defects, such as nicks, burs, pits, and scratches, following blueprints, sketches, and order specifications. Tests materials for hardness, using hardness tester. Measures materials, using precision measuring instruments, such as calipers, micrometers, gauges, and dial indicators. Prepares rejection slips indicating reasons materials or parts failed inspection. Trains new staff and monitors progress. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.03.02 PD M 04 08 09 10 12 13 15 M3 L3 SVP 7 SOC 6881

706.384-010 INSPECTOR-ADJUSTER, OFFICE-MACHINE COMPONENTS (office mach.)

Inspects and adjusts components and subassemblies of high-speed printers used in electronic data systems for conformance with specifications, using testing equipment and handtools: Examines components and subassemblies for defects and faulty workmanship, using schematic drawings and work process specifications. Measures and checks clearances, tensions, alignments, and electric circuitry, using gauges, ohmmeter, and aligning fixtures. Turns adjusting screw to increase or decrease tension and clearance of parts not conforming to specifications. Examines printout of printed characters to determine if height, width, and spacing meet specifications, using plastic template, and adjusts rollers to correct defects, using handtools. Connects frequency meter lead to circuit board of printer and reads meter dial to verify that frequency readings are within prescribed limits. Measures printer motor speed, using motor-speed tester, and routes defective motors to repair shop. GOE 06.01.05 PD L 08 09 10 15 17 18 19 M2 L3 SVP 3 SOC 782

709.281-018 ULTRASONIC TESTER (bus. ser.)

Conducts ultrasonic tests on fabricated metal parts or products in commercial testing laboratory to identify discontinuities: Reviews work orders, test procedure sheets, and product acceptance criteria to determine test specifications. Attaches specified crystal probe transducer to ultrasonic test device and moves switch to actuate device. Sprays couplant (light oil which acts as medium) over calibration plate, moves transducer over drilled holes of plate, and observes CRT (cathode ray tube) screen to detect specified discontinuity patterns as transducer passes over plate. Turns dials of ultrasonic device to adjust device to test settings, following screen reading and applying knowledge of ultrasonic testing procedures. Applies couplant to metal part to be tested, moves transducer across part, and observes CRT screen to detect patterns that indicate cracks, inclusions, or porosity. Marks defective areas of part and prepares report of test findings. May use forklift to move parts to or from work station. GOE 05.07.01 PD M 08 09 10 17 M3 L3 SVP 6 SOC 6881

710.685-010 SHAKE-TEST MACHINE TENDER (inst. & app.)

Tends shake-test machine that grades and sorts medical thermometers: Inspects thermometers visually for breaks, cracks, or missing mercury, and discards defective thermometers for recycling. Loads thermometers passing visual inspection into chucks of machine for automatic grading. Depresses button to start machine that determines required mercury level by shaking thermometers and ejects graded thermometers automatically. Stops machine when jam occurs at ejection chute and removes thermometer by hand. Ascertains machine revolutions for specified time period to verify machine setup, using stopwatch, and notifies setup worker when adjustment is required. Records daily production totals on grading report, reflecting quantity of thermometers graded into categories indicated on report. GOE 06.03.01 PD S 08 09 10 15 17 M1 L1 SVP 2 SOC 783

712.134-010 SUPERVISOR, ARTIFICIAL BREAST FABRICATION (per. protect. & med. dev.)

Supervises, coordinates, and participates in activities of workers engaged in fabricating cosmetic appliances from latex for use as artificial breasts: Explains and demonstrates work techniques and use of equipment to train new employees. Observes workers to ensure that work performance conforms to company standards. Weighs, pours, and mixes prescribed amounts of filtered water and chemicals, using scale and mixing tanks, to prepare latex gel. Places plastic roll on worktable, using hydraulic jack, unrolls plastic, and cuts plastic to specified sizes, according to work order, using portable rotary cutting machine. Molds shells, using vacuum forming machine, and cuts molded sheets into individual shells, using cutting machine. Fills inner shells with latex gel, using weighing and filling device, and imprints outer shell backing with identification data, using printing device. Fuses backing to shells to form cells, using heat sealing machine, inflates cells with airhose, and seals cells, using tacking device. Compiles inventory reports. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 10 12 13 M2 L2 SVP 6 SOC 71

712.684-042 FABRICATOR, ARTIFICIAL BREAST (per. protect. & med. dev.)

Fabricates cosmetic appliances from latex for use as artificial breasts, using dies, molded plastic forms, heat-sealing device, and airhose: Places molded form in die, according to size, and positions die on balance scale under spigot of latex gel container. Pushes lever to open spigot to fill molded form and to close spigot when mold reaches prescribed weight. Imprints mold size and other identification data onto plastic sheet used as backing for form, using printing device. Places imprinted backing in prescribed position over die containing gel-filled mold and fuses backing to molded form, using sealing device, to form inner shell. Inserts inner shell into outer plastic shell and fuses outer shell, using sealing device. Inflates shell to specified shape and firmness, using airhose, and seals opening, using heated rod. Tears excess plastic from edge of form. GOE 06.04.02 PD L 08 09 10 M1 L1 SVP 2 SOC 8769

714.281-030 SERVICE TECHNICIAN, COMPUTERIZED-PHOTOFINISHING EQUIPMENT (photofinish.)

Analyzes malfunctions in computerized electromechanical photofinishing equipment and replaces or repairs defective components, utilizing knowledge of equipment operation and repair: Examines and tests equipment to determine nature and probable cause of malfunction, using work aids such as voltmeter, ohmmeter, schematic drawings, and equipment specifications. Removes and replaces defective electronic, electrical, mechanical, and plumbing components, such as pipes, valves, printed circuit boards, wiring, switches, thermostats, heaters, motors, pumps, gears, and drive chains, using handtools and following drawings and manufacturer's manuals. Tightens or solders loose connections and fittings, and performs related repairs. Adjusts equipment to manufacturer's specifications, using handtools and measuring instruments. Test operates equipment to ensure that defects have been corrected. GOE 05.05.11 PD M 08 09 15 17 18 19 M3 L4 SVP 6 SOC 6171

719.261-014 RADIOLOGICAL-EQUIPMENT SPECIALIST (medical ser.) radiologic electronic specialist.

Tests, repairs, installs, calibrates, and modifies radiological and related equipment used in medical diagnosis and therapy, applying technical knowledge of electronic, radiological, and mechanical systems, and using manuals, test equipment, measuring instruments, handtools, and power tools: Confers with supervisor, manufacturers' representatives, equipment operators, and other workers to discuss and establish work priorities, resolve equipment related problems, and plan installation, modification, and repair procedures. Inspects and tests malfunctioning equipment to determine cause of malfunction, following learned procedures and repair manual instructions, using specialized test and analysis instruments and manufacturers' specifications. Disassembles malfunctioning equipment and removes, replaces, or repairs defective components, and readjusts components to manufacturers' specifications, using handtools, power tools, and measuring instruments. Installs and assembles radiological equipment in designated areas, following installation and assembly manuals, using handtools, power tools, and heavy equipment moving devices, and utilizing knowledge of equipment installation and assembly techniques. Tests and calibrates equipment at regular or required intervals, using test and measuring instruments and handtools to maintain manufacturers' operational specifications. Selects, devises, designs, and installs mechanical or structural hardware, using tools and utilizing knowledge of mechanics and structures to resolve special equipment operation problems and expand application capabilities. Writes narrative reports of work activities to maintain history of equipment repairs and modifications. Fabricates modification hardware, using machine and power tools, handtools, and related equipment. Demonstrates operational procedures for new or modified equipment to users. May work for manufacturer and specialize in particular line of equipment. GOE 05.05.11 PD H 04 05 06 08 09 10 11 12 13 14 15 17 18 19 20 EC 09 M5 L5 SVP 7 SOC 6179

719.381-010 CONTACT PRINTER, PHOTORESIST (inst. & app.; optical goods)

Prints reticles or patterns on optical lenses and metal sheets to be used as guides in fabricating components for optical instruments, using printing equipment: Cleans surfaces of materials to be printed to facilitate adherence of photoresist solution, using solvents and pumice. Coats material with photoresist solution, utilizing one of following methods: (1) Mounts sheet of material in rotary fixture of centrifugal coater and pours solution over material. (2) Brushes or sprays solution on hanging sheet of material. (3) Dips sheet of material into tank containing solution. Places coated material in drier to set photoresist. Positions material in vacuum printer, using handtools, such as tweezers and vacuum probe. Positions and aligns reticle pattern or mask over top of material, using binocular microscope, and activates vacuum to hold assembly in specified alignment. Sets time controls of printer for specified period of exposure and activates printer to print pattern on material. Washes unexposed photoresist from material, using water or solvent, and places printed material in drier. May etch printed material or fill surfaces to specified thickness, using etching tools or vacuum deposition processing equipment. May prepare photo masks for reticle-making process, using photographic equipment. May strip photoresist from material subsequent to etching or vacuum filling. May be designated according to industry and product as RETICLE MAKER (optical

goods); SENSITIZER AND PRINTER (inst. & app.). GOE 05.05.11 PD L 08 09 10 15 17 18 M3 L3 SVP 6 SOC 6849

724.684-014 ARMATURE CONNECTOR (elec. equip.) II

Inserts lead wires of armature coils into commutator slots to connect armature to commutator. Places armature in holding fixture on workbench and strips insulation from ends of coil wires, using wire scraper or knife. Bends wire leads to conform with curvature of armature and inserts leads into commutator slots, using handtools. Winds and ties cord around coil leads to hold in specified commutator slots. Cuts excess wire from leads, using wirecutter or scissors. May shape end windings, using hammer and fiber block. May test connected armatures by touching contact points to test light. May repair connections by splicing, reconnecting, or reinsulating wires. May dip commutator into solder pot to solder wires into commutator slots. May press commutator on armature shaft, using arbor press. May be designated according to coil leads connected as PRIMARY CONNECTOR, ARMATURE (elec. equip.); SECONDARY CONNECTOR, ARMATURE (elec. equip.). GOE 06.04.23 PD S 08 09 10 11 15 17 18 M2 L2 SVP 3 SOC 772

726.130-010 SUPERVISOR, ELECTRONICS (electronics)

Supervises and coordinates activities of workers engaged in assembling, testing, and inspecting electronics systems, subassemblies, components, and parts: Analyzes manufacturing schedule to plan work assignments for group on basis of priority and worker skills. Reviews work orders, product specifications, technical instructions, and facility requirements, and requisitions tools, equipment, and supplies for section. Assigns duties to workers and evaluates worker performance. Demonstrates work methods, such as wire routing, assembly, inspection sequence, and test equipment operation. Recommends and initiates personnel action, such as promotion, transfer, or discharge. Examines product according to knowledge of manufacturing and quality standards to ensure acceptability. Reviews and compiles operations records, such as yield, scrap, and maintenance costs. May be required to participate in work of subordinates by performing such tasks as machine and equipment setup, adjustment, and minor repair. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May be designated according to function supervised as SUPERVISOR, ELECTRONICS ASSEMBLY (electronics); SUPERVISOR, ELECTRONICS INSPECTION (electronics); SUPERVISOR, ELECTRONICS TESTING (electronics). GOE 06.01.01 PD L 08 09 10 12 13 15 17 19 M3 L3 SVP 7 SOC 71

726.131-014 SUPERVISOR, HEARING-AID ASSEMBLY (per. protect. & med. dev.)

Supervises and coordinates activities of workers engaged in assembling and repairing hearing aids: Reads assembly orders and repair tickets to determine work priorities, and assigns work to those workers responsible for assembly or repair. Records production, such as type of hearing aids to be assembled, number of units, and date assigned. Monitors work in progress to determine whether production is maintained according to schedule. Confers with workers' representatives to resolve grievances. Demonstrates job tasks to train new workers and assigns experienced workers to assist in training. Compiles weekly and monthly production reports of hearing aids assembled and repaired. Requisitions supplies and equipment as required. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.01.01 PD L 08 09 10 12 13 15 17 18 M3 L3 SVP 7 SOC 71

726.131-018 SUPERVISOR, PRINTED CIRCUIT BOARD TESTING (electronics) supervisor, electronic testing; supervisor, functional testing; supervisor, in-circuit testing.

Supervises and coordinates activities of workers engaged in repairing and testing performance of printed circuit boards (PCBs) during and after assembly, applying knowledge of electronic theory and circuitry, test procedures, and documentation: Directs training of workers in areas such as test procedures and equipment operation, troubleshooting and repairing, and interpretation of specifications and documentation. Coordinates testing and repair work to ensure completion of work assignment. Monitors repair activities to verify PCBs conform to documentation standards. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May supervise activities of workers engaged in assembling PCBs. GOE 06.01.01 PD L 08 09 10 12 13 18 19 M3 L4 SVP 8 SOC 71

726.134-010 SUPERVISOR, PRINTED CIRCUIT BOARD ASSEMBLY (electronics)

Supervises and coordinates activities of workers engaged in assembling, testing, and inspecting printed circuit boards (PCBs): Directs training of workers in interpreting shop specifications, component recognition, equipment operation, and performance of job duties to ensure that assembly standards are met. Plans and coordinates assembly assignments to ensure that production goals are met. Examines boards during assembly process, applying knowledge of assembly and quality standards to ensure acceptability. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May be designated according to stage of assembly as SUPERVISOR, FINAL (electronics); SUPERVISOR, POST-WAVE (electronics); SUPERVISOR, PRE-WAVE (electronics). May be designated according to function supervised as SUPERVISOR, ASSEMBLY (electronics); SUPERVISOR, QUALITY CONTROL (electronics); SUPERVISOR, TESTING (electronics). GOE 06.01.01 PD L 08 09 10 12 13 15 18 19 M3 L4 SVP 7 SOC 71

726.281-014 ELECTRONICS TESTER (electronics) I quality-control-assembly-test technician; technician, test systems; tester, systems; test technician; trouble shooter.

Performs a variety of electronic, mechanical, and electromechanical tests on electronic systems, subassemblies, and parts to ensure unit functions according to specifications or to determine cause of unit failure, using full range of electronic test instruments: Reads test schedule, work orders, test manuals, performance specifications, wiring diagrams, and schematics to ascertain testing procedure and equipment to be used. Performs functional tests of systems, subassemblies, and parts under specified environmental conditions, such as temperature change, vibration, pressure, and humidity, using devices such as temperature cabinets, shake-test machines, and centrifuges. Calibrates test instruments according to specifications. Connects unit to be tested to equipment, such as signal generator, frequency meter, or spectrum analyzer. Reads dials that indicate electronic characteristics, such as voltage, frequency, distortion, inductance, and capacitance. Compares results with specifications and records test data or plots test results on graph. Traces circuits of defective units, using knowledge of electronic theory and electronic test equipment to locate defects, such as shorts or faulty components. Replaces defective wiring and components, using handtools and soldering iron, or records defects on tag attached to unit and returns it to production department for repair. May write computer programs to control semiconductor device and electronic component test equipment prior to testing, utilizing knowledge of programming techniques, electronics, test equipment, and testing specifications. May examine switches, dials, and other hardware for conformance to specifications. May verify dimensions of pins, shafts, and other mechanical parts, using calipers, vernier gauges, and micrometers. May operate x-ray equipment to verify internal assembly and alignment of part according to specifications. May calibrate unit to obtain specified dial reading of characteristics, such as frequency or inductance. May devise test equipment setup to evaluate performance and operation of nonstandard or customer returned units. May be designated according to unit tested as MEMORY-UNIT TEST TECHNICIAN (electronics); TELEVISION-RECEIVER ANALYZER (electronics); TRANSMITTER TESTER (electronics); TUBE-TEST TECHNICIAN (electronics). GOE 06.01.05 PD L 08 09 10 12 13 18 M4 L3 SVP 7 SOC 6881

726.361-014 GROUP LEADER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics)

Assists supervisor in coordinating activities of workers engaged in assembly of printed circuit boards (PCBs), applying knowledge of PCB assembly techniques, specifications, and production scheduling: Confers with supervisor and reviews production schedules, specifications, and priorities to plan departmental work assignments. Requisitions, obtains, and distributes supplies and materials, such as PCBs, electronic components and parts, solder and flux, antistatic bags and wristbands, and schematic drawings and work orders. Assigns duties to assembly workers and oversees department activities. Revises work assignments as required by priorities and work availability. Explains and demonstrates PCB assembly line procedures and techniques to workers. Interprets schematic drawings, specifications, and work orders for workers. Assists workers in resolving technical problems and advises supervisor of complex production problems. Reads, prepares, collects, and maintains reports, such as individual and department production reports, employee time and attendance records, and component waste reports. May assemble sample PCBs for use as work aids by workers, using schematic drawings, handtools, and soldering equipment. May preform lead wires for electronic components to supply assembly line with preformed parts, using forming machines or handtools. May substitute for workers during worker absence or to relieve bottlenecks in work congested areas. GOE 06.02.23 PD L 08 09 10 12 13 15 16 17 18 19 M2 L3 SVP 5 SOC 6867

726.361-018 GROUP LEADER, PRINTED CIRCUIT BOARD QUALITY CONTROL (electronics)

Assists supervisor in coordinating activities of workers engaged in inspecting, testing, and repairing printed circuit boards (PCBs), applying knowledge of electronic theory, test procedures, repair techniques, and quality standards: Confers with supervisor and reviews production schedules to determine quantity and type of PCBs to be inspected, tested, or repaired. Assists in planning department work assignments. Collects and distributes PCBs and components for processing from receiving and assembly departments. Requisitions, obtains, and distributes supplies, materials, and equipment, such as electronic components and parts used during repair work, test and inspection specifications, and test equipment, fixtures, and handtools. Inspects test equipment to verify that equipment functions according to standards. Reports substandard equipment performance to supervisor or maintenance personnel. Compiles list of test and inspection personnel. Assigns duties to inspection, test, and repair workers, using knowledge of workers' experience and capabilities. Oversees department activities and revises work assignments as required by priorities and work availability. Explains inspection and test procedures and specifications. Demonstrates use of testing equipment and PCB repair techniques to workers. Interprets schematic drawings, procedure changes, and work orders for workers. Assists workers in resolving technical problems, utilizing knowledge of electronic theory, test procedures, and specifications. Reports unresolved problems to supervisor. Reads, prepares, collects, and

maintains reports, such as individual and department production reports and test results, employee time and attendance records, and product waste reports. Maintains history files on vendors. May relieve workers during absence or substitute for workers to relieve bottlenecks in work congested areas. May confer with technical personnel and other department supervisors to report and resolve problems concerning substandard assembly work and testing procedures. GOE 06.03.01 PD L 08 09 10 12 13 15 17 18 19 M2 L3 SVP 6 SOC 6881

726.361-022 REPAIRER, PROBE TEST CARD, SEMICONDUCTOR WAFERS (electronics)

Replaces and realigns broken, worn, or misaligned probes on probe test cards, using handtools and equipment, to maintain probe cards for wafer probe (electrical test) equipment: Reads specification sheets, manuals, and diagrams to determine probe card wiring and probe positions. Inspects probe cards, using microscope, to detect defects, such as loose wiring and loose, split, or worn probes. Removes, replaces, and re-solders defective wiring and probes, using tweezers and soldering iron. Observes probe card through microscope and aligns probes in specified position over test wafer, using tweezers. Aligns probes on even plane, using tweezers and test equipment. Maintains repair and replacement records. Maintains probe and inventory records, using computer terminal. GOE 06.01.04 PD L 08 09 10 15 17 18 M2 L2 SVP 4 SOC 6867

726.362-010 GROUP LEADER, SEMICONDUCTOR TESTING (electronics) production aide.

Assists SUPERVISOR, ELECTRONICS TESTING (electronics) 726.130-010 in coordinating and monitoring activities of workers engaged in testing electronic devices (components), such as integrated circuits (ICs), transistors, and diodes, on semiconductor wafers, utilizing knowledge of equipment, procedures, and test specifications: Answers questions from workers pertaining to test procedures and test equipment operation. Monitors and expedites flow of materials through testing cycle. Enters test program into test equipment, using computer terminal, and examines test equipment printout to verify test equipment is functioning according to company and manual specifications. Notifies maintenance workers of test equipment malfunctions. Operates or tends equipment to substitute for absentee workers. Maintains production records. Trains workers in equipment operation and test procedures. GOE 06.01.05 PD S 08 09 10 12 13 15 17 M2 L2 SVP 7 SOC 783

726.362-014 WAVE-SOLDERING MACHINE OPERATOR, PRINTED CIRCUIT BOARDS (electronics) flow-solder machine operator.

Controls and maintains operation of wave-soldering machine or system to solder electronic components onto printed circuit boards (PCBs): Reads production schedules and operations manuals and receives verbal instructions regarding sequential start up and operation of wave-soldering machines (bench models) or systems (modular floor models). Moves controls to activate machines or system modules, such as flux, preheater, wax stabilizer, chiller, lead wire cutter, wave-soldering units, conveyors, and PCB washing and drying machines. Adjusts controls of machines to regulate operating speeds and temperatures of machines and to regulate heights (stand or flow) of flux, wax, and solder waves, according to predetermined standards. Adds supplies to reservoirs of machines, such as flux, wax, solder, oil, and thinner. Verifies specific gravity of flux, using hydrometer. Adjusts dimensional and structural characteristics of conveyor pallets and rails used to hold and transport PCBs through wave-soldering process, using instruments and handtools, such as micrometers, dial indicators, pin gauges, wrenches, and screwdrivers, and knowledge of production schedules and standards. Places loaded master pallet (master fixture) and production pallets on conveyor line of wave-soldering machines or systems and observes pallets as they travel through process to verify that timing, temperatures, and dimensions are set according to standards. Observes heat-sensitive color marks or strips placed on PCBs to verify boards have been preheated to specified temperatures. Records machine settings before and after adjustments in daily logs. Observes meters, gauges, and indicator lights during operation of wave-soldering machines or systems to ensure that soldering of PCBs conforms to standards and to prevent damage to equipment. Removes samples of soldered boards to examine top and underside of boards to detect substandard soldering. Discusses quality of soldering with supervisor and makes adjustments to controls according to instructions received. Records data in daily operating logs, such as operating time, number of PCBs processed, number of pallets used, conditions of lead wire cutting blades, and hours of usage of flux and wax. Moves switches and turns valves to shut down machines and systems, following prescribed procedures. Drains and refills wax (used to stabilize components on boards prior to lead wire cutting operation) and flux reservoirs, according to length of use and established replacement times. Skims dross from surface of molten solder pots and periodically drains and refills reservoirs. Removes machine parts, using handtools. Cleans parts and interiors of machines, using cleaning materials and supplies. Performs preventive maintenance tasks, such as examining and replacing lead wire cutter blades (on modular systems), tightening drive belts and pulleys, and lubricating motors, pumps, bearings, and pulleys, using handtools and lubricants, according to specifications and instructions received. Records cleaning and preventive maintenance activities in daily logs. May return substandard boards to workers for repairs. May feed

and/or offbear board or pallets loaded with PCBs to or from conveyor system. GOE 06.02.19 PD M 08 09 15 17 18 20 EC 03 M2 L3 SVP 4 SOC 7533

726.364-010 LEAD HAND, INSPECTING AND TESTING (electronics)

Assists supervisor in coordinating activities of workers engaged in inspecting and testing electronic components for compliance to company standards: Receives boxes of components and records identifying information on specified forms. Collects random lot samples, according to lot volume and following company guidelines. Delivers samples to or instructs designated worker to pull samples when job demands warrant attention. Distributes components to workers responsible for testing specific components. Instructs new workers in testing equipment operation, component testing sequence, and specification sheet interpretations. Modifies workers' assignments to meet priorities and to adjust work loads according to worker absenteeism. Completes requisition forms to obtain items requested and delivers items to workers. Observes calibration maintenance sheets to verify maintenance of test equipment and notifies designated personnel of unscheduled verification of equipment as warranted by questionable test results. Maintains records that indicate material discrepancies and records information on vendor history forms. GOE 06.03.02 PD M 04 05 06 08 09 10 12 13 15 17 19 M2 L3 SVP 6 SOC 782

726.364-014 TEST FIXTURE DESIGNER (electronics)

Plots and draws schematics for test fixture heads used in testing printed circuit boards (PCBs) for electrical shorts and breaks, utilizing knowledge of printed circuit design, electronics, and customer specifications: Reviews blueprint to determine customer requirements and beginning and end points of PCB conductor paths. Confers with engineer to resolve questions concerning design of test fixture heads. Refers to blueprint and method sheets and chooses electrical points to be tested, making sure to include critical points along conductor path. Plots electrical points to be tested on layout sheet, using pencil. Chooses drill size to be used in drilling test head, according to test design and engineering specifications. Forwards layout of test points with requested drill size to numerical-control drilling department to be used as guide to drill test head. Reviews blueprints to determine logical and most efficient method to wire test head to frame of test fixture. Draws schematics for TEST FIXTURE ASSEMBLER (electronics) 726.684-098 to follow in wiring test head to test fixture frame. May review schematics with assembler to answer questions regarding correct wiring procedures. May monitor building of test fixture by assembler. May record data regarding completed job. GOE 05.03.02 PD S 08 09 15 M3 L3 SVP 7 SOC 399

726.367-014 ELECTRONICS UTILITY WORKER (electronics)

Arranges layout of work station for other workers who fabricate, process, or assemble electronic equipment, and components, such as semiconductor devices, printed circuit boards (PCBs), chassis assemblies, and wire harnesses and cables: Reads specifications, such as process guide, bill of material, wiring diagram, mechanical print, and schematic diagram, to determine equipment needed, such as piece parts, chemicals and gases, tools, test instruments, and *jigs and fixtures*, for work stations. Prepares and submits requisition. Positions equipment in specified arrangement at work stations. Notifies stockroom when stations need resupply of materials, such as chemicals, resistors, transistors, and color-coded wire, during processing or assembly operations. May assist workers to follow new work procedures and relieve operators from work stations. May set and adjust controls for processing, fabricating, and assembly line equipment, such as furnaces, process chambers, power supplies, timers, and multimeters. May test and repair assembled items by removing or adding piece parts or re-soldering or rebonding defective connections, using handtools, production equipment, test machines, and test instruments, such as meters, resistance bridges, and automatic component testers. GOE 06.04.34 PD L 08 09 15 19 M1 L2 SVP 5 SOC 787

726.380-010 ELECTRONIC EQUIPMENT SET-UP OPERATOR (electronics)

Sets up and operates equipment to fabricate single- and multi-layer printed circuit boards (PCBs): Determines dimensions and tolerances of boards, sequence of operations, and tools and equipment required, according to diagrams and specifications, and measures and marks dimensions and reference points to lay out boards for machining. Sets up and operates equipment, such as shearing machine, laminator, and drills, to cut and form boards to specifications for use by other workers. Bevvels edge connectors, using slotter, and verifies dimensional tolerances, using calipers. Cuts boards to size, using shearing machine. Sets up and operates drills to bore holes in fiberglass boards, and sets up and controls plating equipment to copper plate and apply photoresist to boards, using laminator. Photographs design image and exposes film to produce and develop acid resisting circuitry pattern, using photographic equipment. Etches and touches up circuitry on boards, using etcher. Bonds together two or more PCBs to form multi-layer boards, using laminating press. GOE 06.02.09 PD L 08 09 10 15 17 18 EC 07 08 13 M4 L3 SVP 4 SOC 7329

726.381-010 ELECTRONICS INSPECTOR (electronics) I quality control inspector; systems inspector.

Inspects electronic assemblies, subassemblies, and parts for compliance with specifications following blueprints, drawings, and production and in-

spection manuals, using one or combination of following methods: Examines layout and installation of wiring, cables, subassemblies, hardware, and components to detect assembly errors. Compares assembly with parts list to detect missing hardware. Examines joints, using magnifying glass and mirror, and pulls wires and cables to locate soldering defects. Examines alignment of parts and measures parts for conformance with specified dimensions, using precision-measuring instruments, such as micrometers, vernier calipers and gauges. Twists dials, shafts, and gears to verify freedom of movement. Traces cables and harness assemblies, following cable print, to verify routing of wires to specified connections and conformance of cable lacing and insulation with manufacturing standards. Measures plated areas for uniformity and thickness, using micrometers or dial indicators. Verifies location of bolt and rivet holes, using templates, check fixtures, and measuring instruments. Examines parts to locate surface defects, such as chips, scratches, and pinholes. Records inspection data, such as serial number, type and percent of defects, and rework required. May stamp inspected equipment to indicate acceptance. May resolder broken connections. May perform functional and operational tests, using electronic test equipment, such as frequency meters, oscilloscope, and signal generator [ELECTRONICS TESTER (electronics) I 726.281-014]. May inspect and lay out optic axis of raw quartz crystals, using optical inspection equipment and be designated INSPECTOR, RAW QUARTZ (electronics). May inspect parts at random and be designated CHECK INSPECTOR (electronics). May inspect units on assembly line and be designated FINAL INSPECTOR (electronics) or IN-PROCESS INSPECTOR (electronics). May be designated according to kind of unit inspected as INSPECTOR, SUBASSEMBLIES (electronics) or INSPECTOR, TUBES (electronics). GOE 06.01.05 PD L 08 09 10 15 16 19 M4 L4 SVP 6 SOC 6881

726.382-010 SEQUENCING-MACHINE OPERATOR (electronics)

Sets up and operates sequencing machine to insert electronic components in programmed sequence onto paper tape for use in machine insertion of components onto printed circuit boards (PCBs): Reads instructions to determine sequence, quantity, and types of components required. Mounts supply reels of components on spindles and threads component supply reel tape through machine. Installs and spaces holding devices on machine according to number of components to be sequenced, using wrench. Mounts paper tape reels onto spindles of machine to receive sequenced components. Keys data into computer terminal to enter program number that controls release of components in prescribed sequence onto paper tape. Presses button to activate machine and observes panelboard light indicators to verify sequencing procedures and to detect machine stoppages. Clears jams in holding devices and splices tapes, using handtools and adhesive tapes. Straightens bent wire leads or cuts damaged component from supply tape, using wire snips. Replaces defective components. Records production information. May operate sequencing machine equipped with verifier that automatically identifies faulty components. GOE 06.02.20 PD L 08 09 10 15 18 M2 L3 SVP 5 SOC 77

726.384-010 ELECTRONICS ASSEMBLER (inst. & app.)

Installs and wires electronic subassemblies, such as integrators, channel controls, and power sources for spectroscopic equipment, working from wire-prints, schematics, and verbal instructions: Routes wiring through assembly to terminals according to color code, and loops wires to panel. Strips insulation from ends of wire and cable, using wire stripper, and solders or wraps wires around terminals to provide electrical connection. Drills holes into frame and bolts or screws parts and assembled units to frame, using handtools. GOE 06.02.23 PD S 08 09 10 15 18 19 M2 L2 SVP 6 SOC 772

726.384-014 INSPECTOR, CIRCUITRY NEGATIVE (electronics) film inspector.

Inspects circuitry film negatives (artwork) for conformance to specifications and touches up defects on negatives to prepare negatives for use in printed circuit board (PCB) fabrication: Compares size and location of hole images on circuitry negative with drilled holes in sample PCB panel to verify conformance of negative to specifications, using light table. Examines circuitry negatives to detect defects, such as under-exposure or over-exposure of negatives, circuitry width, and spacing, using light table and microscope. Fills nicks, scratches, and gaps in circuitry pattern on negatives with pen or plastic tape, removes excess ink from negatives with cotton swab, and cuts flaws and excess film from circuitry negatives to correct and prepare negatives for use in PCB fabrication, using utility knife. Measures circuitry negative for conformance to specified dimensions, using precision-measuring instruments. GOE 06.03.01 PD L 08 09 10 15 19 M3 L3 SVP 5 SOC 782

726.384-018 INSPECTOR, SEMICONDUCTOR WAFER PROCESSING (electronics)

Inspects semiconductor wafers, using microscope, to identify processing defects: Places wafers on stage of microscope, using tweezers or vacuum wand. Examines surface of wafer and test patterns on wafers, using microscope, and compares wafers to specification diagrams to identify processing defects, such as scratches, contamination, pattern misalignment, photoresist peel, and circuit bridges. Measures specified dimensions of test patterns on wafers, using electronic measuring devices attached to microscope at work station, to verify that wafers meet company specifications. Routes defective wafers to engineering department. Records observations

onto processing sheets and log. Cleans inspecting area, using cleaning solution. GOE 06.03.01 PD S 08 09 10 15 17 18 19 M2 L2 SVP 4 SOC 782

726.384-022 PHOTO MASK INSPECTOR (electronics) mask inspector.

Inspects master or production photo mask plates used in fabrication of semiconductor devices for defects and to ensure conformance to specifications: Positions photo mask plate on stage of microscope or computer-aided inspection equipment. Focuses and aligns lens with predetermined coordinates on photo mask plate. Inspects photo mask plate for defects, such as misalignment of design, contamination, cracks, pinholes, and streaking, and compares photo mask pattern to original design to verify conformance to specifications. Enters commands to activate computer-aided inspection equipment that automatically scans surface of photo mask plate to locate and record defects. Records inspection information, and sorts photo mask plates according to inspection results. May measure critical dimensions of pattern on photo mask plate and compares dimensions to design requirements, using microscopes with attached calibrated viewing or image shearing apparatus. May photograph surface of defective photo mask plate, using instant-print camera. May operate laser-beam equipment to repair circuitry defects on photo mask plate [LASER-BEAM-TRIM OPERATOR (electronics) 726.682-010]. May tend equipment that removes contaminants and photoresist from surface of photo mask plate [PHOTO MASK CLEANER (electronics) 590.684-034]. GOE 06.01.05 PD L 08 09 10 15 18 19 M3 L4 SVP 6 SOC 782

726.682-010 LASER-BEAM-TRIM OPERATOR (electronics)

Operates computer controlled laser-trim system to trim excess material from electronic components: Reads production sheet to determine specific operation code and depresses keys on console control of computer to input code for particular operation. Inserts electronic component into vacuum chuck of laser-trim system, using tweezers, and depresses prescribed sequence of console buttons to actuate laser beam that automatically trims excess metal and glass from component. Observes light indicator on control panel to determine whether each component meets required specifications. Removes trimmed component from chuck and examines component under microscope for completeness of trim. GOE 06.02.02 PD S 08 09 10 15 17 18 M3 L3 SVP 4 SOC 7532

726.682-014 WIRE-WRAPPING-MACHINE OPERATOR (electronics)

Operates computer controlled semiautomatic machine that wraps wires around electronic-pin connectors: Mounts connector panel on machine pallet that moves panel along programmed path, using wrench and screwdriver. Depresses specified button to start automatic programmed tape for pin sequence and observes panel lights that indicate size of wire prescribed in program. Selects and mounts specified wire on machine spindle. Threads wire through bit of wire-wrap gun, positions gun in support to align gun with pins on connector panel, and depresses trigger of wire-wrap gun to wrap wire on pins. Observes directional lights of machine to determine movement of pallet and gun support. Inspects wire-wrap of completed panels for tightness, neatness of fold, or broken wire. GOE 06.02.09 PD L 08 09 10 15 17 19 M3 L4 SVP 2 SOC 7679

726.682-018 COORDINATE MEASURING EQUIPMENT OPERATOR (electronics) mechanical inspector.

Operates coordinate measuring equipment to measure dimensions of printed circuit boards (PCBs): Reads blueprints to determine dimensions and tolerance specifications for selected PCBs. Positions PCBs on measuring table of equipment, views PCBs on monitor screen, and turns calibrated cranks on equipment to position control bar, with attached camera, over specified sections of PCBs. Flips toggles to lock camera in position, activates digital readout equipment, and records specified measurement of PCBs on inspection sheets. Repeats process to cover all sections of PCBs, including locations of specified drilled holes and samples of routed PCBs. Compares recorded measurements to blueprint dimensions and tolerances and notifies specified persons of discrepancies. GOE 06.03.02 PD L 08 09 10 15 M3 L2 SVP 3 SOC 782

726.682-022 FUNCTIONAL TESTER, PRINTED CIRCUIT BOARDS (electronics)

Controls and monitors operation of computerized test equipment to test electronic functions of printed circuit board (PCB) assemblies, components, parts, and circuitry: Reviews schedule of board types to be tested, test procedures, and specification with supervisory personnel to determine specific instructions or modification in test procedures. Removes PCBs from carrier and positions boards in specified position on test unit. Connects cables from automatic computerized test equipment to PCBs to perform test. Observes CRT monitor during automatic testing to determine status of board functions relating to capacitance, resistance, tolerance, continuity and defects, such as shorts and leaks. Compares instrument readings with specifications to determine board passage or failure. Removes and stacks PCBs that pass testing, for movement to next station. Observes CRT monitor to determine location of malfunction in defective circuit boards. Tears off paper tape printout and inserts printouts in designated slots on PCBs to accompany boards that pass and to facilitate repairs of defective boards. Removes and stacks PCBs that fail testing, for movement to repair station. May operate burn-in oven to heat PCBs to elevate temperatures preparatory to testing. May replace defective components, using desoldering tool, solder, and iron. May retest boards following trou-

bleshooting by other workers to verify resolution of malfunctioning problems. May use multimeter or oscilloscope to determine exact location of defect on PCB [PRINTED-CIRCUIT TESTER (electronics) 726.684-026]. May complete production report to indicate number of units tested during shift. May periodically examine test equipment to verify that test equipment is functioning according to standards. May perform mathematical computations, using formula and figures obtained from screen, to determine that board measurements meet established criteria. GOE 06.03.02 PD L 08 09 10 12 13 15 17 18 19 M2 L2 SVP 4 SOC 783

726.682-026 SAW OPERATOR (electronics)

Operates battery of circular saws to cut plastic blocks containing ceramic-coated aluminum rods to length for processing into electronic resistors: Reads job order to determine length of rods required. Secures blocks in clamps of automatic-feed saw, preset to specified length. Closes safety cover and depresses controls to start saw and activate automatic feed. Loads additional saws and monitors sawing operations to detect machine malfunctions. Removes sawed blocks from saws at end of automatic cycle. Holds sawed block against stop of manual-feed saw, starts saw, and feeds block into blade to complete specified cuts. Holds cut blocks under running water to remove debris. Measures cut and washed blocks to verify conformance with job order, using calipers and micrometers. Periodically replaces cog in automatic-feed saw to change length of cut, following identification number on cog and using wrench. Replaces worn or damaged saw blades, using handtools. Cleans work area. Records specified data on production report. May assist maintenance personnel with saw maintenance and repair. GOE 06.02.09 PD M 08 09 15 M2 L1 SVP 4 SOC 7678

726.684-018 ELECTRONICS ASSEMBLER (electronics)

Assembles electronic components, subassemblies, and systems by any one or combination of following methods: Reads work orders, follows production drawings and sample assemblies, and receives verbal instructions regarding duties to be performed. Positions and aligns parts in specified relationship to each other in *jig, fixture*, or other holding device, using tweezers, vacuum probe, or hand instruments. (1) Tends machines or uses handtools and power tools to crimp, stake, bolt, rivet, weld, solder, cement, press fit, or perform similar operation to secure parts in place. (2) Mounts assembled components, such as transformers, resistors, capacitors, integrated circuits, and sockets on chassis panel. (3) Connects component lead wires to printed circuit or routes and connects wires between individual component leads and other components, connectors, terminals, and contact points, using soldering, welding, thermocompression, or related bonding procedures. (4) Installs finished assemblies or subassemblies in cases and cabinets. (5) Assembles and attaches functional and cosmetic hardware, such as caps, clamps, and knobs, to assemblies, using handtools and power tools. (6) Performs intermediate assembly tasks, such as potting, encapsulating, cleaning, coating, epoxy bonding, curing, stamping, etching, impregnating, and color coding parts and assemblies. (7) Tends machines which press or shape component parts, such as contacts, shells, and insulators. (8) Tends automatic assembly equipment which joins components and parts. (9) Winds capacitors on manual or automatic winding equipment. (10) Adjusts or trims material from components, such as capacitors and potentiometers, to change electronic characteristic to specification measured by electronic test instrument. (11) Performs on-line go-not-go testing and inspection, using magnifying devices, fixed and movable measuring instruments, and electronic test equipment, to ensure parts and assemblies meet production specifications and are free from defects. May perform assembly operations under microscope or other magnifying device. Occupations related to assembly of printed circuit boards and fabrication of integrated circuit chips are defined elsewhere under separate definitions. GOE 06.02.23 PD L 08 09 10 15 17 18 19 M1 L2 SVP 3 SOC 772

726.684-022 ELECTRONICS INSPECTOR (electronics) II checker; inspector, component parts; inspector, visual; line inspector.

Inspects electronic assemblies, subassemblies, parts, and components by comparing them with samples or production illustrations: Examines unit visually for physical defects, such as broken wire, excess solder, holes in sealing material, unevenly wound coil, coating and plating blemishes, oil leaks, faulty resistance weld, scratches, and cracks. Compares hardware, such as eyelets, brackets, and lugs, on assemblies, subassemblies, and parts with parts list to verify installation. Examines hardware for specified contact with conductor area. Rejects faulty assembly, part, or component. Records type and quantity of defects to keep record control. May measure parts to verify accuracy of dimensions, using standard gauges. May sort defective components and parts for salvage or scrap. May be designated according to item inspected as CAPACITOR INSPECTOR (electronics); CATHODE-COATING INSPECTOR (electronics); CONNECTOR INSPECTOR (electronics); FILTER INSPECTOR (electronics); GRID INSPECTOR (electronics). Additional titles: RESISTOR INSPECTOR (electronics); TELEVISION-CHASSIS INSPECTOR (electronics); TUBE INSPECTOR (electronics). GOE 06.03.02 PD S 08 09 10 15 17 18 19 M2 L2 SVP 3 SOC 782

726.684-026 ELECTRONICS TESTER (electronics) II component tester; production tester; quality-control tester; testing-machine operator.

Tests electronic function of assemblies, components, and parts, using standard test equipment and procedures: Connects unit to test instrument,

such as ohmmeter, voltmeter, ammeter, resistance bridge, or oscilloscope and turns switch. Reads instrument dial or scope that indicates resistance, capacitance, continuity, and wave pattern or defect, such as short or current leakage. Compares instrument reading with standard and rejects defective units. Records type and quantity of defect. May verify dimensions of parts, using standard gauges. May examine assembly, component, or part for defects, such as short leads, bent plate, or cracked seal. May tend equipment to subject unit to stress and strain prior to testing. May tend automatic test equipment. May operate x-ray photograph and closed circuit television viewing equipment to observe internal image of unit for assembly defect prior to testing. May adjust circuits in radio and television receivers for maximum signal response and be designated ALIGNER (electronics). May be designated according to unit tested as COIL TESTER (electronics); FILTER TESTER (electronics); TUBE TESTER (electronics). GOE 06.03.02 PD L 08 09 10 15 17 18 M3 L3 SVP 3 SOC 783

726.684-034 ASSEMBLER, SEMICONDUCTOR (electronics) microelectronics processor.

Assembles microelectronic semiconductor devices, components, and subassemblies according to drawings and specifications, using microscope, bonding machines, and handtools, performing any combination of following duties: Reads work orders and studies assembly drawings to determine operation to be performed. Observes processed semiconductor wafer under scribing machine microscope and aligns scribing tool with markings on wafer. Adjusts scribing machine controls, according to work order specifications, and presses switch to start scribing. Removes scribed wafer and breaks wafer into dice (chips), using probe. Places dice under microscope, visually examines dice for defects, according to learned procedures, and rejects defective dice. Positions mounting device on holder under bonding machine microscope, and adjusts bonding machine controls according to work order specifications. Positions die (chip) on mounting surface according to diagram. Presses switch on bonding machine to bond die to mounting surface. Places mounted die into holding fixture under microscope of lead bonding machine. Adjusts bonding machine controls according to work order specifications. Views die and moves controls to align and position bonding head for lead bonding according to diagram. Presses switch to bond lead and moves bonding head to points indicated in bonding diagram to attach and route leads as illustrated. Inserts and seals unprotected assembly into designated assembly container device, using welding machine and epoxy syringe, to protect microelectronic assembly and complete device, component, or subassembly package. Examines and tests assembly at various stages of production, using microscope, go-not-go test equipment, measuring instruments, pressure-vacuum tanks, and related devices, according to standard procedures, to detect nonstandard or defective assemblies. Rejects or routes nonstandard components for rework. Cleans parts and assemblies at various stages of production, using cleaning devices and equipment. Maintains records of production and defects. Bonds multiple dice to headers or other mounting devices. Important variations are kinds of equipment used, such as thermal compression, wedge, wire ball, and wobble bonders, items assembled, or procedure performed. GOE 06.02.23 PD S 08 09 10 15 16 17 18 M2 L2 SVP 3 SOC 772

726.684-038 BONDER, SEMICONDUCTOR PACKAGE (electronics)

Bonds connections between integrated circuit and package leads, using bonding equipment and gold or aluminum wire: Reviews schematic diagram of integrated circuit to determine bonding specifications. Turns dials to set bonding equipment temperature controls and to regulate wire feeding mechanism according to specifications. Mounts spool of wire onto holder and inserts wire end through guides, using tweezers. Positions semiconductor package into magazine of automatic feed mechanism, and observes package, using microscope, or views package on equipment display screen, to ensure connections to be bonded are aligned with bonding wire. Adjusts alignment as necessary. Activates equipment that moves bonding wire to bonding unit and automatically bonds wire to specified connections on integrated circuit and package leads. Removes packages from bonding unit and places packages in work tray. May test tensile strength of bonded connections, using testing equipment. GOE 06.04.23 PD S 08 09 10 15 17 18 M1 L2 SVP 2 SOC 7539

726.684-042 DIE ATTACHER (electronics)

Attaches *dies* to empty integrated circuit (IC) packages to assemble complete semiconductor packages, using welding and gluing equipment: Places empty packages on heated chuck of equipment, using tweezers. Deposits bonding material, such as epoxy or gold, in center of empty packages, and positions and aligns dies on bonding materials in packages, using equipment or handtools. Removes packages with attached dies from chuck, using tweezers, and places packages in trays. May place loaded trays in oven to set gluing material. May view positioning of epoxy and die in empty packages, using microscope. GOE 06.04.23 PD S 08 09 10 15 17 EC 14 M1 L2 SVP 2 SOC 7759

726.684-046 ELECTRONIC CIRCUIT TESTER, PRINTED CIRCUIT BOARDS (electronics)

Tests electronic circuits of printed circuit boards (PCBs), using computerized test equipment: Reviews test specifications to determine program disks and test fixtures required to test PCBs. Aligns specified test fixture in test equipment and secures PCBs on pins of test fixture. Inserts program

disk in control panel and depresses keys of computer keyboard to start test equipment that automatically tests continuity of PCB circuits to detect short or open circuits. Observes control panel for signal lights or observes display screen for message indicating PCBs have passed or failed test. Tapes printout (paper tape) of test results on defective boards and stamps identifying number on boards passing tests. Maintains records of PCBs tested and number of boards passed or failed. May monitor computerized test equipment, using test boards, to verify that equipment functions according to standards. May repair defective circuitry on PCBs, using soldering iron. GOE 06.03.02 PD L 08 09 10 15 18 M2 L2 SVP 3 SOC 783

726.684-050 FILM TOUCH-UP INSPECTOR (electronics)

Inspects and repairs circuitry image on photoresist film (separate film or film laminated to fiberglass boards) used in manufacture of printed circuit boards (PCBs): Inspects film under magnifying glass for holes, breaks, and bridges (connections) in photoresist circuit image. Removes excess photoresist, using knife. Touches up holes and breaks in photoresist circuitry image, using photoresist ink pen. Removes and stacks finished boards for transfer to next work station. Maintains production reports. May place lint free paper between dry film sheets to avoid scratching circuit images on film. GOE 06.03.02 PD S 08 09 10 15 M1 L1 SVP 2 SOC 782

726.684-054 INSPECTOR, CRYSTAL (electronics) crystal evaluator.

Inspects, measures, and tests semiconductor crystal ingots to determine compliance to specifications, using variety of measuring devices and test equipment: Transports ingots to work bench by cart or by hand. Measures ingot *flat*, diameter, and length, using calipers and ruler. Weighs ingots on scales and calculates weight loss due to grinding and sawing. Tests ingot resistivity, using electronic probes. Records weights, measurements, and other test results on logbook and labels and attaches labels to ingots. May operate saws to cut off ends of crystal or to cut sample wafers. May tend furnace that heat-treats ingots to alter resistivity to meet specifications. May determine *crystal orientation*, using x-ray machine. May operate machine to grind bevel on ends of crystals. May operate sandblasting machine to remove glaze from ingot surface. May tend equipment that etches ingots to remove surface material. May calculate proportion of impurities, using resistivity readings and specified formula. GOE 06.03.02 PD H 08 09 10 15 17 M2 L2 SVP 4 SOC 782

726.684-058 INSPECTOR, INTEGRATED CIRCUITS (electronics)

Inspects integrated circuit (IC) assemblies, semiconductor wafers, and IC *dies* for conformance to company standards, using microscope: Reads work order to determine inspection criteria. Places group of items in trays on microscope stage, or positions items individually on stage for inspection, using vacuum pencil or tweezers. Turns knobs on microscope to adjust focus and magnification as required to view items for inspection. Views and inspects items according to company standards to detect defects, such as broken circuit lines, bridged circuits, misalignments, symbol errors, and missing solder. Discards defective items. May remove contaminants from items, using brush or airhose. May use magnifying glass to inspect electronic items. GOE 06.03.02 PD L 08 09 10 15 17 18 M2 L2 SVP 3 SOC 782

726.684-062 INSPECTOR, PRINTED CIRCUIT BOARDS (electronics) board inspector; circuit board inspector; touch-up inspector, printed circuit boards; touch-up operator, printed circuit boards.

Inspects printed circuit boards (PCBs) for conformance to specifications and touches up defects: Inserts plug gauges into drilled holes in PCB panels to verify conformance to specified dimensions. Measures plated areas on PCB panels, using devices such as micrometers and dial indicators, to verify uniformity and thickness of plating. Brushes liquid photoresist on sections of circuitry pattern not completed and scrapes excess photoresist from panels, using artist's knife. Examines PCB circuitry, using *light table*, eye-loupe, magnifier or binocular microscope, and specifications or artwork, to detect defects, such as shorts, breaks, excess or missing solder, scratches, cracks and incorrect layout, and scrapes excess copper and solder from board, using artist's knife. Measures PCBs for conformance to specified dimensions, using calipers, micrometers, dial indicators, rulers, and eye-loupes. Rejects defective boards and records type and quantity of defects to keep record control. May inspect plating in holes and remove excess plating. May test adherence of photoresist to PCBs, using tape. May repair broken circuitry, using soldering iron or circuit bonding equipment. May test circuit continuity of boards, using bare board testers. May inspect inner layers of multilayer PCBs to verify that internal alignment and location of drilled component mounting holes meet specifications, using computer-controlled x-ray equipment, and be designated X RAY TECHNICIAN, PRINTED CIRCUIT BOARDS (electronics). GOE 06.03.02 PD S 08 09 10 15 17 18 M2 L2 SVP 3 SOC 782

726.684-066 INSPECTOR, SEMICONDUCTOR WAFER (electronics)

Performs any of following duties to inspect, measure, and test semiconductor wafers for conformance to specifications: Inspects wafers under high intensity lamp to detect surface defects, such as scratches, chips, stains, burns, or haze. Measures thickness and resistivity of wafers, using electronic gauges or automated sorting machine. Measures diameter and *flat* of wafers, using calipers. Inspects bow or flatness of wafers, using electronic gauges, or examines surface of wafers under high intensity lamp. Tests for positive or negative conductivity of wafers, using electron-

ic probe and gauge. Determines *crystal orientation* of wafers, using x-ray equipment. Encloses containers of inspected wafers in plastic bags for protection, using heat sealer. Records inspection data on production records or in computer, using computer terminal. May tend equipment that cleans surface of wafers [WAFER CLEANER (electronics) 590.685-102]. GOE 06.03.02 PD L 08 09 10 15 17 19 M2 L2 SVP 3 SOC 782

726.684-070 PRINTED CIRCUIT BOARD ASSEMBLER, HAND (electronics)

Performs combination of following tasks in assembly of electronic components onto printed circuit boards (PCBs) according to specifications, using handtools: Reads worksheets and wiring diagrams, receives verbal instructions, follows sample board to determine assembly duties, and selects components, such as transistors, resistors, relays, capacitors, and integrated circuits. Twists, bends, trims, strips, or files wire leads of components or reams holes in boards to insert wire leads, using handtools. Inserts color-coded wires in designated holes and clinches wire ends, using pliers. Press-fits (mounts) component leads onto board. Places plastic insulating sleeves around specified wire leads of components and shrinks sleeves into place, using heat gun. Crimps wire leads on underside of board, using handtools or press. Applies sealer or masking compound to selected parts of board to protect parts from effects of wave solder process. Solders wire leads and joints on underside of board, using soldering iron, to route and connect lead wires to board and between individual components. Installs heat sinks, sockets, face plates, and accessories on boards, using handtools. May be designated according to unit installed as SOCKET ASSEMBLER (electronics) or stage of production as POST-WAVE ASSEMBLER (electronics); PRE-WAVE ASSEMBLER (electronics). May assist other workers in duties concerned with wave-soldering PCBs. GOE 06.02.23 PD L 08 09 10 15 17 18 19 M1 L2 SVP 4 SOC 772

726.684-074 PRINTED CIRCUIT BOARD COMPONENT TESTER, CHEMICAL (electronics)

Tests electronic components for compliance to company standards, using chemicals and soldering equipment: Places droplets of acid on surface of petri dish to prepare for lead (metal) test, using eyedropper. Positions wire lead of component or pin on integrated circuit in acid, places acid-coated wire lead or pin on chemically prepared filter paper, and observes reaction on paper that indicates lead content. Soaks components that do not pass lead test in freon to remove acid from wire leads or pins and repeats test. Refers to vendor list to determine whether components are listed as acceptable. Dips wire leads of components in beaker of liquid flux, solder pot, and beaker of freon to conduct solderability test on wire leads, using metal tongs. Observes solder on wire leads for questionable conditions, such as bending of solder, discoloration, or no solder present, using magnification lamp. Sets aside components of questionable acceptance for approval by engineer. Maintains record of test results. GOE 06.03.02 PD M 04 08 09 10 15 17 19 M2 L2 SVP 5 SOC 782

726.684-078 PRINTED CIRCUIT BOARD COMPONENT TESTER, PRE-ASSEMBLY (electronics)

Tests electronic function of components preparatory to printed circuit board (PCB) assembly for compliance to company standards, using test equipment: Selects and positions test fixture on test equipment panel according to type of component being tested. Keys data into computer keyboard or turns dials and presses buttons to set tolerances on equipment, following company standards guide. Positions components in test fixture or mounts reels containing components on tape onto machine spindle and threads component tape through test machine guides. Activates equipment to start test and observes colored panel lights on equipment to determine whether components meet specifications. Replaces defective components. Verifies dimensions of components, using calipers and specification book. Obtains vendor history file for reference when excessive component defects result during testing. Maintains records of test results. May solder electronic components to test boards prior to testing. May be designated according to unit tested as CAPACITOR TESTER (electronics); HYBRID TESTER (electronics); INDUCTOR TESTER (electronics); RELAY TESTER (electronics); RESISTOR TESTER (electronics); TRANSFORMER TESTER (electronics). GOE 06.03.02 PD L 04 08 09 10 15 17 18 19 M2 L2 SVP 5 SOC 783

726.684-082 PRINTED CIRCUIT BOARD INSPECTOR, PRE-ASSEMBLY (electronics)

Inspects printed circuit boards (PCBs) preparatory to assembly for compliance to company guidelines, using test equipment: Examines PCBs on light table for breaks in copper foil circuits. Examines PCBs to detect circuit shorts, using magnification lamp. Measures dimensions of PCBs, using ruler. Views inside edges of solder holes to detect irregular surfaces, using eye loupe. Inserts leads to components in solder holes to verify spacing of holes and ease of component insertion. Verifies plating integrity of copper foil circuits and composition of solder through solder holes, using electronic test equipment. May record inspection results to maintain vendor history files. GOE 06.03.02 PD L 08 09 10 15 17 19 M2 L2 SVP 6 SOC 782

726.684-086 PRODUCTION REPAIRER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics)

Performs any combination of following tasks to repair defects on printed circuit board (PCB) assemblies, using soldering and desoldering equipment: Examines PCBs under magnifying lamp and reads inspection tags to locate defects, such as insufficient or excess solder and missing, misaligned, or defective components and parts. Resolders connections, lead wires, joints, and terminals missed during soldering process. Removes excess solder from connections and clears solder from component holes, using desoldering equipment. Repositions misaligned components, such as resistors, capacitors, and integrated circuits (ICs), and removes and replaces damaged or missing components. Trims long leads, replaces eyelets and rivets, and repairs damaged substrate, using handtools and power tools. Modifies PCBs following shop instructions, using handtools and soldering equipment. May test soldered connections on PCBs to detect open circuits or shorts, using continuity tester. GOE 06.02.23 PD L 08 09 10 15 19 M1 L3 SVP 3 SOC 772

726.684-090 REWORKER, PRINTED CIRCUIT BOARD (electronics) reworker.

Repairs defective surfaces and circuitry on printed circuit boards (PCBs), using power and handtools, utilizing knowledge of electronic repair techniques: Reads work orders to determine number of PCBs to be repaired, type of repairs required, and method and tools to be used in reworking. Positions PCBs under microscope to examine circuitry. Cuts and removes defective wires, using knife, and positions replacement wire on circuit, using magnetic tweezers. Repairs defective circuitry, using handtools and soldering or welding equipment. Repairs board surface faults, such as excess solder on board or gold plating on connectors, using handtools, and washes solder or liquid gold over specified areas to restore board surfaces. Cleans repaired boards with solvent, using brush and rags. Inspects boards to determine that repairs meet specifications. Removes and stacks repaired boards on racks for movement to next work station. Places PCBs in industrial oven to cure solder mask. May prepare production reports. GOE 06.02.23 PD L 08 09 10 15 17 18 19 M2 L2 SVP 3 SOC 77

726.684-094 SOLDER DEPOSIT OPERATOR (electronics)

Cleans assembled semiconductor packages, coats package leads with flux, and applies solder to package leads, using solder dip machine, to complete semiconductor package assembly: Places packages in holding cases and immerses cases in series of acid baths to clean packages. Places packages in holding fixtures and immerses loaded fixtures in flux bath to coat leads of packages. Pushes button to activate solder pumps of solder-dip machine and places loaded fixtures on conveyor of machine that deposits solder on leads of packages to enhance electrical conductivity of leads. Removes fixtures from conveyor, inspects leads of packages for uniform soldering, and removes solder from top of packages, using needle-nose pliers. Places loaded fixtures in baskets and immerses baskets in series of acid and soap baths to clean packages. Removes packages from fixtures, places packages on trays, and positions loaded trays in oven to dry packages. Removes tray from oven and loads packages into lot box and cleans and maintains solder pot of machine. Maintains production records. GOE 06.04.10 PD L 08 09 10 15 17 19 EC 04 07 13 M2 L2 SVP 2 SOC 7533

726.684-098 TEST FIXTURE ASSEMBLER (electronics)

Assembles test fixtures used to test electrical circuitry of printed circuit boards (PCBs), according to diagram instructions: Receives test fixture kits, work orders, and diagrams. Positions test fixture boards on worktable and inserts copper sleeves in designated holes of boards as indicated on diagrams. Positions pins flush with fixture board surface, using mallet. Places copper test pins in sleeves previously inserted and positions spacer blocks in prescribed pattern on top and bottom of boards. Inserts screws in spacer blocks and secures blocks to boards, using screwdriver. Positions wires against pins and blocks, following specified pattern, and secures wires around pins or blocks, using wire wrapping gun. Positions fixture cover over spacer blocks on top of test fixture boards and positions metal back on assembled test fixture. Secures cover and back, using screws and screwdriver. GOE 06.04.23 PD M 08 09 10 15 M2 L2 SVP 3 SOC 772

726.684-102 TESTER, SEMICONDUCTOR WAFERS (electronics)

Tests electrical characteristics of circuits on semiconductor wafers, using test equipment: Reads processing documents to determine test specifications. Obtains specified probe cards from inventory and slides probe cards into designated slot on testing equipment. Activates testing equipment and places wafer on chuck of test equipment, using tweezers. Observes wafer through test equipment microscope and aligns wafer under probes of test equipment. Pushes buttons to activate test cycle. Records test readings from printouts or display screen in test log. Compares test readings with specifications manual to identify wafers failing electrical tests. Maintains production records. May clean and maintain test equipment. GOE 06.03.02 PD S 08 09 10 15 17 18 M2 L2 SVP 3 SOC 783

726.684-106 TESTER, WAFER SUBSTRATE (electronics)

Tests semiconductor wafer substrate, using testing equipment, such as probe tester, spectrophotometer, and curve tracer, to evaluate electrical characteristics of wafer substrate: Places wafer, using tweezers, on test equipment that measures electrical characteristics of wafer substrate, such as resistivity, capacitance, and voltage. Starts equipment and observes equipment readout to determine wafer electrical measurements. Records

measurements in production log. Compares measurements with specification sheets to determine if wafer substrate meets company standards. Sorts, boxes, and labels tested wafers. Delivers wafers and process sheets to production line workers. Maintains production records. May inspect wafer substrate surfaces, using ultraviolet lamp, to detect scratches and contamination. GOE 06.03.02 PD L 08 09 10 15 17 18 M2 L3 SVP 4 SOC 783

726.684-110 TOUCH-UP SCREENER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics)

Inspects printed circuit board (PCB) assemblies for defects, such as missing or damaged components, loose connections, or defective solder: Examines PCBs under magnification lamp and compares boards to sample board to detect defects. Labels defects requiring extensive repairs, such as missing or misaligned parts, damaged components, and loose connections, and routes boards to repairer. Performs minor repairs, such as cleaning boards with freon to remove solder flux; trimming long leads, using wire cutter; removing excess solder from solder points (connections), using suction bulb or solder wick and soldering iron; or resoldering connections on PCBs where solder is insufficient. Maintains record of defects and repairs to indicate recurring production problems. May reposition and solder misaligned components. May measure clearances between board and connectors, using gauges. GOE 06.03.02 PD S 08 09 10 12 13 15 M1 L2 SVP 2 SOC 782

726.685-010 MAGNETIC-TAPE WINDER (electronics) cartridge loader.

Tends machines that wind magnetic tape into reels or cassette hubs for use in communication and control equipment, instruments, and computers: Positions tape supply reels or cassette hubs on letoff and windup spindles of tape winding machines. Loops tape from supply reels through machine guides and into blank reels or hubs. Turns knob of footage counter devices that automatically cut tape and stop machines when specified length of tape has been wound into blank reels or hubs. Pushes switches to start individual machines and removes wound reels or hubs when machines stop. Scrapes detected surface defects from tape with knife. Splices tape ends together to form continuous loops in cassettes, using bench splicer. Inserts filled and blank hubs into cassettes and attaches covers. Packs reels and cassettes into containers and labels containers for shipment. GOE 06.04.02 PD L 08 09 10 15 16 17 18 20 M1 L1 SVP 2 SOC 7679

726.685-014 AUTOMATIC COMPONENT INSERTION OPERATOR (electronics)

Tends computer-controlled machine that automatically inserts electronic components, such as resistors, capacitors, diodes, and integrated circuits, into holes of printed circuit boards (PCBs): Inserts specified program tape in machine or types commands on keyboard to enter program that directs machine to insert components in specified sequence and location on PCBs. Positions paper tape reels or plastic tubes containing components into feeding mechanism to load machine. Positions PCBs on machine bed holding fixtures, starts machine, and monitors machine operation. Removes assembled PCBs from machine bed and inspects PCBs for defects, such as missing components or incomplete insertion. Stops machine and notifies supervisor or maintenance mechanic of machine malfunctions. May make minor machine adjustments and clear machine jams. May manually insert missing components or route defective boards to repair department. May record production levels, machine downtime, and defects. May tend semi-automatic or manually controlled machines and position PCBs or components on board by hand. May be designated according to type of machine tended as VARIABLE CENTER DISTANCE OPERATOR (electronics); or according to component inserted as DUAL IN-LINE OPERATOR (electronics). GOE 06.02.20 PD L 08 09 10 15 17 M2 L3 SVP 4 SOC 7679

726.685-018 BREAK-AND-LOAD OPERATOR (electronics)

Tends machine that breaks resistor plates along previously scored lines and loads resistors into magazines for further processing: Attaches guides of specified size to track on machine that feeds resistors into magazine, using allen wrench. Snaps magazine onto machine. Breaks scrap edges from plates. Places plates into feed mechanism of machine and starts machine that automatically breaks plates into columns of resistors which slide down track. Taps column of resistors at bottom of track, using plastic rod, to break column into single resistors that fall into magazine. Clears machine jams, using plastic rod or tweezers. Breaks plates by hand to remove premarked, defective resistors. Fills out job order and production report. Cleans machine and work station, using brush. Carries magazines to storage room and picks up box of plates for next work order. GOE 06.04.19 PD L 08 09 10 15 M1 L1 SVP 3 SOC 7679

726.685-022 DEFLASH AND WASH OPERATOR (electronics)

Tends equipment that automatically removes rubber flash from resistor ladders (rubber encased resistors) and cleans ladders: Loads resistor ladders into feed chute of machine and starts machine that automatically conveys resistor ladders through abrading chamber that removes flash from ladders. Visually inspects ladders to ensure that flash has been removed. Turns knob to adjust conveyor speed, if necessary, to increase or decrease abrading time. Clears jams on conveyor, using tweezers. Hits chamber of machine with mallet to loosen packed plastic abrading beads. Removes deflashed resistor ladders from conveyor, by hand, and places ladders in

726.685-026

wire basket for subsequent cleaning and rinsing. Hangs basket of ladders on travel arm of wash equipment and starts equipment that ultrasonically cleans and rinses deflashed ladders in chemical baths. GOE 06.04.19 PD M 08 09 15 M1 L1 SVP 3 SOC 7679

726.685-026 DIE ATTACHING MACHINE TENDER (electronics)

Tends *die* attaching machine that bonds dies to semiconductor packages. Loads package carriers, magazines containing dies, and gold pieces, used to attach dies to packages, into designated slots of machine. Starts machine that automatically positions and melts gold on packages and positions dies in packages to form assembled semiconductor packages. Observes operation of machine to ensure that alignment of packages, gold, and dies meets company specifications, using video monitor. Turns knobs on machine to adjust alignment of parts assembled, regulate operation speed, and set temperature of molten gold. Removes magazines of packages for further processing. GOE 06.04.09 PD S 08 09 10 15 17 M1 L2 SVP 2 SOC 7539

726.685-030 DIE TESTER (electronics)

Tests voltage of *dies* containing individual devices, such as diodes and transistors, using computerized testing system, to ensure that dies meet company and manufacturer specifications: Reads production sheets and computer code books to determine test instructions and codes. Keys instructions and codes into computer, using computer terminal. Pours dies into equipment bowl that automatically conveys each die to probe, tests voltage of each die, and sorts dies into specified bottles. Observes equipment operation to detect misfeeds, using built-in microscope. Maintains production records. Records voltage reading on bottle labels. Cleans and maintains testing equipment. GOE 06.03.02 PD L 08 09 10 15 M2 L2 SVP 3 SOC 783

726.685-034 LEAK TESTER, SEMICONDUCTOR PACKAGES (electronics)

Tends testing equipment that detects leaks in semiconductor packages: Loads tubes containing semiconductor packages into cannister. Places loaded cannister in equipment that replaces air in cannister with liquid freon or flushes cannister with radioactive isotopes. Pushes buttons and flips switches to activate equipment. Removes loaded cannister and places either cannister or tube of semiconductor packages in leak testing equipment, such as bubble pot or geiger counter tank, that detects gross and fine leaks in semiconductor packages. Inspects tube of packages in bubble pot, using magnifying glass, to identify packages with bubbles, indicating gross leaks. Observes control panel of geiger counter tank to identify radioactive semiconductor packages, indicating fine leaks. Removes tubes and cannisters from leak detection equipment and places defective semiconductor packages in containers, using tweezers. Places accepted semiconductor packages in tubes, using tweezers. Maintains production records. GOE 06.03.02 PD M 08 09 10 15 17 M1 L2 SVP 2 SOC 6881

726.685-038 REFLOW OPERATOR (electronics)

Tends reflow equipment that melts solder on printed circuit boards (PCBs) to redistribute and fuse solder on boards to improve appearance, hardness, and solderability for PCB component assembly: Immerses boards in cleaning solution or places boards in cleaning machine that cleans and removes contaminants from boards before reflow process. Starts reflow equipment and adjusts conveyor speed and temperature of infrared heating units to meet specifications. Feeds PCBs onto conveyor of equipment that applies liquid flux and infrared heat to boards to melt, redistribute, and fuse existing solder on boards and cleans, rinses, and dries boards following reflow process. Observes boards moving on conveyor to monitor flow and operation of reflow process. Removes boards upon completion of process and inspects boards for reflow process defects. May add chemicals to flux solution. May tend soldering equipment. May tend reflow equipment that automatically cleans, rinses, and dries boards before and after reflow process. GOE 06.04.19 PD M 08 09 15 17 EC 13 M2 L2 SVP 2 SOC 7533

726.685-042 ROD TAPE OPERATOR (electronics)

Tends rod tape machine that separates and tapes ceramic coated aluminum rods and winds tape containing rods onto reels for subsequent processing: Places rods onto feed tray of taping machine that aligns rods in parallel configuration, applies tape to secure rods in place, and winds taped rods onto reel. Monitors operation of machine to detect malfunctions. Replaces empty tape rolls and removes full reels of taped rods from machine. May perform duties as described under **SCREENER OPERATOR** (any ind.) 599.685-082 to separate defective slugs (rods cut to specified lengths, approximately one inch or less). GOE 06.04.19 PD M 04 06 08 09 10 M1 L1 SVP 3 SOC 7679

726.685-046 SAW OPERATOR, SEMICONDUCTOR WAFERS (electronics) scriber.

Tends sawing machine that automatically scribes semiconductor wafers prior to separating wafers into individual *dies*: Flips switches and presses

buttons to activate sawing machine. Places wafer mounted on laminated plastic onto movable chuck of sawing machine, using tweezers. Presses buttons and turns knobs and dials to adjust sawing specifications and to start sawing cycle. Monitors sawing cycle, using magnified viewer, to verify that wafers are scribed according to company specifications. Turns knobs and presses buttons to adjust sawing cycle if required. Removes scribed wafer from machine, using tweezers, and places wafer in container. Maintains production records. May mount wafers on plastic laminate, using mounting device. May visually inspect semiconductor wafers to identify misalignment of scribe lines. May maintain and clean sawing machine. GOE 06.04.09 PD S 08 09 10 15 18 M1 L2 SVP 3 SOC 7678

726.685-050 SOLDER-LEVELER, PRINTED CIRCUIT BOARDS (electronics)

Tends processing equipment that prepares and applies solder to copper circuit areas of printed circuit boards (PCBs) or panels: Reads process specifications and activates equipment units, such as conveyors, sprayers, pumps, brushes, air knives (blower mechanism), and solder bath. Adjusts equipment controls to regulate processing factors, such as temperatures, pressures, and speeds, according to specifications. Feeds boards on motorized conveyor leading into series of processing units, such as sprayers, brushes, dryers, and flux rollers, that clean copper circuit areas and apply flux preparatory to solder application. Removes boards from precleaning equipment conveyor and clamps boards to feeding mechanism of solder leveling equipment. Pushes button to activate equipment that automatically lowers board into molten solder bath, lifts boards out of bath, and moves boards past hot-air knives that smooth solder off non-copper areas. Monitors equipment operation and corrects minor malfunctions, such as board misfeeds, conveyor speeds, and temperature settings. Removes board from solder equipment and visually examines boards for completeness of soldering. Notifies supervisor of equipment malfunctions and board defects, such as discolored, missing, or uneven solder. May reroute defective boards through processing equipment to correct defects. May maintain production records. GOE 06.04.21 PD L 08 09 10 15 19 EC 13 M2 L2 SVP 3 SOC 7543

726.685-054 TESTER, SEMICONDUCTOR PACKAGES (electronics)

Tends automatic equipment that test functions of semiconductor packages: Reads production documents to determine test specifications. Inserts specified test program (magnetic card) in test equipment to program equipment. Places tubular magazines containing semiconductor packages in feeder mechanism of equipment. Flips switch to activate test cycle. Monitors operation of test equipment to detect misfeeds. Sorts tested semiconductor packages into specified containers. Maintains production records. May tend centrifuge or temperature-cycle machine that places semiconductor packages under stress to cause circuit failure of weak sections during subsequent testing. GOE 06.03.02 PD L 08 09 10 15 17 M2 L2 SVP 3 SOC 783

726.685-058 WAFER MOUNTER (electronics)

Tends press that mounts semiconductor wafers in templates for polishing: Cleans templates, using cleaning solution and brush or towel, or tends machine that automatically cleans templates. Places cushion in template depressions and places wafers on cushion, or places wafers on waxed template. Positions templates in press and activates press that presses wafers into templates. May tend machine that automatically removes polished wafers from templates. May tend machine that laps templates to restore flatness. May tend press that attaches template to carriers before mounting wafers. GOE 06.04.09 PD M 08 09 15 M1 L2 SVP 2 SOC 7679

726.685-062 PROGRAMMING EQUIPMENT OPERATOR (electronics) die equipment operator; prom burn-off operator.

Tends equipment that automatically transfers programmed information onto integrated circuits (ICs) on *dies* or IC packages, such as PROMs (programmable read only memory): Reads work order that accompanies ICs for processing to determine programming specifications. Secures master PROM or die in equipment. Keys in codes, using computer keyboard and presses buttons to activate equipment that reproduces master program in programmer. Observes digital displays on equipment to ensure that master program is not defective and to determine when reproduction of program is completed in programmer. Positions blank PROMs and pushes lever to lock PROMs in sockets of programmer; or positions blank dies on platform of die probe equipment, views dies through microscope, and turns knobs on equipment to position specified areas of dies under probes prior to programming. Presses switches to activate programmer that reproduces program on blank PROMs or dies. Observes defect indicator lights to detect defective PROMs or dies and to determine completion of programming. Maintains production records. May load defective PROMs into equipment that exposes PROMs to ultraviolet light for timed intervals to erase programmed information in order to reuse PROMs. GOE 06.04.19 PD S 08 09 10 15 18 M2 L3 SVP 3 SOC 7679

726.686-010 WAVE-SOLDER OFFBEARER (electronics)

Removes printed circuit boards (PCBs) from discharge conveyor of automatic wave-soldering machine following completion of soldering process: Places empty carrier on workbench at discharge end of wave-soldering machine conveyor. Removes pallets containing wave-soldered PCBs from conveyor and places pallets in carrier. Examines boards to detect defects, such as missing solder, spots, or warped boards. Submits defective boards to supervisor for approval or correction of defects. Stacks acceptable boards on carrier or in tub for final assembly. May assist others in setting up and operating equipment for wave-soldering process. May assist in cleaning equipment, using scraper and air hose. May complete production report for supervisory use. GOE 06.04.40 PD M 08 09 15 18 19 M1 L2 SVP 2 SOC 8725

726.687-010 ELECTRONICS WORKER (electronics)

Performs one or combination of duties to clean, trim, or prepare components or parts for assembly by other workers: Receives work directions from supervisor or reads work order for instructions regarding work to be performed. Cleans and deglosses parts, using various cleaning devices, solutions, and abrasives. Trims flashing from molded or cast parts, using cutting tool or file. Applies primers, plastics, adhesives, and other coatings to designated surfaces, using applicators, such as spray guns, brushes, or rollers. Fills shells, caps, cases, and other cavities with plastic encapsulating fluid or dips parts in fluid to protect, coat, and seal them [ENCAPSULATOR (elec. equip.; electronics) 726.687-022]. Prepares wires for assembly by measuring, cutting, stripping, twisting, tinning, and attaching contacts, lugs, and other terminal devices, using a variety of handtools and power tools and equipment [WIREWORKER (elec. equip.; electronics) 728.684-022]. Positions and fastens together parts, such as transformer laminates, glass tube laminates, electron tube mounts and cages, variable capacitor rotors and stators, paper loudspeaker cones, and shells and cases for various other components, using handtools and power tools. Charges rectifier plates, using current-generating device. Prints identifying information on component shells, using silk screen, transfer press, or electro-etch printing devices or equipment. Moves parts and finished components to designated areas of plant to supply assemblers or prepare for shipping or storage. Loads and unloads parts from ovens, baskets, pallets, and racks. Disassembles and reclaims parts, using heating equipment and handtools. Maintains records of production. May load mold with wound resistor forms and pour molten metal into mold to encase resistors. May be designated according to work performed as CAPACITOR ASSEMBLER, VARIABLE (electronics); CLEANER (electronics); CRIMPER (electronics); DIE CASTER (electronics); INSULATOR ASSEMBLER (electronics); METAL-BASE RECLAIMER (electronics). Additional titles: PAPER-CONE MAKER (electronics) I; RECTIFIER-PLATE CHARGER (electronics); TAPER (electronics); TINNER (electronics); WIRE STRIPPER (electronics). GOE 06.04.34 PD L 08 09 15 17 19 M1 L2 SVP 2 SOC 774

726.687-022 ENCAPSULATOR (elec. equip.; electronics) sealer; tanker.

Performs any one or combination of duties to encapsulate electrical and electronic parts, components, and assemblies with epoxy, plastic, or other material to protect them from damage and deterioration, using any of the following methods: (1) Positions module or transformer case under outlet of tank containing encapsulating fluid. Moves controls to force preset amount of fluid through opening in module or transformer case. (2) Places components on dipping rack or hooks, dips components in encapsulating fluid, and places dipped components on drying frame or in oven to harden coating. (3) Fills capacitor shells or semiconductor caps with encapsulating fluid or applies encapsulating fluid to specified surfaces of component, using manual or electrically-powered syringe or other applicator. (4) Tends compression molding machine to mold protective casing around component. May place component in mold and pour encapsulating fluid around it. May heat component in oven or curing device prior to and/or after encapsulating to remove moisture or cure encapsulating material. May inspect encapsulation for defects, such as chips and pinholes. May stamp encapsulated components with color code or trademark. May be designated according to method used as DIPPER (elec. equip.; electronics); FILLER (elec. equip.; electronics); POTTER (electronics). May weigh and mix materials, following formula, and be designated COMPOUND MIXER (elec. equip.; electronics). May apply bonding solution to bond flexible printed circuit boards to rigid boards, using potting equipment and be known as BONDER (electronics). GOE 06.04.24 PD L 08 09 10 18 19 M1 L1 SVP 2 SOC 774

726.687-026 LAMINATION ASSEMBLER, PRINTED CIRCUIT BOARDS (electronics)

Assembles layers of laminating materials and printed circuit board (PCB) panels to prepare multi-layer PCB panels for laminating process: Assembles and aligns inner and outer layers of PCB panels and laminating materials over guide pins in holding fixture to prepare multi-layer PCB panels for laminating process, following standard procedures. Examines inner layers of panels as assembled for dents, chips, dust, or flaws. May tend laminating machine that bonds assembled panels to form multi-layer PCB panels. May heat materials in oven to remove moisture prior to laminating process. GOE 06.04.34 PD M 08 09 10 15 M2 L2 SVP 2 SOC 772

726.687-030 LOADER, SEMICONDUCTOR DIES (electronics)

Loads *dies*, using vacuum wand, into carriers that hold and protect dies during fabrication of semiconductor packages: Pours dies from container

onto filter paper. Picks up and places dies circuit-side up in indentations in carrier, using vacuum wand. Secures lid on carrier, using manual pressure. May clean dies prior to loading, using solutions and cleaning equipment. May sort semiconductor devices to remove defective devices marked in inspection department. GOE 06.04.40 PD S 08 09 10 17 19 M1 L2 SVP 2 SOC 7759

726.687-034 MASKER (electronics)

Applies liquefied soldering mask to designated terminal areas on underside of printed circuit boards (PCBs) to prevent molten solder from collecting on circuitry during wave soldering process, using squeeze bottle of soldering mask and following pre-masked sample of PCBs and verbal instructions. Removes excess mask, using towel. Places masked PCBs in storage racks for movement to next work station. GOE 06.04.23 PD S 08 09 13 15 M1 L2 SVP 2 SOC 772

726.687-038 PREASSEMBLER, PRINTED CIRCUIT BOARD (electronics)

Attaches preassembled components, such as terminal pins, connectors, and labels, to printed circuit boards (PCBs) and stamps identification codes on boards preparatory to further assembly: Examines PCBs for illegible issue numbers and removes and restamps numbers, using eraser and handstamp. Reads work specifications to determine type of labels, components, and locations on PCBs to attach items. Cuts component pins (wires) to specified length, using wire cutters, inserts pins in specified holes on PCBs, and secures pins to PCBs, using holding block and hammer or pneumatically-powered stamping device. Affixes labels and tape to boards and stamps identification codes on boards. GOE 06.04.34 PD L 08 09 10 15 M1 L2 SVP 2 SOC 774

726.687-042 SEALER, SEMICONDUCTOR PACKAGES (electronics)

Positions and seals solder-coated lids or tops on semiconductor packages, using heated chuck or automatic furnace: Places lids on semiconductor packages, using tweezers. Places semiconductor packages on heated chuck in nitrogen box or places container of semiconductor packages on furnace conveyor to heat and seal semiconductor packages. Maintains production records. GOE 06.04.23 PD S 08 09 10 15 17 EC 03 M1 L1 SVP 2 SOC 772

726.687-046 WAFER BREAKER, SEMICONDUCTORS (electronics)

Breaks semiconductor wafers into individual *dies*, using equipment and handtools: Places semiconductor wafer on pad, using tweezers. Taps wafer, using pencil tip, awl, or tweezers to break wafer into quarters. Places semiconductor wafer quarter on plastic square. Presses semiconductor wafer, using roller or air pressure equipment, to break wafer quarter into individual dies. Places individual dies in containers, using vacuum wand or brush. May break wafers, using chemical solutions and breaking equipment. GOE 06.04.34 PD S 08 09 10 15 17 M1 L2 SVP 2 SOC 7759

728.684-022 WIREWORKER (elec. equip.; electronics) wire-preparation worker.

Performs any combination of tasks involved in cutting, stripping, taping, forming, and soldering wires or wire leads of components used in electrical and electronic units, such as communication equipment, aircraft, ignition systems, electrical appliances, or other electrical or electronic control systems: Cuts wires to specified lengths, using wire cutters and ruler or measuring *jig*. Strips insulation from wire ends, using stripping tool. Twists wire ends and dips them into pot of solder to prevent fraying. Solders wires to specified connectors and terminals, using soldering iron, or crimps connectors and terminals to wire ends, using handtools. Wraps numbered or colored identification tape around wires. Rolls wires of identical number or color together and attaches tag to roll. Inserts wires into plastic insulation tubing. Bends, cuts, and crimps component leads to prepare component for mounting on printed circuit board or other assembly, using handtools. May insert wires in automatic numbering or color-coding machine to imprint part numbers or color codes. May insulate wire or component leads by dipping them into paraffin solution. May paint various protective coatings on wires with brush. May test wire and cable assemblies and repair defective assemblies. May use automated equipment or bench-mounted devices to cut, strip, bend, or crimp wire. May be designated by type of wire worked as COMPONENT LEAD FORMER (electronics). GOE 06.04.34 PD L 08 09 10 15 17 18 19 M1 L2 SVP 2 SOC 7755

728.685-010 WIRE-STRIPPING-AND-CUTTING-MACHINE OPERATOR (any ind.)

Tends machine that automatically straightens, cuts to length, and strips insulation from ends of wire for use in electrical installation or assembly: Places reel of specified wire onto play-out spindle and threads end through feed rolls. Adjusts controls of machine to accommodate thickness of wire and to cut and strip wire to specifications. Starts machine and observes operation. Places boxes under ejection roll or manually removes and bundles or boxes finished pieces. Examines wire for conformance to specifications and removes defective pieces. Observes automatic counter or counts finished pieces and records data on tags or boxes. May install drive adjustment and tension or adjustment rolls in machine. May install ram and dies which bend finished pieces to specified angles. May replace dull or broken cutter or stripping blades. May tend machine that automatically bends wire to specified angle or prints identification onto insulation.

729.360-010

May tend machines that crimp and attach connectors and terminals to wire ends. May be designated according to type of wire cut as LEAD-WIRE CUTTER (electronics). GOE 06.04.09 PD L 08 09 10 15 16 17 M1 L2 SVP 2 SOC 7529

729.360-010 PROBE TEST EQUIPMENT TECHNICIAN, SEMICONDUCTOR WAFERS (electronics)

Sets up and maintains wafer probe and test equipment that test electrical properties of circuits on semiconductor wafers, following setup manual specifications: Reads process sheet and setup manual to determine test program required and setup specifications. Inserts test probe card in wafer probe equipment. Inserts floppy disk or magnetic tape into slot on test equipment and pushes buttons on test equipment or types commands on keyboard to enter test program. Places sample wafer from specified wafer lot on wafer probe equipment chuck, using vacuum wand or tweezers. Observes wafer through microscope attached to wafer probe equipment and turns knobs on equipment to align and position wafer circuit under probes on probe card, according to setup manual specifications. Activates test equipment to make trial run to ensure correct equipment setup and informs equipment operator that setup is completed. Removes and sharpens worn probes, using handtools and burnishing blade. Replaces defective probes or probe cards and solders joints on replacement probes, using soldering iron. Tests electrical continuity of cable connecting wafer probe and test equipment, using ohmmeter. Replaces defective connector cables. Removes, cleans, and refills reservoir of ink on wafer probe equipment that marks defective circuits with ink spot. GOE 06.01.02 PD L 08 09 10 12 13 15 17 M2 L3 SVP 5 SOC 7479

730.281-058 BOW MAKER (musical inst.)

Constructs bows for stringed instruments, using handtools and power tools: Selects specified wood to shape bow, utilizing knowledge of bow styles. Cuts and shapes bow blank from wood, using bandsaw, plane, file, and knife. Positions blank over alcohol flame and bends blank to obtain desired curve of bow. Cuts, glues, and solders ornamental material, such as ebony, ivory, tortoise shell, and silver, to form parts of bow, such as frog and ferrule, using bandsaw, torch, and caliper. Drills or chisels mortise in lead of bow or frog to insert bow hair, using lathe, chisel, and hammer. Ties knot in end of bow hair, combs hair to straighten strands, using brush, and inserts hair into mortise, through ferrule, and into frog of bow. Secures bow hair in place with wooden wedge. Smooths and stains bow to achieve desired appearance, using sandpaper, stain, and rags. Adjusts weight, balance, and stiffness of bow by adding or removing decorative material, using handtools. Replaces bow hair [BOW REHAIRER (any ind.) 730.684-022] and repairs bows [VIOLIN REPAIRER (any ind.) 730.281-050]. GOE 05.05.12 PD L 08 09 10 11 15 17 M2 L3 SVP 6 SOC 6861

732.364-014 SKI-BINDING FITTER-AND-REPAIRER (sports equip.)

Fits and attaches bindings to skis, according to customer needs and ski and boot specifications, and repairs ski bindings and skis, using power tools and handtools: Records customer statistics, such as height, weight, skiing experience, and skiing habits to maintain reference file. Reviews customer data and ski manufacturer specifications to determine method of locating and attaching binding to skis. Measures length of ski-running surface with ruler to locate center of skis. Places skis in clamps, positions drilling-jig on skis, and drills holes, using electric hand drill and utilizing knowledge of composition of skis. Screws bindings to skis, using screwdriver, and secures boots in bindings to ensure required flexibility. Replaces defective bindings, cements separated layers of laminated skis, using epoxy resin and clamps, and sharpens ski edges, using file, to repair skis. Occasionally sells skis when sales staff are busy. GOE 06.02.24 PD L 08 09 10 12 13 15 17 M3 L3 SVP 5 SOC 7755

733.364-010 QUALITY-CONTROL TECHNICIAN, INKED RIBBONS (pen & pencil)

Inspects and tests office machine ribbons to ensure adherence to order specifications and company quality standards, using testing equipment: Inspects production line operations, such as aligning ribbon on spool, joining ribbon ends, placing ribbon in cartridge, and packing ribbon for shipment to ensure quality standards are met. Inserts sample of inked ribbon and paper in typewriter, types several symbols on paper, and places paper on reflectance testing machine to obtain ink impregnation reading. Weighs ribbon sample to verify ink impregnation level, using scale. Tests and measures tensile strength and thickness of ribbon sample, using tension testing machine and measuring instrument. Records test results to maintain inspection log and notifies workers when ribbon fails to meet specifications. Completes final inspection form to release product for shipment. GOE 06.03.02 PD L 09 10 15 17 18 M3 L3 SVP 5 SOC 782

734.685-014 BUTTON MAKER AND INSTALLER (house furn.)

Tends button machine that assembles buttons and inserts buttons into pillow and cushion shells prior to stuffing: Positions specified metal button dies in machine, according to work order, and flips switch to activate machine. Turns knob to set counter that tallies number of buttons assembled. Places button covers and metal button parts in specified sequence in dies and depresses pedal to activate automatic assembly cycle of machine. Picks up buttons from machine discharge bin and cuts away excess covering material, using scissors. Inserts one end of button ties into openings on back of buttons, places opposite end of ties into inserting tool, and pushes

tool through precut holes in pillow or cushion shells. Removes ties from tool and inserts ties into openings of other buttons on opposite side of shells. Places assembled items in storage area. Periodically cuts additional button covers from specified fabrics, using handpress. GOE 06.04.09 PD M 08 09 15 19 M1 L1 SVP 2 SOC 7679

739.134-014 SUPERVISOR, DISPLAY FABRICATION (smoking pipe)

Supervises and coordinates activities of workers engaged in fabricating smoking pipe displays: Studies sketches to determine patterns necessary for fabrication or to devise procedure to be used in absence of patterns. Verifies setup of woodworking machines, using tape ruler and information from sketch or pattern. Supervises work of DISPLAY FABRICATOR (smoking pipe) 860.684-022. Constructs model displays, using handtools, sketch, and woodworking machines, such as bandsaw and variety saw. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.04.01 PD M 04 08 09 10 11 12 13 15 18 19 M3 L3 SVP 7 SOC 71

739.261-010 EXHIBIT BUILDER (museum) exhibition specialist; exhibit technician; museum craft worker.

Constructs and installs museum exhibit structures, electric wiring, and fixtures of materials, such as wood, plywood, and fiberglass, using handtools and power tools: Studies sketches or scale drawings for temporary or permanent display or exhibit structures, such as framework, fixtures, booths, or cabinets to determine type, amount, and cost of material needed. Confers with exhibit planning and art personnel to discuss structural feasibility of plans and to suggest alternate methods of displaying objects in exhibit. Cuts, assembles, and fastens parts to construct framework, panels, shelves, and other exhibit components of specified materials, using handtools and power tools. Sprays or brushes paint, enamel, varnish, or other finish on structures, or creates special effects by applying finish with cloth, sponge, or fingers to prepare structure for addition of fittings. Mounts fittings and fixtures, such as shelves, panelboards, and shadowboxes to framework, using handtools or adhesives. Installs electrical wiring, fixtures, apparatus, audiovisual components, or control equipment in framework, according to design specifications. Installs or affixes murals, photographs, mounted legend materials, and graphics in framework or on fixtures. Assembles, installs, or arranges structures in exhibit galleries working with maintenance and installation personnel. Tests electrical, electronic, and mechanical components of exhibit structure to verify operation. May maintain inventory of building materials, tools, and equipment, and order supplies as needed for construction of exhibit fixtures. May assign duties to and supervise work of carpentry, electrical, and other craftworkers engaged in constructing and installing exhibit components. May assist in placement of display accessories and collection objects or specimens. May be designated according to speciality as EXHIBIT CARPENTER (museum) or EXHIBIT ELECTRICIAN (museum) or job location as PLANETARIUM SKY SHOW TECHNICIAN (museum) or SCIENCE CENTER DISPLAY BUILDER (museum). GOE 01.06.02 PD M 08 09 10 15 17 18 M4 L4 SVP 7 SOC 6862

739.684-186 PIPE STEM REPAIRER (smoking pipe)

Repairs or replaces defective pipe stems, using stem moulder, press, grinding wheel, and handtools: Inspects pipes to determine defects. Removes and replaces defective screw-stem assemblies, using screwdriver, glue, press, and stem moulder. Smooths ends of unlevel pipe bowl shank to eliminate cracks between shank and stem, using grinding wheel. Heats defective adjustomatic stems, inserts stems in pipe bowl shank, and twists stems, using pipe stem wrench, to adjust alignment of stem and bowl. Replaces broken push-bit stems, using press machine. GOE 06.04.34 PD S 08 09 10 15 M1 L1 SVP 6 SOC 7679

739.687-206 BRUSH LOADER AND HANDLE ATTACHER (brush & broom)

Attaches plastic handles to wire ends of brush heads to assemble household brushes: Positions brush heads in fixtures attached to machine conveyor, following specified procedures. Aligns ends of plastic brush handles with heated wire ends of brush heads on conveyor, pushes hollow end of handles against heated wires, and twists handles to secure brush heads to handles. Occasionally adjusts temperature control of induction welder that heats brush head wire ends to maintain specified setting. GOE 06.04.34 PD L 08 09 15 17 M1 L1 SVP 2 SOC 825

739.687-210 PIPE STEM ALIGNER (smoking pipe)

Inspects and aligns smoking pipe stems with pipe bowls, using pipe stem wrench, according to specifications. GOE 06.04.34 PD M 08 09 10 15 M1 L1 SVP 1 SOC 7759

749.131-014 SUPERVISOR, PAINT DEPARTMENT (any ind.)

Supervises and coordinates activities of workers engaged in mixing paint, preparing surface of object to be painted, painting object, and drying or baking paint on object: May compute paint mixture formulas. May plan and program sequence of tasks for robots in spray paint booth. May move controls to adjust furnace temperatures, paint supply, hydraulic pressure, or conveyor speeds. May inspect painted surfaces for paint coverage, flow of paint, and color quality. May measure thickness and viscosity of paint applied to objects, using measuring devices. May be required to have experience with particular materials or products painted and application methods. Performs duties as described under SUPERVISOR (any

ind.) Master Title. GOE 06.02.01 PD L 10 12 13 15 17 19 EC 07 M4 L3 SVP 7 SOC 71

749.684-050 PAINT TRIMMER, PIPE BOWLS (smoking pipe)

Trims excess paint from metal bands on shanks of smoking pipes, using paint trimmer and file: Examines pipe stummels to detect metal bands with excess paint. Places stummel bowl over paint trimmer stud, lowers trim blade, and rotates pipe stummel to trim off excess paint. Files excess paint from metal band around pipe bowl shank on designated pipe styles, using file. May operate tumbler barrel to smooth pipe stems and perform duties as described under TUMBLER OPERATOR (any ind.) 599.685-110. GOE 06.04.34 PD M 08 09 10 15 M1 L1 SVP 2 SOC 7679

749.684-054 WALLCOVERING TEXTURER (wallpaper)

Applies paint to decorate textured wallcoverings in prescribed pattern: Reads production card and paint sample book to determine information, such as colors specified, patterns, and methods of paint application. Positions roll of wall covering stock on worktable, and tapes end of stock to takeup reel of drier used to dry painted stock. Drips specified paint onto stock, using stick or sponge depending on paint application method specified for pattern, dips paint roller into paint solvent, and spreads paint onto stock, according to pattern. Places blotting paper on wet paint, and rubs paper to remove excess paint and achieve pattern design. Pushes button to activate drier take-up reel to move painted wall covering into drier and unpainted stock onto worktable. Removes dried rolls of wallcovering and repeats process, using additional paints to achieve final pattern. Observes wallcovering in drier for breaks and tapes wallcovering together to repair breaks. Sprays water repellent on specified wallcovering, using spray gun. GOE 06.04.33 PD M 08 09 15 19 M1 L2 SVP 3 SOC 7756

749.687-034 PIPE RACKER (smoking pipe)

Inserts paper into pipe bowls and inserts dummy stems into bowl shanks to protect openings in stummels during painting process: Places pipes over pegs on bowl tray in specified sequence. Twists and removes stems, places stems in corresponding position on pipe stem tray, places dummy stem in pipe bowl shank, inserts paper into pipe bowl to plug bowl during painting. Replaces plugged bowl on peg. Examines painted pipe bowls, following painting process, to verify conformance to company standards. Removes paper from bowl, using pick. Twists and removes dummy stems and places tray of painted bowls in heated storage area to cure paint. GOE 06.04.34 PD L 08 09 10 15 M2 L2 SVP 3 SOC 8769

754.130-010 DECORATING-AND-ASSEMBLY SUPERVISOR (fabric, plastics prod.)

Supervises and coordinates activities of workers engaged in welding and assembling components into plastic products and printing logos on products: Inspects processed plastic components and products to verify conformance to customer specifications and company standards. Demonstrates machine operations to new employees and assigns trainees to work with experienced workers for continued on-the-job training. Diagnoses machine malfunctions and assists workers in determining corrective actions required. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.04.01 PD L 08 09 10 12 13 15 16 18 19 20 M2 L3 SVP 5 SOC 71

754.685-014 ASSEMBLY-MACHINE TENDER (fabric, plastics prod.)

Tends variety of machines that weld and assemble components into plastic products and stamp or silk-screen logos on products: Positions plastic products or components on fixtures of hot-stamp, silk-screening, and ultrasonic welding machines, and presses buttons or treadles to actuate machines that apply logos to product or weld components together. Dumps plastic components into vibrating hoppers of assembly machine that automatically assembles components to form plastic products. Observes machine operations to detect malfunctions and clears jams and blockages, using screwdriver. Positions plastic bottles or components on conveyor or turntable of hot-stamp, flame cleaner, or stamping machines that automatically apply logos or remove molding residue from bottles or fit components into single part. Inspects decorated and assembled finished products for defects, such as discolored logos or misaligned bottle caps. Packs finished products into cartons. GOE 06.04.20 PD S 08 09 10 15 17 18 19 M1 L1 SVP 2 SOC 7549

759.684-070 SPLICER (per. protect. & med. dev.)

Splices ends of safety ropes to prevent raveling: Cuts polypropylene rope to specifications, using electric knife. Inserts end of rope through protective plastic washer in eye of ring or hook. Unravels and interweaves strands to retain ring or hook at end of rope. Holds spliced section of rope over heated coil to fuse strands. GOE 06.04.34 PD L 08 09 10 17 M1 L1 SVP 2 SOC 772

761.281-018 MARQUETRY WORKER (furn.)

Designs, fabricates, and inlays marquetry in custom furniture: Designs and draws marquetry patterns to scale, using drafting tools. Computes quantities of wood needed for shaping marquetry design blocks, and selects woods, such as ebony, teak, and walnut, for marquetry designs according to color, strength, and grain. Shapes pieces of wood to form pattern, using power saws, handsaws, planers, and jigs. Measures wood pieces to verify workmanship, using calipers, scales, and pattern. Applies glue to wood pieces, assembles pieces according to pattern, and clamps pieces between boards to prevent damage and to form marquetry block. Selects

wood in which pattern will be mounted and cuts openings in surface of wood and specified piece of furniture to form inlay openings for sections of marquetry block, using routers, chisels, and planers. Saws marquetry block to obtain cross-sections of specified thickness for inlay. Glues and places sections into inlay openings of wood surface and positions wood with marquetry design into opening on furniture. Trims design to fit opening, and sands surface of furniture to attain desired finish, using handtools and power sander. Cleans furniture and applies stain, lacquer, or shellac in prescribed order to finish custom furniture. GOE 05.05.08 PD L 04 08 09 10 15 17 19 EC 07 M4 L3 SVP 7 SOC 6839

761.684-050 PANEL CUTTER (furn.)

Cuts plywood or particle board to form end panels for display fixtures, using portable router: Reads work order to determine style of panel and type of woodstock to be used. Selects pattern and places pattern on woodstock, such as plywood or particle board. Clamps pattern and woodstock to workbench. Guides portable router around edge of pattern to cut panel from woodstock. Cuts grooves in specified panels, using shaper. GOE 06.04.25 PD M 08 09 10 15 18 EC 08 M2 L2 SVP 2 SOC 7753

761.684-054 TOUCH-UP CARVER (smoking pipe)

Carves decorative designs on wood smoking pipes to correct defects, using carving machine or pneumatically-powered portable drill: Places designated carving bit in carving machine or drill chuck and tightens bit in chuck, using chuck wrench or pliers. Pushes button to start rotation of carving bit. Holds smoking pipe bowl and shank against bit to recarve designated pattern to specified depth on patched pipe or to correct carving defects. GOE 06.04.25 PD M 08 09 10 15 17 M1 L1 SVP 3 SOC 7639

761.684-058 WIRE BRUSH OPERATOR (smoking pipe)

Cuts pattern on smoking pipe bowl, using rotating wire brush: Places wire brush attachments over wire brush machine shaft and secures brush on shaft, using wrench. Pushes lever to start wire brush rotating. Holds and turns pipe bowl against rotating wire brush, using varying pressure, to cut pattern on specified surfaces of bowl. GOE 06.04.25 PD M 08 09 10 15 M1 L1 SVP 2 SOC 7639

762.687-018 BOX REPAIRER (wood, box) II box-shook patcher.

Examines box shoos and blanks for cracks, knots, holes, and loose binding wire. Fills defects with cement and wood and staples loose binding wires to sides of boxes. GOE 06.03.02 PD L 04 08 09 10 15 M1 L1 SVP 3 SOC 782

763.134-014 SUPERVISOR, FURNITURE ASSEMBLY (furn.)

Supervises and coordinates activities of workers engaged in assembling wood furniture: Determines amount, type, and availability of furniture subassemblies and supplies required for furniture assembly. Examines samples of furniture assembled to ensure conformance to specifications, and instructs workers in methods of correcting defects. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 10 12 13 15 M3 L3 SVP 7 SOC 711

763.380-010 FURNITURE RESTORER (museum) furnishings conservator.

Restores and preserves historical furniture in collection of museum or similar institution, using variety of handtools and power tools and applying knowledge of antique fabrics and wood furniture: Examines furnishings to determine type of material, extent of deterioration or damage, or date of construction to verify authenticity and plan restoration. Sets up and operates variety of woodworking machines to fabricate, repair, reinforce, and replace parts of furniture. Cuts, shapes, and attaches parts according to blueprints or drawings, using handtools. Matches materials for color, grain, and texture. Strips old finish from furnishings, using solvents and abrasives. Fills cracks, depressions, and other blemishes, using plastic wood or lacquer stick. Treats warped or stained surfaces to restore original contour and color. Glues or replaces veneer sections. Smooths surfaces, using power sander or abrasive material. Washes or bleaches furniture surfaces to prepare surface for application of finish. Selects coatings, such as stain, lacquer, or varnish according to type wood, and brushes or sprays material onto surface to protect surface and produce desired appearance. Polishes, sprays, or waxes finished pieces. Removes damaged or deteriorated coverings from upholstered furniture. Repairs, reinforces, or replaces components, such as springs, webbing, and padding. Selects fabric for new covering, using knowledge of period and style of furniture or following instructions of CURATOR (museum) 102.017-010. Tacks, sews, glues, or staples covering to furniture frame to attach upholstery. Refurbishes leather coverings of furnishings, using softeners, solvents, adhesives, stains, or polishes. Replaces damaged coverings with leather pieces of appropriate color, grain, and weight. Stencils, gilds, embosses, or paints designs or borders on restored pieces to reproduce original appearance. May advise curatorial staff on environmental conditions necessary for preservation of furnishings in exhibit and storage areas. May fabricate replicas of period furniture for use in exhibits. May be designated according to specialty as FINISH SPECIALIST (museum) or UPHOLSTERY RESTORER (museum). GOE 05.05.08 PD L 08 09 10 15 18 19 EC 05 07 M3 L4 SVP 6 SOC 683

763.681-010

763.681-010 FRAME REPAIRER (furn.)

Repairs frames of sofas and chairs damaged during upholstery in furniture plant: Removes upholstery, burlap, or webbing to expose splits or breaks in frames. Glues and secures splits with screws, dowels, or nails, using handtools. Cuts out or chisels away broken parts of frames, using handsaw, portable powersaw, or hammer and wood chisel. Cuts replacement parts to fit adjacent parts of frames and glues and dowels replacement parts to frames. GOE 05.10.01 PD H 04 05 08 09 10 11 15 18 19 20 M3 L2 SVP 6 SOC 6179

763.687-030 CANE CUTTER (furn.)

Cuts cane and rattan for use in furniture manufacture: Places rolls of cane on holding device, and pulls cane to mark on work surface according to length specified; or positions rattan on work surface to cut ends for mitering. Pulls lever to lower blade and cut cane or rattan, according to instructions. Stacks cane and rattan for further processing. GOE 06.04.25 PD M 08 09 10 EC 08 M1 L1 SVP 1 SOC 7753

769.684-058 REPAIRER, VENEER SHEET (furn.)

Repairs defects in decorative veneer sheets and tapes veneer border to sheets: Holds veneer sheets against light and examines sheets for defects, such as splits, holes, thin spots, and untaped veneer strips. Moistens tape, using sponge, and presses tape to veneer splits to pull splits together, using flat pressing tool. Cuts and inserts splinters or sections of veneer in holes of sheet, using knife, sponge, and tape; or applies wood putty to opening in sheets, using putty knife. Sands wood particles that overlap veneer joints, using sandpaper and wood block. Positions and tapes shaped veneer borders around perimeter of veneer sheets to add decorative appearance. GOE 06.03.02 PD M 08 09 10 15 18 19 M1 L1 SVP 2 SOC 6179

769.687-058 BRIAR-WOOD SORTER (smoking pipe)

Sorts briar-wood blocks used in making pipe stummels, using metal gauge: Removes briar-wood block from bin and compares block with metal gauge to determine size classification of block. Tosses block into specified burlap bag, according to shape and dimensions of block. Discards scrap briar-wood. GOE 06.03.02 PD M 08 09 10 M1 L1 SVP 2 SOC 785

774.684-046 PATCHER (pottery & porc.)

Fills holes and attaches parts to greenware ceramic figures prior to firing: Breaks off pieces of clay of matching color used to patch greenware, and fills holes formed during casting. Applies water to clay, and shapes clay to contour of greenware, using handtools. Forms holes in greenware at designated locations to vent steam created during firing. Applies wet clay to designated locations on greenware, and attaches clay parts, such as heads, arms, legs, or musical instruments, to complete greenware figures. Smooths clay used to attach parts to figure. Inserts wire in specified greenware to form legs and feet, and adjusts wires to level greenware. Counts greenware and records total on forms for production records. Places greenware on trays, covers greenware with towels or sponge pads, and places trays on racks to await further processing. GOE 06.14.30 PD L 08 09 10 15 17 M1 L1 SVP 3 SOC 772

774.687-026 TESTER (pottery & porc.)

Tests toilet bowls for compliance with company standards, using any of following methods: (1) Positions water tank suspended from overhead rail over water inlet of toilets, and pulls lever to lower water tank gasket onto water inlet of bowls preparatory to flushing. Places rags in bowls and pulls handle of water tank to force water into bowls and flush rags through flush channels. Removes rags caught on obstructions or rough surfaces, using plunger. Marks bowls requiring smoothing of flush channels, using grease pencil. (2) Tips bowls, inserts tip of squeeze bottle containing dye into specified hole in base of bowls, and squirts dye into opening to detect leaks in bowls. Marks bowls to indicate leaks. (3) Places level in several directions across rim of bowls and observes bubble of level to determine levelness of bowls. Marks bowls to indicate need for further grinding of bowl base. Removes defective bowls from conveyor line for further processing. When using dye to test bowls, may be designated DYE TESTER (pottery & porc.); or when flush testing, may be designated FLUSH TESTER (pottery & porc.). GOE 06.03.02 PD H 08 09 10 15 19 M1 L1 SVP 2 SOC 783

780.684-134 UPHOLSTERER, ASSEMBLY LINE (furn.)

Upholsters one section of sofa, chair, or furniture frames, specializing in single assembly-line operation: (1) Attaches spring assembly section to seat and back of frame with clips or ties springs with twine and tacks ends of twine to frame. (2) Places padding and covering over seat springs and tacks or staples covering to frame to complete seat upholstery, using tack hammer or powered staple gun. (3) Places padding and covering over inside of arms and tacks or staples covering to frame to complete inside arms. (4) Places layers of padding over inside back, shaping padding to specifications, and tacks or staples covering over padding to make inside back. (5) Tacks or staples cardboard, padding, and upholstery material to top, side, and bottom rails of outside arms, fitting and shaping materials to obtain smooth contour. (6) Tacks or staples covering material to top, bottom, and side rails of back frame, and sews upholstery covering edges to adjoining inside back and outside arm coverings with needle and thread to complete upholstery of furniture piece. (7) Tacks or staples cover to bottom rails to enclose bottom area. May attach trimming material, such as gimp, braid, binding, skirts, and panels to upholstered frames, using

glue, staples, nails, or tacks. May screw leg units to frame. May be designated according to part or pieces upholstered as ARM MAKER (furn.); BACK MAKER (furn.); SEAT MAKER (furn.). GOE 06.04.27 PD L 08 09 15 18 M1 L1 SVP 3 SOC 772

780.687-062 BACK TUFTER (furn.)

Attaches tufting buttons to foam cushions for use in backs of upholstered furniture: Positions cushion on worktable and spreads and smooths upholstery fabric over cushion. Selects matching (color) button, punches button by hand through pre-cut hole in cloth and cushion, and secures button to cushion with spring washer. Forces cloth around button into pleats, using wedge and fingers. GOE 06.04.27 PD M 04 08 09 10 15 19 M1 L1 SVP 2 SOC 772

780.687-066 INSPECTOR (furn.)

Inspects wood frames and metal springs of upholstered furniture to ensure assembled parts meet company specifications: Examines wood furniture frames to detect defects, such as loose joints, splits, and warped areas. Marks defects with chalk for repair. Inspects metal springs installed in frames for defects, such as misalignment and faulty attachment to frame. Measures position of springs in frame, using ruler, to ensure assembly is mounted according to specification. Examines fabric covering spring assembly to ensure that fabric is taut and secured to springs. GOE 06.03.02 PD M 04 08 09 10 15 17 M2 L2 SVP 6 SOC 782

780.687-070 SKIRT PANEL ASSEMBLER (furn.) skirt clipper.

Fastens rigid plastic-coated fabric between upholstery skirt panel and liner, and presses panel for smoothness and shape, using steam iron and presser: Cuts threads joining sewn panels, using scissors. Presses panels right-side out, using hand steam iron. Cuts coated fabric from roll and inserts fabric between panel and liner and staples fabric to parts to impart body to panel prior to final assembly. Presses assembled panel to flatten seams and shape panel, using steam presser. Examines panel to ensure specifications are attained. Places pressed panels in designated area. GOE 06.04.27 PD L 08 09 10 M2 L2 SVP 3 SOC 772

781.361-010 ASSISTANT DESIGNER (garment)

Lays out, marks, and cuts muslin pattern and garment parts for manufacturer of women's sportswear, using design sketch, master pattern, and scissors: Traces outline of specified paperboard pattern onto muslin fabric, and cuts muslin pattern, using scissors. Positions and pins muslin pattern sections onto dressmaker model form for marking of style lines by designer. Removes marked sections from model and traces style lines on pattern, using tracing wheel and carbon paper. Positions and pins garment and muslin patterns onto form for designer to approve that patterns conform in proportion, harmony, and balance to design-sketch concept. Traces and cuts garment fabric parts, following muslin pattern. Advises workers who sew garment parts together on procedures, such as type of stitching, positioning of collars and sleeves on garments, and correcting defects. GOE 05.05.15 PD L 08 09 15 17 18 M2 L3 SVP 7 SOC 6821

781.381-034 GRADER MARKER (garment)

Draws and cuts sets of garment patterns, grading (increasing or decreasing pattern dimensions) master pattern for each set, and draws marker pattern for use in cutting garment material: Receives set of master garment patterns from PATTERNMAKER (furn.; garment; tex. prod., n.e.c.) 781.381-026 for grading. Positions paperboard, grading device, and master pattern in specified sequence on worktable to mark reference points that serve as guides for joining garment part and pattern outline. Turns knobs on grading device to set dial indicators at specified settings, utilizing reference chart and reference points on master pattern. Marks reference points on paperboard and draws lines between points to outline pattern. Cuts paperboard along pattern outline, using scissors, and marks each pattern section with information, such as garment style, size, and number. Positions carbon paper, marking paper with printed measurements, and complete paperboard pattern sets on worktable, and arranges patterns on marking paper to minimize waste and to determine material needed to position complete pattern set. Draws outline of patterns on marking paper for use in cutting garment material. GOE 05.03.02 PD L 08 09 15 17 18 M2 L3 SVP 6 SOC 6856

781.684-066 MATERIAL ASSEMBLER (furn.)

Gathers and assembles specified upholstery materials and accessories for use in manufacture of upholstered furniture: Reads work ticket to determine type and quantity of materials needed by upholsterers to upholster unit according to specifications. Gathers materials and accessories, such as edge rolls, polyfoam or dacron padding, plywood panels, and metal fasteners, from storage areas and places materials with designated furniture frame to facilitate subsequent processing. Cuts edge rolls and polyfoam to specified length and pattern, using electric cutter. Sprays edges of back and seat cushions with glue. GOE 06.04.27 PD M 08 09 10 15 17 18 M2 L2 SVP 4 SOC 7759

781.684-070 SAMPLE CUTTER (furn.)

Cuts upholstery fabric into squares for use as sample swatches, using electric knife, scissors, and pinking machine: Reads sample list to determine specified fabric and pattern and quantity of swatches to be fabricated. Spreads fabric on table in single or multiple layers. Positions pattern over fabric to ensure fabric design is on swatch area and traces outline of

pattern, using chalk. Removes pattern and cuts along outline, using scissors, electric knife, and pinking machine, to form swatch. Punches holes in swatches, using drill press. GOE 06.02.27 PD V 04 08 09 10 15 17 19 M1 L1 SVP 3 SOC 7753

783.361-010 CUSTOM-LEATHER-PRODUCTS MAKER (leather prod.)

Lays out, cuts, and assembles custom leather products, such as belts, purses, sandals, and garments, from original designs or existing patterns: Examines customer's sketch or sample of leather product to be fabricated and confers with customer regarding specifications of product. Draws outline of leather parts on paper or cardboard to form pattern, and cuts out pattern pieces, using square, compass, ruler, pencil, and scissors. Selects leather, positions pattern on leather, and cuts leather parts, using knife and shears. Assembles leather products according to sketch, utilizing knowledge and experience and work devices, such as sewing machine, needle and thread or leather lacing, glue and clamps, or rivets and riveting tool. Applies liquid dyes, soaks leather in water, or engraves designs on leather to obtain special effects or shapes. Attaches buckles, metal rings, decorative brads, or grommets according to design, using handtools. Stitches or glues fabric or leather linings according to product design. Occasionally displays items and sells them to customers. GOE 05.05.15 PD L 08 09 10 15 17 18 19 M2 L3 SVP 7 SOC 6854

784.687-086 HAT CONDITIONER (hat & cap) muller.

Sprays felt hats with water and refrigerates hats to condition hat fibers in fancy finish department of hat manufacturer: Sprays hats with fine mist, using water spray nozzle, and positions burlap around hats to confine moisture. Places hats in refrigerated room for chilling to condition hat fibers. Removes hat after specified time and places hats on racks for further processing. GOE 06.04.27 PD L 08 09 EC 05 M1 L1 SVP 2 SOC 8769

784.687-090 SWEATBAND SHAPER (hat & cap)

Places hats on heated metal blocks, according to hat size, to shape sweatbands to conform to hat crowns: Removes hats after specified time, places hats on racks, and pushes racks to designated location for further processing. GOE 06.04.27 PD M 08 09 M1 L1 SVP 2 SOC 8769

786.685-042 BUTTONHOLE-AND-BUTTON-SEWING-MACHINE OPERATOR (garment)

Tends semiautomatic sewing machines that cut and stitch buttonholes and sew buttons and other fasteners to garments: Pours buttons into hopper for automatic feeding into holding clamp of sewing machine or places buttons and fasteners in clamp. Turns knobs to adjust stitching and cutting mechanisms of machine to set size of buttonholes according to garment styles. Positions garment, garment parts, buttons, or fasteners under needle, and starts short-cycle sewing machine that cuts and stitches buttonholes in garment or parts or sews buttons and fasteners to garment. Cuts threads, using scissors. GOE 06.04.05 PD L 08 09 10 17 EC 05 M1 L2 SVP 2 SOC 7655

787.685-054 SEWING-MACHINE OPERATOR, PAPER BAGS (paper goods)

Tends automatic sewing machines that stitch folded and glued bottoms of multi-wall paper bags to provide additional bag strength: Presses buttons to start machines and observes automatic operation of machines to detect malfunctions. Performs duties as described under SEWING-MACHINE OPERATOR, AUTOMATIC (any ind.) Master Title. GOE 06.04.04 PD L 08 09 15 17 M1 L1 SVP 4 SOC 7679

789.134-014 SUPERVISOR (per. protect. & med. dev.)

Supervises and coordinates activities of workers engaged in assembling locking devices and splicing safety ropes and nets: Requisitions materials needed to process customer orders. Trains and directs workers in assembly techniques. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD M 08 09 10 12 13 17 M3 L4 SVP 7 SOC 71

789.684-054 ELECTRIC BLANKET WIRER (house furn.) shuttler.

Installs wire and safety thermostats in electric blankets, using shuttle devices, worktable, and wire shears, working as member of two-person team: Places electric blanket shell on worktable that contains illuminated surface panels. Observes prewoven channels in blanket shell, made visible by light passing through blanket shell, to identify channel openings. Threads heater element wire through channels of blanket shell, using shuttle device and working with team member at opposite side of table. Inserts thermostats with attached connecting wires into thermostat channels of blanket shell, using shuttle device. Cuts installed heater element wire at specified points, using wire shears, and fastens cut ends to connecting wires of thermostats to align and secure assembly for subsequent processing, using clamps. May inspect blankets to detect defects, such as closed channels or excessive blanket length. May cut out faulty wires and rewire blanket. GOE 06.02.27 PD M 04 08 09 10 M1 L1 SVP 3 SOC 7759

801.261-018 ROTARY-ENGINE ASSEMBLER (engine & turbine)

Assembles and tests industrial rotary engines, following blueprints and using handtools and power tools: Inspects parts and housing to verify conformity to parts list and blueprint specifications, using micrometer, feeler gauges, and dial indicators. Inspects wiring harnesses for defects, rewires defective harnesses, and connects terminals of harness wires as indicated, following schematics. Tests and adjusts magnetos, using timing light. Dips

parts into cleaning tank of ultrasonic cleaning equipment to clean part surfaces, and hones cleaned parts to smooth finish, using hand files and emery paper. Aligns housing on fixture, using jib crane and measuring tools, to position housing for insertion of parts, working as member of team. Sizes and finishes holes in housing and parts to specified tolerances, using power drills and reamers. Inserts or attaches and secures holding pins, seals, pipes, and tubing, using measuring instruments and handtools or power tools. Positions engine on test block, aligns engine with brake, and bolts engine to bed of block. Connects piping and attachments, using handtools, to supply engine with water, oil, fuel, and exhaust lines and systems during test operation. Connects test panel lines, starts engine, and observes gauges to verify that parts function according to specifications. May disassemble and repair engines. May fabricate engine parts. GOE 06.02.22 PD H 08 09 10 12 13 15 17 18 20 EC 05 08 M3 L4 SVP 6 SOC 6812

806.261-026 MARINE-SERVICES TECHNICIAN (ship & boat bldg. & rep.)

Repairs and maintains boats and similar vessels in marine service facility: Examines repair or installation orders, drawings, and vessel, utilizing knowledge based on past experience to determine extent of repairs required or modifications necessary for installation of equipment, accessories, and hardware. Consults with supervisor regarding installation or repair problems, sequence of operations, and time required to complete repair or installation. Removes vessels from water, using movable lift crane or marine railway. Positions and secures blocking at bottom and sides of vessels according to size, weight, and weight distribution of vessels, using fasteners, handtools, and power tools. Removes flaked paint, barnacles, and encrusted debris from hulls of vessel, using scrapers, scrubbers, power washers, and sandblast equipment. Removes damaged or rotted sections from wooden or fiberglass vessels, using drill, saw, and handtools. Fabricates and installs wooden replacement parts, using drawings, measuring instruments, work aids, handtools, power tools, and wood-working machine and equipment, such as saws, drill press, shaper, planer, and steam cabinet. Calks wooden hulls with cotton to prevent leaks. Grinds and sands edges around removed fiberglass sections. Mixes fiberglass bonding resin and catalyst, cuts fiberglass cloth to size, and impregnates cloth with mixture. Positions layers of impregnated cloth over damaged area, and smooths area to match contour of hull, using rollers, squeegee, and power sander. Mixes and applies paint or gel coat to boats with hand and spray equipment, utilizing knowledge of color mixing, matching techniques, and application procedures. Tests engine, transmission, rigging, propeller, navigational, and related systems to diagnose malfunctions, using various measuring instruments. Replaces or repairs defective components, or fabricates new components. Installs and tests steering gear, sanitation and refrigeration systems, cabinetry, electrical systems and accessories, hardware, trim, and related components, following manufacturer instructions and drawings. GOE 05.05.02 PD H 02 03 04 05 06 08 09 10 15 19 EC 01 07 13 M3 L3 SVP 7 SOC 6179

806.281-058 CARPENTER, PROTOTYPE (ship & boat bldg. & rep.)

Fits and installs bulkheads, sole, and cabinets in prototype fiberglass boats and cuts pattern for production sailboats: Reads preliminary blueprints to determine bulkhead dimensions and position. Transfers dimensions to marine plywood, using tape measure, square, and marking devices. Cuts wood to specified dimensions, using portable electric saw. Lifts and carries wood and climbs scaffolds to position plywood in hull. Pushes and pulls to position bulkhead in accordance with specifications. Marks and trims bulkhead to remove excess material and ensure bulkhead matches hull contour. Attaches bulkhead to pawl with clamps to immobilize bulkhead. Applies liquid adhesive to back of trim fabric and surface to be covered, using brush. Lays fabric on adhesive-coated area and smooths material with hands to remove wrinkles. Slides and shoves prebuilt cabinets into specified position. Transfers measurements of fitted parts to plywood, using tape measure, square, and marking devices. Cuts wood, using portable electric saw, to make pattern for production sailboat. GOE 05.05.02 PD H 02 04 05 06 08 09 15 M3 L3 SVP 7 SOC 6422

806.381-062 INSTALLER, ELECTRICAL, PLUMBING, MECHANICAL (ship & boat bldg. & rep.)

Installs electrical circuitry and fixtures, plumbing and plumbing fixtures, and engines in sailboats, using power and handtools: Reads blueprints and work diagrams to determine length and size of wire needed. Measures and cuts wire to specified length, using tape measure and electrician's pliers. Strips insulation from ends of wire, using electrician's knife, and connects wire to terminals, using screwdriver. Strings wire harness beneath hull flange to secure harness with nylon strap. Pulls length of wire from harness at specified points to complete branch circuits. Drills holes in bulkhead and cabin and mounts panels and fixtures, using electric drill and screwdriver. Places toilet in prescribed location on toilet pedestal and secures toilet with bolts, using handheld wrench. Places sink in countertop cutout, applies sealant around edge of sink, using caulking gun, and secures sink with fasteners, using wrench. Forces ends of prescribed, precut hoses over intake and discharge fittings to provide water for plumbing system and engine cooling. Installs and tightens hose clamps to form watertight seal, using wrench and screwdriver. Operates saw to cut holes for valves, outlets, and propeller drive shaft. Inserts valve and outlet fittings through hole to provide watertight fit. Operates overhead hoist controls to position

engine in boat. Pushes and pulls engine to position engine over mount rails. Inserts stub shaft in engine drive coupling to aid in aligning engine on mount rails and to locate position for shaft gland on stern post. Drills holes in engine mount rails, using portable electric drill, inserts bolts, and tightens bolts, using wrench, to secure engine to boat. May lead and give directions to other workers performing the same duties. GOE 05.05.05 PD M 02 04 05 06 07 08 09 15 M3 L3 SVP 7 SOC 6432

806.684-142 RUNNING RIGGER (ship & boat bldg. & rep.)

Splices wire and nylon rope to fabricate items, such as halyards, outhaul assemblies, reef lines, lazy jacks, and lifelines: Selects size and type of rope specified on work order and pulls rope through length meter to measure rope. Wraps masking tape around rope to mark points where rope is to be spliced and cuts rope, using soldering iron with rope cutting attachment. Wraps nylon thread around ends of rope or burns end of rope, using soldering iron, to seize ends and prevent fraying. Pushes marlinspike through rope to separate strands and passes fid through casing of rope to interweave strands and splice ropes to join unlike ropes into one continuous length or to form eyes for attaching hardware. Coils rope and ties end of rope around center of coil to secure rope for storage or transport. Threads lifeline rope through stanchions on boat decks and splices shackle to end of rope to install lifelines. GOE 06.02.32 PD M 08 09 10 15 M3 L2 SVP 4 SOC 7759

807.381-030 AUTO-BODY REPAIRER, FIBERGLASS (auto. ser.)

Repairs damaged fiberglass automobile bodies, using pneumatic tools and knowledge of fiberglass repair techniques: Cuts away damaged fiberglass, using air grinder. Smooths edges of painted surface, using sandpaper or air-powered sander. Masks surrounding undamaged surface, using masking tape. Cuts plastic separating film, using shears, and tapes film to outside repair area. Mixes polyester resin and hardener according to specifications and applies mixture to repair area, using brush. Soaks matting in resin mixture and layers matting over repair area to specified thickness. Peels separating film from repair area and washes repair surface with water. Occasionally secures new panel to repair area, using C-clamp. Applies and spreads body filler manually to re-establish surface. Manually files away excess filler to match original contour. Smooths filler, using air sander. Cleans repair area with air gun. GOE 05.10.01 PD M 04 05 06 08 09 10 11 15 17 18 EC 05 07 08 M2 L2 SVP 7 SOC 6115

809.381-034 SOLAR-FABRICATION TECHNICIAN (mach. shop)

Fabricates and assembles metal solar collectors according to job order specifications, using machine shop tools and equipment: Lays out and marks reference points on metal tubing and sheets according to job order specifications, using rule and scribe. Aligns, cuts, and drills copper tubing to form pipe sections, using jig, bandsaw, and drill press. Smooths edges of pipe sections, using file and T-bar. Inserts other precut pipes into drilled holes of pipe sections according to job order specifications, and brazes joints to form manifold unit. Aligns and bends copper sheeting to form absorber plate, using power brake. Aligns manifold unit with grooves of absorber plate, squirts liquid solder into grooves, and bakes assembly to permanently bond joints, using oven. Sprays black paint on assembly to facilitate solar heat absorption, using paint sprayer. Aligns and bends galvanized sheeting to form enclosure frame parts of solar collector, using power brake. Drills holes into frame parts and screws or rivets parts together, using pneumatic drill and rivet gun. Inserts absorber plate and manifold assembly into enclosure frame, and rivets sections together. Calks assembly corners to prevent water leaks, using calk gun. Cuts and inserts insulation into enclosure frame to provide heat retention. Aligns and rivets frame end to assembly. Rivets covering to unit to complete solar collector assembly. Packs solar collectors into cardboard boxes for shipment, using tape, strapping, and crimper. Records product identification information on packed boxes. GOE 06.02.24 PD H 04 05 08 09 15 17 EC 08 14 M3 L2 SVP 4 SOC 6829

809.684-042 PANEL LAMINATOR (struct. & ornam. metalwork)

Laminates precut materials to form doors and portable wall sections used in prefabricated metal buildings: Reads work order to determine materials to be laminated, such as steel, aluminum, urethane, vinyl hardboard, and gypsum, and to determine size and color. Measures materials to verify size. Applies adhesive to materials, using spray gun. Positions and presses materials together on conveyor in prescribed order and aligns materials, using mallet. Pushes button to start conveyor and activate pinch roller that presses sections together and removes air pockets. Removes completed panel from conveyor and places panel on pallet. GOE 06.04.22 PD H 08 09 10 15 18 19 EC 05 M1 L1 SVP 3 SOC 772

816.682-010 SCARFING MACHINE OPERATOR (iron & steel)

Sets up and operates, from control booth, scarfing machine to cut surface defects from rolled steel slabs: Reads rolling orders to ascertain scarfing instructions and determine machine setup. Selects specified number of torches and installs tips in torches, using handtools. Clamps torches in machine at specified angle and connects hoses from gas and air manifolds onto torches. Opens manifold valves, observes pressure gauges, and turns valve wheels to regulate gas and oxygen pressure. Moves console controls to ignite torches and adjust gas and oxygen mixture to obtain specified color of flame. Moves controls to position machine on rolling line, to activate rolling conveyor, and to ignite torches. Observes operation to ensure defects have been removed from slab and rescarfed slab as needed. Opens

water spray valve to flush scale and metal from scarfed slab. Moves controls to move machine away from rolling line. Cleans and changes tips as needed. Prepares production reports and cleans work area. Assists other workers to repair scarfing machine. GOE 06.02.02 PD L 08 09 12 13 16 19 EC 03 05 07 M2 L2 SVP 5 SOC 7329

819.132-010 SUPERVISOR, FLAME CUTTING (iron & steel)

Supervises and coordinates activities of workers engaged in removing defects from and cutting heavy gauge steel plates into specified sizes and shapes, using flame cutting, welding, chipping, and grinding machines and equipment: Reviews orders to ascertain size, shape, and gauge of steel plate ordered and examines plate marked by inspection personnel to plan unit work and sequences of operations. Observes flame cutting and plate conditioning activities to ensure expedient, quality, and maximum production. Trains workers in operation of equipment and performance of assigned duties. Inspects equipment for need of repair and arranges for maintenance. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.02.01 PD L 08 09 12 13 17 19 EC 05 07 M3 L3 SVP 7 SOC 71

819.664-010 PLATE CONDITIONER (iron & steel)

Removes and repairs surface defects in steel plates, using hammer and chisel, portable power grinder, and arc welding machine: Determines method required for reconditioning plate based upon examination of plate or following instructions of supervisory personnel. Chips out rolled-in scale from plate, using hammer and chisel, or grinds overfills to plate level, using portable electric grinder. Fills in depressions or chipped out areas of plate, using arc welding machine. Brushes welded area to remove flux, using wire brush, and grinds filled in area to remove excess metal and to smooth plate, using portable electric grinder. Reworks plate to meet standards as directed by inspection personnel. Stamps or marks identification on plate, using steel dies, hammer, or chalk. Attaches sling to plate and crane hook and signals worker operating crane to lift and position plate on or remove plate from workbench. GOE 06.04.24 PD L 08 09 15 EC 05 06 14 M2 L2 SVP 4 SOC 7758

821.381-018 WIND-GENERATING-ELECTRIC-POWER INSTALLER (const.; light, heat, & power)

Assembles, installs, and maintains electrical and mechanical parts, such as alternators, generators, and rotors of electric power generating windmills, according to production specifications, using tools and equipment: Assembles and adjusts alternator components according to production specifications, using handtools, drill presses, grinders, and micrometers. Welds steel supports to alternator for mounting on windmill tower, using welding equipment. Crates alternator for shipment to installation site. Attaches cables to alternator and pulls lever to activate truck-mounted hoist to position alternator on windmill tower. Secures alternator to tower structure, using bolts and wrenches. Attaches electric cables, windmill motor, and rotor to alternator, according to schematic, using handtools. Replaces bent or defective parts of windmill and lubricates machinery to service equipment, using handtools, oilcan, and grease gun. GOE 05.05.05 PD H 02 03 05 06 08 09 10 15 20 EC 01 10 M3 L3 SVP 8 SOC 6433

821.684-022 TROLLEY-WIRE INSTALLER (mining & quarrying)

Installs and maintains electric wire in underground mine to provide power source for mine locomotives: Drives dinkey engine equipped with tools and materials to underground job site. Operates pneumatic drill to bore hanger holes in top of tunnel. Inserts and secures trolley wire hanger in roof holes. Strings transmission cable (trolley wire) from hanger to hanger, using wrench. Repairs damaged wire and hangers. Relocates transmission cables which are no longer used to other areas of mine. GOE 05.10.04 PD H 08 09 10 15 EC 14 M2 L2 SVP 3 SOC 6433

823.131-026 SUPERVISOR, SOUND TECHNICIAN (bus. ser.)

Supervises and coordinates activities of workers engaged in installing, servicing, and repairing commercial sound systems in businesses, offices, and industrial work places: Reads sales orders to ascertain specifications of units to be installed and to determine components, coaxial cable, fittings, and connectors and to prepare installation orders for crew. Scans installation site to determine degree of difficulty of installation and to ascertain equipment needs. Assigns installation tasks to individual workers, according to their skills and experience. Explains and demonstrates tasks to workers to impart knowledge and upgrade skill level. Oversees work in progress to ensure quality of work and professional appearance of installation. Turns volume and tone controls to adjust sound levels to harmonize with room size and ambient noises and to test installation. Prepares checklist to indicate inspection of each step and completion of installation. Writes listing to indicate work performed; components installed; distances wired; coaxial cable, fittings, and connectors used; and hours of work expended. Reads reports of malfunctions to diagnose probable cause and to ascertain make, model, and size of installation. Prepares work order and dispatches SOUND TECHNICIAN (any ind.) 829.281-022 to repair and service system components. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.05 PD L 08 09 10 12 13 15 19 EC 09 M3 L3 SVP 7 SOC 6151

823.261-022 ANTENNA INSTALLER, SATELLITE COMMUNICATIONS (any ind.)

Installs, tests, and repairs antennas and related equipment that receive communication satellite signals, following specifications and using handtools and test instruments: Reviews installation specifications, building permit, manufacturer's instructions, and government ordinances to determine installation site for antenna. Measures distance from landmarks to identify exact site location. Visually inspects installation site to identify obstructions, such as trees or buildings, that could distort or block microwave signals from satellite. Discusses site location and construction requirements with customer. Digs hole for footing to support antenna base, using gasoline-powered auger, posthole digger, or shovel. Assembles and installs prefabricated form in hole to cast concrete base, using handtools, plumb rule, and level, following specifications. Mixes, pours, and finishes concrete, using concrete mixer, trowel, and float. Inserts pedestal mounting bolts in wet concrete. Digs trench and lays underground cable to connect antenna base to source of power in customer's building. Attaches antenna base to footing after concrete dries, using handtools. Assembles and attaches electronic and structural components of antenna, with co-worker, applying knowledge of electronics and electricity, following installation guidelines, and using handtools. Attaches antenna to base, using nuts, bolts, and handtools. Climbs ladder to install antenna when area is inaccessible from ground. Orients antenna to direction and altitude of communication satellite, using surveying instruments and following charts of satellite position. Solders connections to electronic controls, using soldering gun and wire cutters. Connects antenna and television set to signal converter control box, using handtools. Tests installed system for conformance to specifications, using test equipment, such as multimeters and oscilloscope. Observes picture on television screen to evaluate reception. Instructs customer in use of equipment. Replaces or repairs defective parts, using handtools and test equipment. May construct pole or roof mounts for antenna base, using carpenter's tools. May reinforce roof of building to provide secure installation site, using carpenter's tools. May install antennas and related equipment to receive satellite signals for such purposes as telephone, telex, facsimile, data, or radio communication. GOE 05.05.05 PD M 02 03 04 05 06 08 09 10 12 13 15 17 19 EC 01 M3 L3 SVP 6 SOC 6151

825.684-018 BATTERY CHARGER (any ind.)

Inspects, recharges, and replaces batteries of electric industrial trucks: Disconnects electrical leads and removes battery from industrial truck, using handtools and hoist. Checks fluid levels and specific gravity of cells and adds water and acid, using hydrometer, thermometer, and siphons, to ensure fluid concentration meets specifications. Cleans electrical leads and battery poles to provide contact surface, using wire brush. Attaches battery to battery charger and manipulates controls of battery charger to start flow of electricity into battery. Installs recharged battery in industrial truck. May remove and replace other defective electrical components, such as motor, switches, wires, and rheostats. May lubricate truck's moving parts, using grease gun. GOE 05.12.16 PD M 04 08 09 15 EC 13 M2 L1 SVP 3 SOC 6152

827.131-018 SUPERVISOR, AIR-CONDITIONING INSTALLER (any ind.)

Supervises activities of workers engaged in fabricating, installing, and repairing air-conditioning systems in residential and commercial buildings: Inspects and measures building to determine airflow requirements. Plans and draws layout and dimensions of ductwork, applying knowledge of sheet metal fabrication and air-conditioning system design, using pencil and ruler, and following specifications from air-conditioning equipment manufacturers and customer. Obtains price quotations on materials and purchases materials, such as sheet metal, compressors, and fans, from suppliers and tests equipment to verify that equipment is functioning. Schedules air-conditioning installation assignments. Examines installed air-conditioning systems to verify that system is functioning, using test instruments. Compiles labor and material cost figures and supporting media for billing purposes. Attends classes and seminars on air-conditioning components and system design to update skills. May instruct workers in sheet metal fabrication in shop. May supervise sheet metal fabrication in shop and resolve problems to maintain production schedule. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.10.04 PD L 02 08 09 10 12 13 15 16 17 18 M4 L4 SVP 7 SOC 60

828.131-010 SUPERVISOR, ELECTRONIC CONTROLS REPAIRER (engine & turbine)

Supervises and coordinates activities of workers engaged in repair of electronic controls of diesel engines and generators: Trains workers in diagnosis and repair of electronic controls of diesel engines and generators in heavy equipment, such as tractors, cranes, and compressors, using test equipment and following repair manuals, blueprints, diagrams, and schematics. Reviews service calls to determine type of equipment needing repair, equipment location, and nature of problem and schedules workers for service assignments. Orders supplies and materials and maintains service records. Assists workers in repair of electronic controls at job site or in maintenance shop. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.05.10 PD M 08 09 10 12 13 15 M4 L3 SVP 8 SOC 60

828.281-026 COMPUTERIZED ENVIRONMENTAL CONTROL INSTALLER (electronics)

Installs and repairs programmable, computer-based control systems for regulating residential and commercial environmental energy equipment, such as heating, ventilating and air-conditioning (HVAC) systems, heat pumps, boilers, and chillers, applying knowledge of computer control systems and environmental energy equipment: Reads specifications, diagrams, and schematics detailing computer control installation requirements and existing environmental energy equipment design and layout. Installs, mounts, and connects specified computer hardware, such as central processing unit, keyboard, CRT display, temperature sensor, analog to digital converter, and interconnect wiring to interface with environmental energy equipment control circuits, using handtools and power tools. Types commands on input keyboard or inserts disk into disk drive to start and run computerized environmental control system through operating sequence. Tests control circuits to verify system operation or diagnose malfunctions, using voltmeter and oscilloscope. Isolates faults to computer controls or environmental energy units based on test results, specification data, and symptoms. Tests circuitry of faulty computer controls, using voltmeter, oscilloscope, and logic analyzer to isolate malfunctions to circuit board. Replaces faulty circuit boards, using handtools. Maintains records of installation, test results, and repairs. GOE 05.05.05 PD L 04 05 06 08 09 10 15 17 18 19 EC 09 M4 L4 SVP 7 SOC 6159

829.261-018 ELECTRICIAN, MAINTENANCE (any ind.) electrical repairer.

Installs and repairs electrical apparatus and electrical and electronic components of industrial machinery and equipment, using handtools, power tools, and electrical and electronic test equipment, such as *multimeter* and oscilloscope and following electrical code, manuals, specifications, schematic diagrams, and blueprints: Installs power supply wiring and conduit for newly-installed machines and equipment, such as robots, conveyors, and *programmable controllers*, using handtools and voltage tester and following electrical code and blueprints. Connects power supply wires to machines and equipment, and connects cables and wires between machines and equipment, using handtools and test equipment and following manuals, schematic diagrams, and blueprints. Diagnoses and replaces damaged or broken wires and cables and malfunctioning electrical apparatus, such as transformers, motors, and lighting fixtures, using test equipment and handtools. Tests malfunctioning machinery, such as robots and conveyors, using test equipment, and discusses malfunction with production workers, supervisors, or other maintenance workers, such as MACHINE REPAIRER, MAINTENANCE (any ind.) 638.261-030 and TOOL MAKER, MAINTENANCE (mach. shop) 601.280-042, to diagnose malfunction. Replaces faulty electrical components of machines, such as relays, switches, motors, and position sensing devices, using handtools. May diagnose and replace faulty electronic components, such as printed circuit boards, in equipment such as *robot controllers* and programmable controllers, using test equipment and following manuals, specifications, and schematic diagrams. May push buttons and press keys on robot controller, *teach pendant*, and programmable controller to program automated machinery, such as robots, to operate automated machinery, to test for malfunctions, and to verify repairs. May install wiring, conduit, and electrical apparatus in new building [ELECTRICIAN (any ind.) 824.261-010]. May plan layout of wiring. May replace electric motor bearings and rewind motors. May test and repair printed circuit boards [ELECTRONICS TESTER (electronics) I 726.281-014]. May dress or replace spot welding electrodes. May diagnose and replace faulty mechanical, hydraulic, and pneumatic components of machines. May install end-of-arm tools on robots. May be required to hold electrician's license. May be designated according to equipment repaired as CIRCUIT-BREAKER MECHANIC (light, heat, & power); ELECTRICIAN, CRANE MAINTENANCE (any ind.); ELECTRICIAN, RECTIFIER MAINTENANCE (light, heat, & power); SALVAGE REPAIRER (light, heat, & power) I; TIME CLOCK REPAIRER (elec. equip.); TRANSFORMER-COIL WINDER (light, heat, & power); or according to work location as ELECTRICIAN, MACHINE SHOP (mach. shop); ELECTRICIAN, REFINERY (petrol. refin.); UNDERGROUND REPAIRER (light, heat, & power). Additional titles: WATCH ELECTRICIAN (tel.& tel.); WIRER, MAINTENANCE (light, heat, & power). GOE 05.05.05 PD M 04 05 06 07 08 09 10 13 15 17 18 19 EC 08 09 M4 L4 SVP 8 SOC 6153

840.131-010 SUPERVISOR, PAINTING (const.)

Supervises and coordinates activities of workers engaged in applying decorative and protective coats of paint, varnish, stain, enamel, or lacquer to exterior or interior surfaces, trimming, and fixtures of buildings or other structures: Assists workers in mixing and blending paint, removing old paint from surfaces, repairing and cleaning surfaces, and applying coatings to surfaces. May supervise workers covering room interiors with wallpaper or fabric and assist workers in removing old wallpaper, repairing cracks and holes in structural surfaces, measuring and cutting coverings and applying wallpaper or fabric to interiors. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.10.07 PD L 02 03 04 05 06 08 09 10 12 13 15 16 17 19 20 EC 01 07 10 M3 L3 SVP 8 SOC 6315

840.381-010 PAINTER (const.)

Applies coats of paint, varnish, stain, enamel, or lacquer to decorate and protect interior or exterior surfaces, trimmings, and fixtures of buildings, and other structures: Smooths surfaces, using sandpaper, brushes, or steel wool and removes old paint from surfaces, using paint remover, scraper, wire brush, or blowtorch to prepare surfaces for painting. Fills nail holes, cracks, and joints with putty, plaster, or other filler. Selects premixed paints, or mixes required portions of pigment, oil, and thinning and drying substances to prepare paint that matches specified colors. Paints surfaces, using brushes, spray gun, or paint rollers. Simulates wood grain, marble, brick, or tile effects. Applies paint with cloth, brush, sponge, or fingers to create special effects. Erects scaffolding or sets up ladders to perform tasks above ground level. May be designated according to type of work performed as PAINTER, INTERIOR FINISH (const.); PAINTER, MAINTENANCE (any ind.); or according to type of material used as CALCIMINER (const.); VARNISHER (const.). May also hang wallpaper and fabrics [PAPERHANGER (const.) 841.381-010]. GOE 05.10.07 PD M 02 03 04 05 06 08 09 10 15 16 17 19 20 EC 01 07 10 M2 L2 SVP 7 SOC 6442

845.381-014 PAINT SPRAYER, SANDBLASTER (conc. prod.)

Spray paints and sandblasts heavy equipment, such as concrete mixer trucks, boom trucks, and payloaders, using spray gun and sandblasting equipment: Cleans grease, dirt, dried concrete, old paint, and rust from equipment, using solvent, water, rags, brushes, pneumatic wire brush, and chipping hammer. Cleans and prepares surface for painting, using air-powered sandblasting equipment. Applies paper and masking tape to protect unpainted surfaces, such as windows and trim. Stencils lettering and other identifying information on vehicles according to specifications. Selects paint according to company color scheme and specifications. Stirs paint, pours paint into spray container, and applies primer or finish coat of paint, using spray gun. Paints areas inaccessible to spray gun, using paint brush. Disassembles paint and sandblasting equipment and cleans equipment, using solvent, wire brushes, and dry cloth. GOE 05.10.07 PD M 08 09 19 EC 05 M2 L1 SVP 4 SOC 6115

851.362-010 SEWER-LINE REPAIRER, TELE-GROUT (sanitary ser.)

Operates mobile television and chemical sealing units to conduct internal inspection of sewer lines and to seal defects for prevention of water infiltration: Locates line sections to be inspected, using map, and determines setup procedures. Turns knobs to activate television equipment for video viewing. Adjusts TV camera and monitors controls for optimal clarity and contrast. Locates and identifies infiltration points and sewer defects to determine extent of sewer line damage. Prepares description of each sewer defect, and records pertinent data, including exact location of defect. Photographs screen picture of serious or unusual irregularities, using camera. Determines chemical composition of sealing compound based on type of sealing activity necessary to seal defects, and oversees preparation of compound. Turns control knobs of sealing unit to inflate packer to desired pressure, to air test infiltration point, to determine volume of needed sealing compound, and to pump correct amount of sealing chemicals. Turns air release valve to deflate packer after allowing specified time for sealing compound to set. Communicates with workers, using intercom system, and confers with supervisors to discuss condition of sewer lines, based on television inspection. Services, adjusts, and makes minor repairs to equipment and attachments. Gives directions to workers in efficient and safe use of television and grout, in work methods, and safety precautions. Drives television and grout unit truck. GOE 05.10.01 PD L 02 04 05 06 08 09 10 12 13 15 17 18 20 EC 01 04 07 M3 L2 SVP 7 SOC 6881

851.362-010 SEWER-LINE PHOTO-INSPECTOR (sanitary ser.)

Operates camera to photograph inside of sewer lines to conduct inspection and determine need for repairs: Locates line sections to be photographed, using map. Determines setup procedures. Floats rope used to pull camera to adjacent manhole to thread sewer lines. Directs workers in setting up cable stands over manholes. Loads camera with film and inspects battery of camera. Depresses button on camera to photograph small blackboard giving location of manhole, manhole number, data, and weather conditions for future reference. Attaches pulling cable to camera and instructs workers to position camera in sewer line and to turn cable stand handles that enable camera to move inside pipe. Snaps pictures at designated intervals until camera reaches downstream manhole. Detaches camera from cable, rewinds cable into reel, and disassembles equipment. Removes film and batteries from camera and sends film to be developed. Confers with supervisor to discuss condition of sewer lines as indicated in developed photographs. Drives pickup truck to haul crew and equipment. Services, adjusts, and makes minor repairs to camera, equipment, and attachments. Communicates with supervisor, using radio telephone. Gives directions to workers in efficient and safe use of camera and equipment, work methods, and safety precautions. Prepares daily report listing lines photographed. GOE 05.07.01 PD M 02 04 05 06 09 10 12 13 15 16 17 18 20 EC 01 04 07 M2 L2 SVP 5 SOC 6882

860.381-074 CUSTOM VAN INSTALLER (auto. mfg.; auto. ser.)

Constructs cabinets and installs paneling, windows, insulation, carpeting, and appliances to outfit custom van trucks according to customer orders and specifications: Measures interior of van to determine area to be modified and to draw diagram. Selects, lays out, saws, sands, glues, nails, and

staples paneling and cabinet sections to fabricate parts for walls, cabinets, and supports. Studies diagrams and blueprints and measures and marks locations to route wiring and place outlets. Installs wiring and outlets by drilling holes, pulling wiring through holes, securing wiring, positioning outlets, and connecting wiring to outlets, using drills, routers, clips, clamps, screwdriver, and knife. Installs precut windows by cutting holes in frame with flame torch, filing area to remove burns and scratches, fitting window gaskets and seals over edges of openings, and mounting windows in gaskets. Washes interior of van to remove rust and dirt. Spreads adhesive on walls, using brush and glue gun, and positions fiberglass insulation in place. Glues or tacks block supports onto frame and secures paneling and cabinet sections in place, using screws and bolts. Positions refrigerator in prescribed location and connects electrical leads to power source. Measures and cuts carpet to size, using rule, knife, or scissors. Positions carpet over walls and floor and fastens carpet in place. Measures, cuts, positions, and screws molding around cabinets and between ceiling and wall sections. GOE 05.05.02 PD M 04 05 06 08 09 10 15 19 M3 L3 SVP 5 SOC 6422

860.684-018 CAR BLOCKER (any ind.)

Fabricates and installs braces to prevent shifting or damage to products shipped in railroad cars: Determines size of bracing needed, using tape measure. Selects lumber and cuts boards, using power saw. Assembles boards and fits or wedges braces into position to prevent load from shifting during transit. Nails braces to car floor and/or walls, using hand- or air-powered hammer. May secure load with banding machine and clincher. May place and inflate dunnage bags with compressed air between sections of load and/or between ends and sides of car and load. May cover load with tarpaulin. GOE 05.12.12 PD M 02 04 08 09 15 17 M2 L2 SVP 3 SOC 8726

860.684-022 DISPLAY FABRICATOR (smoking pipe)

Fabricates and assembles parts to manufacture smoking pipe sales displays: Traces pattern or sketch onto construction material or marks dimensions of parts on material, using ruler and pencil. Cuts out display parts along marked lines, using machines such as bandsaw and variety saw. Wipes stain on parts, using rag, or applies paint or varnish, using portable spray gun. Places parts in specified sequence and assembles parts to form displays, using pneumatic stapler. Assembles packing carton, inserts display into carton, and seals carton, using pneumatic stapler. Attaches shipping information to carton, using pneumatic stapler or writes address on carton, using crayon. GOE 06.04.22 PD H 04 08 09 10 11 15 18 19 M2 L2 SVP 2 SOC 772

861.134-010 SUPERVISOR, SMOKE CONTROL (iron & steel)

Supervises and coordinates activities of workers engaged in patching and repairing coke oven components to ensure oven smoke emissions comply with company and government air pollution regulations: Observes oven operations to detect smoke emissions and inspects ovens to ascertain cause of smoke. Determines oven repairs required, utilizing knowledge of oven structure, and confers with designated personnel to coordinate scheduling of repairs. Reviews technical literature on recent developments in controlling smoke emissions and consults with engineering and management personnel to evaluate feasibility of implementing new methods. Develops smoke emissions programs, conducts tests to determine effectiveness of programs, and prepares reports of test results for management. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.04.01 PD L 02 08 09 12 13 15 EC 14 M3 L3 SVP 7 SOC 71

861.664-010 MARBLE FINISHER (const.) marble helper; marble mason helper; marble mechanic helper; marble setter helper.

Supplies and mixes construction materials for MARBLE SETTER (const.) 861.381-030, applies grout, and cleans installed marble: Moves marble installation materials, tools, machines, and work devices to work areas. Mixes mortar, plaster, and grout, as required, following standard formulas and using manual or machine mixing methods. Moves mixed mortar or plaster to installation area, manually or using wheelbarrow. Selects marble slab for installation, following numbered sequence or drawings. Drills holes and chisels channels in edges of marble slabs to install metal wall anchors, using power drill and chisel. Bends wires to form metal anchors, using pliers, inserts anchors into drilled holes of marble slab, and secures anchors in place with wooden stake and plaster. Moves marble slabs to installation site, using dolly, hoist, or portable crane. Fills marble joints and surface imperfections with grout, using grouting trowel or spatula, and removes excess grout, using wet sponge. Grinds and polishes marble, using abrasives, chemicals, and manual or machine grinding and polishing techniques. Cleans installed marble surfaces, work and storage areas, installation tools, machinery, and work aids, using water and cleaning agents. Stores marble, installation materials, tools, machinery, and related items. May modify mixing, material moving, grouting, polishing, and cleaning methods and procedures, according to type of installation or materials. May repair and fill chipped, cracked, or broken marble pieces, using torch, spatula, and heat sensitive adhesive and filler. May secure marble anchors to studding, using pliers, and cover ends of anchors with plaster to secure anchors in place. May assist MARBLE SETTER (const.) 861.381-030 to saw and position marble. May erect scaffolding and install

installation structures. GOE 05.05.01 PD V 02 03 04 05 06 07 08 09 10 11 15 17 19 EC 01 07 08 M1 L1 SVP 5 SOC 6479

861.664-014 TERRAZZO FINISHER (const.) terrazzo helper; terrazzo mechanic helper; terrazzo worker helper.

Supplies and mixes construction materials for TERRAZZO WORKER (const.) 861.381-046, applies grout, and finishes surface of installed terrazzo: Moves terrazzo installation materials, tools, machines, and work devices to work areas, manually or using wheelbarrow. Measures designated amounts of ingredients for terrazzo or grout, using graduated containers and scale, following standard formulas and specifications, and loads portable mixer, using shovel. Mixes materials according to experience and requests from TERRAZZO WORKER (const.) 861.381-046, and dumps mixed materials that form base or top surface of terrazzo into prepared installation site, using wheelbarrow. Applies curing agent to installed terrazzo to promote even curing, using brush or sprayer. Grinds surface of cured terrazzo, using power grinders, to smooth terrazzo and prepare for grouting. Spreads grout across terrazzo to fill surface imperfections, using trowel. Fine grinds and polishes surface of terrazzo, when grout has set, using power grinders. Washes surface of polished terrazzo, using cleaner and water, and applies sealer, according to manufacturer's specifications, using brush. Installs grinding stones in power grinders, using handtools. Cleans installation site, mixing and storage areas, tools, machines, and equipment, using water and various cleaning devices. Stores terrazzo installation materials, machines, tools, and equipment. May modify mixing, grouting, grinding, and cleaning procedures according to type of installation or material used. May assist TERRAZZO WORKER (const.) 861.381-046 to position and secure moisture membrane and wire mesh prior to pouring base materials for terrazzo installation. May spread marble chips or other material over fresh terrazzo surface and press into terrazzo, using roller. May cut divider and joint strips to size as directed. May assist TERRAZZO WORKER (const.) 861.381-046 to lay terrazzo. May cut grooves in terrazzo stairs, using power grinder, and fill grooves with nonskid material. GOE 05.05.01 PD V 04 05 06 08 09 15 17 19 EC 04 05 07 08 M1 L2 SVP 5 SOC 6479

861.664-018 TILE FINISHER (const.) tile mechanic helper; tile setter helper.

Supplies and mixes construction materials for TILE SETTER (const.) 861.381-054, applies grout, and cleans installed tile: Moves tiles, tiling tools, and work devices from storage area to installation site manually or using wheelbarrow. Mixes mortar and grout according to standard formulas and request from TILE SETTER (const.) 861.381-054, using bucket, waterhose, spatula, and portable mixer. Supplies TILE SETTER (const.) 861.381-054 with mortar, using wheelbarrow and shovel. Applies grout between joints of installed tile, using grouting trowel. Removes excess grout from tile joints with wet sponge and scrapes corners and crevices with trowel. Wipes surface of tile after grout has set to remove grout residue and polish tile, using nonabrasive materials. Cleans installation site, mixing and storage areas, and installation machines, tools, and equipment, using water and various cleaning tools. Stores tile setting materials, machines, tools, and equipment. May apply calk, sealers, acid, steam, or related agents to calk, seal, or clean installed tile, using various application devices and equipment. May modify mixing, grouting, grinding, and cleaning procedures according to type of installation or material used. May assist TILE SETTER (const.) 861.381-054 to position and secure metal lath, wire mesh, or felt paper prior to installation of tile. May cut marked tiles to size, using power saw or tile cutter. GOE 05.05.01 PD V 04 05 06 08 09 15 17 19 EC 08 M1 L2 SVP 5 SOC 6479

861.684-022 REPAIRER, KILNCAR (brick & tile)

Repairs kilncars: Sweeps dust and chipped brick from beds of empty kilncars, using broom. Scrapes loose or chipped mortar from sides of kilncars, using trowel. Pours water and mortar mix into wheelbarrow, stirs mixture, and spreads and smooths mortar onto sides of kilncars to repair heat-resistant cover, using trowel. Replaces broken refractory blocks on beds of kilncars and straightens uneven blocks, using rubber mallet. Lubricates kilncar wheels, using grease gun. May position wooden frame over frame of kilncar, pour mortar into wooden frame, lay insulation mat over mortar, and place refractory slabs and bricks in prescribed order over mat to build new kilncars. GOE 05.12.08 PD M 04 08 09 15 M1 L2 SVP 3 SOC 674

862.281-022 PIPE FITTER (any ind.) plumber, pipe fitting.

Lays out, assembles, installs, and maintains pipe systems, pipe supports, and related hydraulic and pneumatic equipment for steam, hot water, heating, cooling, lubricating, sprinkling, and industrial production and processing systems, applying knowledge of system operation, and following blueprints: Selects type and size of pipe, and related materials and equipment, such as supports, hangers, and hydraulic cylinders, according to specifications. Inspects worksite to determine presence of obstructions and to ascertain that holes cut for pipes will not cause structural weakness. Plans installation or repair to avoid obstructions and to avoid interfering with activities of other workers. Cuts pipe, using saws, pipe cutter, hammer and chisel, cutting torch, and pipe cutting machine. Threads pipe, using pipe threading machine. Bends pipe, using pipe bending tools and pipe bending machine. Assembles and installs variety of metal and non-metal pipes, tubes, and fittings, including iron, steel, copper, and plastic. Connects pipes, using threaded, calked, soldered, brazed, fused, or cemented joints,

and handtools. Secures pipes to structure with brackets, clamps, and hangers, using handtools and power tools. Installs and maintains hydraulic and pneumatic components of machines and equipment, such as pumps and cylinders, using handtools. Installs and maintains refrigeration and air-conditioning systems, including compressors, pumps, meters, pneumatic and hydraulic controls, and piping, using handtools and power tools, and following specifications and blueprints. Increases pressure in pipe system and observes connected pressure gauge to test system for leaks. May weld pipe supports to structural steel members. May observe production machines in assigned area of manufacturing facility to detect machinery malfunctions. May operate machinery to verify repair. May modify programs of automated machinery, such as robots and conveyors, to change motion and speed of machine, using *teach pendant*, control panel, or keyboard and display screen of *robot controller* and *programmable controller*. When installing piping systems that must withstand high pressure, may be designated STEAM FITTER (const.). May be designated according to type of system installed as PIPE FITTER, AMMONIA (const.); PIPE FITTER, FIRE-SPRINKLER SYSTEMS (const.); PIPE FITTER, GAS PIPE (const.); or type of piping used as PIPE FITTER, PLASTIC PIPE (const.); PIPE FITTER, SOFT COPPER (const.). Additional titles: AIRDOX FITTER (mining & quarrying); FREIGHT-AIR-BRAKE FITTER (loco. & car bldg. & rep.); INSTRUMENT FITTER (const.); MAINTAINER, SEWER-AND-WATERWORKS (const.); PIPE FITTER, MAINTENANCE (any ind.); PIPE FITTER, WELDING (const.); PNEUMATIC-TUBE FITTER (const.) SPRINKLER-AND-IR-RIGATION-SYSTEM INSTALLER (const.); TUYERE FITTER (iron & steel). GOE 05.05.03 PD H 02 03 04 06 08 09 10 12 13 15 16 19 20 EC 08 09 M3 L3 SVP 7 SOC 645

862.684-034 WATER-SOFTENER SERVICER-AND-INSTALLER (bus. ser.)

Delivers, installs, and reconditions water-softener tanks: Connects hoses of portable regenerating equipment to water-softener tank, and opens valves and sets dials to activate equipment that automatically regenerates water-softener chemical (zeolite) with brine and chlorine to restore its water-softener qualities. Tests chemical for acidity, iron content, and hardness, using test kit. Attaches pipes and rubber hoses to tank, fills tank with water, and inspects it for leaks and worn parts. Cuts, threads, and replaces pipes, control valves, and couplings, using wrenches, pipe cutters, and threaders. Examines water pipes to determine connections to be made and pipe and pipe fittings required. Installs pipes and seals connections, using gas flame and solder stick, and inspects connections for leaks. GOE 05.10.01 PD H 08 09 10 11 15 16 17 EC 04 M2 L2 SVP 4 SOC 645

863.364-014 INSULATION WORKER (const.)

Applies insulating material to exposed surfaces of structures, such as air ducts, hot and cold pipes, storage tanks, and cold storage rooms: Reads blueprints and selects required insulation material (in sheet, tubular, or roll form), such as fiberglass, foam rubber, styrofoam, cork, or urethane, based on material's heat retaining or excluding characteristics. Brushes adhesives on or attaches metal adhesive-backed pins to flat surfaces as necessary to facilitate application of insulation material. Measures and cuts insulation material to specified size and shape for covering flat or round surfaces, using tape measure, knife, or scissors. Fits, wraps, or attaches required insulation material around or to structure, following blueprint specifications. Covers or seals insulation with preformed plastic covers, canvas strips, sealant, or tape to secure insulation to structure, according to type of insulation used and structure covered, using staple gun, trowel, paintbrush, or calking gun. GOE 05.10.01 PD M 04 05 06 08 09 10 15 17 EC 01 07 10 M2 L3 SVP 6 SOC 6465

865.361-010 MIRROR INSTALLER (const.)

Installs custom mirrors on walls, ceilings, and doors in homes and commercial establishments, according to work orders and diagrams, with assistance of helper, using handtools: Loads and arranges mirrors on truck, according to sequence of customer orders. Covers each mirror section with burlap to prevent nicks, scratches, and breakage. Drives to customer location and unloads mirrors, equipment, and tools. Moves furniture to clear worksite area and covers floor and furniture with drop cloths. Measures mirrors and dimensions of area to be covered by mirrors, using ruler, chalked cord, work order, and diagram. Determines plumb of walls or ceilings, using plumb line and level. Installs furring strips and shims to level wall surface and provide solid backing for mirrors, using ruler, saw, hammer, and nails. Cuts metal mounting strips and moldings to required lengths, using hacksaw or metal cutters. Attaches strips and moldings to wood, plaster, or concrete walls, using nails, screws, and stud gun. Applies mastic cement, putty, or screws in mirrors with predrilled holes to position and secure mirrors. Accepts payment for completed work. GOE 05.10.01 PD H 02 03 04 05 06 08 09 10 15 17 18 EC 14 M2 L2 SVP 6 SOC 6464

869.131-038 SUPERVISOR, SWIMMING-POOL MAINTENANCE (const.)

Supervises and coordinates activities of workers engaged in construction, repair, and maintenance of swimming pools: Measures and marks pool excavation site, using transit and stakes. Directs workers in mixing, pouring, and leveling cement to form pool floor and in assembling prefabricated pool walls and lining. Cuts openings for plumbing into sides of

pool and directs workers in installation of fixtures, such as pipes, spigots, valves, and pumps. Oversees installation of pool solar-heating system components. Inspects work in progress and completed pool installation to verify adherence to specifications. Trains new workers in work methods and assists workers in pool construction, maintenance, and repair. May secure contracts for pool installation and write customer orders. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.02.02 PD M 08 09 10 12 13 15 17 20 EC 01 M3 L3 SVP 7 SOC 6318

869.134-026 SUPERVISOR, ASBESTOS REMOVAL (const.)

Supervises and coordinates activities of workers engaged in removing asbestos from ceilings, walls, floors, and other structures: Reviews job specifications, inspects worksite, and confers with contracting agent to evaluate removal project. Estimates length of time, number of workers, and equipment and supplies required to accomplish project. Hires new workers and instructs workers in safety and removal procedures. Assigns and supervises workers in specific tasks, such as setup of equipment and removal and clean-up of asbestos. Monitors and inspects quality of work during project. Examines workers' equipment, such as respirator systems, air evacuation and filtration systems, and air quality testing devices, to ensure that they meet company and government safety standards. May maintain project records and order supplies. May assist workers in removal activities. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.10.01 PD M 02 03 04 05 06 07 08 09 10 12 13 15 EC 07 09 10 M3 L3 SVP 6 SOC 6318

869.261-018 POURED-CONCRETE-WALL TECHNICIAN (const.)

Surveys and marks construction site, and constructs concrete buildings, using surveying instruments, blueprints, handtools, and power tools, working as member of crew: Reads structural specifications, such as blueprints, building plans, sketches, and plot maps of site location to ascertain dimensions of structure and types of materials to be used. Measures and bolts together wooden or metal sections to form walls, windows, and door frames, using handtools and power tools. Surveys excavation site to ensure specified angles and dimensions of structure footings, using surveying instruments, such as transit and theodolite. Measures distances to points, using steel tape, and records station numbers, distances, and elevations in logbook. Stakes corners of building site and signals BULLDOZER OPERATOR (any ind.) I 850.683-010 to excavate area to specified depth. Lays building and wall footings and trues corners, using plumb bob and string, chalk, stakes, footing and wall forms, and hammer. Signals CONCRETE-MIXING-TRUCK DRIVER (const.) 900.683-010 and guides pouring chute that dumps cement into wall and footing cavities. Smooths tops of poured cement, using trowel. Removes wooden forms after cement has dried to free walls and footings, using hammer. Sprays asphalt on outer wall surfaces and footings to waterproof structures. Installs subgrade drainage tile and connects tile to specified points at sewer drain. GOE 05.10.01 PD H 08 09 10 14 15 18 20 EC 10 M3 L3 SVP 7 SOC 6479

869.261-022 REPAIRER, RECREATIONAL VEHICLE (trans. equip.)

Repairs recreational vehicles, such as campers, travel trailers, and motor homes according to customer service request or work order: Confers with customer or reads work order to determine nature and extent of damage to vehicle. Inspects, examines, or tests parts or item to be repaired or replaced. Lists parts needed, estimates costs, and plans work procedure, using parts list, technical manuals, diagrams, and personal knowledge. Removes damaged exterior panels of vehicle, using handtools. Repairs and replaces structural frame members, seals leaks, and replaces or repairs malfunctioning items, such as heaters, stoves, refrigerators, or water pumps, using equipment and tools, such as drill press, wrenches, and saws. Repairs electrical wiring, plumbing, and gas (propane) lines, using items such as calking compounds, electrical wiring and tape, and plastic or copper pipe. Refinishes wood surfaces on cabinets, doors, moldings, and walls, using woodworking tools, spray equipment, paints, and varnishes. Inspects, examines, and tests functional parts of vehicle, using pressure gauges, ohmmeter, and other test equipment, according to work order, to verify completeness of work performed on new or repaired units before delivery to customer. GOE 05.10.01 PD M 04 05 06 08 09 10 12 13 15 18 M3 L3 SVP 6 SOC 6179

869.463-010 SWIMMING POOL INSTALLER-AND-SERVICER (const.)

Performs any combination of following tasks in constructing, installing, and servicing swimming pools at commercial and residential sites: Plots length and width of pool site, according to specifications, and marks corners of site, using stakes and sledge hammer. Confers with customer to ensure that pool location and dimensions meet customer's demands. Operates backhoe to dig, shape, and grade walls of in-ground pool. Assembles and aligns wall panel sections, using nuts, bolts, electric air gun, and transit. Pours premixed concrete mixture between dirt wall and wall panels to establish footing (foundation base) to anchor bottoms of wall panels and cross braces. Dumps and spreads gravel into hollow foundation to form drain field, using wheelbarrow, shovel, and rake. Digs trenches, spreads gravel, and lays drain tiles uphill of pool site to divert ground water. Lays out and connects pipelines for water inlets, return valves, and filters, using handtools. Snaps coping section to inside upper edge of wall panels around pool circumference to secure liner edge and protect pool users. Mixes prescribed amounts of cement, sand, and water, and pours mixture into foundation. Spreads and smooths mixture evenly throughout founda-

tion, using trowel, and allows mixture to set. Assembles heater parts, connects gas, oil, or electric lines, and starts heater to verify working order of unit. Installs liner into pool, starts pump to fill pool with water, and installs return valves. Builds concrete deck around pool. Lays out and assembles prefabricated parts of above-ground pool, installs liner, connects plumbing lines, starts pump, and checks pool for leaks. Maintains and repairs pool and equipment, advises customers, and sells chemicals to prevent pool-water problems. GOE 05.10.01 PD V 04 05 06 08 09 15 17 20 EC 01 04 M4 L4 SVP 8 SOC 6479

869.664-018 SEWER-LINE REPAIRER (sanitary ser.)

Repairs and maintains municipal storm and sanitary sewer lines, performing any combination of following tasks: Inspects manholes to locate stoppage. Runs cleaning rods through rod guide, fits front end of rod with auger, using wrench, and lowers guide into position. Thrusts rods into invert and advances them until auger reaches obstruction. Rotates rods manually with turning pin, or attaches end of rod to portable power rodder to rotate rods. Pulls lever and depresses pedal of machine to advance cleaning tool to encounter obstruction and to rotate cable or rods until obstacle is broken. Retracts rods to drag out obstructions, such as roots, grease, and other deposits. Cleans and repairs catch basins, manholes, culverts, and storm drains, using handtools. Lays brick to raise manhole walls to prescribed street level, using masonry tools. Measures distance of excavation site, using tape measure, and marks outline of area to be trenched according to direction of supervisor. Breaks asphalt and other pavement, using airhammer, pick, and shovel. Cuts damaged section of pipe with cutters and removes broken section from ditch. Replaces broken pipes and reconnects pipe sections, using pipe sleeve. Inspects joints to ensure tightness and seal before backfilling. Packs backfilled excavation, using air and gasoline tamper. Taps mainline sewers to install sewer saddles. Replaces manhole covers. Updates sewer maps and manhole charting. Drives pickup trucks to haul crew, materials, and equipment. Services, adjusts, and makes minor repairs to equipment, machines, and attachments. Communicates with supervisor and other workers, using radio telephone. Prepares records showing actions taken, manpower and equipment utilization, and disposition of material. Requisitions tools and equipment. Operates sewer cleaning equipment including power rodder, high velocity water jet, sewer flusher, bucket machine, wayne ball, and vac-all. Cleans and disinfects domestic basements and other areas flooded as a result of sewer stoppages. May lead workers in large repair and construction crew and direct other workers in efficient and safe use of machines, work methods, and safety procedures. GOE 05.12.12 PD H 02 04 05 06 07 08 09 10 16 17 18 20 EC 01 04 07 08 M2 L2 SVP 6 SOC 6479

869.684-082 ASBESTOS REMOVAL WORKER (const.)

Removes asbestos from ceilings, walls, beams, boilers, and other structures, following hazardous waste handling guidelines: Assembles scaffolding and seals off work area, using plastic sheeting and duct tape. Positions mobile decontamination unit or portable showers at entrance of work area. Builds connecting walkway between mobile unit or portable showers and work area, using handtools, two-by-fours, nails, plastic sheeting, and duct tape. Positions portable air evacuation and filtration system inside work area. Sprays chemical solution over asbestos covered surfaces, using tank with attached hose and nozzle, to soften asbestos. Cuts and scrapes asbestos from surfaces, using knife and scraper. Shovels asbestos into plastic disposal bags and seals bags, using duct tape. Cleans work area of loose asbestos, using vacuum, broom, and dust pan. Places asbestos in disposal bags and seals bags, using duct tape. Dismantles scaffolding and temporary walkway, using handtools, and places plastic sheeting and disposal bags into transport bags. Seals bags, using duct tape, and loads bags into truck. GOE 50.10.01 PD H 02 03 04 05 06 07 08 09 10 15 17 EC 07 10 M2 L2 SVP 2 SOC 6479

891.684-022 BUILDING CLEANER (any ind.)

Cleans brick, stone, or metal exterior of structures, using cleaning agents, such as sand, acid solution, and steam: Cleans limited section of surface to determine strength of cleaning agents needed to prepare desired surface finish. Erects swinging scaffold, positions ladders, or assembles metal scaffolding to facilitate cleaning of structures. Pours specified portions and type of cleaning agents into hoppers or tanks of truck-mounted pumping equipment, and turns valves of equipment to produce steam and pump cleaning agents through hoses. Presses levers of spray nozzles to regulate flow of cleaning agent over structure surface. Cleans excessively stained surface areas, using brushes and cleaning compound. Sprays concrete floor to etch surface for cleaning and applies filler compound to seal floor surface. Cleans exterior surfaces of vehicles, using high pressure hoses and cleaning solutions. Cleans rugs on premise of customer, using chemicals, handbrushes, or portable scrubbing machine. Replaces worn parts of cleaning equipment and maintains equipment, using handtools. GOE 05.10.01 PD H 02 03 05 06 07 08 09 10 15 17 EC 01 07 10 M2 L2 SVP 4 SOC 6479

891.687-022 TANK CLEANER (any ind.)

Cleans interiors of boilers, storage tanks, industrial processing tanks, kilns, and tank and refrigerator railroad cars to remove emulsion and incrustations, using shovels, squeegees, brooms, scrapers, hoses, water, and solvents: Drains tank, connects hose to water or steam lines, and sprays walls, roof, and bottom of tank to flush residue, such as oil, acid, grease,

and sludge through tank openings. Scrapes and scrubs walls, using detergents, solvents, scrapers, and brushes to remove incrustations, scale, or deposits of coke or catalyst. Sweeps up debris and shovels sludge into buckets or wheelbarrows or down chutes. Removes chemical residues and other liquids from tank bottoms with squeegees or pump and suction hoses. May dry tanks with wood shavings or portable air-drying equipment. May test gas content of tanks. May add specified chemicals to industrial tanks to maintain and replenish tank processing solutions. May be designated according to type of tank cleaned as ACID-TANK CLEANER (petrol. refin.); BOILER CLEANER (any ind.); PLATING-TANK CLEANER (electronics); TANK-CAR CLEANER (petrol. refin.). GOE 05.12.18 PD H 02 04 08 09 EC 04 13 M1 L1 SVP 3 SOC 875

899.261-014 MAINTENANCE REPAIRER, INDUSTRIAL (any ind.) maintenance associate; plant-maintenance worker; utility repairer.

Installs, maintains, and repairs machinery, equipment, physical structures, and pipe and electrical systems in commercial or industrial establishments, using handtools, power tools, hoist, crane, and testing instruments, and following specifications, blueprints, manuals, and schematic diagrams: Visually inspects and tests machinery and equipment, using electrical and electronic test equipment. Listens for unusual sounds, and talks with supervisors, production workers, or maintenance workers to detect and diagnose malfunctions. Dismantles defective machines and equipment and installs new or repaired parts, following specifications and blueprints and using precision-measuring instruments and handtools [MACHINE REPAIRER, MAINTENANCE (any ind.) 638.261-030]. Cleans and lubricates shafts, bearings, gears, and other parts of machinery, using rags, brushes, and grease gun. Installs and repairs electrical apparatus, such as transformers and wiring, and electrical and electronic components of machinery and equipment [ELECTRICIAN, MAINTENANCE (any ind.) 829.261-018]. Lays out, assembles, installs, and maintains pipe systems and related hydraulic and pneumatic equipment, and repairs and replaces gauges, valves, pressure regulators, and related equipment [PIPE FITTER (any ind.) 862.281-022]. Makes and repairs counters, benches, partitions, and other wooden structures. Repairs and maintains physical structure of establishment [MAINTENANCE REPAIRER, BUILDING (any ind.) 899.381-010]. May install machinery and equipment according to blueprints and other specifications [MILLWRIGHT (any ind.) 638.281-018]. May install, program, or repair automated machinery and equipment, such as robots or *programmable controllers*. May set up and operate machine tools, such as lathe, grinder, and milling machine to repair or fabricate machine parts, *jigs and fixtures*, and tools. May operate welding equipment to join metal parts used to repair or fabricate equipment. GOE 05.05.09 PD H 04 05 06 08 09 10 19 20 EC 08 09 10 M4 L4 SVP 8 SOC 61

899.364-014 ARTIFICIAL-FOLIAGE ARRANGER (ret. tr.)

Cuts out, assembles, and installs artificial foliage, such as trees, shrubs, and flowers, to achieve aesthetic effects in commercial and industrial locations, using handtools and working as member of team: Receives instructions from supervisor, and reviews work orders to determine materials needed, such as soil, stones, styrofoam, planters, and artificial flora, to complete customer request. Selects, cuts, and assembles materials to form artificial flowers, trees, and shrubs, utilizing experience and knowledge of flora design and using clips, wire, glue, colored tape, scissors, and wire cutters. Loads materials into van, and drives van to deliver artificial flora displays on site to create natural effect, utilizing ground covers, such as gravel, pinebark, and soil, according to effect desired by customer. Services arrangements to replace or repair damaged flora and to rearrange flora as specified by customer. Prepares daily reports of materials used in each arrangement to maintain inventory records. GOE 05.12.12 PD M 02 03 04 05 06 08 09 10 19 M2 L2 SVP 5 SOC 6479

899.384-010 TRANSPORTATION-EQUIPMENT-MAINTENANCE WORKER (museum) maintenance worker; renovator; transportation-museum helper.

Assists in restoration or maintenance of transportation equipment, such as automobiles, ships, aircraft, streetcars, or locomotives, displayed by museums or similar institutions through performance of any combination of following tasks: Repairs or replaces interior components of equipment, such as wooden panels, seat cushions, window molding, or dashboards, using handtools and power tools, and utilizing carpentry, metal working, and upholstery techniques. Cuts lumber or sheet metal to designated size, installs components, such as brake assemblies, rudders, or propellers, or welds metal sections, to assist other workers in reconstruction or renovation of exterior structural sections and accessories. Cleans surfaces with wire brushes and solvent, applies rustproofing agent to surfaces, vacuums and dry cleans upholstered components, brushes or sprays paint, lacquer, or other coating on cleaned surfaces, or stencils and paints letters or designs on equipment or vehicles to restore or simulate original appearance. Builds, repairs, and installs wooden steps, scaffolds, and walkways to gain access to or permit improved view of exhibited equipment. May be designated according to specialty of institution as ANTIQUE-AUTOMUSEUM-MAINTENANCE WORKER (museum), according to principal activity as MAINTENANCE CARPENTER (museum), or according to job location as EXHIBIT CLEANER (museum). GOE 05.05.06 PD M 02 04 06 08 09 10 15 17 18 19 20 M2 L3 SVP 5 SOC 61

899.684-046 MAINTENANCE WORKER, MUNICIPAL (gov. ser.)

Performs any combination of the following duties to maintain and repair property of municipality, using variety of machines, tools, and equipment: Receives written work orders or verbal instructions from municipal administrator. Cuts grass and trims weeds on town property and parks, using lawn mower and weed trimmer. Digs flower beds and plants flowers, using gardening tools. Constructs decorative flower garden borders from wood, using handtools. Cleans buildings, washes windows, and empties trash cans, using brooms, cleaning supplies, and floor buffer. Paints interior and exterior walls and trim, using paint and painting tools. Operates backhoe to dig trenches for water and sewer pipe. Drives truck and loads fallen tree limbs and roadside trash onto truck and delivers refuse to landfill. Repairs streets and sidewalks with asphalt, cold patching materials, and concrete, using shovel, hand roller, trowel, level, and long-handled tamp. Removes and replaces damaged parking meters and traffic signs. Operates snow removal equipment to maintain streets, sidewalks, and driveways. Reads water meters and records reading in logbook. Maintains and repairs municipal buildings' plumbing and electrical system, including replacing worn or defective parts, such as switches and fuses. Repairs or replaces building brick, stone, and concrete. Maintains and repairs wood parts of buildings, using carpenter tools. Replaces worn or damaged parts, such as hoses, wiring, and belts, in machines and equipment, such as truck, street sweeper, and riding mower. Hand washes vehicles. GOE 05.12.12 PD H 08 09 10 15 16 17 20 EC 01 08 09 14 M2 L3 SVP 5 SOC 6479

900.683-010 CONCRETE-MIXING-TRUCK DRIVER (const.) batch-mixing-truck driver; moto-mix operator; ready-mix-truck driver; transit-mix operator.

Drives truck equipped with auxiliary concrete mixer to deliver concrete mix to job sites: Drives truck under loading hopper to receive sand, gravel, cements, and water and starts mixer. Drives truck to location for unloading. Moves levers on truck to release concrete down truck chute into wheelbarrow or other conveying container or directly into area to be poured with concrete. Cleans truck after delivery to prevent concrete from hardening in mixer and on truck, using waterhose and hoe. May spray surfaces of truck with protective compound to prevent adhering of concrete. GOE 05.08.03 PD M 08 09 16 17 19 20 EC 01 M1 L1 SVP 7 SOC 8213

910.167-014 TRAIN DISPATCHER, ASSISTANT CHIEF (r.r. trans.)

Assigns locomotives, cabooses, and crews to trains to obtain most efficient use of equipment and personnel within assigned railroad territory: Determines number of locomotives to be allocated to trains based on type of freight and number and destinations of freight cars to be moved. Assigns locomotives and cabooses to trains and schedules departure and movement of trains on specific tracks and sidings according to ultimate destination of individual freight cars. Schedules and assigns initial, replacement, or emergency crews to trains depending upon available work time of individual crews and purpose of trip. Routes locomotives scheduled for preventive maintenance to destinations in proximity to designated maintenance facility to minimize cost of transfer to service site. GOE 05.09.02 PD S 12 13 15 M2 L3 SVP 7 SOC 4751

911.131-010 BOATSWAIN (water trans.)

Supervises ABLE SEAMAN (water trans.) 911.364-010 and DECKHAND (water trans.) 911.687-022 engaged in cleaning decks and lifeboats, chipping, scraping, wirebrushing, and painting decks, sides, and superstructure: Examines cargo-handling gear and lifesaving equipment and supervises crew engaged in repairing or replacing defective gear and equipment. May be required to be certified by U.S. Coast Guard as ABLE SEAMAN (water trans.) 911.364-010. GOE 05.12.18 PD H 02 03 04 08 09 10 12 13 15 16 17 18 19 20 EC 01 04 08 09 10 M2 L3 SVP 7 SOC 71

912.663-010 AIRPORT UTILITY WORKER (air trans.)

Services aircraft, working as member of crew, performing any combination of following tasks: Directs incoming and outgoing aircraft near terminal area to assist pilot's maneuvering of aircraft, using visual hand or light signals. Operates service vehicles to replenish fuel, water, and waste system chemicals and to remove liquid waste. Cleans exterior or interior of aircraft, using portable platform, ladders, brushes, rags, waterhose, and vacuum. Positions and removes boarding platform to unload or load aircraft passengers. Unloads and loads luggage and cargo from aircraft, using tow truck with luggage carts. Traces lost baggage for customers and prepares lost baggage claims. GOE 05.12.06 PD H 02 08 09 16 17 18 20 EC 01 05 08 M2 L3 SVP 4 SOC 87

913.663-018 DRIVER (motor trans.) shuttle-bus driver; van driver.

Drives minibus, van, or light-weight truck to transport clients, trainees, or company personnel: Drives vehicle from individual or central loading area to social services or rehabilitation center, training location, job site, or other destination according to assigned schedule. May assist disabled passengers into and out of vehicle. May secure passengers' wheelchairs to restraining devices to stabilize wheelchairs during trip. May operate radio or similar device to communicate with base station or other vehicles to report disruption of service. May clean and/or service vehicle with fuel, lubricants, and accessories. May keep records of trips and/or behavior of passengers. May perform other duties when not driving, such as custodial

and building maintenance tasks. GOE 09.03.01 PD M 08 09 12 13 16 17 20 M2 L2 SVP 3 SOC 8215

915.583-010 LOT ATTENDANT (ret. tr.)

Verifies receipt of new cars delivered to dealer and parks cars in new car lot in orderly manner: Compares serial numbers of incoming cars against invoice. Inspects cars to detect damage and to verify presence of accessories listed on invoice, such as spare tires and radio and stereo equipment. Records description of damages and lists missing items on delivery receipt. Parks new cars in assigned area according to model. Assigns stock control numbers to cars, and catalogs and stores keys. Repairs cars, following sales, to maximize use of space and maintain lot in order. Delivers sold cars to new car preparation department. Services cars in storage to protect tires, battery, and finish against deterioration. GOE 05.08.03 PD L 08 09 15 16 17 18 20 EC 01 M2 L3 SVP 3 SOC 874

915.587-010 GAS-AND-OIL SERVICER (motor trans.) gas-and-oil checker.

Refuels and oils motor vehicles, such as trucks and buses, in company garage: Refills vehicle radiator and washes windows of vehicle. Transports materials, such as filled and empty oil drums, using forklift. Compiles mileage records, fuel consumption log, and storage tank inventory. GOE 05.12.06 PD M 08 09 10 15 EC 05 07 12 M1 L1 SVP 2 SOC 873

915.667-014 PARKING LOT SIGNALER (auto. ser.) general lot attendant.

Directs vehicle drivers to specific parking spot, using hand signals: Lifts, positions, and removes barricades to open or close parking areas at direction of SUPERVISOR, PARKING LOT (auto. ser.) 915.133-010. Signals vehicle drivers with hands or flashlight to parking area and/or to spot within parking area at activities, such as sporting events, concerts, and expositions. GOE 09.04.02 PD L 08 09 17 EC 01 14 M1 L1 SVP 2 SOC 5144

915.687-014 GARAGE SERVICER, INDUSTRIAL (any ind.)

Services trucks, buses, automobiles, and other automotive equipment used in industrial or commercial establishments: Inspects equipment to ascertain gasoline, oil, and water requirements. Tests batteries and tires. Changes oil and lubricates automotive equipment [LUBRICATION SERVICER (auto. ser.) 915.687-018]. May keep record of gas and oil supplied to each vehicle and gasoline and oil supplies in storage tanks. GOE 05.12.08 PD M 04 06 08 09 17 EC 07 M1 L1 SVP 3 SOC 873

915.687-034 AUTOMOBILE DETAILER (auto. ser.)

Cleans and refurbishes new and used automobiles, performing any combination of following duties: Washes vehicle exterior to clean cars, using cleaning solution, water, cloths, and brushes. Applies wax to auto body, and wipes or buffs surfaces to protect surfaces and preserve shine, using cloth or buffing machine. Vacuums interiors of vehicles to remove loose dirt and debris, using vacuum cleaner. Cleans upholstery, rugs, and other surfaces, using cleaning agents, applicators, and cleaning devices. Applies revitalizers and preservatives to vinyl or leather surfaces, and treats fabrics with spot and stain resistant chemicals to preserve and protect interior components. Cleans engine and engine compartment with steam cleaning equipment and various cleaning agents to remove grease and grime. Applies special purpose cleaners to remove foreign materials which do not respond to normal cleaning procedures, utilizing experience and following recommendations of product manufacturer. Paints engine components and related parts, using spray gun or aerosol can and masking material. Applies paint to chipped body surfaces of vehicle, using container of touchup paint. Applies dyes and reconditioning chemical to vinyl tops of vehicle to restore color and condition. GOE 05.12.18 PD M 04 06 08 09 17 20 EC 01 05 07 M1 L1 SVP 2 SOC 875

919.683-030 DRIVER, STARTING GATE (amuse. & rec.)

Steers vehicle equipped with rear folding barrier (gate) that allows alignment and positioning of horses abreast of gate prior to official start of sulky (harness) race. Accepts control of vehicle acceleration from HORSE-RACE STARTER (amuse. & rec.) 153.267-010 who simultaneously actuates folding of gate at starting point of race. Drives vehicle off track to clear path for race. GOE 05.08.03 PD L 08 09 17 M1 L1 SVP 2 SOC 8219

920.137-026 SUPERVISOR, PACKING AND WRAPPING (any ind.)

Supervises and coordinates activities of workers engaged in packing and/or wrapping products and materials to protect them from damage during storage and/or shipment: Studies production orders and confers with other department supervisors to ascertain type and quantity of product to be shipped and packing requirements, such as containers or wrapping material to be used, and to coordinate department's activities with other departments. Inspects products prior to packing and wrapping and places rejected products aside or returns them to production departments. Observes packing and wrapping operations to verify conformance to specifications. Trains workers in packing and wrapping procedures. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May supervise workers engaged in cleaning upholstered furniture of foreign material prior to packing and be designated SUPERVISOR, INSPECT, CLEAN-UP, AND WRAP (furn.). May supervise workers engaged in final assembly of mirrors before packing and be designated SUPERVISOR, PACKING (mirror). GOE 06.04.01 PD M 04 08 09 12 13 15 16 17 20 M2 L3 SVP 7 SOC 71

920.380-010 SETTER, JUICE PACKAGING MACHINES (can. & preserv.)

Sets up and adjusts can filling and sealing machines and caser machines to package juice in juice processing establishment: Selects filler tubes according to size of cans to be filled and installs and adjusts tubes in filling and sealing machines, following production specifications and using wrench. Adjusts tension controls on filling and sealing machines to regulate pressure of filling, capping, and sealing mechanisms, following operation manual and using screwdriver. Sets and adjusts caser machine controls that position feed hopper, folding and pressure rollers, and conveyor guides to encase products in conformity with size and shape specifications, using mechanic's handtools. Starts machines, monitors filling, sealing, and casing operations, and adjusts machines to conform with operations specifications and production requirements. Replaces worn or damaged machine parts. Dismantles, cleans, and reassembles machines. Cleans machines and lubricates moving parts [MACHINE CLEANER (any ind.) 699.687-014]. Occasionally installs cables to connect machines to power source, using electrician's handtools. GOE 06.01.02 PD M 08 09 15 17 EC 05 M3 L3 SVP 6 SOC 7462

920.587-026 MARKER, SEMICONDUCTOR WAFERS (electronics)

Scribes identifying information onto semiconductor wafer, using metal stylus (scribe): Obtains container loaded with semiconductor wafers and removes wafers from container, using tweezers. Marks lot number and description number in designated area of wafers, following specifications and using metal stylus. Records production data. Cleans containers, using soap and water. GOE 06.04.37 PD L 08 09 10 15 M1 L2 SVP 2 SOC 8769

920.685-106 CUBING-MACHINE TENDER (conc. prod.)

Tends machine that stacks and binds cured concrete blocks into packages of specified dimensions for shipping: Places strapping tape on machine feed spindles and threads tape through guides and rollers of machine. Depresses buttons to activate conveyor that positions blocks under binding mechanism of machine, and flips switch to start machine that automatically wraps strapping tape around specified number of blocks to form cube-shaped packages. Presses buttons to set machine pressure gauges that regulate tension of strapping tape. Observes blocks on conveyor to detect imperfections, such as chips, cracks, or discolorations, and replaces defective blocks. Manually rearranges blocks on conveyor, when required, to maintain prescribed order. Stops conveyor and machine when jams occur and clears jams, using metal bar. Adjusts machine guides to package blocks of different styles and sizes, using wrench. May attach identification tags to packages. May tend machine that stacks and binds brick into packages and be designated STRAPPING-MACHINE TENDER (brick & tile). GOE 06.04.38 PD H 08 09 16 20 EC 05 M1 L1 SVP 2 SOC 7662

921.663-070 TRUCK LOADER, OVERHEAD CRANE (nonfer. metal alloys)

Operates overhead crane with handheld control box to load trucks with bundles of aluminum extrusions: Reviews daily truck-delivery schedules to determine information, such as description of orders, sequence of deliveries, and special loading instructions. Weighs bundles, using floor scale, and records weight for company records. Attaches hook or sling of crane to bundles, and presses buttons on control box to hoist and move bundles to loading area or onto trucks, according to unloading sequence. Inspects bundle packaging for conformance to customer requirements. Removes and batches packing tickets. Occasionally loads, restacks, or unloads bundles from trucks by hand or using industrial truck. Directs truck drivers backing vehicles into loading bays and uncovers, covers, and secures loads for delivery. GOE 05.11.04 PD M 04 08 09 17 M1 L2 SVP 4 SOC 8315

922.665-014 BIN TRIPPER OPERATOR (iron & steel)

Tends discharge end of conveyor system that moves raw materials in blast furnace to storage bins: Inspects bins and notifies CONVEYOR OPERATOR (any ind.) 921.683-026 of required material, such as iron and manganese ore, limestone, clay, or sinter. Moves control to position tipper over bin. Opens valve to turn on water spray to settle dust. Notifies CONVEYOR OPERATOR (any ind.) 921.683-026 when bin is full. Presses switch to stop conveyor for malfunctions. Scrapes and cleans bins and bin areas, using bar, scraper, shovel, and broom. GOE 06.04.40 PD L 08 09 16 17 EC 05 07 M1 L1 SVP 3 SOC 8319

929.687-054 PALLETIZER (nonfer. metal alloys)

Secures battens (grooved strips of wood) around bundles of packaged metal extrusions to form protective shipping pallets, using strapping tool: Presses conveyor controls to position packaged extrusions under strapping tool. Measures dimensions of bundles, using ruler, and cuts battens to required size, using power saw. Positions battens, cardboard strips, and metal or plastic strapping around bundles in specified fashion, according to written instructions. Threads strapping through strapping tool and secures battens with strapping, using strapping tool, to form protective pallet around extrusions. Removes palletized bundles from conveyor for further processing, using pneumatic hoist. GOE 06.04.38 PD L 08 09 17 M2 L2 SVP 2 SOC 8761

929.687-058 BANDER, HAND (any ind.) baler; load clerk; packager and strapper.

Fastens plastic or metal bands around stacks, bundles, or palletized articles prior to storage or shipment, using strapping tool and clamps: Counts number of articles to be banded to verify number specified on work order. Unwinds plastic or metal banding material from reel, wraps band around stack or bundle, inserts loose end of banding material into strapping tool, and cinches and crimps banding material and clamp with strapping tool to secure articles during storage or shipment. Counts and records number of banded bundles. May operate hydraulic jack lift or truck to move articles before or after bundling. May cut lumber or other reinforcing material, using handsaw or power saw, and include reinforcing material in bundle or nail lumber together to protect articles during storage or shipment. May stack banded articles on pallet by hand. May band articles to pallet to secure articles for moving. May mark or stencil size of article, customer's name, order number, address, or other identifying data on visible portion of bundle or shipping ticket with markers, brushes, or paint. GOE 06.04.38 PD H 04 05 08 09 15 16 17 18 M2 L2 SVP 2 SOC 8761

930.662-010 LONG-WALL SHEAR OPERATOR (mining & quarrying)

Operates equipment to shear coal from long-wall face in mine: Moves levers to control movement of equipment and to adjust speed and height of cut into coal face during initial pass and during subsequent clean-up passes. Signals other crew members to communicate need to adjust speed of equipment to rate of installation of roof supports and to adjust speed of conveyor to volume of coal needing removal. Listens for unusual sounds that indicate equipment malfunctions. Assists in routine lubrication and maintenance of equipment. GOE 05.11.02 PD H 12 13 17 20 EC 07 14 M2 L2 SVP 5 SOC 654

950.585-014 BOILER-OPERATOR HELPER (sugar)

Assists BOILER OPERATOR (any ind.) 950.382-010 in operation and maintenance of coal-fired boilers: Turns valves that regulate water flow into full ash hoppers to form slurry and flush slurry into ash grinder. Turns switches that activate vacuum pumps to remove fly ash from full fly ash hoppers. Turns valves and flips switches that activate pumps to replace contaminated water in boiler system. Obtains water samples from designated locations of boiler system and carries samples to testing laboratory. Performs chemical and physical water quality laboratory tests according to prescribed standards. Records and gives results of tests to other workers for use in adjustment of equipment operation. GOE 05.06.02 PD L 08 09 15 19 EC 03 14 M2 L3 SVP 4 SOC 7668

952.132-010 OPERATIONS SUPERVISOR, NUCLEAR POWER PLANT (light, heat, & power)

Supervises and coordinates activities of workers engaged in operation and control of thermal-nuclear reactor, turbine-generator, and auxiliary equipment at electric generating station: Devises and writes operating procedures for reactor, turbine-generator, and auxiliary equipment, based on review and interpretation of government regulations, technical manuals, and conferences with manufacturer's representatives. Oversees activities of workers, reviews status reports of station operations, and monitors and analyzes readings of instrumentation systems to ensure that reactor and auxiliary equipment are operated safely and in accordance with Nuclear Regulatory Commission regulations. Confers with supervisory personnel to coordinate activities of operations and maintenance workers engaged in performance of routine and emergency shutdowns and maintenance of equipment and machinery. Prepares training outlines and instructs workers in such subjects as mathematics, reactor physics, and electrical theory, according to Federal regulatory requirements. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.06.01 PD L 12 13 15 20 M5 L5 SVP 8 SOC 67

952.137-026 SUPERVISOR, OPERATIONS (light, heat, & power)

Supervises and coordinates activities of POWER-PLANT OPERATORS (light, heat, & power) 952.382-018, AUXILIARY-EQUIPMENT OPERATORS (light, heat, & power) 952.362-010, and other workers engaged in operating and controlling coal-fired electric generating equipment to produce electricity: Confers with SUPERINTENDENT, GENERATING PLANT (light, heat, & power) 184.167-166 to resolve electric generating problems and to report work activities and personnel matters. Coordinates repair of malfunctioning equipment with maintenance department, and inspects repaired equipment prior to return to service. Assigns new workers to experienced personnel for training, according to established training procedure. Studies equipment modification and operating procedure materials to improve supervisory skills and techniques and to increase worker productivity. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.06.01 PD L 08 09 12 13 15 M3 L4 SVP 7 SOC 67

954.132-010 SUPERVISOR, WATER TREATMENT PLANT (water-works)

Supervises and coordinates activities of workers engaged in operating and maintaining equipment in water treatment plant: Directs activities of workers engaged in filtering, chemically treating, pumping, and testing fresh and processed water in preparation for human and/or industrial use. Plans daily work schedule and assigns tasks to workers based upon priority of work and expertise of individual workers. Inspects equipment, such as filters, chlorine indicators, basins, filtered water basins, and pumps, to

detect malfunctions. Directs workers in repair of equipment and/or reports need for repairs to designated authority. Maintains records on chemical usage and storage, equipment operation, and personnel attendance. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May be required to meet licensing or certification standards established by regulatory agency concerned. GOE 05.02.01 PD L 02 03 08 09 10 12 13 15 16 17 18 EC 07 M3 L3 SVP 6 SOC 691

955.131-010 SUPERVISOR, INCINERATOR PLANT (sanitary ser.)

Supervises and coordinates activities of incinerator plant workers engaged in operation, maintenance, and repair of incinerator furnaces and auxiliary equipment, such as grates, fans, compressors, temperature controls, overhead electric cranes, and ventilating and hydraulic equipment: Directs activities of workers engaged in tasks such as weighing and unloading refuse trucks, moving rubbish to furnace hoppers, operating incinerator furnaces, repairing furnace refractory linings, and removing ashes. Assists workers in repairing facilities and equipment, applying knowledge of principles of combustion and safety procedures, and using handtools. Maintains personnel records. Trains workers in performance of duties and safety procedures. Inspects incinerator furnace and other equipment to detect need for maintenance and repair. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.06.04 PD L 08 09 10 12 13 15 EC 03 07 M2 L2 SVP 5 SOC 67

955.222-010 INSTRUCTOR, WASTEWATER-TREATMENT PLANT (sanitary ser.)

Instructs wastewater treatment plant personnel in operation and maintenance of treatment plant facilities to improve efficiency and meet regulatory certification requirements: Trains personnel in operation and maintenance of treatment plant machines and equipment and demonstrates operation of machines and equipment. Instructs personnel in other procedures, such as selection of sampling sites, laboratory techniques, recordkeeping, safety measures, and care of lift stations. Administers tests and maintains records of students' progress. Assembles materials, schedules courses, and designs contents of courses to meet specific needs of plant personnel. Provides technical assistance to plant staff and serves as troubleshooter in solving problems in operations. Maintains examination records and coordinates training program with State certification program. GOE 05.06.04 PD L 08 09 10 12 13 15 17 M3 L3 SVP 6 SOC 691

955.362-014 INCINERATOR OPERATOR (sanitary ser.) II

Controls operation of multiple-hearth incinerator furnaces and related equipment to burn sludge in wastewater treatment plant: Pushes buttons and turns valves to ignite burners, release combustion air, add fuel, control hearth dampers, set hearth temperatures, and set length of burning cycles. Observes meters and gauges on central control room panel to verify that flows, pressures, and temperatures are within specifications. Turns controls to make routine adjustments, following standard procedures. Notifies worker controlling sludge filter press to adjust feed rate of waste material into incinerator hopper to maintain incinerator efficiency. Opens hearth doors and observes operation of waste raking mechanism to verify that burned residue is swept to succeeding hearth. Periodically records specified meter and gauge readings on incinerator log. Calculates and records values for number of tons of waste material fed per hour and quantity of auxiliary fuel burned per ton of waste material, to document efficiency of incinerator operation. Monitors and adjusts controls of auxiliary equipment, such as exhaust emissions, scrubbers, and incinerator heat recovery unit, following prescribed procedures. Removes and cleans equipment parts, such as valves, burners, and oxygen analyzers, following manuals and using handtools. GOE 05.06.04 PD M 02 08 09 10 15 EC 03 07 M2 L3 SVP 4 SOC 696

955.463-010 SANITARY LANDFILL OPERATOR (sanitary ser.) solid waste facility operator.

Performs any combination of following duties to dispose of solid waste materials at landfill site: Operates heavy equipment, such as bulldozer, front-end loader, and compactor, to excavate landfill site, transport solid waste materials, and to spread and compact layers of waste and earth cover. Directs incoming vehicles to dumping area. Examines cargo to prohibit disposal of caustic waste, according to government regulations. Sprays poisons and other specified chemicals over waste material to control disease carrying pests. Drives truck to distribute oil or water over landfill to control dust. Weighs vehicles entering and leaving site and collects dumping fees. GOE 05.11.01 PD M 08 09 10 17 20 EC 01 05 07 M1 L1 SVP 5 SOC 8317

955.667-010 INCINERATOR PLANT LABORER (sanitary ser.)

Signals GARBAGE COLLECTOR DRIVER (motor trans.) 905.663-010 to dump refuse in specific area of collection pit to maintain even distribution of refuse, using hand. Cleans spills from floor of receiving area, using rake, broom, and hose. Loads non-combustible material into containers and carries containers to pickup area for removal. GOE 05.12.20 PD M 08 09 20 M1 L1 SVP 1 SOC 8769

955.685-010 INCINERATOR OPERATOR (sanitary ser.) I

Tends one or more incinerator furnaces that burn refuse, such as sludge, trash, and garbage: Pulls mechanism to release refuse from hopper into incinerator. Moves levers to ignite burners, to adjust blowers and dampers that regulate airflow and temperature, and to control charging, discharging

ing, and quenching mechanisms of furnace. Opens furnace door and agitates burning refuse to facilitate combustion, using stoking hoe. Moves levers to open grate and drop ashes and noncombustible material from furnace at end of burning cycle. Replaces refractory linings of furnace, using firebrick and mortar. Cleans debris from furnace room floor, using rake and broom. May assist SUPERVISOR, INCINERATOR PLANT (sanitary ser.) 955.131-010 in maintenance and repair of cranes, conveyor equipment, and exhaust system, using handtools. GOE 05.06.02 PD M 08 09 EC 03 M1 L1 SVP 2 SOC 7675

959.137-022 SUPERVISOR, HOME-ENERGY CONSULTANT (light, heat, & power) supervisor, energy conservation representative.

Supervises and coordinates activities of workers engaged in performing domestic-energy-consumption audits for customers of public utilities: Confers with customers and utility representatives to determine customer needs, appointment times, availability of representatives, and scheduling conflicts. Reschedules energy audits accordingly. Reads federal program guidelines, journals, and related reports to ascertain federal program requirements and recent developments concerning energy conservation techniques. Attends energy seminars, staff meetings, and training sessions to assess effectiveness of energy audit program. Suggests to management changes in brochures, community workshops, or audit procedures to improve community acceptance. Prepares written reports that reflect assessment of program and submits them to management and department officials. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.02.01 PD S 12 13 15 M3 L4 SVP 6 SOC 1343

959.367-018 ENERGY-CONSERVATION REPRESENTATIVE (light, heat, & power)

Inspects homes of utility company customers to identify conditions that cause energy waste and suggests actions to reduce waste: Interviews customer to obtain data relating to household energy use, such as type of heating system, number of persons home during day, furnace temperature setting, and prior heating costs. Draws sketch of house, measures house perimeter, windows, and doors, using tape measure, and records dimensions on sketch for use in heat-loss calculations. Inspects areas of house, such as attics, crawl spaces, and basements, and notes conditions that contribute to energy waste, such as loose-fitting windows, uninsulated pipes, and deficient insulation. Reads hotwater tank label to ascertain tank heat-loss rating and determine need for tank insulation blanket. Examines furnace air filters and heat exchanger to detect dirt in filters and soot buildup in exchanger that retard efficient furnace operation. Confers with customer and recommends action to be taken to reduce energy waste, such as weatherstripping, reducing hotwater temperature setting, and adding insulation. Informs customer of types and prices of energy efficiency items sold by utility. Gives customer pamphlets describing energy conservation improvements and sources of loans. Occasionally wraps insulating blanket around hotwater tank, using adhesive strips. Calculates area of windows and house volume, using calculator, and records results on computer input form to provide data for computer calculation of heat-loss estimates that are mailed to customer. GOE 05.07.01 PD M 04 05 06 07 08 09 12 13 15 16 18 EC 01 M3 L3 SVP 3 SOC 1473

960.382-010 AUDIOVISUAL TECHNICIAN (any ind.) audiovisual-equipment operator; projectionist.

Operates audiovisual or sound-reproducing equipment to provide or complement educational or public service programs offered by institutions, such as museums, zoos, or libraries: Operates motion picture projecting equipment to show films in auditorium or lecture hall for entertainment or enlightenment of visitors to institution. Operates film, slide, video, audio tape, or turntable equipment to project or produce still or moving pictures, background music, oral commentary, or sound effects to illustrate, clarify, or enhance impact of presentation by TEACHER (museum) 099.227-038. Coordinates equipment operation with material presented, according to notations in script or instructions of speaker. Maintains equipment in working condition. Makes minor adjustments and repairs to equipment, and notifies maintenance personnel when correction of major malfunction is required. Positions, installs, and connects equipment, such as microphones, amplifiers, and lights. GOE 05.10.05 PD M 08 09 10 13 15 16 19 M3 L3 SVP 3 SOC 7479

962.261-010 PLANETARIUM TECHNICIAN (museum) astro-technician; technical specialist.

Installs, modifies, operates, and maintains sound and projection equipment used in presentation of planetarium classes or shows: Consults with personnel who plan classes and shows to determine feasibility of achieving specified effects, modifications in equipment necessary to create desired effects, and additional equipment or properties to be incorporated into technical equipment layout. Modifies projectors, electro-optic equipment, console controls, and auxiliary instruments, following script or lecture outline, to adjust equipment for producing desired visual effects, basing modifications on knowledge of equipment capabilities, and using handtools, precision instruments, and circuitry diagrams. Selects tapes of musical compositions from planetarium files and records portions of each, as designated in script, to produce tape recording with musical background. Modifies sound system to permit synchronization of recorded commentary and background music with visual presentation. Installs special effect properties, such as models of space ships or slides of ancient interpretations of

constellations, in designated positions in dome of theater, and secures properties to control wires or machinery to facilitate manipulation of properties according to script or lecture outline, using handtools. Operates electro-optic, audio, and auxiliary equipment to present show or to complement presentation of class lectures. Repairs and maintains equipment, using handtools and precision calibrating and testing instruments, applying knowledge of electronic circuitry and electro-optics, and following manufacturer's maintenance instructions and diagrams. Constructs and installs permanent or temporary displays, incorporating electro-mechanical or electronic components, in planetarium's exhibit area. GOE 05.10.05 PD M 02 03 04 06 08 09 10 15 16 17 18 19 M4 L4 SVP 7 SOC 615

962.261-014 STAGE TECHNICIAN (amuse. & rec.)

Installs rigging, lighting, sound equipment, and scenery and erects stages for theatrical, musical, and other entertainment events in arenas, stadiums, theaters, studios, and other amusement places: Reads stage layout specifications and blueprints and confers with MANAGER, STAGE (amuse. & rec.) 159.167-018 to determine type and location of sets, props, scenery, lighting, and sound equipment required for specific event. Assembles props provided by production company, constructs additional props, scenery, and/or stages, and attaches braces that support scenery frames in upright position, using carpenter's handtools and power tools. Climbs ladder or scaffolding to ceiling grid, crawls and balances on beams, inserts ends of cables or ropes through ceiling grid, and attaches cables to scenery, curtains, equipment, support pipes, and counter-balance weights [GRIP (amuse. & rec.; radio & tv broad.) 962.684-014]. Positions lighting fixtures on and around stage area, clamps light fixtures to supports, connects electrical wiring from fixtures to power source and control panel [LIGHTING-EQUIPMENT OPERATOR (amuse. & rec.) 962.381-014], positions sound equipment, such as microphones, speakers, and amplifiers, on and around stage area, and connects electrical lines to power source and mixing console [PUBLIC-ADDRESS SERVICER (any ind.) 823.261-010], utilizing knowledge of electrical codes and use of electrician's handtools and power tools. Pulls cables that raise and lower scenery, curtains, and equipment [FLYER (amuse. & rec.; radio & tv broad.) 962.687-018] and operates lighting and sound equipment during rehearsals and performances, following audio and/or visual cues. GOE 05.10.04 PD H 02 03 07 08 09 10 12 13 15 16 17 18 19 EC 10 M3 L4 SVP 7 SOC 399

962.361-010 OPTICAL-EFFECTS LAYOUT PERSON (motion pic.) assistant camera operator; optical-effects-line-up person; plotter.

Locates and marks frames of motion picture film to identify film segments for optical effects processing: Reads work order or optical effects specifications sheets to ascertain optical effects specifications and location of subject material on original photography film. Mounts single or multiple rolls of film on spindles of winding device, locates marked start frame of film, and aligns start frame in start position of synchronizer-counter device to locate and identify film frames specified for optical effects. Turns crank on winding device to advance film and observes film passing over viewing light box to detect damage or unclean condition. Cleans film using cleaning solutions and velvet cloth. Repairs minor damage, such as torn sprocket holes, using tape. Periodically stops film when viewing more than one roll simultaneously and compares numbers printed on film edges to ensure synchronization of films. Stops film when counter reading matches number indicated on work order for start of first optical effect. Reviews subject matter within film frame and compares to description on work order to ensure match when work order does not include reference numbers. Marks reference frame of film, using film notcher, tape, or other marking device to indicate optical effect starting point. Marks symbols and numbers on film edge or leader to indicate type of effect and length. Advances film to additional reference frames indicated, and marks designated frames to show reference points within individual optical effects. Prepares count sheet indicating position, length, and type of optical effects required for films which do not have prepared specifications sheets. Splices strips of leader material to film, and assembles designated segments of film in specified relationship, using splicing device. May confer with clients regarding optical effects requirements and production problems. May determine artwork requirements and requisition artwork. May review and approve finished optical effects. May load and unload film from camera magazine, and mount and remove magazines from camera. May change sub-title cards when filming sub-titles. GOE 01.06.02 PD L 08 09 10 15 18 19 M3 L3 SVP 6 SOC 6868

962.684-022 PROP ATTENDANT (amuse. & rec.)

Readies stage, equipment, and seating area of theater prior to performances and produces special lighting and sound effects during performances, using various equipment and devices: Lifts, places, and repositions special effect props, such as breakaway walls, dry ice in smoke/fog generator, and stage elevators, for use by performers during show. Starts, connects, and tests light and sound equipment, such as microphones, magnetic tape players, amplifiers, and stage lighting system, prior to show. Cleans and prepares stage, seating, and dressing areas prior to show [CLEANER, COMMERCIAL OR INSTITUTIONAL (any ind.) 381.687-014]. Pushes buttons, presses and flips switches, and turns valves to achieve special sound and lighting effects and to raise and lower scenery and stage curtain during performance, following sight or sound cues. Hands props to per-

formers and assists performers with costume changes during show. May order makeup supplies and props to replace those used or damaged during shows. Prior to show may test equipment and during show may tend equipment that activates and controls animated characters. GOE 05.12.16 PD M 02 04 06 08 09 10 13 15 16 17 20 M2 L3 SVP 2 SOC 399

969.137-014 SUPERVISOR, SHOW OPERATIONS (amuse. & rec.)

Supervises and coordinates activities of performers and technicians in amusement or theme park: Reviews and adjusts performance schedule to ensure number of performances meets anticipated attendance. Arranges shift assignments of performers and technicians. Talks to guests in person or by telephone to answer questions and resolve complaints. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 01.03.01 PD L 08 09 10 12 13 15 M4 L4 SVP 6 SOC 329

969.685-010 SNOWMAKER (amuse. & rec.)

Tends artificial snow making equipment of ski resort to produce artificial snow along ski trails: Rides chair lift or drives snow-terrain vehicle along ski trails to reach snow equipment. Attaches hoses from snow equipment to nozzles of above-ground outlets for underground compressed air and water pipelines, using wrenches. Turns outlet valves to adjust compressed air and water mixture to obtain desired snow spray. Returns defective or frozen snow equipment to ski lodge for repair, using snow vehicle. Repositions equipment periodically to direct snowfall to other sections of trail, or closes valves to shut off equipment when snow coverage is completed. Cleans dirt and frozen snow from equipment, using handtools. GOE 05.12.18 PD H 04 05 06 08 09 15 16 EC 01 10 M1 L1 SVP 2 SOC 525

970.131-010 SUPERVISOR, TYPE COPYING (mach. mfg.)

Supervises and coordinates activities of workers engaged in drawing, tracing, and cutting out type characters used in manufacturing phototypesetting type disks: Interviews job applicants and evaluates art portfolios to determine skill levels of applicants. Trains new workers in all phases of type designing, including use of photographing and developing equipment. Observes and evaluates progress of new employees for consideration of retention or release. Consults with staff to identify and resolve production difficulties and provide technical assistance. Coordinates production activities and assigns work according to availability and capabilities of workers. Occasionally designs, draws, and cuts out new type characters of complex nature, using drawing and cutting instruments. Maintains production records. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 01.06.03 PD L 09 10 12 13 15 M3 L4 SVP 9 SOC 67

970.131-014 SUPERVISOR, ARTIST, SUSPECT (gov. ser.)

Supervises and coordinates activities of workers engaged in forming composite images of persons suspected of criminal activities: Assigns duties to and trains new workers. Participates in activities of ARTIST, SUSPECT (gov. ser.) 970.361-018 to arrange and enhance set of facial features to form composite images of persons suspected of criminal activities. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 01.06.01 PD L 08 09 10 12 13 15 17 18 19 M3 L3 SVP 7 SOC 325

970.137-010 SUPERVISOR, SIGN SHOP (signs)

Supervises and coordinates activities of workers engaged in constructing and painting signs: Reviews work orders and visits future site of sign to determine size of sign, materials needed to construct sign, and media needed to convey requested message. Orders material not already on inventory. Assigns work to PAINTER, SIGN (any ind.) 970.381-026; SIGN MAKER (signs) 869.381-026; SIGN WRITER, HAND (any ind.) 970.281-022; or other workers based upon current workload, priority of work to be completed, and expertise of available workers. Performs other duties as described under SUPERVISOR (any ind.) Master Title. May prepare periodic department budget based upon knowledge of historic and projected costs of personnel, materials, and replacements and additions to tool and equipment inventory. GOE 05.10.04 PD L 08 09 10 12 13 15 16 17 19 M3 L4 SVP 8 SOC 71

970.361-018 ARTIST, SUSPECT (gov. ser.)

Selects from inventory and arranges set of facial features to form composite image of persons suspected of criminal activities based on descriptions obtained from victims and witnesses to crimes: Assembles and arranges outlines of features, such as head contours, noses, eyes, lips, chins, and hair lines and styles, to form composite image, according to information provided by witness or victim. Operates photocopy or similar machine to reproduce composite image. Draws moles, scars, and other identifying marks, using pens, pencils, and other artist's work aids, to retouch copy. Alters copy of composite image until witness or victim is satisfied that composite is best possible representation of suspect. Classifies and codes components of image, using established system, to help identify suspect. Searches, or helps witness or victim to search, police photograph records, using classification and coding system, to determine if existing photograph of suspect is available. GOE 01.06.01 PD L 08 09 10 12 13 15 17 18 19 M3 L3 SVP 6 SOC 325

970.381-030 RETOUCHER, PHOTOENGRAVING (print. & pub.)

Touches up photoengraving film reproductions of sketches or photographs to eliminate processing defects and distortions in design or to

create special effects on reproductions, utilizing knowledge of lithographic techniques: Compares film negatives or positives with original to locate portions of image, such as dots and lines that were lost during processing, spots on negatives or positives, and excessively dark or light tone values on film. Paints in lines and dots that were lost during processing, using brush, pen, or sponge and opaque. Scratches out spots and undesirable portions of image, using knife and pin. Paints in additional lines or dots to increase intensity of image on film or scratches out lines or dots to reduce intensity, following colors on original to restore specified tone values. May sketch designs on transparent paper preparatory to transferring to film. May retouch, correct, and create special effects on reproductions of photoengraved materials, using computer graphics system and be designated COMPUTER-ASSISTED RETOUCHER, PHOTOENGRAVING (print. & pub.). GOE 01.06.01 PD S 08 09 10 15 18 19 M3 L3 SVP 7 SOC 6842

970.381-042 TYPE COPYIST (mach. mfg.)

Draws and cuts out type characters of plastic, such as letters, numbers, and logos for use in manufacturing phototypesetting type disks, using drawing and cutting instruments: Searches reference sources to determine availability of characters in type style specified on orders. Reproduces reference copies of new characters required to obtain working copies, using automatic film developer. Places tracing paper over working copies, and traces and draws new characters, using pencil and triangle. Measures width, thickness, and spacing of characters, using optical and other measuring instruments, and pencils in or erases markings of characters as necessary to arrive at specified size and spacing requirements. Places tracing paper with finalized characters in light box, positions plastic sheets over light box, and cuts plastic following character outlines on tracing paper to obtain plastic characters, using cutting tools and metal guides. Records identity of characters on card for filing with reference source and routes characters for further processing. GOE 01.06.03 PD S 08 09 10 15 M3 L3 SVP 7 SOC 6863

972.282-014 LASER-BEAM-COLOR-SCANNER OPERATOR (print. & pub.)

Sets up and operates computer controlled laser-beam color scanner to enlarge and screen film separations used in preparation of lithographic printing plates: Measures original color transparency, color negative, or flexible color reflection copy to determine square area of film for reproduction, using metric rulers. Computes and converts percentage ratio and digital readings of enlargement, following instructions on work order and computer chart. Selects and cleans specified scanner drum and head to ensure dust free processing, using cleaning solvents, air blower, and static free brush. Mounts scanner drum and head on scanner according to reproduction scale desired, using handtools. Positions transparency or original reflection copy on scanning drum and secures copy against drum to prevent air pockets, using oil and transparent tape. Analyzes original copy to evaluate color density, gradation highlights, middle tones and shadows, and turns control knobs of color computer to obtain desired effects of entire or specific areas of copy. Selects desired preprogrammed computer tape, positions tape in electronic screening section of computer, and activates console keys to input specified information regarding reproduction of copy, such as horizontal and vertical scale and screenlines and width. Loads film into film holder, places holder in exposing chamber, and activates automatic vacuum system mechanism that loads and secures film on drum. Adjusts hand-lever to align scanning head, and turns knobs to focus lens of head when combinations of several picture subjects, insertions of lettering, picture cutout, partial picture correction, or colored borders are required. Activates keys of color computer to select recording speed, depending on desired resolution of copy. Pushes button to activate scanner, unloads film holder at completion of scanning cycle, and develops exposed film, using automatic developing machine. Inspects developed film for desired results and quality, using magnifying glass and scope. Adjusts controls of scanner and repeats process until desired results are obtained. Replenishes chemicals used in developing machine and color scanner. GOE 05.10.05 PD L 08 09 10 15 18 19 M3 L4 SVP 7 SOC 7444

972.382-018 PHOTO MASK MAKER, ELECTRON-BEAM (electronics) electron-beam operator.

Operates computer-controlled electron-beam exposure equipment to transfer circuit pattern onto photoresist-coated photo mask plates for subsequent use in fabrication of semiconductor devices: Loads disk or tape of pattern information into equipment, and positions unexposed photo mask plate in vacuum chamber of equipment. Types commands to enter exposure specifications and production instructions and activate equipment that directs electron beam at specified locations on coated photo mask plate to expose photoresist. Develops and etches exposed photo mask plate, using automatic developing and etching equipment. Inspects pattern on photo mask plate for conformance to specifications, using microscope and specialized inspection devices. GOE 05.10.05 PD L 08 09 10 13 15 16 17 18 M2 L3 SVP 6 SOC 6842

972.382-022 PHOTO MASK TECHNICIAN, ELECTRON-BEAM (electronics)

Generates computer tape or disk of processing instructions for use in electron-beam fabrication of photo masks used in integrated circuit (IC) manufacture, using computer graphics system and software and applying

knowledge of photo mask layout: Reviews work order and specification manuals to determine data required to layout array (arrangement of integrated circuit layer patterns) for reproduction onto photo mask. Enters commands into computer, using keyboard, to retrieve from data file and display on display screen existing array format information. Calculates additional array information required, such as array center and coordinates, number of rows and columns in array, and location of test patterns in array, following specification manual and work order instructions. Locates file (computer tape) relating to specified IC layer and loads tape into computer tape drive. Enters specified commands into computer, using keyboard to retrieve IC layer pattern from file and display pattern on array format on computer display screen. Positions IC layer patterns and test patterns within array format on display screen, using knowledge of photo mask layout and computer graphics. Enters electron-beam exposure instructions into computer and keys in commands to transfer array data and exposure instructions onto computer disk or tape for use by PHOTO MASK MAKER, ELECTRON-BEAM (electronics) 972.382-018. May enter commands into computer, using keyboard, to transfer IC layer patterns onto hard copy (plots), using plotter peripheral equipment. May inspect plots of IC layer patterns for layout errors. GOE 05.10.05 PD L 08 09 10 15 18 M3 L3 SVP 6 SOC 3974

972.384-010 PHOTO MASK PROCESSOR (electronics)

Prints and develops working photo mask plates from master photo mask plate for subsequent use in fabrication of semiconductor devices: Reads work order to determine process specifications. Loads unexposed plates and master plate in holding fixture of printing machine. Adjusts controls and activates machine that exposes blank plate to image on master plate. Develops exposed plates, using developing equipment and dryer. Cleans developing equipment periodically and refills chemical sinks. Cleans master plate at specified intervals, using cleaning and rinsing solutions and ultrasonic equipment. GOE 05.10.05 PD L 08 09 10 15 17 18 M2 L2 SVP 5 SOC 7671

972.384-014 PLATEMAKER, SEMICONDUCTOR PACKAGES (electronics)

Prints and develops printing plates used in printing symbols and numbers on semiconductor packages: Types identifying symbols and numbers on paper or rubs transfer sheet to transfer symbols and numbers onto paper. Places paper containing identification information on camera grid. Places specified lens on camera holder and presses buttons and turns handles to adjust camera focus. Mounts film in guide slot of camera and pushes button to expose film to identify information. Removes exposed film camera and places film in developer that automatically develops and dries negative. Inserts negative (containing image of identification information) and sheet of polymer into exposure machine. Activates machine to expose negative polymer sheet to print negative image on polymer and form printing plate. Removes polymer plate and places plate in envelope. Maintains production records and machines. May place semiconductor packages in oven to set or dry printing. May immerse printed packages in chemical solution to test durability of printing. GOE 05.10.05 PD L 08 09 10 15 17 18 EC 13 M2 L3 SVP 4 SOC 7671

972.131-026 SUPERVISOR, TYPE PHOTOGRAPHY (mach. mfg.)

Supervises and coordinates activities of workers engaged in photographing, developing, printing, examining, measuring, and sorting type characters used in production of phototypesetting type disks: Schedules daily production activities, utilizing computerized production control system, and assigns work to staff based on priorities, knowledge of worker capability, and capacity of machines and equipment. Observes workflow to ensure schedules are maintained. Examines production operations at each station to ensure adherence to specifications and quality standards, using comparator-profile projector and rules. Confers with staff to resolve production problems and provide technical assistance. Interviews job applicants and trains new staff. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.10.05 PD L 08 09 12 13 15 M3 L4 SVP 8 SOC 71

972.380-010 COMPUTER-CONTROLLED-COLOR-PHOTOGRAPH-PRINTER OPERATOR (photofinish.)

Sets up and operates computerized photofinishing equipment to produce color photographic prints from negatives: Develops test film strip and prints test photographic prints from negative at specified intervals, using film processing and printing equipment, to ensure photofinishing equipment functions according to processing standards. Tests film strip and prints for conformance to color density values, using densitometer. Plots and records reading on charts and compares results with standards to ascertain color balance deviation and need for program changes, following processing control manual. Keys program changes into computer and posts changes in processing log to maintain record of changes. Measures and mixes specified chemicals and transfers solutions to reservoirs of photofinishing equipment. Reads customer photofinishing order to ascertain film type, number of prints desired, and delivery date and to determine machine settings and lens requirement for printing photos. Replaces lens and negative carrier in printer according to film type to be processed. Adjusts controls to regulate frame and paper size. Scans computer display unit to ensure specified program mode is operational and inputs code changes. Keys in billing information according to film type and number of exposures to be printed. Positions negatives in frame of carrier and de-

presses pedal to actuate printing action. Examines prints for variations from standards and keys in computer changes to maintain computer programming of color values in printing operation. Removes customer sales slip from billing unit and attaches slip to envelope containing customer film and prints. GOE 05.10.05 PD S 08 10 15 18 19 M3 L3 SVP 3 SOC 7671

972.382-026 COMPUTER-OUTPUT-MICROFICHE OPERATOR (bus. ser.)

Operates computer-output-microfiche (COM) unit to produce microfiche copies of documents from magnetic tape: Reviews processing instructions to determine computer programs required to produce microfiche in accordance with customer specifications. Types program identification code into COM unit and scans information on unit display screen to verify program selection. Positions reel of magnetic tape on unit and threads tape through tape reading mechanism. Selects and installs camera lens according to designated format and depresses controls to actuate unit that automatically reads electronic impulses on magnetic tape, converts impulses to printed images on film, and develops film to produce microfiche. Monitors lights that indicate depletion of film or chemicals or unit malfunction and observes display screen to detect unit demand for data input. Examines sample microfiche to verify clarity of images, using microfiche viewer, and modifies processing procedures when microfiche do not meet quality standards. May tend automatic film processor to develop film when COM unit does not include processor. May duplicate microfiche, using microfiche duplicating machine. May develop programs for COM unit [PROGRAMMER, DETAIL (clerical) 219.367-026], keyboard data into computer, or operate keypunch machine to transcribe data onto computer program cards. GOE 05.10.05 PD L 08 09 10 15 19 M1 L3 SVP 2 SOC 7671

972.382-030 PHOTOGRAPHIC ALIGNER, SEMICONDUCTOR WAFERS (electronics) aligner.

Operates photographic equipment to align and expose mask circuit pattern with photoresist-coated semiconductor wafer to produce image of circuit pattern on wafer surface: Inserts mask into aligning equipment. Places wafer in wafer holders, such as chuck or conveyor, using tweezers or vacuum wand, to load aligning equipment. Presses buttons to position wafers underneath microscope and aligning head. Observes wafer through microscope and turns knobs to align mask with index points on wafer. Presses button to activate wafer exposing cycle. Maintains production records. GOE 06.02.18 PD L 08 09 10 15 17 18 M2 L2 SVP 4 SOC 7671

972.382-034 STEP-AND-REPEAT REDUCTION CAMERA OPERATOR (electronics)

Operates step-and-repeat camera and film developer to reduce electronic drawings to specified size and to repeat pattern on photographic (photo mask) plates used in fabrication of semiconductor devices: Positions and aligns electronic drawing and photographic plates in holding fixtures of camera. Turns adjustment knobs to attain specified focus. Sets control panel dials according to specifications, or loads pre-programmed tape into computerized control panel, and activates camera. Feeds film into automatic machine that develops, fixes, washes, and dries film, or moves film from tank to tank in developing unit, using tongs or tweezers and utilizing knowledge of film development techniques to develop film. Records process information in production log. May inspect electronic drawing or exposed plate. GOE 05.10.05 PD L 08 09 10 15 17 EC 13 M2 L2 SVP 5 SOC 7444

972.382-038 PHOTO MASK PATTERN GENERATOR (electronics) pattern generator operator.

Operates pattern-generating machine to transfer integrated circuit pattern onto surface of reticle for use by PHOTO MASK PROCESSOR (electronics) 972.384-010 in production of photo mask plates used in fabrication of semiconductor devices: Reads specifications to determine production data and enters data into pattern-generating machine, using keyboard. Loads digitizer tape into machine reader to control exposure process. Positions unexposed photoresist coated reticle on projection stage of machine and adjusts focus. Types commands to activate machine that exposes photoresist on reticle to circuit pattern. Tends developing and etching equipment to develop and etch pattern on reticle. Inspects reticle for defects, using microscope. GOE 05.10.05 PD L 08 09 10 15 17 M3 L3 SVP 5 SOC 7671

972.384-010 PHOTO TECHNICIAN (electronics)

Prints and develops film of circuit designs for use in fabricating printed circuit boards (PCBs), using photographic equipment and knowledge of photographic processing: Reads work order to determine photographic techniques required. Aligns artwork developed from circuitry blueprint and other specifications with duplicating film on darkroom light table, following prescribed procedures. Tapes materials to table or closes table lid and depresses control to activate vacuum device that holds work in alignment during processing. Adjusts camera settings for reduction or enlargement of image, according to work order specifications, and sets or activates timer that controls exposure time of film. Feeds exposed film into machine that develops, fixes, washes, and dries film [PRINT DEVELOPER, AUTOMATIC (photofinish.) 976.685-026]. Examines film to verify that reproduced image meets quality standards. May touch up artwork or

developed film, using tape, knife, brush, or pen. May submerge exposed film in series of baths to develop and fix image, and dry film, using squeegee and electric dryer. May print and develop circuit image on diazo film, using automatic equipment and be designated DIAZO TECHNICIAN (electronics). GOE 05.10.05 PD L 08 09 10 15 17 18 M2 L3 SVP 4 SOC 7671

976.385-010 MICROFILM PROCESSOR (bus. ser.)

Tends machine that automatically processes microfilm and examines processed film to ensure that quality of microfiche meets established standards: Loads film into magazine of camera under darkroom conditions, attaches magazine to camera, and splices end of film to leader in machine to facilitate threading film, using splicing tape. Flips switches and turns valves to activate machine components and functions, such as blower, squeegee, water flow into processor, and rate of processing chemical replenishment. Monitors machine warning lights to detect processing malfunctions, such as break in film or leader, and takes action to correct malfunction, using knowledge of machine operation. Records film processing information, such as film type, developing speed, and rate of chemical replenishment to maintain film log. Examines processed film to ensure numerical order and clarity of microfiche, using film winder, light table, and magnifier. Marks defective microfiche section of film and lists identifying number of sections on identification sheet to indicate refilming required. Measures optical density of random film section to ensure standard processing, using densitometer. Places film on cutter, aligns markings on cutter and film, and moves cutting instrument across film to separate individual microfiche sections of film. Discards defective microfiche and places acceptable microfiche in envelope for further processing. Mixes processing chemicals to maintain supply, following specified formula, using mixing machine. Processes sample film and measures density of film to enable MICROFILM-CAMERA OPERATOR (bus. ser.) 976.682-022 to determine exposure settings for new batches of film. GOE 05.10.05 PD L 08 09 10 15 M2 L2 SVP 2 SOC 7671

976.682-022 MICROFILM-CAMERA OPERATOR (bus. ser.)

Operates microfilm unit camera to film documents: Selects and inserts format disk, turns knobs and flips switches to set controls of unit operation, such as exposure time, margin space, and camera action according to format instruction sheet. Selects specified camera lens according to document reduction ratios desired on film and slides lens into position on unit. Loads film into camera and splices film to device that facilitates movement of film through unit, using splicing tape. Positions documents on unit feed belt, depresses pedal to activate camera, and observes control panel to monitor unit operation. Replaces film or realigns documents according to signal lights on control panel. Observes colors on printed documents to determine exposure settings based on predetermined standards, and adjusts unit controls to obtain desired effects. Removes film from unit and wraps in light-resistant bag for further processing. Completes film identification sheet that indicates indexing numbers of microfilm and attaches sheet to bag for reference by MICROFILM PROCESSOR (bus. ser.) 976.385-010. GOE 05.10.05 PD S 08 09 10 15 19 M1 L2 SVP 2 SOC 7671

976.684-030 CONTACT PRINTER, PRINTED CIRCUIT BOARDS (electronics) exposure machine operator; imager; photo printer; photoresist printer.

Prints circuit image on photoresist film-laminated panels for use in fabricating printed circuit boards (PCBs), using contact printer: Aligns (registers) one or more circuit negative films with film-laminated circuit board panel in drawer of contact printer vacuum frame. Activates printer controls to create vacuum and secure negative film against circuit board panel. Activates printer to expose negative and panel film to ultraviolet light and transfer circuit image onto panel film. Lifts drawer cover and removes PCB panel and negative. May measure light intensity of contact printer, using exposure meter, tapes, or radiometer, and adjust exposure time according to specifications. May secure negative and panel in vacuum frame, using jig or tape. May examine printed panels for defects in printed circuit. May feed circuit board panels into machine that develops exposed circuit pattern on panels. May tend equipment that laminates photoresist film to circuit board panels. May print circuit pattern on dry photoresist film for use in manufacturing double-sided and flexible PCBs and be designated CONTACT PRINTER, DRY FILM (electronics). GOE 05.10.05 PD L 08 09 10 15 18 M2 L2 SVP 3 SOC 7671

976.685-034 DEVELOPER, PRINTED CIRCUIT BOARD PANELS (electronics)

Tends machine that develops photoresist image on panels of printed circuit boards (PCBs): Mixes specified amount of chemical solution and pours chemicals into developing machine tank. Turns valves to admit specified amount of water into machine reservoirs. Starts machine and monitors conveyor system, temperature gauges, and pumps. Adjusts controls to maintain specified temperature levels and speed of conveyor. Removes plastic protective film from upper and lower surfaces of photoresist laminated PCB panels. Places panels on conveyor that feeds panels into machine that automatically develops photoresist circuit image on exposed photoresist film, dissolves unexposed photoresist film, and rinses and dries panels. Removes panels from conveyor and visually examines panels to detect development processing defects. Notifies supervisor of defective panels and machine malfunctions. May count and record number of panels completed. May maintain log on usage of developer solution. GOE 06.04.19 PD M 08 09 15 18 19 M2 L2 SVP 2 SOC 7671

976.685-038 PHOTOGRAPHIC PROCESSOR, SEMICONDUCTOR WAFERS (electronics) resist coater-developer.

Tends photographic processing machines that coat semiconductor wafers with solutions, such as photoresist and developing chemicals: Places wafers in containers, such as boats, magazines, cassettes or chuck, using vacuum wand or tweezers. Loads wafer containers in photographic processing machine, such as photoresist coater or developer. Pushes buttons and turns knobs to start automatic coating cycle. Removes container of coated wafers from machine. Cleans and maintains machines. Maintains production records. May immerse wafers in baths of developing chemicals. May place coated wafers in oven to set and dry wafers. May enter production information into computer, using computer terminal keyboard. May immerse wafers in chemical baths to etch excess photoresist or to clean wafers. May visually inspect wafers to identify defects, such as misalignment, excess photoresist, and scratches. GOE 06.04.19 PD L 08 09 10 15 17 EC 13 M1 L2 SVP 2 SOC 7671

979.132-010 SHIFT SUPERVISOR, FILM PROCESSING (print. & pub.)

Supervises and coordinates activities of workers engaged in production of computer tapes containing pattern design data or film positives or negatives of pattern designs for use in photoengraving processes: Analyzes work order and confers with supervisory personnel to determine most feasible method required to produce negative or positive film or computer tape of customer pattern design. Develops work procedures for producing customer design in accordance with computer limitations and customer specifications. Computes mathematical model for pattern designs adaptable to mathematical solution. Inspects film positives and negatives to verify conformance to specifications. May operate scanner, computer, display console, and color design console. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 05.10.05 PD L 08 09 10 12 13 15 17 18 19 M3 L3 SVP 8 SOC 71

979.137-026 SUPERVISOR, TYPE-DISK QUALITY CONTROL (mach. mfg.)

Supervises and coordinates activities of workers engaged in printing, developing, and examining type character proofsheets used to verify accuracy of phototypesetting type disks: Schedules production activities, such as printing, developing, and proofing of copy used to verify accuracy of type characters on disks, applying knowledge of processing techniques and production requirements. Periodically examines proofs or type characters on disks, using magnifier, to ensure conformity to product specifications and quality standards. Interviews and hires job applicants, initiates training, and assigns new workers to work with experienced workers to continue on-the-job training. Performs other duties as described under SUPERVISOR (any ind.) Master Title. GOE 06.01.01 PD L 08 09 12 13 15 18 M3 L4 SVP 7 SOC 71

979.384-010 SCREEN MAKER, PHOTOGRAPHIC PROCESS (any ind.)

Fabricates stencils for screen printing, using knowledge of photochemical processing and equipment: Coats screen with photosensitive emulsion, using brush. Places and secures artwork and screen in frame of vacuum printer. Adjusts printer controls and activates printer to transfer image onto screen and form stencil. Washes unexposed emulsion from screen, using water and hose. Hangs screen in rack or places screen in oven to dry. May fabricate stencil by adhering film with specified image to screen, using vacuum frame. May insert screen in frame, using handtools and tension meters [PRINTING SCREEN ASSEMBLER (electronics) 979.684-042]. May measure and mix ingredients used in photochemical process, according to standard formulas. May scrub screen for reuse, using solvents, brush, and hose, in sink. May pour ink or other printing material onto screen and move squeegee across screen to test screen or to screen print objects [SCREEN PRINTER (any ind.) 979.684-034]. GOE 05.10.05 PD M 08 09 10 15 18 M2 L2 SVP 4 SOC 6868

979.665-010 SILK-SCREEN PRINTER, MACHINE (any ind.)

Tends silk-screen machine that prints designs or lettering on glassware, pottery, metal, plastic, or electronic items: Bolts framed silk-screen onto machine, and installs and adjusts workpiece holding fixture, stops, and guides, using handtools, ruler, and workpiece pattern. Attaches squeegee to pneumatic drive mechanism, using wrench, and couples air line to mechanism. Regulates air pressure and manipulates squeegee to adjust squeegee pressure and angle of sweep. Applies printing compound to screen, using spatula or brush. Places workpiece in or on holding fixture, presses button to lower screen, and depresses pedal or pushes button to activate squeegee. Observes silk-screen and workpiece to detect printing defects caused by rip in screen and applies glue to rip to repair screen. Cleans silk-screen, using brush and solvent. May thin printing compound, using specified thinner. May tend firing oven to dry printed workpiece. May sharpen squeegee on sanding machine. May transfer image of original artwork to screen, using vacuum printer. May be known as DECORATING-MACHINE OPERATOR (glass mfg.); SQUEEGEE-MACHINE OPERATOR (glass mfg.); or STENCILING-MACHINE TENDER (glass mfg.; glass prod.). May tend machine that screen-prints circuit pattern and nomenclature on printed circuit board panels used in fabricating printed circuit boards and be known as SCREEN-PRINTING-MACHINE TENDER, PRINTED CIRCUIT BOARDS (electronics). GOE 06.04.09 PD L 08 09 10 15 17 18 19 M1 L2 SVP 3 SOC 7643

979.667-010 INSPECTOR, SCREEN PRINTING (print. & pub.)

Inspects stencils, silk screens, materials, and printed products at various stages of production to ensure conformance to specifications, applying knowledge of screen printing techniques: Reviews job order and examines customer artwork and material to be printed, such as vinyl, wood, glass, or paper products, to evaluate suitability of material for silk-screen printing. Inspects stencils for conformance to customers specifications and company standards and returns unsatisfactory stencils to cutter for modifications. Examines sample of screen printing prepared from stencil to verify print is complete and color is applied in conformity with customer's requirements. Feels surface of screen print for smoothness. Discusses corrections to silk-screen process with screen printer. Inspects final product to verify quality. Records inspection results on job order or quality control form. GOE 06.03.02 PD L 08 09 11 12 13 15 19 M2 L2 SVP 3 SOC 782

979.684-034 SCREEN PRINTER (any ind.) decorator; letterer; screener; silk-screen operator; silk-screen painter.

Prints lettering and designs on objects, such as posters, targets, instrument dials, furniture, glass, and toys, using screen-printing device: Positions object against guides on setup board or holding *fixture* of screening device and lowers screen. Pours paint into screen frame or dips squeegee in paint and draws squeegee across screen to transfer design to object. Cleans screen with solvent at end of run and when using different colors. May mix paints according to standard formulas. May affix decals to parts and assemblies, using roller. May examine printed object for defects. May fabricate silk-screen stencil, using photographic equipment. May be designated according to object printed as TARGET-FACE MAKER (sports. equip.). May tend semi-automatic machine that advances wallpaper under printing screen and be designated WALLPAPER PRINTER (wallpaper) II. May screen-print electrode material onto substrate used in electronic components, such as ceramic capacitors and film resistors and be known as SILK-SCREEN PRINTER (electronics). May screen-print solder mask or nomenclature on printed circuit boards and be designated as SCREEN PRINTER, PRINTED CIRCUIT BOARDS (electronics). GOE 06.04.34 PD L 08 09 10 15 17 18 19 M1 L1 SVP 3 SOC 7757

979.684-042 PRINTING SCREEN ASSEMBLER (electronics) screen stretcher.

Stretches and fastens screening material to metal frames to make printing screens, using one of the following methods: (1) Positions frame in holding fixture of stretcher. Places specified length of screening material, such as silk, polyester, or metal mesh, over frame and secures edges of material in clamps of stretcher. Turns ratchet wheels on stretcher to stretch and straighten screening material. Examines and feels screening material to determine tension. Places tension measuring instrument on screening material to measure tension according to specifications. Glues screening material to frame and removes frame from stretcher. Trims excess material from frame, using knife. (2) Clamps specified length of screening material to screen frame. Tightens screws of frame to stretch and straighten screening material according to sequence diagram, using handtool. Examines screen for defects, such as runs or torn areas. GOE 06.04.34 PD L 08 09 10 11 15 17 M1 L1 SVP 2 SOC 774

979.687-026 TYPE-COPY EXAMINER (mach. mfg.)

Examines proofsheets for irregularities in type characters indicative of defects in phototypesetting type disks: Examines each character on proofsheets for breaks, irregular spacing, improper alignment, and eccentricity, using magnifying glass. Circles characters that do not conform to standards, using red pencil. Files approved proofsheets and forwards proofsheets failing to meet standards to SUPERVISOR, TYPE-DISK QUALITY CONTROL (mach. mfg.) 979.137-026. May attach identification labels or adhesive-backed paper to phototypesetting type disk components. GOE 06.03.02 PD S 08 09 10 15 18 M1 L2 SVP 2 SOC 782

979.687-030 INSPECTOR, FURNITURE DECALS (furn.)

Inspects silk-screened decals used in furniture decoration for defects: Inspects sheets of decals for defects, such as smears, misalignments, uneven color, or torn paper. Counts acceptable decals and records totals on production records. Arranges stacks of decal sheets in order and cuts stacks, using power shear. Positions rubberbands around stacks of decals and places stacks in storage bins. GOE 06.03.02 PD M 08 09 10 15 18 19 EC 07 M1 L1 SVP 2 SOC 782

Glossary

The description of tasks of some occupations required the use of technical words, the meanings of which differ from the usage listed in most standard dictionaries. These technical terms appear in italics the first time they are used in a definition.

Thirteen new technical terms, defined below, are used in occupational definitions included in this Supplement. Other Glossary terms are found on pages 947 through 963 of the Fourth Edition DOT.

ACCUMULATOR

Component of a hydraulic system which stores hydraulic fluid (oil) under pressure.

BALANCE

To adjust pressure, velocity, or volume control settings in a heating, cooling, or ventilating system to attain performance indicated in system design specifications.

BOAT

A supporting structure used to hold semiconductor wafers during and between processing.

CRYSTAL ORIENTATION

The structural arrangement of atoms or molecules inside a semiconductor crystal or wafer.

DIE

An individual integrated circuit also known as a chip. The term is usually used after the wafer has been scribed and sorted, although it is not limited to that use.

FLAT

A flat edge ground along a semiconductor crystal to denote crystal orientation and resistivity and which serves as a reference line during processing.

PROGRAMMABLE CONTROLLER

A device which, after being programmed by means of its keyboard and display screen, starts, stops, and coordinates one or more pieces of automated machinery.

REMELT

Pieces of crystal ingot not meeting specifications used as material to grow new ingot.

RETICLE

A photo plate on which an enlarged copy of a semiconductor circuit layer pattern is reproduced and used in the production of photomasks.

ROBOT CONTROLLER

A computerized device that provides the signals that direct the motions of the robot, so that it is both positioned and oriented correctly in space over time.

TEACH PENDANT

A hand held control box connected to the robot by an electrical cable used to actuate, for programming and re-programming purposes, the motions of the robot performing its prescribed task.

TYPING ELEMENT

Ball-shaped component of electric typewriters that contains raised characters, such as alphabets, numbers, and special symbols.

WELD CONTROLLER

A programmable device which controls the amperage, pressure, and dwell (time) of welding guns attached to automatic machinery.

A

abrading machine tender (electronics) 673.685-102
 ACCOUNTANT (profess. & kin.) 160.167-010
 ACCOUNTANT, COST (profess. & kin.) 160.167-018
 ACCOUNTANT, PUBLIC (profess. & kin.) 160.167-010
 ACID-TANK CLEANER (petrol. refin.) 891.687-022
 ACUPRESSURIST (medical ser.) 079.271-014
 ADMINISTRATOR, PESTICIDE (gov. ser.) 188.117-134
 ADMINISTRATOR, STRUCTURAL PEST CONTROL (gov. ser.) 188.117-134
 AERONAUTICAL PROJECT ENGINEER (aircraft-aerospace mfg.) 002.167-018
 AGRICULTURAL-CHEMICALS INSPECTOR (gov. ser.) 168.267-082
 AGRICULTURAL COMMODITY GRADING SUPERVISOR (gov. ser.) 188.117-134
 AIR AND HYDRONIC BALANCING TECHNICIAN (any ind.) 637.261-034
 AIRDOX FITTER (mining & quarrying) 862.281-022
 AIRPORT UTILITY WORKER (air trans.) 912.663-010
 ALCOHOL-AND-DRUG-ABUSE-ASSISTANCE PROGRAM ADMINISTRATOR (gov. ser.) 195.167-042
 aligner (electronics) 976.382-030
 ALIGNER (electronics) 726.684-026
 ALLOCATIONS CLERK (electronics) 221.387-046
 AMUSEMENT PARK WORKER (amuse. & rec.) 349.664-010
 ANIMAL HEALTH TECHNICIAN (medical ser.) 079.361-014
 ANIMAL-NURSERY WORKER (amuse. & rec.; museum) 412.674-014
 animal shelter supervisor (nonprofit organ.) 410.134-018
 ANTENNA INSTALLER, SATELLITE COMMUNICATIONS (any ind.) 823.261-022
 ANTIQUE-AUTO-MUSEUM-MAINTENANCE WORKER (museum) 899.384-010
 APPLICATIONS ENGINEER, MANUFACTURING (profess. & kin.) 007.061-038
 AREA SUPERVISOR, RETAIL CHAIN STORE (ret. tr.) 185.117-014
 ARMATURE CONNECTOR (elec. equip.) II 724.684-014
 ARM MAKER (furn.) 780.684-134
 ARTIFICIAL-FOLIAGE ARRANGER (ret. tr.) 899.364-014
 ARTIST, SUSPECT (gov. ser.) 970.361-018
 ASBESTOS REMOVAL WORKER (const.) 869.684-082
 ASSEMBLER, SEMICONDUCTOR (electronics) 726.684-034
 ASSEMBLY-MACHINE TENDER (fabric. plastics prod.) 754.685-014
 ASSIGNMENT CLERK (clerical) 249.367-090
 assistant camera operator (motion pic.) 962.361-010
 ASSISTANT DESIGNER (garment) 781.361-010
 assistant teacher (education) 099.327-010
 astro-technician (museum) 962.261-010
 ATTENDANT, ARCADE (amuse. & rec.) 342.667-014
 audiovisual-equipment operator (any ind.) 960.382-010
 AUDIOVISUAL TECHNICIAN (any ind.) 960.382-010
 AUTO-BODY REPAIRER, FIBERGLASS (auto. ser.) 807.381-030
 AUTOMATIC BANDSAW TENDER (furn.) 667.685-070
 AUTOMATIC CASTING-FORGING MACHINE OPERATOR (forging) 611.682-014
 AUTOMATIC COMPONENT INSERTION OPERATOR (electronics) 726.685-014
 AUTOMOBILE DETAILER (auto. ser.) 915.687-034
 AUTOMOBILE-SERVICE-STATION MECHANIC (auto. ser.) 620.261-030
 AUTOMOTIVE-COOLING-SYSTEM DIAGNOSTIC TECHNICIAN (auto. ser.) 620.261-034

B

BACCARAT DEALER (amuse. & rec.) 343.467-018
 BACK MAKER (furn.) 780.684-134
 BACK TUFTER (furn.) 780.687-062
 BAKER BEADS (electronics) 590.684-014
 BAKERY WORKER, CONVEYOR LINE (bake. prod.) 524.687-018
 baler (any ind.) 929.687-058
 BANDER, HAND (any ind.) 929.687-058
 BAND-SAW OPERATOR (paper goods) 640.685-090
 batch-mixing-truck driver (const.) 900.683-010
 BATCH-RECORDS CLERK (fabric. plastics prod.) 221.387-054
 BATTERY CHARGER (any ind.) 825.684-018
 BATTERY-WRECKER OPERATOR (nonfer. metal alloys) 515.686-010
 BEACH LIFE GUARD (amuse. & rec.) 379.364-014
 BEE WORKER (agric.) 413.687-018
 BEVELER, PRINTED CIRCUIT BOARDS (electronics) 699.682-034
 BILLING CLERK (clerical) 214.362-042
 BIN TRIPPER OPERATOR (iron & steel) 922.665-014
 BLACK OXIDE COATING EQUIPMENT TENDER (electronics) 501.685-018
 black oxide operator (electronics) 501.685-018
 BLANKMAKER (glass mfg.) 579.382-022
 BLENDING-TANK TENDER HELPER (can. & preserv.) 520.687-066

BLOWER (can. & preserv.) 525.687-126
 BLOW-MOLDING-MACHINE TENDER (toys & games) 556.685-086
 board handler (build. board) 569.686-042
 board inspector (electronics) 726.684-062
 BOATSWAIN (water trans.) 911.131-010
 BOATSWAIN, OTTER TRAWLER (fish.) 441.132-010
 BOBBIN WINDER, MACHINE (cord. & twine; textile) 681.585-014
 BOILER CLEANER (any ind.) 891.687-022
 BOILER-OPERATOR HELPER (sugar) 950.585-014
 BONDER (electronics) 726.687-022
 BONDER, SEMICONDUCTOR PACKAGE (electronics) 726.684-038
 BORING-MACHINE OPERATOR (furn.) 666.685-014
 BOTTLE-PACKING-MACHINE CLEANER (any ind.) 699.687-014
 BOW MAKER (musical inst.) 730.281-058
 BOX REPAIRER (wood. box) II 762.687-018
 box-shook patcher (wood. box) 762.687-018
 BRAKE REPAIRER, RAILROAD (r.r. trans.) 622.261-010
 BREAK-AND-LOAD OPERATOR (electronics) 726.685-018
 BRIAR-WOOD SORTER (smoking pipe) 769.687-058
 BRICK SETTER OPERATOR (brick & tile) 579.685-058
 BRICK UNLOADER TENDER (brick & tile) 579.685-062
 BRIQUETTE OPERATOR (brick & tile) 579.685-066
 BROACHING-MACHINE REPAIRER (mach. tool & access.) 638.261-030
 BRUSH LOADER AND HANDLE ATTACHER (brush & broom) 739.687-206
 BUDGET ANALYST (gov. ser.) 161.267-030
 BUILDING CLEANER (any ind.) 891.684-022
 BURNER (brick & tile) 573.685-038
 BURNER, HEARTH (brick & tile) 573.685-038
 BURNER, SHAFT (brick & tile) 573.685-038
 BUSINESS REGULATION INVESTIGATOR (gov. ser.) 168.167-090
 BUTTONHOLE-AND-BUTTON-SEWING-MACHINE OPERATOR (garment) 786.685-042
 BUTTON MAKER AND INSTALLER (house furn.) 734.685-014

C

CADMIUM BURNER (chem.) 553.685-114
 CALCIMINER (const.) 840.381-010
 CANCELING-AND-CUTTING CONTROL CLERK (finan. inst.) 219.367-042
 CANE CUTTER (furn.) 763.687-030
 CAN-FILLING-AND-CLOSING-MACHINE TENDER (can. & preserv.) 529.685-282
 CANTOR (profess. & kin.) 129.027-010
 CAPACITOR ASSEMBLER, VARIABLE (electronics) 726.687-010
 CAPACITOR INSPECTOR (electronics) 726.684-022
 CAPACITOR TESTER (electronics) 726.684-078
 CARBIDE-TOOL MAKER (clock & watch) 601.280-042
 CAR BLOCKER (any ind.) 860.684-018
 CARD CLEANER (textile) 699.687-014
 CARD GRINDER HELPER (textile) 680.684-010
 CARDIAC MONITOR TECHNICIAN (medical ser.) 078.367-010
 CARDIOPULMONARY TECHNOLOGIST (medical ser.) 078.362-030
 CARDIOPULMONARY TECHNOLOGIST, CHIEF (medical ser.) 078.161-014
 career counselor (military ser.) 166.267-026
 CARPENTER, PROTOTYPE (ship & boat bldg. & rep.) 806.281-058
 cartridge loader (electronics) 726.685-010
 CASEWORKER (gov. ser.) 169.262-010
 cashier, fast foods restaurant (hotel & rest.) 311.472-010
 castables worker (brick & tile) 579.684-026
 CASTER (brick & tile) 579.684-026
 CATHODE-COATING INSPECTOR (electronics) 726.684-022
 CENTERLESS-GRINDING-MACHINE ADJUSTER (ammunition) 638.261-030
 CENTRIFUGAL-CASTING-MACHINE TENDER (fabric. plastics prod.) 556.685-090
 CERTIFIED FINANCIAL PLANNER (profess. & kin.) 251.257-022
 CHANGE PERSON (amuse. & rec.) 211.467-034
 CHARGE PREPARATION TECHNICIAN (electronics) 590.384-010
 checker (electronics) 726.684-022
 CHECK INSPECTOR (electronics) 726.381-010
 CHEMICAL-RADIATION TECHNICIAN (gov. ser.) 015.261-010
 CHEMICAL RECLAMATION EQUIPMENT OPERATOR (electronics) 558.685-058
 CHEMIST, INSTRUMENTATION (profess. & kin.; sanitary ser.) 022.261-018
 CHEMIST, WASTEWATER-TREATMENT PLANT (profess. & kin.; sanitary ser.) 022.261-022
 CHIEF INSPECTOR (office mach.) 706.131-018
 CHIEF OF NUCLEAR MEDICINE (medical ser.) 070.117-010
 CHIEF TECHNOLOGIST, NUCLEAR MEDICINE (medical ser.) 078.161-018

CHILD DAY CARE PROGRAM SUPERVISOR (gov. ser.) 168.167-090
child development specialist (social ser.) 195.227-018
CHILDREN'S ATTENDANT (amuse. & rec.) 349.677-018
children's zoo caretaker (amuse. & rec.; museum) 412.674-014
CIGAR-WRAPPER TENDER, AUTOMATIC (tobacco) 529.685-286
circuit board inspector (electronics) 726.684-062
CIRCUIT-BREAKER MECHANIC (light, heat, & power) 829.261-018
city carrier (gov. ser.) 230.367-010
CIVIL ENGINEERING TECHNICIAN (profess. & kin.) 005.261-014
claims administrator (insurance) 241.137-018
CLEANER (electronics) 726.687-010
cleaner, carpet and upholstery (any ind.) 389.664-010
CLEANER, HOME RESTORATION SERVICE (any ind.) 389.664-010
CLEANER, HOSPITAL (medical ser.) 323.687-010
CLEANING MACHINE TENDER, SEMICONDUCTOR WAFERS (electronics) 590.685-062
CLERK, TELEVISION PRODUCTION (radio & tv broad.) 221.367-086
CLINICAL SOCIOLOGIST (profess. & kin.) 054.107-010
COATED EQUIPMENT OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 590.685-066
COATER, SMOKING PIPE (smoking pipe) 562.685-022
CODE INSPECTOR (gov. ser.) 168.367-018
COIL TESTER (electronics) 726.684-026
COLD-TRIMMING-PRESS OPERATOR (forging) 615.685-030
COLLECTOR (hosiery) 684.687-022
COMMANDER, INTERNAL AFFAIRS (gov. ser.) 375.167-050
COMMANDER, POLICE RESERVES (gov. ser.) 375.137-030
COMMANDING OFFICER, POLICE OFFICER (gov. ser.) III 375.137-034
COMMISSARY ASSISTANT (amuse. & rec.; museum) 412.687-010
commissary helper (amuse. & rec.; museum) 412.687-010
COMMUNITY WORKER (gov. ser.) 195.367-018
COMPLAINT EVALUATION OFFICER (gov. ser.) 375.367-014
COMPLAINT EVALUATION SUPERVISOR (gov. ser.) 375.137-038
COMPONENT LEAD FORMER (electronics) 728.684-022
component tester (electronics) 726.684-026
COMPOUND MIXER (elec. equip.; electronics) 726.687-022
COMPUTER-ASSISTED RETOUCHER, PHOTOENGRAVING (print. & pub.) 970.381-030
COMPUTER-CONTROLLED-COLOR-PHOTOGRAPH-PRINTER OPERATOR (photofinish.) 976.380-010
COMPUTERIZED ENVIRONMENTAL CONTROL INSTALLER (electronics) 828.281-026
COMPUTER-OUTPUT-MICROFICHE OPERATOR (bus. ser.) 976.382-026
CONCRETE-MIXING-TRUCK DRIVER (const.) 900.683-010
CONDONIUM MANAGER (real estate) 186.167-062
CONGRESSIONAL-DISTRICT AIDE (gov. ser.) 209.362-030
CONNECTOR INSPECTOR (electronics) 726.684-022
CONTACT PRINTER, DRY FILM (electronics) 976.684-030
CONTACT PRINTER, PHOTORESIST (inst. & app.; optical goods) 719.381-010
CONTACT PRINTER, PRINTED CIRCUIT BOARDS (electronics) 976.684-030
CONTROLS DESIGNER (profess. & kin.) 003.261-014
CONTROLS DESIGNER, COMPUTER-ASSISTED (profess. & kin.) 003.261-014
controls project engineer (profess. & kin.) 003.261-014
COOK, SOYBEAN SPECIALTIES (food prep., n.e.c.) 529.685-290
COORDINATE MEASURING EQUIPMENT OPERATOR (electronics) 726.682-018
coordinator, material control (clerical) 221.167-014
coordinator, program planning (radio & tv broad.) 132.067-030
COORDINATOR, SKILL-TRAINING PROGRAM (gov. ser.) 169.167-062
COPPER DEPOSITION OPERATOR (electronics) 501.685-022
CORRECTIONAL-TREATMENT SPECIALIST (social ser.) 195.107-042
CORRECTION OFFICER (gov. ser.) 372.667-018
CORRECTION OFFICER, CITY OR COUNTY JAIL (gov. ser.) 372.667-018
CORRECTION OFFICER, PENITENTIARY (gov. ser.) 372.667-018
CORRECTION OFFICER, REFORMATORY (gov. ser.) 372.667-018
COTTON CLASSER AIDE (agric.) 429.587-010
COUNTER CLERK (photofinish.) 249.366-010
COURT ADMINISTRATOR (gov. ser.) 188.117-130
CRAB MEAT PROCESSOR (can. & preserv.) 525.687-126
CRAFT DEMONSTRATOR (museum) 109.364-010
craft supervisor (any ind.) 638.131-022
CREEL CLEANER (textile) 699.687-014
CREW LEADER, GLUING (vener & plywood) 569.565-010
CRIMPER (electronics) 726.687-010
crystal cutter (electronics) 677.382-018
crystal evaluator (electronics) 726.684-054
CRYSTAL FLAT GRINDER (electronics) 673.382-026
CRYSTAL GRINDER (electronics) 673.382-026
CRYSTAL GROWER (electronics) 590.382-014
crystal growing furnace operator (electronics) 590.382-014
CRYSTAL GROWING TECHNICIAN (electronics) 590.262-010
CRYSTAL MACHINING COORDINATOR (electronics) 679.362-010
CRYSTAL MOUNTER (electronics) 677.687-014
CRYSTAL SLICER (electronics) 677.382-018
CUBING-MACHINE TENDER (conc. prod.) 920.685-106
CULTURED-MARBLE-PRODUCTS MAKER (stonework) 575.684-050
CUSTOMER-SUPPORT SPECIALIST (whole. tr.) 020.224-010
CUSTOM-LEATHER-PRODUCTS MAKER (leather prod.) 783.361-010
CUSTOM VAN INSTALLER (auto. mfg.; auto. ser.) 860.381-074
CUT-OFF-MACHINE OPERATOR (furn.; iron & steel) 619.685-094
CUT-OFF-SAW OPERATOR (furn.; sawmill; woodworking) 667.685-074
CUTTER (brick & tile) 579.684-030
CUTTER-MACHINE TENDER (electronics) 615.685-046

D

DANCE THERAPIST (medical ser.) 076.127-018
DEBONER, PET FOOD (can. & preserv.) 521.685-378
DEBRIDGING-MACHINE OPERATOR (nonfer. metal alloys) 607.685-014
DEBURRER, PRINTED CIRCUIT BOARD PANELS (electronics) 603.686-014
DEBURRING-AND-TOOLING-MACHINE OPERATOR (office mach.) 690.280-010
DECORATING-AND-ASSEMBLY SUPERVISOR (fabric. plastics prod.) 754.130-010
DECORATING-MACHINE OPERATOR (glass mfg.) 979.665-010
decorator (any ind.) 979.684-034
decorator consultant (ret. tr.) 295.357-018
DEFLASH AND WASH OPERATOR (electronics) 726.685-022
deposition operator (electronics) 501.685-022
DEPUTY UNITED STATES MARSHALL (gov. ser.) 377.267-010
DESIGN TECHNICIAN, COMPUTER-AIDED (electronics) 003.362-010
DEVELOPER, PRINTED CIRCUIT BOARD PANELS (electronics) 976.685-034
development disability specialist (social ser.) 195.227-018
DIAMOND-TOOL MAKER (clock & watch) 601.280-042
DIAPER MACHINE TENDER (per. protect. & med. dev.) 692.685-278
DIAZO TECHNICIAN (electronics) 976.384-010
DICE DEALER (amuse. & rec.) 343.467-018
DIE ATTACHER (electronics) 726.684-042
DIE ATTACHING MACHINE TENDER (electronics) 726.685-026
DIE CASTER (electronics) 726.687-010
die equipment operator (electronics) 726.685-062
DIE MAKER, ELECTRONIC (mach. shop) 601.381-042
DIE SET-UP OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 699.380-010
dietary assistant (hotel & rest.) 319.137-030
DIETARY MANAGER (hotel & rest.) 187.167-206
DIE TESTER (electronics) 726.685-030
DIFFUSION FURNACE OPERATOR, SEMICONDUCTOR WAFERS (electronics) 590.685-070
digitizer (electronics) 003.362-010
DIGITIZER OPERATOR (bus. ser.; petrol. production) 213.582-010
DIPPER (elec. equip.; electronics) 726.687-022
DIRECTOR, BIO-COMMUNICATIONS LABORATORY (medical ser.) 076.104-010
DIRECTOR, CRAFT CENTER (profess. & kin.) 187.167-202
DIRECTOR, DENTAL SERVICES (medical ser.) 072.117-010
DIRECTOR, DIAGNOSTIC-AND-EVALUATION CLINIC (medical ser.) 070.107-018
DIRECTOR, EDUCATION (museum) 099.117-030
DIRECTOR, EDUCATIONAL PROGRAMMING (radio & tv broad.) 169.167-070
DIRECTOR, FIELD SERVICES (education) 090.167-034
DIRECTOR, FOOD AND BEVERAGE (amuse. & rec.) 187.167-210
DIRECTOR, FUNDS DEVELOPMENT (profess. & kin.) 165.117-014
DIRECTOR, MEDIA MARKETING (radio & tv broad.) 163.117-022
DIRECTOR, MUSEUM-OR-ZOO (museum) 102.117-014
DIRECTOR OF PUPIL PERSONNEL PROGRAM (education) 099.167-034
DIRECTOR OF RADIOLOGY (medical ser.) 070.117-014
director of recruitment (education) 090.167-034
DIRECTOR, OUTPATIENT SERVICES (medical ser.) 187.117-058
DIRECTOR, PHARMACY SERVICES (medical ser.) 074.131-010
director, product assurance (profess. & kin.) 189.117-042
DIRECTOR, QUALITY ASSURANCE (profess. & kin.) 189.117-042
DIRECTOR, REACTOR PROJECTS (gov. ser.) 188.117-134
DIRECTOR, REGULATORY AGENCY (gov. ser.) 188.117-134
DIRECTOR, SERVICE (nonprofit organ.) 187.167-214
DIRECTOR, SPEECH-AND-HEARING (medical ser.) 079.131-010
DIRECTOR, TRANSPORTATION UTILITIES REGULATION (gov. ser.) 188.117-134

director, underwriter sales (radio & tv broad.) 163.117-026
 DIRECTOR, UNDERWRITER SOLICITATION (radio & tv broad.) 163.117-026
 DIRECTOR, WEIGHTS AND MEASURES (gov. ser.) 188.117-134
 DISASTER DIRECTOR (nonprofit organ.) 187.167-214
 DISC-PAD GRINDER (asbestos prod.) 673.685-086
 DISC-PAD GRINDING MACHINE FEEDER (asbestos prod.) 673.686-030
 DISC-PAD KNOCKOUT WORKER (asbestos prod.) 579.687-034
 DISC-PAD-PLATE FILLER (asbestos prod.) 579.687-038
 dispatcher (gov. ser.) 379.362-018
 DISPATCHER, CONCRETE PRODUCTS (conc. prod.) 579.137-030
 DISPATCHER, STREET DEPARTMENT (gov. ser.) 239.367-030
 DISPLAY FABRICATOR (smoking pipe) 860.684-022
 DIVISION FIELD INSPECTOR (light, heat, & power) 168.264-018
 DIVISION ROAD SUPERVISOR (r.r. trans.) 184.167-282
 DOCUMENTATION ENGINEER (profess. & kin.) 012.167-078
 DOCUMENT PREPARER, MICROFILMING (bus. ser.) 249.587-018
 doweler (woodworking) 669.685-050
 DOWELING-MACHINE OPERATOR (woodworking) 669.685-050
 dowel-setting-machine operator (woodworking) 669.685-050
 DRAFTER (CAD), ELECTRICAL (profess. & kin.) 003.281-010
 DRAFTER (CAD), ELECTRONIC (profess. & kin.) 003.281-014
 DRAFTER, ELECTRICAL (profess. & kin.) 003.281-010
 drafter, electro-mechanical (profess. & kin.) 003.281-014
 DRAFTER, ELECTRONIC (profess. & kin.) 003.281-014
 DRAWINGS CHECKER, ENGINEERING (profess. & kin.) 007.267-010
 DRAW-PRESS OPERATOR (any ind.) II 615.685-030
 DRILL-BIT SHARPENER (electronics) 603.682-030
 DRILLER AND DEBURRER, REFLECTOR (light. fix.) 676.686-014
 DRILL-PRESS OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 676.382-010
 drill sharpener (electronics) 603.682-030
 DRIVER (motor trans.) 913.663-018
 DRIVER, STARTING GATE (amuse. & rec.) 919.683-030
 drum chainer (petrol. refin.) 599.687-034
 DRUM CLEANER (petrol. refin.) 599.687-034
 DRUM-DRIER OPERATOR (synthetic fibers) 581.684-010
 DRUM TESTER (petrol. refin.) 599.687-038
 DRY-CELL-ASSEMBLY-MACHINE TENDER (elec. equip.) 692.665-018
 DUAL IN-LINE OPERATOR (electronics) 726.685-014
 durable medical equipment repairer (per. protect. & med. dev.; ret. tr.) 639.281-022
 DYE AUTOMATION OPERATOR (textile) 582.362-014
 DYE-LAB TECHNICIAN (hosiery) 582.384-010
 DYE TESTER (pottery & porc.) 774.687-026

E

EDDY-CURRENT INSPECTOR (iron & steel) 619.381-014
 EDGE-ROUND TENDER (electronics) 673.685-094
 EDUCATIONAL RESOURCE COORDINATOR (museum) 099.167-030
 EDUCATIONAL THERAPIST (education) 094.227-010
 education department registrar (museum) 238.367-034
 EGG PASTEURIZER (agric.) 529.682-038
 electrical repairer (any ind.) 829.261-018
 ELECTRIC BLANKET WIRER (house furn.) 789.684-054
 ELECTRIC-CABLE DIAGRAMER (elec. equip.) 003.281-010
 ELECTRICIAN, CRANE MAINTENANCE (any ind.) 829.261-018
 ELECTRICIAN, MACHINE SHOP (mach. shop) 829.261-018
 ELECTRICIAN, MAINTENANCE (any ind.) 829.261-018
 ELECTRICIAN, RECTIFIER MAINTENANCE (light, heat, & power) 829.261-018
 ELECTRICIAN, REFINERY (petrol. refin.) 829.261-018
 ELECTROLESS PLATER, PRINTED CIRCUIT BOARD PANELS (electronics) 501.685-022
 electron-beam operator (electronics) 972.382-018
 ELECTRONIC CIRCUIT TESTER, PRINTED CIRCUIT BOARDS (electronics) 726.684-046
 ELECTRONIC-COMPONENT PROCESSOR (electronics) 590.684-014
 ELECTRONIC EQUIPMENT SET-UP OPERATOR (electronics) 726.380-010
 ELECTRONICS ASSEMBLER (electronics) 726.684-018
 ELECTRONICS ASSEMBLER (inst. & app.) 726.384-010
 ELECTRONICS INSPECTOR (electronics) I 726.381-010
 ELECTRONICS INSPECTOR (electronics) II 726.684-022
 ELECTRONICS TESTER (electronics) I 726.281-014
 ELECTRONICS TESTER (electronics) II 726.684-026
 ELECTRONICS UTILITY WORKER (electronics) 726.367-014
 ELECTRONICS WORKER (electronics) 726.687-010
 ELECTRONIC-TYPESETTING-MACHINE OPERATOR (print. & pub.) 203.582-074
 electroplater, automatic (electroplating) 500.665-010

EMPLOYEE RELATIONS SPECIALIST (motor trans.) 166.267-042
 EMPLOYER RELATIONS REPRESENTATIVE (profess. & kin.) 166.257-010
 ENCAPSULATOR (elec. equip.; electronics) 726.687-022
 ENERGY-CONSERVATION REPRESENTATIVE (light, heat, & power) 959.367-018
 ENERGY-CONTROL OFFICER (education) 199.167-018
 ENGINEERING MANAGER, ELECTRONICS (profess. & kin.) 003.167-070
 ENGINEERING TECHNICIAN (profess. & kin.) 005.261-010
 engineering technician, parking (gov. ser.) 199.261-014
 ENVIRONMENTAL ANALYST (gov. ser.) 199.167-022
 ENVIRONMENTAL EPIDEMIOLOGIST (gov. ser.) 041.167-010
 EPITAXIAL REACTOR OPERATOR (electronics) 590.382-018
 EPITAXIAL REACTOR TECHNICIAN (electronics) 590.282-010
 EQUAL OPPORTUNITY OFFICER (any ind.) 168.267-114
 EQUIPMENT-INVENTORY CLERK (aircraft-aerospace mfg.) 222.387-026
 ETCHED-CIRCUIT PROCESSOR (electronics) 590.684-018
 ETCHER (electronics) 590.685-078
 ETCHER, PRINTED CIRCUITS (electronics) 590.685-082
 ETCHER-STRIPPER, PRINTED CIRCUIT BOARDS (electronics) 590.685-082
 ETCHER-STRIPPER, SEMICONDUCTOR WAFERS (electronics) 590.684-026
 ETCH OPERATOR, SEMICONDUCTOR WAFERS (electronics) 590.685-074
 EVALUATOR (education) 094.267-010
 EXECUTIVE DIRECTOR, RED CROSS (nonprofit organ.) 187.117-066
 EXECUTIVE PRODUCER, PROMOS (radio & tv broad.) 159.167-022
 EXHIBIT ARTIST (museum) 149.261-010
 EXHIBIT BUILDER (museum) 739.261-010
 EXHIBIT CARPENTER (museum) 739.261-010
 EXHIBIT CLEANER (museum) 899.384-010
 EXHIBIT DESIGNER (museum) 142.061-058
 EXHIBIT ELECTRICIAN (museum) 739.261-010
 exhibition specialist (museum) 739.261-010
 exhibit technician (museum) 739.261-010
 expeditor (clerical) 221.167-014
 expeditor (clerical) 221.367-042
 EXPEDITER, SERVICE ORDER (furn.) 222.367-070
 exposure machine operator (electronics) 976.684-030
 EXTERMINATOR HELPER (any ind.) 383.684-010
 EXTRUSION-DIE REPAIRER (nonfer. metal alloys) 705.381-014

F

FABRICATOR, ARTIFICIAL BREAST (per. protect. & med. dev.) 712.684-042
 FASTENER TECHNOLOGIST (nut & bolt) 612.260-010
 FAST-FOODS WORKER (hotel & rest.) 311.472-010
 FEED INSPECTION SUPERVISOR (gov. ser.) 168.167-090
 FIELD SERVICE TECHNICIAN (mach. mfg.) 638.261-026
 FILLER (elec. equip.; electronics) 726.687-022
 FILLING-MACHINE OPERATOR (nonfer. metal alloys) 699.685-038
 film inspector (electronics) 726.384-014
 FILM TOUCH-UP INSPECTOR (electronics) 726.684-050
 FILTER INSPECTOR (electronics) 726.684-022
 FILTER TESTER (electronics) 726.684-026
 FINAL CLEANER (electronics) 699.686-014
 FINAL INSPECTOR (electronics) 726.381-010
 FINANCIAL PLANNER (profess. & kin.) 251.257-022
 FINGERNAIL FORMER (per. ser.) 331.674-014
 finisher (electronics) 699.682-034
 FINISH SPECIALIST (museum) 763.380-010
 FIN-MACHINE OPERATOR (auto. mfg.) 615.685-030
 FIRE-PROTECTION ENGINEERING TECHNICIAN (profess. & kin.) 019.261-026
 FIRER (electronics) 590.684-014
 FISH ROE PROCESSOR (can. & preserv.) 522.687-046
 FISH ROE TECHNICIAN (can. & preserv.) 522.384-010
 FLAT DRIER (felt goods) 581.685-078
 FLAVORING OIL FILTERER (flav. ext. & sirup) 521.685-382
 flow-solder machine operator (electronics) 726.362-014
 FLUSH TESTER (pottery & porc.) 774.687-026
 FOOD-MANAGEMENT AIDE (gov. ser.) 195.367-022
 food preparer (amuse. & rec.; museum) 412.687-010
 forensic artist (gov. ser.) 141.061-034
 FORMING-PRESS OPERATOR (any ind.) II 615.685-030
 FORMULA CHECKER (tex. prod., n.e.c.; textile) 221.387-046
 FORMULA CLERK (textile) 221.367-090
 frame opener (leather prod.) 222.687-042
 FRAME REPAIRER (furn.) 763.681-010
 FREIGHT-AIR-BRAKE FITTER (loco. & car bldg. & rep.) 862.281-022
 FUNCTIONAL TESTER, PRINTED CIRCUIT BOARDS (electronics) 726.682-022

furnishings conservator (museum) 763.380-010
FURNITURE-RENTAL CONSULTANT (ret. tr.) 295.357-018
FURNITURE RESTORER (museum) 763.380-010

G

GALLIUM ARSENIDE CRYSTAL GROWER (electronics) 590.382-014
GAMBLING DEALER (amuse. & rec.) 343.467-018
GARAGE SERVICER, INDUSTRIAL (any ind.) 915.687-014
gardener-florist (agric.; museum) 406.684-018
GARDEN WORKER (agric.; museum) 406.684-018
gas-and-oil checker (motor trans.) 915.587-010
GAS-AND-OIL SERVICER (motor trans.) 915.587-010
GAS INSPECTOR (gov. ser.; light, heat, & power) 168.264-018
GAS INSPECTOR, LIQUEFIED (gov. ser.) 168.264-018
GENERAL ACCOUNTING SYSTEMS OPERATOR (clerical) 210.382-066
GENERAL CAR SUPERVISOR, YARD (r.r. trans.) 184.167-286
general lot attendant (auto. ser.) 915.667-014
GEOLOGICAL AIDE (petrol. production) 024.267-010
GERIATRIC NURSE ASSISTANT (medical ser.) 355.674-026
GLASS-CUTTING-MACHINE FEEDER (mirror) 677.686-014
GLUING-MACHINE FEEDER (woodworking) 569.686-038
GOLD PLATER (electronics) 500.684-026
GRADER MARKER (garment) 781.381-034
GRANT COORDINATOR (profess. & kin.) 169.117-014
GRID INSPECTOR (electronics) 726.684-022
grinding machine operator (electronics) 673.382-026
GROOVER-AND-STRIPER OPERATOR (build. board) 669.685-102
GROUP-CONTRACT ANALYST (insurance) 169.267-034
GROUP LEADER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics) 726.361-014
GROUP LEADER, PRINTED CIRCUIT BOARD QUALITY CONTROL (electronics) 726.361-018
GROUP LEADER, SEMICONDUCTOR PROCESSING (electronics) 590.362-018
GROUP LEADER, SEMICONDUCTOR TESTING (electronics) 726.362-010
group leader, wafer polishing (electronics) 673.364-010
guard (gov. ser.) 372.667-018
GUARD, DEPUTY (gov. ser.) 372.667-018
GUIDE-RAIL CLEANER (textile) 699.687-014

H

HAT CONDITIONER (hat & cap) 784.687-086
HAT-FINISHING-MATERIALS PREPARER (hat & cap) 559.684-030
HAZARDOUS-WASTE MANAGEMENT SPECIALIST (gov. ser.) 168.267-086
HEAD DOFFER (textile) 689.366-010
HEALTH-EQUIPMENT SERVICER (medical ser.) 359.363-010
HEAT TREATER (electronics) 504.686-022
HELPER, SHEAR OPERATOR (iron & steel) 615.687-010
HERBARIUM WORKER (profess. & kin.) 041.384-010
HIDE STRETCHER, HAND (leather mfg.) 580.687-014
HISTORIC-SITE ADMINISTRATOR (museum) 102.167-014
HOG-CONFINEMENT-SYSTEM MANAGER (agric.) 410.161-022
HOLTER SCANNING TECHNICIAN (medical ser.) 078.264-010
HOME HEALTH TECHNICIAN (medical ser.) 079.224-010
HORTICULTURAL THERAPIST (medical ser.) 076.124-018
hot roll laminator (electronics) 699.685-042
HOT-TRIMMING-PRESS OPERATOR (forging) 615.685-030
housekeeper, home (dom. ser.) 301.474-010
HOUSE SITTER (dom. ser.) 309.367-010
HOUSE WORKER, GENERAL (dom. ser.) 301.474-010
HUMAN RESOURCE ADVISOR (profess. & kin.) 166.267-046
HYBRID TESTER (electronics) 726.684-078
HYDRAULIC REPAIRER (any ind.) 638.281-034
HYDRAULIC-RUBBISH-COMPACTOR MECHANIC (sanitary ser.) 638.281-030

I

IC DESIGNER, CUSTOM (profess. & kin.) 003.261-018
IC DESIGNER, GATE ARRAYS (profess. & kin.) 003.261-018
IC DESIGNER, STANDARD CELLS (profess. & kin.) 003.261-018
imager (electronics) 976.684-030
IMMUNOHEMATOLOGIST (medical ser.) 078.221-010
INCINERATOR OPERATOR (sanitary ser.) I 955.685-010
INCINERATOR OPERATOR (sanitary ser.) II 955.362-014
INCINERATOR PLANT LABORER (sanitary ser.) 955.667-010
income-tax-return preparer (bus. ser.) 219.362-070
INDUCTOR TESTER (electronics) 726.684-078
INDUSTRIAL-SAFETY-AND-HEALTH TECHNICIAN (any ind.) 168.161-014

infant educator (social ser.) 195.227-018
IN-PROCESS INSPECTOR (electronics) 726.381-010
INSPECTOR (drug. prep. & rel. prod.) 559.387-014
INSPECTOR (furn.) 780.687-066
INSPECTOR (pottery & porc.) 575.687-034
INSPECTOR-ADJUSTER, OFFICE-MACHINE COMPONENTS (office mach.) 706.384-010
INSPECTOR AND HAND PACKAGER (fabric. plastics prod.) 559.687-074
INSPECTOR, ASSEMBLY (furn.) 669.364-010
INSPECTOR, CIRCUITRY NEGATIVE (electronics) 726.384-014
inspector, component parts (electronics) 726.684-022
INSPECTOR, CRYSTAL (electronics) 726.684-054
INSPECTOR, FINISHING (felt goods) 589.387-022
INSPECTOR, FURNITURE DECALS (furn.) 979.687-030
INSPECTOR, HANDBAG FRAMES (leather prod.) 222.687-042
INSPECTOR, INTEGRATED CIRCUITS (electronics) 726.684-058
INSPECTOR, PRINTED CIRCUIT BOARDS (electronics) 726.684-062
INSPECTOR, PROCESSING (chew. gum) 529.687-226
INSPECTOR, RAW QUARTZ (electronics) 726.381-010
INSPECTOR, SCREEN PRINTING (print. & pub.) 979.667-010
INSPECTOR, SEMICONDUCTOR WAFER (electronics) 726.684-066
INSPECTOR, SEMICONDUCTOR WAFER PROCESSING (electronics) 726.384-018
INSPECTOR, SUBASSEMBLIES (electronics) 726.381-010
INSPECTOR, TUBES (electronics) 726.381-010
inspector, visual (electronics) 726.684-022
INSPECTOR, WATER-POLLUTION CONTROL (gov. ser.) 168.267-090
INSTALLER, ELECTRICAL, PLUMBING, MECHANICAL (ship & boat bldg. & rep.) 806.381-062
INSTRUCTOR, BUSINESS EDUCATION (education) 090.222-010
instructor, crippled students (education) 094.227-018
instructor, deaf-mute (education) 094.224-010
INSTRUCTOR, PROGRAMMABLE CONTROLLERS (education) 166.221-010
INSTRUCTOR, ROBOTICS (education) 166.221-010
INSTRUCTOR, TECHNICAL TRAINING (education) 166.221-010
INSTRUCTOR-TRAINER, CANINE SERVICE (gov. ser.) 379.227-010
INSTRUCTOR, WASTEWATER-TREATMENT PLANT (sanitary ser.) 955.222-010
INSTRUMENT FITTER (const.) 862.281-022
INSULATION WORKER (const.) 863.364-014
INSULATOR ASSEMBLER (electronics) 726.687-010
INSURANCE LICENSING SUPERVISOR (gov. ser.) 168.167-090
INTEGRATED CIRCUIT LAYOUT DESIGNER (profess. & kin.) 003.261-018
interior horticulturist (agric.) 408.364-010
INVENTORY CLERK (clerical) 222.387-026
INVENTORY CLERK, PERPETUAL (clerical) 222.387-026
INVENTORY CLERK, PHYSICAL (clerical) 222.387-026
INVENTORY CLERK, STOCKROOM (clerical) 222.387-026
INVESTIGATOR, DEALER ACCOUNTS (finan. inst.) 241.367-038
INVESTIGATOR, INTERNAL AFFAIRS (gov. ser.) 375.267-034
INVOICING SYSTEMS OPERATOR (clerical) 214.582-010
ION IMPLANT MACHINE OPERATOR (electronics) 590.382-022

J

JINRIKISHA DRIVER (amuse. & rec.) 349.477-010
JOB DEVELOPMENT SPECIALIST (profess. & kin.) 166.267-034
job-order clerk (clerical) 221.387-046

K

KENO WRITER (amuse. & rec.) 343.467-022
KEYMODULE-ASSEMBLY-MACHINE TENDER (office mach.) 692.685-274
KITCHEN SUPERVISOR (hotel & rest.) 319.137-030

L

laboratory aide (drug. prep. & rel. prod.) 559.384-010
LABORATORY ASSISTANT, CULTURE MEDIA (drug. prep. & rel. prod.) 559.384-010
LABORATORY ASSISTANT, ZOO (medical ser.) 073.361-014
LABORATORY MANAGER (education) 090.164-010
laborer, drying department (leather mfg.) 580.687-014
LAMINATING-MACHINE FEEDER (build. board) 569.686-042
LAMINATING-MACHINE OFFBEARER (build. board) 569.686-046
LAMINATING MACHINE WORKER (inst. & app.) 692.687-014
LAMINATING ASSEMBLER, PRINTED CIRCUIT BOARDS (electronics) 726.687-026
LAMINATOR (build. board) 554.685-030
laminator grader (build. board) 569.686-046

LAMINATOR, PRINTED CIRCUIT BOARDS (electronics) 692.685-282
 lapper (electronics) 673.685-094
 LAPPER (textile) 689.687-090
 LAPPING MACHINE TENDER (electronics) 673.685-094
 LASER-BEAM-COLOR-SCANNER OPERATOR (print. & pub.) 972.282-014
 LASER-BEAM-TRIM OPERATOR (electronics) 726.682-010
 LASERIST (amuse. & rec.) 159.042-010
 LEAD HAND, INSPECTING AND TESTING (electronics) 726.364-010
 LEAD-WIRE CUTTER (electronics) 728.685-010
 LEAD WORKER, WAFER POLISHING (electronics) 673.364-010
 LEAD WORKER, WAFER PRODUCTION (electronics) 590.364-010
 LEAK TESTER, SEMICONDUCTOR PACKAGES (electronics) 726.685-034
 LEASE PICKER (textile) 689.684-018
 LEGISLATIVE AIDE (gov. ser.) 199.267-034
 LEGISLATIVE ASSISTANT (gov. ser.) 169.167-066
 letter carrier (gov. ser.) 230.367-010
 letterer (any ind.) 979.684-034
 LIBRARY CONSULTANT (library) 100.117-014
 line inspector (electronics) 726.684-022
 load clerk (any ind.) 929.687-058
 LOADER-DEMOLDER (furn.) 556.684-030
 LOADER, SEMICONDUCTOR DIES (electronics) 726.687-030
 LOG PEELER (sawmill) 569.684-010
 LONG-WALL SHEAR OPERATOR (mining & quarrying) 930.662-010
 LOOM BLOWER (textile) 699.687-014
 LOT ATTENDANT (ret. tr.) 915.583-010
 LUMPIA WRAPPER MAKER (food prep., n.e.c.) 526.684-014

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machine brusher (any ind.) 699.687-014
 MACHINE CLEANER (any ind.) 699.687-014
 machine operator technician (electronics) 679.362-010
 MACHINE REPAIRER, MAINTENANCE (any ind.) 638.261-030
 machine rubber (any ind.) 699.687-014
 MACHINE SETTER-AND-REPAIRER (fabric. plastics prod.) 690.380-014
 MAGNETIC-TAPE WINDER (electronics) 726.685-010
 MAIL CARRIER (gov. ser.) 230.367-010
 MAINSTREAMING FACILITATOR (education) 094.267-010
 MAINTAINER, SEWER-AND-WATERWORKS (const.) 862.281-022
 maintenance advisor (any ind.) 638.131-022
 maintenance associate (any ind.) 899.261-014
 MAINTENANCE CARPENTER (museum) 899.384-010
 MAINTENANCE-MECHANIC SUPERVISOR (any ind.) 638.131-022
 MAINTENANCE REPAIRER, INDUSTRIAL (any ind.) 899.261-014
 maintenance supervisor (any ind.) 638.131-022
 MAINTENANCE SUPERVISOR, MOBILE BATTERY EQUIPMENT (mining & quarrying) 638.131-034
 maintenance worker (museum) 899.384-010
 MAINTENANCE WORKER, MUNICIPAL (gov. ser.) 899.684-046
 MANAGER, AERIAL PLANTING AND CULTIVATION (agric.) 180.167-062
 MANAGER, ANIMAL SHELTER (nonprofit organ.) 187.167-218
 MANAGER, APARTMENT HOUSE (hotel & rest.) 320.137-014
 MANAGER, AUTO SPECIALTY SERVICES (auto. ser.) 185.167-074
 MANAGER, BAKERY (bake. prod.) 189.117-046
 MANAGER, BOWLING ALLEY (amuse. & rec.) 187.167-222
 MANAGER, CAMP (amuse. & rec.) 329.161-010
 MANAGER, CAR INSPECTION AND REPAIR (r.r. trans.) 184.117-086
 MANAGER, EDUCATION AND TRAINING (education) 166.167-026
 MANAGER FOR HEALTH, SAFETY, AND ENVIRONMENT (gov. ser.) 188.117-134
 MANAGER, HOTEL (hotel & rest.) 320.137-014
 manager, kitchen (hotel & rest.) 319.137-030
 MANAGER, LODGING FACILITIES (hotel & rest.) 320.137-014
 MANAGER, MARINA (hotel & rest.) 320.137-014
 MANAGER, MARINA DRY DOCK (amuse. & rec.; water trans.) 187.167-226
 MANAGER, MOTEL (hotel & rest.) 320.137-014
 manager, office (profess. & kin.) 160.167-010
 MANAGER, ORCHARD (agric.) 180.167-066
 MANAGER, POOL (amuse. & rec.) 153.137-010
 MANAGER, REAL-ESTATE FIRM (real estate) 186.167-066
 MANAGER, RECREATION FACILITY (amuse. & rec.) I 187.167-230
 MANAGER, REGULATED PROGRAM (gov. ser.) 168.167-090
 MANAGER, TOURIST CAMP (hotel & rest.) 320.137-014
 MANAGER, TRAILER PARK (hotel & rest.) 320.137-014
 MARBLE FINISHER (const.) 861.664-010
 marble helper (const.) 861.664-010
 marble mason helper (const.) 861.664-010

marble mechanic helper (const.) 861.664-010
 marble setter helper (const.) 861.664-010
 MARINE-CARGO SURVEYOR (bus. ser.) 168.267-094
 MARINE-SERVICES TECHNICIAN (ship & boat bldg. & rep.) 806.261-026
 marker (electronics) 652.685-110
 MARKER MACHINE ATTENDANT (glass mfg.) 579.685-070
 MARKER, SEMICONDUCTOR WAFERS (electronics) 920.587-026
 MARQUETRY WORKER (furn.) 761.281-018
 mask designer (profess. & kin.) 003.261-018
 MASKER (electronics) 726.687-034
 mask inspector (electronics) 726.384-022
 MATERIAL ASSEMBLER (furn.) 781.684-066
 material control expediter (clerical) 221.167-014
 MATERIAL COORDINATOR (clerical) 221.167-014
 MATERIAL EXPEDITER (clerical) 221.367-042
 MATERIAL MIXER (fabric. plastics prod.) 550.685-130
 MATERIAL PREPARATION WORKER (electronics) 590.684-030
 mathematics improvement teacher (education) 099.227-042
 MEAT AND POULTRY SPECIALIST SUPERVISOR (gov. ser.) 168.167-090
 mechanical inspector (electronics) 726.682-018
 MEDIA DIRECTOR (profess. & kin.) 164.117-018
 MEDICAL COORDINATOR, PESTICIDE USE (gov. ser.) 041.067-010
 MEDICAL-EQUIPMENT REPAIRER (per. protect. & med. dev.; ret. tr.) 639.281-022
 MEDICATION AIDE (medical ser.) 355.374-014
 MEMORY-UNIT TEST TECHNICIAN (electronics) 726.281-014
 MENTAL-RETARDATION AIDE (medical ser.) 355.377-018
 METAL-BASE RECLAIMER (electronics) 726.687-010
 METALLIZATION EQUIPMENT OPERATOR, SEMICONDUCTOR WAFERS (electronics) 590.685-086
 microelectronics processor (electronics) 726.684-034
 MICROELECTRONICS TECHNICIAN (electronics) 590.362-022
 MICROFILM-CAMERA OPERATOR (bus. ser.) 976.682-022
 MICROFILM PROCESSOR (bus. ser.) 976.385-010
 MILL STENCILER (iron & steel) 659.685-026
 MILLWRIGHT (any ind.) 638.281-018
 MIRROR INSTALLER (const.) 865.361-010
 MIXER (brick & tile) 579.685-074
 MIXER OPERATOR, SNACK FOODS (food prep., n.e.c.) 520.685-230
 MIXING SUPERVISOR (fabric. plastics prod.) 550.135-014
 molder (tex. prod., n.e.c.) 692.685-286
 MOLDER, AUTOMOBILE CARPETS (tex. prod., n.e.c.) 692.685-286
 molder operator (fabric. plastics prod.) 556.685-090
 molder-trimmer (tex. prod., n.e.c.) 692.685-286
 MOLD FILLER (sports equip.) 556.687-030
 MOLDING SUPERVISOR (fabric. plastics prod.) 556.130-018
 moto-mix operator (const.) 900.683-010
 muller (hat & cap) 784.687-086
 MULTIPLE-PUNCH-PRESS OPERATOR (any ind.) II 615.685-030
 MULTI-PURPOSE MACHINE OPERATOR (furn.) 669.382-022
 MUSEUM ATTENDANT (museum) 109.367-010
 museum craft worker (museum) 739.261-010
 MUSEUM INTERN (museum) Term
 museum service scheduler (museum) 238.367-034

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NARRATOR (amuse. & rec.) 139.167-010
 NICKEL PLATER (electronics) 500.684-026
 NONDESTRUCTIVE TESTER (bus. ser.) 011.261-018
 NOTEREADER (clerical) 203.582-078
 NUCLEAR-CRITICALITY SAFETY ENGINEER (profess. & kin.) 015.067-010
 NUCLEAR-DECONTAMINATION RESEARCH SPECIALIST (profess. & kin.) 008.061-030
 NUCLEAR-FUELS RECLAMATION ENGINEER (profess. & kin.) 015.061-026
 NUCLEAR-FUELS RESEARCH ENGINEER (profess. & kin.) 015.061-030
 NUCLEAR-PLANT TECHNICAL ADVISOR (light, heat, & power) 015.167-010
 NUCLEAR-TEST-REACTOR PROGRAM COORDINATOR (profess. & kin.) 015.167-014
 NUMERICAL-CONTROL DRILL OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 606.382-018
 NUMERICAL-CONTROL ROUTER OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 605.382-046
 NURSE, LICENSED PRACTICAL (medical ser.) 079.374-014
 NURSE SUPERVISOR, EVENING-OR-NIGHT (medical ser.) 075.127-030
 nutrition aide (gov. ser.) 195.367-022
 nutrition educator (per. ser.) 359.367-014

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OFFBEARER, PIPE SMOKING MACHINE (smoking pipe) 563.686-018
 OFFICE CLERK (clerical) 209.567-022
 OFFSET-DUPLICATING-MACHINE OPERATOR, INSTANT PRINT (print. & pub.) 651.362-038
 OPENING-MACHINE CLEANER (textile) 699.687-014
 operations manager (ret. tr.) 185.117-014
 OPERATIONS SUPERVISOR, NUCLEAR POWER PLANT (light, heat, & power) 952.132-010
 OPTICAL-EFFECTS-CAMERA OPERATOR (motion pic.) 143.260-010
 OPTICAL-EFFECTS LAYOUT PERSON (motion pic.) 962.361-010
 optical-effects-line-up person (motion pic.) 962.361-010
 ORDER DETAILER (clerical) 221.387-046
 ORDERLY (medical ser.) 355.674-018
 OVEN CURING ATTENDANT (electronics) 590.685-090
 OVEN-PRESS TENDER (asbestos prod.) I 573.685-042
 OVEN-PRESS TENDER (asbestos prod.) II 573.685-046

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packager and strapper (any ind.) 929.687-058
 PAINTER (const.) 840.381-010
 PAINTER, INTERIOR FINISH (const.) 840.381-010
 PAINTER, MAINTENANCE (any ind.) 840.381-010
 PAINT SPRAYER, SANDBLASTER (conc. prod.) 845.381-014
 PAINT STRIPPER (petrol. refin.) 599.685-130
 PAINT TRIMMER, PIPE BOWLS (smoking pipe) 749.684-050
 PALLETIZER (nonfer. metal alloys) 929.687-054
 PANEL CUTTER (furn.) 761.684-050
 PANEL LAMINATOR (struct. & ornam. metalwork) 809.684-042
 PAPER-CONE MAKER (electronics) I 726.687-010
 PARCEL-POST CARRIER (gov. ser.) 230.367-010
 parent trainer (social ser.) 195.227-018
 PARK AIDE (gov. ser.) 249.367-082
 PARKING ANALYST (gov. ser.) 199.261-014
 PARKING LOT SIGNALER (auto. ser.) 915.667-014
 park technician (gov. ser.) 249.367-082
 PASSPORT-APPLICATION EXAMINER (gov. ser.) 169.267-030
 PASTER, HAT LINING (hat & cap) 692.686-070
 PASTORAL ASSISTANT (nonprofit organ.) 129.107-026
 PATCHER (pottery & porc.) 774.684-046
 PATIENT-RESOURCES-AND-REIMBURSEMENT AGENT (gov. ser.) 195.267-018
 pattern generator operator (electronics) 976.382-038
 PATTERNMAKER, ALL-AROUND (fabric. plastics prod.; found.) 693.280-014
 PATTERNMAKER (furn.) II 661.280-010
 PELLET-PREPARATION OPERATOR (electronics) 590.684-014
 PERFUSIONIST (medical ser.) 078.362-034
 PERSONNEL QUALITY ASSURANCE AUDITOR (electronics) 168.367-022
 PERSONNEL RECRUITER (profess. & kin.) 166.267-038
 pest control worker helper (any ind.) 383.684-010
 PESTICIDE-CONTROL INSPECTOR (gov. ser.) 168.267-098
 PETROLEUM PRODUCTS DISTRICT SUPERVISOR (gov. ser.) 168.167-090
 PETROLEUM PRODUCTS INSPECTION SUPERVISOR (gov. ser.) 188.117-134
 PEWTER CASTER (silverware) 502.384-010
 PEWTERER (silverware) 700.261-010
 PEWTER FINISHER (silverware) 700.281-026
 pharmacy technician (medical ser.) 355.374-014
 PHLEBOTOMIST (medical ser.) 079.364-022
 PHOTOGRAPHIC ALIGNER, SEMICONDUCTOR WAFERS (electronics) 976.382-030
 PHOTOGRAPHIC PROCESSOR, SEMICONDUCTOR WAFERS (electronics) 976.685-038
 PHOTO MASK CLEANER (electronics) 590.684-034
 PHOTO MASK INSPECTOR (electronics) 726.384-022
 PHOTO MASK MAKER, ELECTRON-BEAM (electronics) 972.382-018
 PHOTO MASK PATTERN GENERATOR (electronics) 976.382-038
 PHOTO MASK PROCESSOR (electronics) 972.384-010
 PHOTO MASK TECHNICIAN, ELECTRON-BEAM (electronics) 972.382-022
 photo printer (electronics) 976.684-030
 PHOTORESIST LAMINATOR, PRINTED CIRCUIT BOARD (electronics) 699.685-042
 photoresist printer (electronics) 976.684-030
 PHOTO TECHNICIAN (electronics) 976.384-010
 PHYSICAL-INTEGRATION PRACTITIONER (per. ser.) 076.264-010
 PIN CLEANER (textile) 699.687-014
 PINNER, PRINTED CIRCUIT BOARDS (electronics) 699.685-046
 PIPE FITTER (any ind.) 862.281-022
 PIPE FITTER, AMMONIA (const.) 862.281-022
 PIPE FITTER, FIRE-SPRINKLER SYSTEMS (const.) 862.281-022

PIPE FITTER, GAS PIPE (const.) 862.281-022
 PIPE FITTER, MAINTENANCE (any ind.) 862.281-022
 PIPE FITTER, PLASTIC PIPE (const.) 862.281-022
 PIPE FITTER, SOFT COPPER (const.) 862.281-022
 PIPE FITTER, WELDING (const.) 862.281-022
 pipe processor (iron & steel) 619.662-014
 PIPE RACKER (smoking pipe) 749.687-034
 pipe smoking machine operator (smoking pipe) 563.686-018
 PIPE STEM ALIGNER (smoking pipe) 739.687-210
 PIPE STEM REPAIRER (smoking pipe) 739.684-186
 PLAN CHECKER (gov. ser.) 168.267-102
 PLANETARIUM SKY SHOW TECHNICIAN (museum) 739.261-010
 PLANETARIUM TECHNICIAN (museum) 962.261-010
 PLANNER, PROGRAM SERVICES (gov. ser.) 188.167-110
 PLANT-CARE WORKER (agric.) 408.364-010
 plant-maintenance worker (any ind.) 899.261-014
 plant tender (agric.) 408.364-010
 PLASMA ETCHER, PRINTED CIRCUIT BOARDS (electronics) 590.685-094
 PLASTIC ROLLER (fabric. plastics prod.) 690.685-498
 PLATE CONDITIONER (iron & steel) 819.664-010
 PLATEMAKER, SEMICONDUCTOR PACKAGES (electronics) 972.384-014
 PLATER, PRINTED CIRCUIT BOARD PANELS (electronics) 500.684-026
 PLATER, PRODUCTION (electroplating) 500.665-010
 PLATER, SEMICONDUCTOR WAFERS AND COMPONENTS (electronics) 500.684-030
 PLATING-TANK CLEANER (electronics) 891.687-022
 plotter (motion pic.) 962.361-010
 plumber, pipe fitting (any ind.) 862.281-022
 PNEUMATIC-TUBE FITTER (const.) 862.281-022
 POLICE ACADEMY PROGRAM COORDINATOR (gov. ser.) 375.167-054
 POLICE ARTIST (gov. ser.) 141.061-034
 POLICE CLERK (gov. ser.) 375.362-010
 POLICE OFFICER, BOOKING (gov. ser.) 375.367-018
 POLICE OFFICER, CRIME PREVENTION (gov. ser.) 375.264-010
 POLICE OFFICER (gov. ser.) III 375.267-038
 POLICE OFFICER, SAFETY INSTRUCTION (gov. ser.) 375.267-042
 POLISHING MACHINE TENDER (electronics) 673.685-094
 POLYSILICON PREPARATION WORKER (electronics) 590.684-038
 POST-WAVE ASSEMBLER (electronics) 726.684-070
 POTTER (electronics) 726.687-022
 POULTRY SPECIALIST SUPERVISOR (gov. ser.) 168.167-090
 POURED-CONCRETE-WALL TECHNICIAN (const.) 869.261-018
 PREASSEMBLER, PRINTED CIRCUIT BOARD (electronics) 726.687-038
 PREFORMING-MACHINE OPERATOR (electronics) 590.684-014
 PREPAROLE-COUNSELING AIDE (gov. ser.) 195.367-026
 PRESS BREAKER (build. board) 569.686-050
 PRESS OFFBEARER (brick & tile) 579.686-030
 PREVENTIVE MAINTENANCE COORDINATOR (any ind.) 169.167-074
 PRE-WAVE ASSEMBLER (electronics) 726.684-070
 PRICER, MESSAGE AND DELIVERY SERVICE (bus. ser.) 214.467-014
 PRIMARY CONNECTOR, ARMATURE (elec. equip.) 724.684-014
 PRINTED CIRCUIT BOARD ASSEMBLER, HAND (electronics) 726.684-070
 PRINTED CIRCUIT BOARD COMPONENT TESTER, CHEMICAL (electronics) 726.684-074
 PRINTED CIRCUIT BOARD COMPONENT TESTER, PRE-ASSEMBLY (electronics) 726.684-078
 PRINTED CIRCUIT BOARD INSPECTOR, PRE-ASSEMBLY (electronics) 726.684-082
 PRINTED CIRCUIT DESIGNER (profess. & kin.) 003.261-022
 PRINTED CIRCUIT DESIGNER, COMPUTER-ASSISTED (profess. & kin.) 003.261-022
 PRINTING SCREEN ASSEMBLER (electronics) 979.684-042
 PROBATION-AND-PAROLE OFFICER (profess. & kin.) 195.107-046
 PROBE TEST EQUIPMENT TECHNICIAN, SEMICONDUCTOR WAFERS (electronics) 729.360-010
 PROCESS CONTROLLER (textile) 689.364-014
 PROCESSOR, INSTANT POTATO (food prep., n.e.c.) 523.382-022
 production aide (electronics) 726.362-010
 production aide (electronics) 590.362-018
 production control worker (clerical) 221.167-014
 PRODUCTION ENGINEER, TRACK (r.r. trans.) 005.167-026
 PRODUCTION MANAGER, ADVERTISING (profess. & kin.) 141.137-010
 PRODUCTION MATERIAL COORDINATOR (electronics) 221.387-046
 PRODUCTION REPAIRER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics) 726.684-086
 PRODUCTION SET-UP WORKER (auto. mfg.) 699.685-050

PRODUCTION SUPERVISOR (build. mat., n.e.c.) 539.137-014
 PRODUCTION TECHNICIAN, SEMICONDUCTOR PROCESSING
 EQUIPMENT (electronics) 590.384-014
 production tester (electronics) 726.684-026
 program coder (clerical) 219.367-026
 PROGRAM COORDINATOR (amuse. & rec.) 139.167-010
 PROGRAMMER, BUSINESS (profess. & kin.) 020.162-014
 PROGRAMMER, DETAIL (clerical) 219.367-026
 programmer operator, numerical control (electronics) 609.262-010
 programmer trainee (clerical) 219.367-026
 PROGRAMMING EQUIPMENT OPERATOR (electronics) 726.685-062
 PROGRAM PROPOSALS COORDINATOR (radio & tv broad.)
 132.067-030
 PROGRAM SPECIALIST, EMPLOYEE-HEALTH MAINTENANCE
 (profess. & kin.) 166.167-050
 projectionist (any ind.) 960.382-010
 prom burn-off operator (electronics) 726.685-062
 PROP ATTENDANT (amuse. & rec.) 962.684-022
 PROPERTY-AND-EQUIPMENT CLERK (petrol. refin.) 222.387-026
 PROPERTY-ASSESSMENT MONITOR (gov. ser.) 241.367-042
 PROTECTIVE-CLOTHING ISSUER (chem.) 222.687-046
 PROVIDER (iron & steel) 221.387-046
 PSYCHIATRIC TECHNICIAN (medical ser.) 079.374-026
 PSYCHOLOGIST, CHIEF (profess. & kin.) 045.107-046
 PUBLIC-SAFETY OFFICER (gov. ser.) 379.263-014
 PUBLIC UTILITIES COMPLAINT ANALYST SUPERVISOR (gov.
 ser.) 168.167-090
 PULMONARY-FUNCTION TECHNICIAN (medical ser.) 078.262-010
 PUNCH PRESS OPERATOR (build. board) 669.685-106
 PUNCH-PRESS OPERATOR (any ind.) II 615.685-030
 PUNCH-PRESS OPERATOR, PRINTED CIRCUIT BOARDS (elec-
 tronics) 615.685-030

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quality-control-assembly-test technician (electronics) 726.281-014
 QUALITY CONTROL CHECKER, TEXTURING PROCESS (textile)
 681.387-010
 quality control inspector (electronics) 726.381-010
 QUALITY CONTROL INSPECTOR (furn.; veneer & plywood) 569.687-
 030
 QUALITY CONTROL INSPECTOR (sugar) 529.367-034
 QUALITY-CONTROL SUPERVISOR (fabric. plastics prod.) 559.134-
 010
 QUALITY CONTROL TECHNICIAN (build. board) 579.364-010
 QUALITY-CONTROL TECHNICIAN, INKED RIBBONS (pen &
 pencil) 733.364-010
 QUALITY-CONTROL TESTER (build. board) 569.384-010
 quality-control tester (electronics) 726.684-026
 QUALITY-CONTROL TESTER (fuel briquettes) 543.684-010
 QUILTING-MACHINE OPERATOR (coated fabrics) 584.382-014

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RACK CLEANER (textile) 699.687-014
 RADIATION-PROTECTION ENGINEER (gov. ser.) 015.137-010
 RADIATION-PROTECTION SPECIALIST (gov. ser.) 168.261-010
 RADIATION-THERAPY TECHNOLOGIST (medical ser.) 078.361-034
 RADIOLOGICAL-EQUIPMENT SPECIALIST (medical ser.) 719.261-
 014
 radiologic electronic specialist (medical ser.) 719.261-014
 RADIOLOGY ADMINISTRATOR (medical ser.) 187.117-062
 RADIOPHARMACIST (medical ser.) 074.161-014
 RADIUS CORNER MACHINE OPERATOR (mirror) 673.685-098
 ranger aide (gov. ser.) 249.367-082
 RATE ENGINEER (profess. & kin.) 160.167-018
 reading improvement teacher (education) 099.227-042
 ready-mix-truck driver (const.) 900.683-010
 RECREATION AIDE (social ser.) 195.367-030
 RECRUITER (military ser.) 166.267-026
 RECTIFIER-PLATE CHARGER (electronics) 726.687-010
 REFERRAL CLERK, TEMPORARY-HELP AGENCY (clerical)
 205.367-062
 REFLOW OPERATOR (electronics) 726.685-038
 REGIONAL SUPERINTENDENT, RAILROAD CAR INSPECTION
 AND REPAIR (r.r. trans.) 184.117-090
 REGISTRAR, MUSEUM (museum) 102.167-018
 REGISTRATION SPECIALIST, AGRICULTURAL CHEMICALS
 (gov. ser.) 168.267-106
 RELAY TESTER (electronics) 726.684-078
 RELIABILITY ENGINEER (profess. & kin.) 019.061-026
 renovator (museum) 899.384-010
 rental clerk, furniture (ret. tr.) 295.357-018
 REPAIRER, KILNCAR (brick & tile) 861.684-022
 REPAIRER, PROBE TEST CARD, SEMICONDUCTOR WAFERS
 (electronics) 726.361-022

REPAIRER, RECREATIONAL VEHICLE (trans. equip.) 869.261-022
 REPAIRER, VENEER SHEET (furn.) 769.684-058
 REPAIRER, WELDING EQUIPMENT (welding) 626.384-010
 REPAIRER, WELDING SYSTEMS AND EQUIPMENT (welding)
 626.261-014
 RESEARCH ANALYST (insurance) 169.267-034
 RESEARCH ASSISTANT (profess. & kin.) II 199.267-034
 RESEARCH ASSOCIATE (museum) 109.067-014
 RESEARCH ASSOCIATE (profess. & kin.) Term
 researcher (profess. & kin.) 199.267-034
 RESEARCH SUBJECT (any ind.) 359.677-030
 resident care aide (medical ser.) 355.377-018
 resist coater-developer (electronics) 976.685-038
 RESISTOR INSPECTOR (electronics) 726.684-022
 RESISTOR TESTER (electronics) 726.684-078
 RESOURCE-RECOVERY ENGINEER (gov. ser.) 019.167-018
 RESPIRATORY-THERAPY AIDE (medical ser.) 355.674-022
 RESTORER, CERAMIC (museum) 102.361-014
 RESTORER, PAPER-AND-PRINTS (library; museum) 109.361-010
 RETICLE MAKER (optical goods) 719.381-010
 RETOUCHER, PHOTOENGRAVING (print. & pub.) 970.381-030
 reworker (electronics) 726.684-090
 REWORKER, PRINTED CIRCUIT BOARD (electronics) 726.684-090
 REWORK MACHINE OPERATOR (fabric. plastics prod.) 605.685-054
 rickshaw driver (amuse. & rec.) 349.477-010
 robot technician (mach. mfg.) 638.261-026
 RODDING MACHINE TENDER (furn.) 665.685-038
 ROD TAPE OPERATOR (electronics) 726.685-042
 ROLLER MAKER (rubber goods) 690.685-502
 ROOFING-MACHINE TENDER (build. mat., n.e.c.) 590.685-098
 ROTARY-ENGINE ASSEMBLER (engine & turbine) 801.261-018
 ROUGH PLANER TENDER (woodworking) 665.665-010
 ROULETTE DEALER (amuse. & rec.) 343.467-018
 ROUTER MACHINE OPERATOR (fabric. plastics prod.) 605.685-054
 ROUTER, PRINTED CIRCUIT BOARDS (electronics) 605.682-034
 ROUTER TENDER (furn.) 665.685-042
 RUNNING RIGGER (ship & boat bldg. & rep.) 806.684-142
 RURAL MAIL CARRIER (gov. ser.) 230.363-010

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SAFETY DIRECTOR (nonprofit organ.) 187.167-214
 SAFETY MANAGER (medical ser.) 168.167-086
 SALES ATTENDANT, BUILDING MATERIALS (ret. tr.) 299.677-
 014
 SALESPERSON, LEATHER-AND-SUEDE APPAREL-AND-AC-
 CESSORIES (ret. tr.) 261.357-074
 SALES REPRESENTATIVE, DATA-PROCESSING SERVICES (bus.
 ser.) 251.157-014
 SALES REPRESENTATIVE, SECURITY SYSTEMS (bus. ser.)
 259.257-022
 SALES REPRESENTATIVE, WATER-TREATMENT CHEMICALS
 (whole. tr.) 262.357-022
 SALVAGE REPAIRER (light, heat, & power) I 829.261-018
 SAMPLE CLERK (fabric. plastics prod.) 222.387-066
 SAMPLE CLERK (furn.) 221.382-026
 SAMPLE CUTTER (furn.) 781.684-070
 SAMPLE MAKER (boot & shoe) 690.685-506
 SANITARY LANDFILL OPERATOR (sanitary ser.) 955.463-010
 SANITATION INSPECTOR (gov. ser.) 168.267-110
 SATELLITE-INSTRUCTION FACILITATOR (education) 249.367-086
 satellite-project site monitor (education) 249.367-086
 SAWMILL-RELIEF WORKER (sawmill) 667.686-014
 SAWMILL WORKER (sawmill) 667.686-014
 SAW OPERATOR (brick & tile) 677.685-054
 SAW OPERATOR (electronics) 726.682-026
 saw operator (electronics) 677.382-018
 SAW OPERATOR, SEMICONDUCTOR WAFERS (electronics)
 726.685-046
 SAWYER (can. & preserv.) 525.687-126
 SCALING MACHINE OPERATOR (can. & preserv.) 521.685-386
 SCARFING MACHINE OPERATOR (iron & steel) 816.682-010
 scheduler (clerical) 221.167-014
 SCHEDULER (museum) 238.367-034
 SCIENCE CENTER DISPLAY BUILDER (museum) 739.261-010
 screener (any ind.) 979.684-034
 SCREEN-MACHINE OPERATOR (house furn.) 559.682-070
 SCREEN MAKER, PHOTOGRAPHIC PROCESS (any ind.) 979.384-
 010
 SCREEN PRINTER (any ind.) 979.684-034
 SCREEN PRINTER, PRINTED CIRCUIT BOARDS (electronics)
 979.684-034
 SCREEN-PRINTING-MACHINE TENDER, PRINTED CIRCUIT
 BOARDS (electronics) 979.665-010
 screen stretcher (electronics) 979.684-042

SCREW-MACHINE ADJUSTER, AUTOMATIC (ammunition) 638.261-030

SCREW-MACHINE REPAIRER (mach. shop) 638.261-030
scribe (electronics) 726.685-046

SCRUBBER MACHINE FEEDER-OFFBEARER (electronics) 699.686-014

SCRUBBER, PLATING (electronics) 699.686-014
sealer (elec. equip.; electronics) 726.687-022

SEALER, SEMICONDUCTOR PACKAGES (electronics) 726.687-042

SEAT MAKER (furn.) 780.684-134

SECONDARY CONNECTOR, ARMATURE (elec. equip.) 724.684-014

SECURITY CONSULTANT (bus. ser.; per. ser.) 189.167-054

SEED CORE OPERATOR (electronics) 679.384-010

SEED PELLETER (agric.) 599.685-126

SEMICONDUCTOR PROCESSOR (electronics) 590.684-022

SENSITIZER AND PRINTER (inst. & app.) 719.381-010

SEQUENCING-MACHINE OPERATOR (electronics) 726.382-010

SERVICE MANAGER (ret. tr.) 185.164-010

SERVICE TECHNICIAN, COMPUTERIZED-PHOTOFINISHING EQUIPMENT (photofinish.) 714.281-030

SETTER, JUICE PACKAGING MACHINES (can. & preserv.) 920.380-010

SEWER-LINE PHOTO-INSPECTOR (sanitary ser.) 851.362-010

SEWER-LINE REPAIRER (sanitary ser.) 869.664-018

SEWER-LINE REPAIRER, TELE-GROUT (sanitary ser.) 851.262-010

SEWING-MACHINE OPERATOR, PAPER BAGS (paper goods) 787.685-054

SHAFTING CLEANER (any ind.) 699.687-014

SHAKER (hosiery) 589.687-058

SHAKE-TEST MACHINE TENDER (inst. & app.) 710.685-010

SHAPING MACHINE TENDER (furn.) 665.685-046
shearer, printed circuit boards (electronics) 615.685-046

SHIFT SUPERVISOR, FILM PROCESSING (print. & pub.) 979.132-010

SHOTBLAST-EQUIPMENT OPERATOR (found.) 503.362-014
shuttle-bus driver (motor trans.) 913.663-018
shuttler (house furn.) 789.684-054
sidehand (iron & steel) 615.687-010

SILICON CRYSTAL GROWER (electronics) 590.382-014
silk-screen operator (any ind.) 979.684-034
silk-screen painter (any ind.) 979.684-034

SILK-SCREEN PRINTER (electronics) 979.684-034

SILK-SCREEN PRINTER, MACHINE (any ind.) 979.665-010

SINGING MESSENGER (bus. ser.) 230.647-010

SKELP PROCESSOR (iron & steel) 619.662-014

SKI-BINDING FITTER-AND-REPAIRER (sports equip.) 732.364-014
skirt clipper (furn.) 780.687-070

SKIRT PANEL ASSEMBLER (furn.) 780.687-070

SNOWMAKER (amuse. & rec.) 969.685-010

SOCIAL-SERVICES AIDE (social ser.) 195.367-034

SOCKET ASSEMBLER (electronics) 726.684-070
soft tooling technician (electronics) 609.262-010

SOFTWARE TECHNICIAN (profess. & kin.) 020.262-010

SOIL-CONSERVATION TECHNICIAN (profess. & kin.) 040.261-010

SOLAR-ENERGY-SYSTEM INSTALLER (any ind.) 637.261-030

SOLAR-ENERGY-SYSTEM-INSTALLER HELPER (any ind.) 637.687-018

SOLAR-ENERGY-SYSTEMS DESIGNER (profess. & kin.) 007.161-038

SOLAR-FABRICATION TECHNICIAN (mach. shop) 809.381-034

SOLDER DEPOSIT OPERATOR (electronics) 726.684-094

SOLDER-LEVELER, PRINTED CIRCUIT BOARDS (electronics) 726.685-050
solid waste facility operator (sanitary ser.) 955.463-010

SOYFREEZE OPERATOR (food prep., n.e.c.) 529.685-290
spare hand, carding (textile) 689.685-166

SPECIAL-DELIVERY CARRIER (gov. ser.) 230.367-010

SPINDLE REPAIRER (textile) 628.684-042

SPLICER (per. protect. & med. dev.) 759.684-070

SPRINKLER-AND-IRRIGATION-SYSTEM INSTALLER (const.) 862.281-022

SPRUCE-CUTTING-PRESS OPERATOR (found.) 615.685-030

SQUEEGEE-MACHINE OPERATOR (glass mfg.) 979.665-010
stacker operator (brick & tile) 579.685-058
staffing clerk (clerical) 205.367-062

STAFF TOXICOLOGIST (gov. ser.) 041.061-094

STAGE TECHNICIAN (amuse. & rec.) 962.261-014

statler operator (mirror) 677.686-014

STEAM FITTER (const.) 862.281-022

STENCILING-MACHINE TENDER (glass mfg.; glass prod.) 979.665-010

STEP-AND-REPEAT REDUCTION CAMERA OPERATOR (electronics) 976.382-034

STITCHER, TAPE-CONTROLLED MACHINE (boot & shoe) 690.685-494

stock chaser (clerical) 221.167-014
stock chaser (clerical) 221.367-042
stock rustler (clerical) 221.167-014

STORAGE-FACILITY RENTAL CLERK (bus. ser.; ret. tr.) 295.367-026

STRAPPING-MACHINE TENDER (brick & tile) 920.685-106

STRESS ANALYST (profess. & kin.) 007.061-042
subject, scientific research (any ind.) 359.677-030

SUPERINTENDENT, HORTICULTURE (museum) 180.161-014

SUPERINTENDENT, MAINTENANCE (any ind.) 189.167-046

SUPERINTENDENT, SEED MILL (agric.) 599.137-010

SUPERVISOR (brick & tile) 570.132-022

SUPERVISOR (electronics) 619.130-046

SUPERVISOR (fabric. plastics prod.) 690.130-018

SUPERVISOR (felt goods) 586.130-010

SUPERVISOR (macaroni & rel. prod.) 529.132-110

SUPERVISOR (per. protect. & med. dev.) 789.134-014

SUPERVISOR (per. protect. & med. dev.) 692.137-014

SUPERVISOR, AIR-CONDITIONING INSTALLER (any ind.) 827.131-018

SUPERVISOR, ANIMAL MAINTENANCE (drug. prep. & rel. prod.) 410.137-018

SUPERVISOR, ARTIFICIAL BREAST FABRICATION (per. protect. & med. dev.) 712.134-010

SUPERVISOR, ARTIST, SUSPECT (gov. ser.) 970.131-014

SUPERVISOR, ASBESTOS REMOVAL (const.) 869.134-026

SUPERVISOR, ASSEMBLY (electronics) 726.134-010

SUPERVISOR, BONDING (textile) 589.137-014

SUPERVISOR, BRAKE REPAIR (r.r. trans.) 622.137-010

SUPERVISOR, BURLING AND JOINING (textile) 689.132-010

SUPERVISOR, CAPACITOR PROCESSING (electronics) 590.130-010

SUPERVISOR, CAR AND YARD (r.r. trans.) 622.137-014

SUPERVISOR, CLAIMS (insurance) 241.137-018

SUPERVISOR, COMMUNICATIONS-AND-SIGNALS (r.r. trans.) 184.167-290

SUPERVISOR, CONTRACT-SHELTERED WORKSHOP (nonprofit organ.) 187.134-010

SUPERVISOR, DISPLAY FABRICATION (smoking pipe) 739.134-014

SUPERVISOR, DRAFTING AND PRINTED CIRCUIT DESIGN (profess. & kin.) 003.131-010

SUPERVISOR, DRYING AND WINDING (synthetic fibers) 559.134-014

SUPERVISOR, ELECTRONIC CONTROLS REPAIRER (engine & turbine) 828.131-010

SUPERVISOR, ELECTRONICS (electronics) 726.130-010

SUPERVISOR, ELECTRONICS ASSEMBLY (electronics) 726.130-010

SUPERVISOR, ELECTRONICS INSPECTION (electronics) 726.130-010

SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010

SUPERVISOR, ELECTRONICS TESTING (electronics) 726.130-010
supervisor, electronic testing (electronics) 726.131-018

SUPERVISOR, ELECTRON-TUBE PROCESSING (electronics) 590.130-010
supervisor, energy conservation representative (light, heat, & power) 959.137-022

supervisor, engraving (furn.) 652.132-010

SUPERVISOR, EPOXY FABRICATION (brick & tile) 579.134-014

SUPERVISOR, FELTING (felt goods) 586.130-010

SUPERVISOR, FIBER-LOCKING (textile) 689.132-014

SUPERVISOR, FINAL (electronics) 726.134-010

SUPERVISOR, FLAME CUTTING (iron & steel) 819.132-010

SUPERVISOR, FOAM CUTTING (house furn.) 690.130-022

SUPERVISOR, FRAME SAMPLE AND PATTERN (furn.) 661.137-010

SUPERVISOR, FULLING (felt goods) 586.130-010
supervisor, functional testing (electronics) 726.131-018

SUPERVISOR, FURNITURE ASSEMBLY (furn.) 763.134-014

SUPERVISOR, HEARING-AID ASSEMBLY (per. protect. & med. dev.) 726.131-014

SUPERVISOR, HOME-ENERGY CONSULTANT (light, heat, & power) 959.137-022

SUPERVISOR, HOME RESTORATION SERVICE (any ind.) 389.137-010

SUPERVISOR, INCINERATOR PLANT (sanitary ser.) 955.131-010
supervisor, in-circuit testing (electronics) 726.131-018

SUPERVISOR, INSPECT, CLEAN-UP, AND WRAP (furn.) 920.137-026

SUPERVISOR, INSPECTION (chew. gum) 529.137-074

SUPERVISOR, INSTANT POTATO PROCESSING (food prep., n.e.c.) 529.137-078

SUPERVISOR, INTEGRATED CIRCUIT MANUFACTURING (electronics) 590.130-010

SUPERVISOR, KENNEL (nonprofit organ.) 410.134-018

SUPERVISOR, KEYMODULE ASSEMBLY (office mach.) 692.130-038

SUPERVISOR, LABORATORY (textile) 689.134-026

SUPERVISOR, LABORATORY ANIMAL FACILITY (agric.) 418.137-010

SUPERVISOR, LOCOMOTIVE (r.r. trans.) 625.137-010

SUPERVISOR, LONG GOODS (macaroni & rel. prod.) 529.132-110
 SUPERVISOR, OPERATIONS (light, heat, & power) 952.137-026
 SUPERVISOR, PACKING (mirror) 920.137-026
 SUPERVISOR, PACKING AND WRAPPING (any ind.) 920.137-026
 SUPERVISOR, PAINT DEPARTMENT (any ind.) 749.131-014
 SUPERVISOR, PAINTING (const.) 840.131-010
 SUPERVISOR, POST-WAVE (electronics) 726.134-010
 SUPERVISOR, PRE-WAVE (electronics) 726.134-010
 SUPERVISOR, PRINTED CIRCUIT BOARD ASSEMBLY (electronics) 726.134-010
 SUPERVISOR, PRINTED CIRCUIT BOARD PROCESSING (electronics) 590.130-010
 SUPERVISOR, PRINTED CIRCUIT BOARD TESTING (electronics) 726.131-018
 SUPERVISOR, PRINT LINE (furn.) 652.132-010
 SUPERVISOR, PROCESSING (chew. gum) 529.137-082
 SUPERVISOR, PROCESS TESTING (electronics) 590.130-010
 SUPERVISOR, PROTECTIVE-SIGNAL OPERATIONS (bus. ser.) 379.137-022
 SUPERVISOR, QUALITY CONTROL (electronics) 726.134-010
 SUPERVISOR, REAL-ESTATE OFFICE (real estate) 249.137-030
 SUPERVISOR, REFRACTORY PRODUCTS (brick & tile) 579.134-018
 SUPERVISOR, RESEARCH DAIRY FARM (agric.) 410.134-022
 SUPERVISOR, RESEARCH KENNEL (agric.) 418.137-014
 SUPERVISOR, SAWING AND ASSEMBLY (furn.) 669.132-010
 SUPERVISOR, SEMICONDUCTOR WAFER MANUFACTURING (electronics) 590.130-010
 SUPERVISOR, SHOP (brush & broom) 692.130-042
 SUPERVISOR, SHORT GOODS (macaroni & rel. prod.) 529.132-110
 SUPERVISOR, SHOW OPERATIONS (amuse. & rec.) 969.137-014
 SUPERVISOR, SIGN SHOP (signs) 970.137-010
 SUPERVISOR, SMOKE CONTROL (iron & steel) 861.134-010
 SUPERVISOR, SOUND TECHNICIAN (bus. ser.) 823.131-026
 SUPERVISOR, SPECIAL EDUCATION (education) 094.167-010
 SUPERVISOR, SPINNING AND WINDING (synthetic fibers) 559.130-026
 SUPERVISOR, STAVE CUTTING (cooperage) 667.137-010
 SUPERVISOR, SWIMMING-POOL MAINTENANCE (const.) 869.131-038
 SUPERVISOR, TELECOMMUNICATOR (gov. ser.) 379.132-010
 SUPERVISOR, TESTING (electronics) 726.134-010
 SUPERVISOR, TRAIN OPERATIONS (r.r. trans.) 184.167-294
 SUPERVISOR, TUBING (textile) 689.137-014
 SUPERVISOR, TYPE COPYING (mach. mfg.) 970.131-010
 SUPERVISOR, TYPE-DISK QUALITY CONTROL (mach. mfg.) 979.137-026
 SUPERVISOR, TYPE PHOTOGRAPHY (mach. mfg.) 976.131-026
 SUPERVISOR, WATER TREATMENT PLANT (waterworks) 954.132-010
 SUPERVISOR, WEIGHTS AND MEASURES, GAS AND OIL INSPECTION (gov. ser.) 168.167-090
 SUPERVISOR, WELDING EQUIPMENT REPAIRER (welding) 626.137-010
 SUPERVISOR, YARN PREPARATION (textile) 689.130-034
 SURVEILLANCE-SYSTEM MONITOR (gov. ser.) 379.367-010
 SWAGER AND PIERCER (clock & watch) 615.685-030
 swamper (sawmill) 667.686-014
 SWEATBAND SHAPER (hat & cap) 784.687-090
 SWIMMING POOL INSTALLER-AND-SERVICER (const.) 869.463-010
 SYMBOL STAMPER, SEMICONDUCTOR PACKAGES (electronics) 652.685-110
 systems inspector (electronics) 726.381-010

T

TABLET-MAKING-MACHINE-OPERATOR HELPER (paper goods) 649.685-130
 TAKE-UP OPERATOR (synthetic fibers) 557.685-034
 TANK-CAR CLEANER (petrol. refin.) 891.687-022
 TANK CLEANER (any ind.) 891.687-022
 tanker (elec. equip.; electronics) 726.687-022
 tape machine tailer (veneer & plywood) 569.686-054
 TAPER (electronics) 726.687-010
 TAPER, PRINTED CIRCUIT LAYOUT (electronics) 017.684-010
 TARGET-FACE MAKER (sports equip.) 979.684-034
 tax form preparer (bus. ser.) 219.362-070
 TAX PREPARER (bus. ser.) 219.362-070
 TEACHER (museum) 099.227-038
 TEACHER, ADVENTURE EDUCATION (education) 099.224-014
 TEACHER AIDE, ELEMENTARY SCHOOL (education) 249.367-074
 TEACHER AIDE (education) I 099.327-010
 TEACHER AIDE (education) II 249.367-074
 TEACHER AIDE, PRIMARY SCHOOL (education) 099.327-010
 TEACHER AIDE, SECONDARY SCHOOL (education) I 099.327-010
 TEACHER AIDE, SECONDARY SCHOOL (education) II 249.367-074

teacher, aurally handicapped (education) 094.224-010
 TEACHER, DEAF STUDENTS (education) 094.224-010
 teacher, educable mentally retarded (education) 094.227-022
 teacher, educationally handicapped (education) 094.227-010
 teacher, exceptional children (education) 094.227-018
 TEACHER, HANDICAPPED STUDENTS (education) 094.227-018
 TEACHER, HOME THERAPY (social ser.) 195.227-018
 TEACHER, LIP READING (education) 094.224-010
 TEACHER, MENTALLY-RETARDED STUDENTS (education) 094.227-022
 teacher, oral-deaf (education) 094.224-010
 teacher, orthopedically handicapped (education) 094.227-018
 TEACHER, RESOURCE (education) 099.227-042
 TEACHER, VOCATIONAL TRAINING (education) 094.227-026
 technical assistant (drug. prep. & rel. prod.) 559.384-010
 technical specialist (museum) 962.261-010
 TECHNICAL SUPPORT SPECIALIST (profess. & kin.) 199.224-010
 TECHNICAL TRAINING COORDINATOR (education) 166.167-054
 TECHNICIAN, SEMICONDUCTOR DEVELOPMENT (profess. & kin.) 003.161-018
 technician, test systems (electronics) 726.281-014
 TELECOMMUNICATOR (gov. ser.) 379.362-018
 telemetry technician (medical ser.) 078.367-010
 TELEVISION-CHASSIS INSPECTOR (electronics) 726.684-022
 TELEVISION-RECEIVER ANALYZER (electronics) 726.281-014
 TELEVISION TECHNICIAN (radio & tv broad.) 194.062-010
 TEMPEH MAKER (food prep., n.e.c.) 529.685-290
 TERRAZZO FINISHER (const.) 861.664-014
 terrazzo helper (const.) 861.664-014
 terrazzo mechanic helper (const.) 861.664-014
 terrazzo worker helper (const.) 861.664-014
 TESTER (pottery & porc.) 774.687-026
 TESTER, SEMICONDUCTOR PACKAGES (electronics) 726.685-054
 TESTER, SEMICONDUCTOR WAFERS (electronics) 726.684-102
 tester, systems (electronics) 726.281-014
 TESTER, WAFER SUBSTRATE (electronics) 726.684-106
 TEST FIXTURE ASSEMBLER (electronics) 726.684-098
 TEST FIXTURE DESIGNER (electronics) 726.364-014
 testing-machine operator (electronics) 726.684-026
 test technician (electronics) 726.281-014
 TEST TECHNICIAN, SEMICONDUCTOR PROCESSING EQUIPMENT (electronics) 590.262-014
 TEXTURING-MACHINE FIXER (textile) 628.684-046
 ticketer (clerical) 221.387-046
 TILE FINISHER (const.) 861.664-018
 tile mechanic helper (const.) 861.664-018
 tile setter helper (const.) 861.664-018
 TIME CLOCK REPAIRER (elec. equip.) 829.261-018
 TINNER (electronics) 726.687-010
 TIP-OUT WORKER (conc. prod.) 575.687-038
 TOE PUNCHER (hosiery) 689.685-162
 TOFU MAKER (food prep., n.e.c.) 529.685-290
 TOOL, GAUGE, AND FIXTURE REPAIRER (auto. mfg.) 601.281-030
 TOOL MAKER (mach. shop) 601.280-042
 TOOL MAKER, MAINTENANCE (mach. shop) 601.280-042
 TOOL PROGRAMMER, NUMERICAL CONTROL (electronics) 609.262-010
 TOOL REPAIRER (mach. shop) 601.280-042
 TOUCH-UP CARVER (smoking pipe) 761.684-054
 touch-up inspector, printed circuit boards (electronics) 726.684-062
 touch-up operator, printed circuit boards (electronics) 726.684-062
 TOUCH-UP SCREENER, PRINTED CIRCUIT BOARD ASSEMBLY (electronics) 726.684-110
 TOXICOLOGIST (drug. prep. & rel. prod.) 022.081-010
 TRADE MARKER (smoking pipe) 690.685-510
 TRAIN DISPATCHER, ASSISTANT CHIEF (r.r. trans.) 910.167-014
 training administrator (education) 166.167-026
 training specialist (education) 166.221-010
 TRAINING TECHNICIAN (can. & preserv.) 522.264-010
 TRANSFORMER-COIL WINDER (light, heat, & power) 829.261-018
 TRANSFORMER TESTER (electronics) 726.684-078
 transit-mix operator (const.) 900.683-010
 TRANSMITTER TESTER (electronics) 726.281-014
 TRANSPORTATION DIRECTOR (nonprofit organ.) 187.167-214
 TRANSPORTATION-EQUIPMENT-MAINTENANCE WORKER (museum) 899.384-010
 transportation-museum helper (museum) 899.384-010
 TRIMMER, PRINTED CIRCUIT BOARD PANELS (electronics) 699.685-054
 TRIMMING MACHINE SET-UP OPERATOR (smoking pipe) 664.382-018
 TROLLEY-WIRE INSTALLER (mining & quarrying) 821.684-022
 trouble shooter (electronics) 726.281-014
 TRUCK LOADER, OVERHEAD CRANE (nonfer. metal alloys) 921.663-070
 TUBE INSPECTOR (electronics) 726.684-022

TUBE TESTER (electronics) 726.684-026
TUBE-TEST TECHNICIAN (electronics) 726.281-014
TURNING LATHE TENDER (furn.) 664.685-034
TURNING MACHINE SET-UP OPERATOR (smoking pipe) 669.382-026
TUYERE FITTER (iron & steel) 862.281-022
TWENTY-ONE DEALER (amuse. & rec.) 343.467-018
TYPE-COPY EXAMINER (mach. mfg.) 979.687-026
TYPE COPYIST (mach. mfg.) 970.381-042
TYPE-LIBRARY CLERK (mach. mfg.) 222.387-070
TYPE-PROOF REPRODUCER (mach. mfg.) 652.685-106
TYPING-ELEMENT-MACHINE OPERATOR (office mach.) 616.382-018

U

ULTRASONIC TESTER (bus. ser.) 709.281-018
UNDERGROUND REPAIRER (light, heat, & power) 829.261-018
UPHOLSTERER, ASSEMBLY LINE (furn.) 780.684-134
UPHOLSTERY RESTORER (museum) 763.380-010
USER REPRESENTATIVE, INTERNATIONAL ACCOUNTING (electronics) 189.117-038
UTILITY CLERK (light, heat, & power) 239.367-034
UTILITY OPERATOR (comp. & liquefied gases) 549.685-042
UTILITY OPERATOR (sawmill) 669.682-070
utility repairer (any ind.) 899.261-014
UTILITY TENDER, CARDING (textile) 689.685-166
UTILITY WORKER, MOLDING (fabric. plastics prod.) 559.684-026
UTILITY WORKER, PRODUCTION (drug. prep. & rel. prod.) 559.684-034
utility worker, virus (drug. prep. & rel. prod.) 559.684-034
UTILIZATION COORDINATOR (radio & tv broad.) 169.167-078
UTILIZATION-REVIEW COORDINATOR (medical ser.) 079.137-010

V

VACUUM-EVAPORATION OPERATOR (electronics) 590.684-014
VALUATION ENGINEER (profess. & kin.) 160.167-018
van driver (motor trans.) 913.663-018
VARIABLE CENTER DISTANCE OPERATOR (electronics) 726.685-014
VARNISHER (const.) 840.381-010
V-BLOCK SAW OPERATOR (electronics) 677.382-018
VECTOR CONTROL ASSISTANT (gov. ser.) 049.364-014
VENDING-MACHINE ATTENDANT (hotel & rest.) 319.464-014
VENEER-TAPING-MACHINE OFFBEARER (veneer & plywood) 569.686-054
VOCATIONAL REHABILITATION CONSULTANT (gov. ser.) 094.117-018
VOICE PATHOLOGIST (profess. & kin.) 076.104-010

W

WAFER ABRADING MACHINE TENDER (electronics) 673.685-102

WAFER BREAKER, SEMICONDUCTORS (electronics) 726.687-046
WAFER CLEANER (electronics) 590.685-102
wafer etcher (electronics) 590.685-078
wafer fab operator (electronics) 590.684-022
WAFER MOUNTER (electronics) 726.685-058
wafer polisher (electronics) 673.685-094
wafer slicer (electronics) 677.382-018
WALLCOVERING TEXTURER (wallpaper) 749.684-054
WALLPAPER PRINTER (wallpaper) II 979.684-034
WASTE-MANAGEMENT ENGINEER, RADIOACTIVE MATERIALS (profess. & kin.) 005.061-042
WATCH ELECTRICIAN (tel. & tel.) 829.261-018
WATER-SOFTENER SERVICER-AND-INSTALLER (bus. ser.) 862.684-034
WAVE-SOLDERING MACHINE OPERATOR, PRINTED CIRCUIT BOARDS (electronics) 726.362-014
WAVE-SOLDER OFFBEARER (electronics) 726.686-010
WEIGHT-COUNT OPERATOR (electronics) 590.684-014
WEIGHT-REDUCTION SPECIALIST (per. ser.) 359.367-014
wheelchair repairer (per. protect. & med. dev.; ret. tr.) 639.281-022
WIND-GENERATING-ELECTRIC-POWER INSTALLER (const.; light, heat, & power) 821.381-018
wiper (any ind.) 699.687-014
WIRE BRUSH OPERATOR (smoking pipe) 761.684-058
wire-preparation worker (elec. equip.; electronics) 728.684-022
WIRER, MAINTENANCE (light, heat, & power) 829.261-018
WIRE SAW OPERATOR (electronics) 677.382-018
WIRE STRIPPER (electronics) 726.687-010
WIRE-STRIPPING-AND-CUTTING-MACHINE OPERATOR (any ind.) 728.685-010
WIREWORKER (elec. equip.; electronics) 728.684-022
WIRE-WRAPPING-MACHINE OPERATOR (electronics) 726.682-014
WOOD-FUEL PELLETIZER (fuel briquettes) 569.685-078
WOOD SCRAP HANDLER (veneer & plywood) 564.686-010
WORD-PROCESSING-MACHINE OPERATOR (clerical) 203.362-022
word processor (clerical) 203.362-022
work-order clerk (clerical) 221.387-046
work-order detailer (clerical) 221.387-046
WORK-STUDY COORDINATOR, SPECIAL EDUCATION (education) 094.107-010

X

X RAY TECHNICIAN, PRINTED CIRCUIT BOARDS (electronics) 726.684-062

Y

yard salesperson (ret. tr.) 299.677-014

Z

ZOO VETERINARIAN (medical ser.) 073.101-018

Appendix A

Occupational Code Request Program

There may be occasions when users are unable to locate titles, codes, and definitions in the DOT or the new Supplement. This could occur for one of several reasons:

1. The job may have been missed during data collection.
2. The job may be more specific than the composite DOT definition.
3. The job may include specific tasks from more than one definition.
4. The job was created as the result of recent technological changes or labor force pressures.
5. The user may not be familiar with the structure of the DOT.

Users who cannot find the occupational information they need in the DOT should feel free to contact the nearest State Employment Job Service office for assistance. If the Job Service office cannot supply the information, such offices will submit an "occupational code request" to the appropriate Occupational Analysis Field Center. A title and code will be transmitted to the user after the information is reviewed. This special procedure, which has been set up to provide supplementary occupational information to users, serves as an additional method of securing job information for subsequent publications.

If it is not convenient to seek the help of the local State Employment Job Service office, you may send your requests for DOT title and code information directly to an Occupational Analysis Field Center. In your correspondence, please include information corresponding to that requested on Form ETA 741, Occupational Code Request, so that the response you receive will have the correct title and code assigned to it.

Address such inquiries to the Field Center responsible for your State or Territory as indicated in the following list:

Massachusetts Occupational Analysis
Field Center (617) 727-6718
Research and Statistics Section
Charles Hurley Building, Second
Floor
Government Center
Boston, MA 02114

Connecticut
Delaware
Maine
Massachusetts
New Hampshire
New Jersey

Michigan Occupational Analysis
Field Center
Michigan Employment Security
Commission
7310 Woodward Avenue, Room 425
Detroit, MI 48202

Illinois
Indiana
Michigan
Minnesota

Missouri Occupational Analysis
Field Center
Division of Employment Security
505 Washington Avenue
St. Louis, MO 63101

Arkansas
Iowa
Kansas
Louisiana
Missouri

North Carolina Occupational
Analysis Field Center
Employment Security Commission
of North Carolina
Post Office Box 27625
Raleigh, NC 27611

Alabama
District of Columbia
Florida
Georgia
Kentucky
Maryland

Utah Occupational Analysis Field
Center
Department of Employment
Security
174 Social Hall Avenue
Salt Lake City, UT 84111

Alaska
American Somoa
Arizona
California
Colorado
Guam
Hawaii
Idaho

New York
Pennsylvania
Puerto Rico
Rhode Island
Vermont
Virgin Islands

(313) 876-5140 or
(313) 876-5198

Ohio
West Virginia
Wisconsin

(314) 231-7348

Nebraska
North Dakota
Oklahoma
South Dakota
Texas

(919) 733-7917

Mississippi
North Carolina
South Carolina
Tennessee
Virginia

(801) 533-2225

Montana
Nevada
New Mexico
Oregon
Utah
Washington
Wyoming

Appendix B

Revised Fourth Edition Definitions

Analysis of occupational data collected since the publication of the Fourth Edition and the Fourth Edition Supplement resulted in the revision of tasks for selected occupations. For some occupations, the analysis required a change in the middle three digits of the DOT occupational code. These digits reflect the Worker Functions ratings of the tasks performed by the worker. (A further explanation of worker functions may be found on pages xvii and 1369 through 1371 of the Fourth Edition DOT.)

The list below contains 61 Fourth Edition DOT and Supplement occupations for which the definition and/or code has been revised. The list includes six base definitions from the First Supplement which were Undefined Related (UR) titles in the Fourth Edition. (The list also includes two base definitions deleted from the Supplement and indicates the disposition of the occupations. When appropriate, the list indicates the title and code as previously published and the revised title and code as published in this Supplement.)

- AUTOMOBILE-SERVICE-STATION MECHANIC (auto. ser.) 620.261-010
This former UR title is now AUTOMOBILE-SERVICE-STATION MECHANIC (auto. ser.) 620.261-030.
- BUILDING CLEANER, BRICK OR STONE (const.) 869.687-026
- BUILDING CLEANER, SANDBLASTER (const.) 869.664-014
- BUILDING CLEANER, STEAM (const.) 869.664-014
These former UR titles are now BUILDING CLEANER (any ind.) 891.684-022.
- CONTACT PRINTER, PHOTORESIST (electronics; inst. & app.; optical goods) 719.381-010 is now CONTACT PRINTER, PHOTORESIST (inst. & app.; optical goods) 719.381-010
- DRAFTER, COMPUTER-ASSISTED (profess. & kin.) 017.261-042 is no longer a defined occupation. The use of computer-assisted drafting equipment is reflected in a "May" item following the definition for the particular type of drafting.
- DRAFTER, ELECTRICAL (profess. & kin.) 003.281-010
- DRAFTER, ELECTRO-MECHANICAL (profess. & kin.) 003.281-018 is now an Alternate Title to DRAFTER, ELECTRONIC (profess. & kin.) 003.281-014
- DRAFTER, ELECTRONIC (profess. & kin.) 003.281-014
- ELECTRICAL REPAIRER (any ind.) 829.281-014 is now ELECTRICIAN, MAINTENANCE (any ind.) 829.261-018
- ELECTRIC-CABLE DIAGRAMMER (elec. equip.) 728.281-010 is now a UR to DRAFTER, ELECTRICAL (profess. & kin.) 003.281-010
- ELECTRONIC-COMPONENT PROCESSOR (electronics) 590.684-014
- ELECTRONICS ASSEMBLER (electronics) 726.684-018
- ELECTRONICS INSPECTOR (electronics) I 726.381-010
- ELECTRONICS INSPECTOR (electronics) II 726.684-022
- ELECTRONICS TESTER (electronics) I 726.281-014
- ELECTRONICS TESTER (electronics) II 726.684-026
- ELECTRONICS UTILITY WORKER (electronics) 726.361-010 is now ELECTRONICS UTILITY WORKER (electronics) 726.367-014
- ELECTRONICS WORKER (electronics) 726.687-010
- ENCAPSULATOR (elec. equip.; electronics) 726.684-030 is now ENCAPSULATOR (elec. equip.; electronics) 726.687-022
- ETCHED-CIRCUIT PROCESSOR (electronics) 590.684-018
- ETCHER, PRINTED CIRCUITS (electronics) 590.685-030 is now a UR to ETCHER-STRIPPER, PRINTED CIRCUIT BOARDS (electronics) 590.685-082
- INSULATION WORKER (const.) 869.664-014 This former UR title is now INSULATION WORKER (const.) 863.364-014.
- INVENTORY CLERK (clerical) 222.387.026
- KITCHEN SUPERVISOR (hotel & rest.) 310.137-014 is now KITCHEN SUPERVISOR (hotel & rest.) 319.137-030
- MACHINE CLEANER (any ind.) 699.687-014
- MACHINE REPAIR, MAINTENANCE (any ind.) 626.281-010 is now MACHINE REPAIRER, MAINTENANCE (any ind.) 638.261-030
- MAINTENANCE-MECHANIC SUPERVISOR (any ind.) 638.131-022
- MAINTENANCE REPAIRER, FACTORY OR MILL (any ind.) 899.281-014 is now MAINTENANCE REPAIRER, INDUSTRIAL (any ind.) 899.261-014
- MANAGER, EDUCATION AND TRAINING (education) 166.167-026
- MARBLE SETTER HELPER (const.) 869.664-014 This former UR title is now MARBLE FINISHER (const.) 861.664-010.
- MATERIAL COORDINATOR (clerical) 221.167-014
- MATERIAL EXPEDITER (clerical) 221.367-042
- MILLWRIGHT (any ind.) 638.281-018
- ORDER DETAILER (clerical) 221.387-046
- PIPE FITTER (const.) 862.381-018 is now PIPE FITTER (any ind.) 862.281-022
- PLATER, PRODUCTION (electroplating) 500.365-010 is now PLATER, PRODUCTION (electroplating) 500.665-010
- PROGRAMMER, BUSINESS (profess. & kin.) 020.162-014
- PROGRAMMER, DETAIL (clerical) 219.367-026
- PUNCH-PRESS OPERATOR (any ind.) II 615-685-030
- RELIABILITY ENGINEER (profess. & kin.) 019.081-022 is now RELIABILITY ENGINEER (profess. & kin.) 019.061-026
- REPAIRER, WELDING EQUIPMENT (welding) 626.381-022 is now REPAIRER, WELDING EQUIPMENT (welding) 626.384-010
- RETOUCHER, PHOTOENGRAVING (print. & pub.) 970.381-030
- SCREEN MAKER, PHOTOGRAPHIC PROCESS (any ind.) 971-381-042 is now SCREEN MAKER, PHOTOGRAPHIC PROCESS (any ind.) 979.384-010
- SCREEN PRINTER (any ind.) 979.684-034
- SEMICONDUCTOR-DEVELOPMENT TECHNICIAN (profess. & kin.) 003.161-018 is now TECHNICIAN, SEMICONDUCTOR DEVELOPMENT (profess. & kin.) 003.161-018
- SEMICONDUCTOR PROCESSOR (electronics) 590.684-022
- SILK-SCREEN PRINTER (electronics) 726.687-018 is now a UR to SCREEN PRINTER (any ind.) 979.684-034
- SILK-SCREEN PRINTER, MACHINE (any ind.) 652.665-010 is now SILK-SCREEN PRINTER, MACHINE (any ind.) 979.665-010
- STEP-AND-REPEAT REDUCTION CAMERA OPERATOR (electronics) 971.382-022 is now STEP-AND-REPEAT REDUCTION CAMERA OPERATOR (electronics) 976.382-034
- SUPERINTENDENT, MAINTENANCE (any ind.) 189.167-046
- SUPERVISOR, ELECTRONICS (electronics) 726.130-010
- SUPERVISOR, ELECTRONICS PROCESSING (electronics) 590.130-010
- SUPERVISOR, PAINT DEPARTMENT (any ind.) 749.131-014
- TANK CLEANER (any ind.) 891.687-022
- TERRAZZO FINISHER (const.) 861.381-046 and TERRAZZO-WORKER HELPER (const.) 869.664-014 Both former UR titles are now TERRAZZO FINISHER (const.) 861.664-014.
- TITLE SETTER HELPER (const.) 869.664-014 This former UR title is now TILE FINISHER (const.) 861.664-018.
- TOOL MAKER (mach. shop) 601.280-042
- WIRE-STRIPPING-AND-CUTTING-MACHINE OPERATOR, AUTOMATIC (any ind.) 691.485-010 is now WIRE-STRIPPING-AND-CUTTING-MACHINE OPERATOR (any ind.) 728.685-010
- WIREWORKER (elec. equip.; electronics) 728.687-010 is now WIREWORKER (elec. equip.; electronics) 728.684-022

Appendix C

Revisions to *Selected Characteristics of Occupations Defined in the Dictionary of Occupational Titles*

Information published in *Selected Characteristics of Occupations Defined in the Dictionary of Occupational Titles* provides users with ratings for selected occupational characteristics, such as Physical Demands and Training Time. After reviewing additional source data for the 32 occupations listed below, analysts determined that Strength factor ratings for some Fourth Edition occupations and the Training Time, as reflected through Specific Vocational Preparation (SVP), for others should be revised. The definitions and revised ratings for the following affected definitions are included in this Supplement.

ACCOUNTANT (profess. & kin.) 160.167-010
ACCOUNTANT, COST (profess. & kin.) 160.167-018
ARMATURE CONNECTOR (elec. equip.) II 724.684-014

BOATSWAIN (water trans.) 911.131-010
BOBBIN WINDER, MACHINE (cord. & twine; textile) 681.585-014
BOX REPAIRER (wood. box) II 762.687-018

CLEANER, HOSPITAL (medical ser.) 323.687-010
CONCRETE-MIXING-TRUCK DRIVER (const.) 900.683-010
CORRECTION OFFICER (gov. ser.) 372.667-018

DOWELING-MACHINE OPERATOR (woodworking) 669.685-050

EDUCATIONAL THERAPIST (education) 094.227-010
ELECTRONICS ASSEMBLER (inst. & app.) 726.384-010

GAMBLING DEALER (amuse. & rec.) 343.467-018
GARAGE SERVICER, INDUSTRIAL (any ind.) 915.687-014
GAS-AND-OIL SERVICER (motor trans.) 915.587-010

HOUSE WORKER, GENERAL (dom. ser.) 301.474-010

MAIL CARRIER (gov. ser.) 230.367-010

MANAGER, LODGING FACILITIES (hotel & rest.) 320.137-014

NURSE, LICENSED PRACTICAL (medical ser.) 079.374-014

ORDERLY (medical ser.) 355.674-018

PAINTER (const.) 840.381-010

RECRUITER (military ser.) 166.267-026
RURAL MAIL CARRIER (gov. ser.) 230.363-010

SANITARY LANDFILL OPERATOR (sanitary ser.) 955.463-010
SAWMILL WORKER (sawmill) 667.686-014
SUPERVISOR, PAINTING (const.) 840.131-010

TEACHER AIDE (education) I 099.327-010
TEACHER AIDE (education) II 249.367-074
TEACHER, DEAF STUDENTS (education) 094.224-010
TEACHER, HANDICAPPED STUDENTS (education) 094.227-018
TEACHER, MENTALLY-RETARDED STUDENTS (education) 094.227-022

WATER-SOFTENER SERVICER-AND-INSTALLER (bus. ser.) 862.684-034

Appendix D

Rating Structures of Physical Demands and Environmental Conditions

I. PHYSICAL DEMANDS

The Physical Demands (PD) given in the profile at the end of each definition reflect both the physical requirements of the occupation and the physical capacities a worker must have to meet those requirements. These ratings estimate the overall strength requirement (expressed in terms of the letter corresponding to the particular strength rating) and identify other PD factors considered critical or important for average, successful work performance (identified by the number corresponding to the particular factor). The absence of a factor rating in the PD estimates profile does not necessarily mean that the physical activity is not present in the job. Rather, it indicates that the occupational data collected and evaluated by occupational analysts did not establish the activity as critical or important for successful job performance. Below are explanations of the strength ratings and the nineteen other Physical Demands factors.

1. STRENGTH

This factor is expressed by one of five terms: Sedentary, Light, Medium, Heavy, and Very Heavy. In order to determine the overall rating, an evaluation is made of the worker's involvement in the following activities:

a. *Standing, Walking, Sitting*

Standing—Remaining on one's feet in an upright position at a work station without moving about.

Walking—Moving about on foot.

Sitting—Remaining in the normal seated position.

b. *Lifting, Carrying, Pushing, Pulling*

Lifting—Raising or lowering an object from one level to another (includes upward pulling).

Carrying—Transporting an object, usually holding it in the hands or arms, or on the shoulder.

Pushing—Exerting force upon an object so that the object moves away from the force (includes slapping, striking, kicking, and treadle actions).

Pulling—Exerting force upon an object so that the object moves toward the force (includes jerking).

Lifting, pushing, and pulling are evaluated in terms of both intensity and duration. Consideration is given to the weight handled, position of the worker's body, and the aid given by helpers or mechanical equipment. Carrying most often is evaluated in terms of duration, weight carried, and distance carried.

Estimating the Strength factor rating for an occupation requires the exercise of care on the part of occupational analysts in evaluating the force and physical effort a worker must exert. For instance, if the worker is in a crouching position, it may be much more difficult to push an object than if pushed at waist height. Also, if the worker is required to lift and carry con-

tinuously or push and pull objects over long distances, the worker may exert as much physical effort as is required to similarly move objects twice as heavy, but less frequently and/or over shorter distances.

c. *Controls*

Controls entail the use of one or both arms or hands (hand/arm) and/or one or both feet or legs (foot/leg) to move controls on machinery or equipment. Controls include but are not limited to buttons, knobs, pedals, levers, and cranks.

Following are descriptions of the five terms in which the Strength Factor is expressed:

S—Sedentary Work—Exerting up to 10 pounds of force occasionally* and/or a negligible amount of force frequently** or constantly*** to lift, carry, push, pull, or otherwise move objects, including the human body. Sedentary work involves sitting most of the time, but may involve walking or standing for brief periods of time. Jobs are sedentary if walking and standing are required only occasionally and all other sedentary criteria are met.

L—Light Work—Exerting up to 20 pounds of force occasionally, and/or up to 10 pounds of force frequently, and/or a negligible amount of force constantly to move objects. Physical demand requirements are in excess of those for Sedentary Work. Light Work usually requires walking or standing to a significant degree. However, if the use of arm and/or leg controls requires exertion of forces greater than that for Seden-

*Occasionally: activity or condition exists up to 1/3 of the time.

**Frequently: activity or condition exists from 1/3 to 2/3 of the time.

***Constantly: activity or condition exists 2/3 or more of the time.

tary Work and the worker sits most of the time, the job is rated for Light Work.

M—Medium Work—Exerting up to 50 pounds of force occasionally, and/or up to 20 pounds of force frequently, and/or up to 10 pounds of force constantly to move objects.

H—Heavy Work—Exerting up to 100 pounds of force occasionally, and/or up to 50 pounds of force frequently, and/or up to 20 pounds of force constantly to move objects.

V—Very Heavy Work—Exerting in excess of 100 pounds of force occasionally, and/or in excess of 50 pounds of force frequently, and/or in excess of 20 pounds of force constantly to move objects.

2. CLIMBING

Ascending or descending ladders, stairs, scaffoldings, ramps, poles, and the like, using feet and legs and/or hands and arms. Body agility is emphasized. This factor is important if the amount and kind of climbing required exceeds that required for ordinary locomotion.

3. BALANCING

Maintaining body equilibrium to prevent falling when walking, standing, crouching, or running on narrow, slippery, or erratically moving surfaces; or maintaining body equilibrium when performing gymnastic feats. This factor is important if the amount and kind of balancing exceeds that needed for ordinary locomotion and maintenance of body equilibrium.

4. STOOPING

Bending body downward and forward by bending spine at the waist. This factor is important if it occurs to a considerable degree and requires full use of the lower extremities and back muscles.

5. KNEELING

Bending legs at knees to come to rest on knee or knees.

6. CROUCHING

Bending body downward and forward by bending legs and spine.

7. CRAWLING

Moving about on hands and knees or hands and feet.

8. REACHING

Extending hand(s) and arm(s) in any direction.

9. HANDLING

Seizing, holding, grasping, turning, or otherwise working with hand or hands. Fingers are involved only to the extent that they are an extension of the hand.

10. FINGERING

Picking, pinching, or otherwise working primarily with fin-

gers rather than with the whole hand or arm as in handling.

11. FEELING

Perceiving attributes of objects, such as size, shape, temperature, or texture, by touching with skin, particularly that of fingertips.

12. TALKING

Expressing or exchanging ideas by means of the spoken word. Talking is important for those activities in which workers must impart oral information to clients or to the public, and in those activities in which they must convey detailed or important spoken instructions to other workers accurately, loudly, or quickly.

13. HEARING

Perceiving the nature of sounds. Hearing is important for those activities which require ability to receive detailed information through oral communication, and to make fine discriminations in sounds, such as when making fine adjustments on running engines.

14. TASTING/SMELLING

Distinguishing, with a degree of accuracy, differences or similarities in intensity or quality of flavors and/or odors, or recognizing particular flavors and/or odors, using tongue and/or nose.

15. NEAR ACUITY

Clarity of vision at 20 inches or less. This factor is important when special and minute accuracy is demanded and when defective near acuity would adversely affect job performance and/or safety of self and others.

16. FAR ACUITY

Clarity of vision at 20 feet or more. This factor is important when visual efficiency in terms of far acuity is required and when defective far acuity would adversely affect job performance and/or safety of self and others.

17. DEPTH PERCEPTION

Three-dimensional vision. Ability to judge distances and spatial relationships so as to see objects where and as they actually are. This factor is important when depth perception is required for successful job performance and/or for reasons of safety to oneself and others.

18. ACCOMMODATION

Adjustment of lens of eye to bring an object into sharp focus. This factor is important when doing near point work at varying distances from eye.

19. COLOR VISION

Ability to identify and distinguish colors.

20. FIELD OF VISION

Observing an area that can be seen up and down or to right or left while eyes are fixed on a given point. This factor is important when job performance requires seeing a large area while keeping the eyes fixed.

II. ENVIRONMENTAL CONDITIONS

The Environmental Conditions (EC) listed in this publication serve as a means of describing the physical surroundings of a worker in a specific job and of indicating the hazards that pose a definite risk of bodily injury to the worker. The physical surroundings are reflected in factors numbered one (1) through seven (7) and the hazards are reflected in factors numbered eight (8) through fourteen (14). The EC factors identified for an occupation are those which are considered to be important or critical. Below are explanations of the fourteen Environmental Conditions factors.

PHYSICAL SURROUNDINGS

1. EXPOSURE TO WEATHER

Exposure to hot, cold, wet, humid, or windy conditions, caused by the weather. This factor is rated important when exposure to weather results in marked bodily discomfort.

2. EXTREME COLD

Exposure to nonweather-related cold temperatures. This factor is rated important when temperatures are sufficiently low to cause marked bodily discomfort.

3. EXTREME HEAT

Exposure to nonweather-related hot temperatures. This factor is rated important when temperatures are sufficiently high to cause marked bodily discomfort.

4. WET AND/OR HUMID

Contact with water or other liquids; or exposure to nonweather-related humid conditions. This factor is rated important when contact with water or other liquids or exposure to humidity causes marked bodily discomfort.

5. NOISE*

Exposure to constant or intermittent sounds of a pitch or level sufficient to cause marked distraction or possible hearing loss.

6. VIBRATION

Exposure to a shaking object or surface. This factor is rated important when vibration causes a strain on the body or extremities.

7. ATMOSPHERIC CONDITIONS

Exposure to conditions, such as fumes, noxious odors,

dusts, mists, gases, and poor ventilation, that affect the respiratory system, eyes, or the skin. This factor is rated important if these conditions are present to a degree or length of time sufficient to cause marked bodily discomfort or possible injury.

HAZARDS

A hazard is a condition in the work environment that subjects or exposes the worker to the possibility of serious bodily injury or danger to the worker's life or health. A hazard is specific, related to the job, and has a greater likelihood of occurring than it would away from the job. The following conditions are evaluated as possible hazards in specific jobs:

8. Proximity to Moving, Mechanical Parts
9. Exposure to Electrical Shock
10. Working in High, Exposed Places
11. Exposure to Radiant Energy
12. Working with Explosives
13. Exposure to Toxic or Caustic Chemicals
14. Other Hazards

If protective measures eliminate the hazard entirely and if the worker has no choice regarding their use, the hazard is considered to be reduced and the factor is not rated. However, if the protective device is subject to the worker's discretionary use, the hazard is not considered reduced, and if appropriate, is rated, irrespective of the presence of the device.

*With regard to Factor 5. NOISE, the current standards of the Occupational Safety and Health Administration (OSHA) for permissible noise exposure apply. Factor 5 is rated important when the noise level exceeds these standards. The following chart indicates those standards:

PERMISSIBLE NOISE EXPOSURES

Duration Per Day, Hours	Sound Level DB
8	90
6	92
4	95
3	97
2	100
1 1/2	102
1	105
1/2	110
1/4	115

OCCUPATIONAL CODE REQUEST

DATE RECEIVED BY OAFIC: ➡ ➡	
B. INFORMATION OBTAINED FROM:	
1. CHECK APPROPRIATE BOX <input type="checkbox"/> Employer <input type="checkbox"/> Applicant <input type="checkbox"/> Training Program <input type="checkbox"/> Other (specify)	
2. Establishment (Name and Address)	
3. Establishment Contact (Name, Title, Phone No.)	
4. Requested By (Name, Title, Phone No.)	5. SIC Code (4 digits)

A. ORIGINATING OFFICE	
1. State	2. Date Transmitted
3. Local Office (Name, LO No., Address, Phone No.)	
4. Requested By (Name, Title, Phone No.)	

C. JOB DESCRIPTION (Instructions on Reverse Side)

1. Establishment Job Title(s)	D. APPROVED TITLE AND CODE:
2. List Overall Purpose or Summary of this Job	
3. List Important or Regularly Performed Tasks:	
4. (a) List Employer's Hiring Requirements: (education, vocational training, experience, other)	INDUSTRY
4. (b) List Machines, Tools, Equipment or Work Aids the Worker Uses To Perform Duties:	OCCUPATIONAL TITLE
	OCCUPATIONAL CODE (9-digits)
	GOE CODE (6-digits)

SEND ORIGINAL COPY TO RESPONSIBLE OAFIC.

E. ADDITIONAL INFORMATION AND COMMENTS

List Any Additional Information and Comments Not Covered Elsewhere. (Use additional sheets, if necessary.)

F. REPLY TO ORIGINATING OFFICE AND STATE COORDINATOR

"X" one

1. Use DOT Definition (4th Edition Title and 9-digit code)
2. Use Approved O.C.R. Code (Full 9-digit code)
3. Use New Code and Title (See Item D - Approved Title and Code, on other side)
4. Send more information (See Attached Letter)

G. TRANSMITTAL ACTION

APPROVED BY	Name and Title	DATE RETURNED TO ORIGINATING OFFICE ➤
		DATE SENT TO DOA/ OTHER OAF ➤ ➤

**INSTRUCTIONS FOR COMPLETING
PART C, JOB DESCRIPTION**

1. Summarize, in one sentence, the overall objective or purposes of the job (such as, "Operates injection molding machine.")
2. List the more important or regularly performed tasks. A good job description should include these five kinds of information:
 - a. Worker actions (what actions a worker takes), such as "Sets-up. . . ."
 - b. Machines, tools, equipment, and/or work aids (include with the tasks where pertinent), such as "injection molding machine. . . ."
 - c. Purpose of worker actions (the results of the work, the purpose of the task), such as "to mold. . . ."
 - d. Materials used, such as "granulated resin pellets," products made, such as "plastic bottles;" subject matter employed, (academic discipline), such as "accounting principles," "machine shop math," etc.; or service rendered, such as "hair styling."
 - e. Kind of instructions received, such as "simple worksheet," complex blue-prints;" or basis for judgments, such as "following supervisor's directions," or "according to work order and knowledge of machine operations."

NOTE: Use more than one sentence, if necessary, to describe all important or regularly performed tasks. For example of a related published job definition using the above components, see *INJECTION-MOLDING-MACHINE OPERATOR, 556.382-014* in the Dictionary of Occupational Titles.