

Contract Audit No. 3136-1

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT

QUALITY PRE-AWARD SURVEY MANUAL
WBS 05

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1.0 INTRODUCTION

I. INTRODUCTION

The evaluation of proposals is a comprehensive process and must address many areas involving a bidder's ability to successfully execute a contract. When proposals are received from equipment contractors for the Metro Rail project, they will need to be evaluated against several criteria to determine which contractor should be selected. In addition to quality assurance capabilities, other criteria will include:

- Technical responsiveness
- Capabilities of the firm
- Cost
- Schedule adherence.

The Quality Pre-Award Survey Manual is designed for use only in reviewing and verifying the quality assurance capabilities for potential contractors providing systems, equipment hardware, and software. These quality assurance capabilities include quality planning, control, coordination, audit, and analysis activities during the design, procurement, fabrication, assembly, and delivery phases of the contract. The evaluation is carried out in two steps:

- Review of the contractor's quality assurance documentation submitted in the proposal to the SCRTD
- Physical verification of contractor's capabilities through surveys of contractor's and users' facilities.

This manual provides the necessary tools for SCRTD's Quality Assurance organization to conduct the evaluation by:

- Identifying the quality assurance criteria which are to be reviewed
- Providing a procedure to conduct the quality pre-award survey
- Providing a checklist for each quality assurance criterion to complete the evaluation.

The Quality Pre-Award Survey Manual is intended to assist SCRTD management in their selection process of the most responsible and responsive contractors. This will help result in the procurement of systems and equipment of the highest quality, thus contributing to the successful operation of the Metro Rail system.

2.0 OBJECTIVE AND SCOPE

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2.1 OBJECTIVE

The Quality Pre-Award Survey Manual is intended to:

- Serve as a guide to assist the SCRTD in conducting, evaluating, and reporting appraisals of a contractor's existing quality assurance practices and controls
- Identify the quality assurance areas to be reviewed
- Establish a uniform procedure for conducting surveys to assure fairness and equity in the process
- Provide a checklist for measuring the overall quality assurance program.

In this manner, the manual functions as a working document and will serve as the basis of future surveys and evaluations during the contract execution.

2.2 SCOPE

The evaluation of proposals is a comprehensive process and must address all areas involving the execution of the contract. The Quality Pre-Award Survey Manual is limited to the following uses:

- It provides guidelines for evaluation solely of the quality assurance area.
- It provides the means to assess the capabilities of the contractors which provide systems and equipment, but is not designed to evaluate the contractors for the civil and architectural contracts.

- The evaluation checklists address typical quality assurance items; specific checklist items will have to be developed as applicable to unique features of individual contracts.

The results of the quality survey should be integrated into the overall evaluation process of a contractor's proposal.

3.0 QUALITY ASSURANCE SURVEY CRITERIA

3.0 QUALITY ASSURANCE SURVEY CRITERIA

This chapter discusses the essential elements of a quality assurance program. These elements must be surveyed to determine if an acceptable level of quality assurance management is present within the contractor's organization.

3.1 ORGANIZATION

The quality assurance organization shall be clearly defined and so documented. The quality assurance executive and his staff shall have well-defined authority and responsibilities. They shall receive mandates from and report to the highest levels of the corporate management. The quality assurance organization must:

- Participate in all phases of the project, including design, prototype and production manufacturing, testing, shipping, and warranty support
- Provide coordination with other organizations within the company
- Have freedom to identify, evaluate, and recommend solutions to quality problems
- Verify implementation of the solutions.

It is important that the quality assurance organization follow a program which will not compromise quality due to the cost and schedule constraints of the project.

3.2 QUALIFICATION OF PERSONNEL

The quality assurance personnel, including all managers, supervisors, and inspectors, shall be thoroughly qualified for their positions and responsibilities by:

- Education
- Training
- Job experience.

Personnel performing critical work such as welding, wiring or testing shall be certified through proper training programs. Personnel performing inspections and tests shall be certified for such work. Quality assurance personnel shall maintain records of personnel certifications and monitor the training program and methods used in measuring proficiency levels.

3.3 PROCUREMENT OF MATERIALS AND EQUIPMENT FROM SUPPLIERS

The contractor's purchasing organization shall assure selection of qualified suppliers and the transmission of all design, safety, maintainability, human factors, configuration input, reliability, and quality requirements to the suppliers. The quality assurance organization must provide input to the supplier selection process and participate in the on-site quality surveys at suppliers' facilities for complex or critical items.

The methods used by the contractor for the selection and control of its suppliers shall be reviewed. These methods shall identify the means of:

- Selection of qualified suppliers
- Evaluation and assessment of the supplier's quality system
- Transmission of all design, reliability, and quality requirements to suppliers; approval authority of all basic concepts and changes to design, quality, and product improvements
- Monitoring of the suppliers quality performance
- Evaluation of procured items against purchase order requirements
- Providing for early and effective information feedback and correction of nonconforming materials
- Approval of acceptance tests, special processes, and qualification test procedures.

3.4 INSPECTION AND TESTING

The contractor's quality assurance process during manufacturing, assembly, shipping, and installation shall be reviewed to ensure proper quality considerations. The process shall be closely investigated for the following:

- Incoming material acceptance and segregation
- Production processing, fabrication, and assembly

- Completed item inspection and testing
- Handling, storage, shipping, delivery, and installation
- Indication of inspection status.

The contractor's receiving inspection activity shall provide for the inspection and adequate storage of all incoming materials. These inspection measures shall ensure that only correct and accepted items are used and installed.

The in-process inspection shall assure that the production activities are performed under controlled conditions of work environment, equipment, and instructions.

Inspection and testing of the completed item shall be performed to provide a measure of the overall quality of the end product use and function.

The inspection activity shall be continued during handling, storage, shipping, delivery, and installation of the completed item to preclude any damage and to ensure a continued acceptable level of quality.

A system of identification shall be maintained for progressive inspection status of materials, components, subassemblies, and assemblies as to their acceptance, rejection, or non-inspection. This could be accomplished with physical segregation and status indicators such as tags, serialization, markings, stamps, and inspection records. The identification system shall ensure that only items that have passed the required inspections and tests are used.

3.5 CORRECTIVE ACTIONS AND CONTROLS

The contractor shall provide measures to ensure that conditions such as failures, malfunctions, deficiencies, deviations, and defects in material and equipment are promptly identified and corrected. In the case of such conditions, the measures shall ensure that the cause of the condition is determined and corrective action is immediately taken to preclude repetition. A system of using a Material Review Board (MRB) shall be adopted to review and resolve these conditions. Corrective action and related information shall be appropriately documented.

Corrective actions shall be based on the analysis of data and examination of defective products to determine the extent and causes of the problem. Corrective actions are critical to the quality function, because they are intended to:

- Introduce required improvements and corrections, review the adequacy of such measures, and monitor the effectiveness of corrective action taken
- Provide input to analyze trends in processes or performance of work to prevent nonconforming products.

The contractor must establish and maintain an effective system for controlling nonconforming material including its identification, segregation, and disposition.

3.6 CONFIGURATION MANAGEMENT

The contractor's in-house standards and procedures for design and manufacturing process changes shall be reviewed to determine if quality assurance personnel can monitor their implementation. This will ensure that inspection and testing is performed to the latest configuration during all stages of assembly, manufacturing, and installation. Measures shall be provided for the review and evaluation of the proposed changes to design drawings and specifications by quality assurance personnel.

3.7 CALIBRATION AND CERTIFICATION OF EQUIPMENT AND TOOLS

The contractor shall demonstrate an effective calibration and certification program for equipment and tooling. All measuring equipment, tools, and standards shall be verified or calibrated against certified standards at intervals established to ensure continued validity. Each device so verified shall bear an indication attesting to the current status of calibration. Quality Assurance personnel shall periodically verify the calibration status and maintain the certification records.

3.8 QUALITY ASSURANCE RECORDS AND PUBLICATIONS

The contractor shall establish and maintain written procedures defining his quality assurance program. The procedures shall encompass all phases of the program such as the control of subcontractors, receiving inspection, production and process control, functional testing, discrepancy control, measuring and test equipment calibration/certification, drawing control, configuration control, quality assurance records, shipping inspection, and other quality specifications.

The contractor shall maintain adequate records to provide evidence of quality and accountability. These records shall include results of inspections, tests, process controls, certification of process and personnel, discrepant material (including records of disposition), and any necessary quality requirements. Inspection and testing records shall indicate details such as the reference tests, nature of the observations, the number of observations made, and the number and types of deficiencies found. Also, records for monitoring work performance and for inspection and testing shall indicate the acceptability of work or products and the action taken in connection with the correction of deficiencies.

3.9 AUDITS

The Quality Assurance Department shall perform periodic analysis of the effectiveness of the quality assurance program. The audits shall be conducted to evaluate procedures, systems, and applicable documentation/practices for conformance to established policies and standards. Audit results shall be documented and reviewed by the management for follow-up action and correction of deficiencies.

3.10 QUALITY HISTORY

The contractor's quality assurance related performance on previously completed contracts shall be closely examined. Meetings or discussions with users of equipment similar to Metro Rail requirements will provide an indication of how effectively all of the above survey criteria were actually implemented.

4.0 SURVEY PROCEDURE

4.0 SURVEY PROCEDURE

This chapter contains a discussion of the responsibility of the participants in the quality survey and the process for scheduling and conducting the survey and evaluation.

4.1 RESPONSIBILITY

The responsibility of the SCRTD's Quality Assurance organization and the participating consultants is described below.

4.1.1 SCRTD

The SCRTD will:

- Be the central receiving office for all proposals from the contractors
- Schedule contractor surveys and evaluations in consultation with the contractor
- Formally notify the contractor of all appropriate activities, of the date, purpose, and scope of the survey and evaluation
- Request the contractor to conduct an introductory meeting to acquaint survey team members with his organization, practices, and procedures
- Formally advise the contractor of the results and conclusions of the survey.

4.1.2 Consultants

The consultants participating in the survey, at the direction of the SCRTD, will:

- Review the quality assurance data from the contractor's proposals
- Provide qualified staff to participate in the survey with the SCRTD staff

- Prepare a detailed evaluation checklist for each procurement
- Advise SCRTD of the results of the survey and any deficiencies noted in the contractor's quality assurance program.
- Prepare and maintain survey and evaluation reports and related documentation
- Transmit survey and evaluation reports and related documentation to the SCRTD.

4.1.3 Survey Team Leader

The SCRTD will designate a staff member to lead the survey team. The leader of the survey team will:

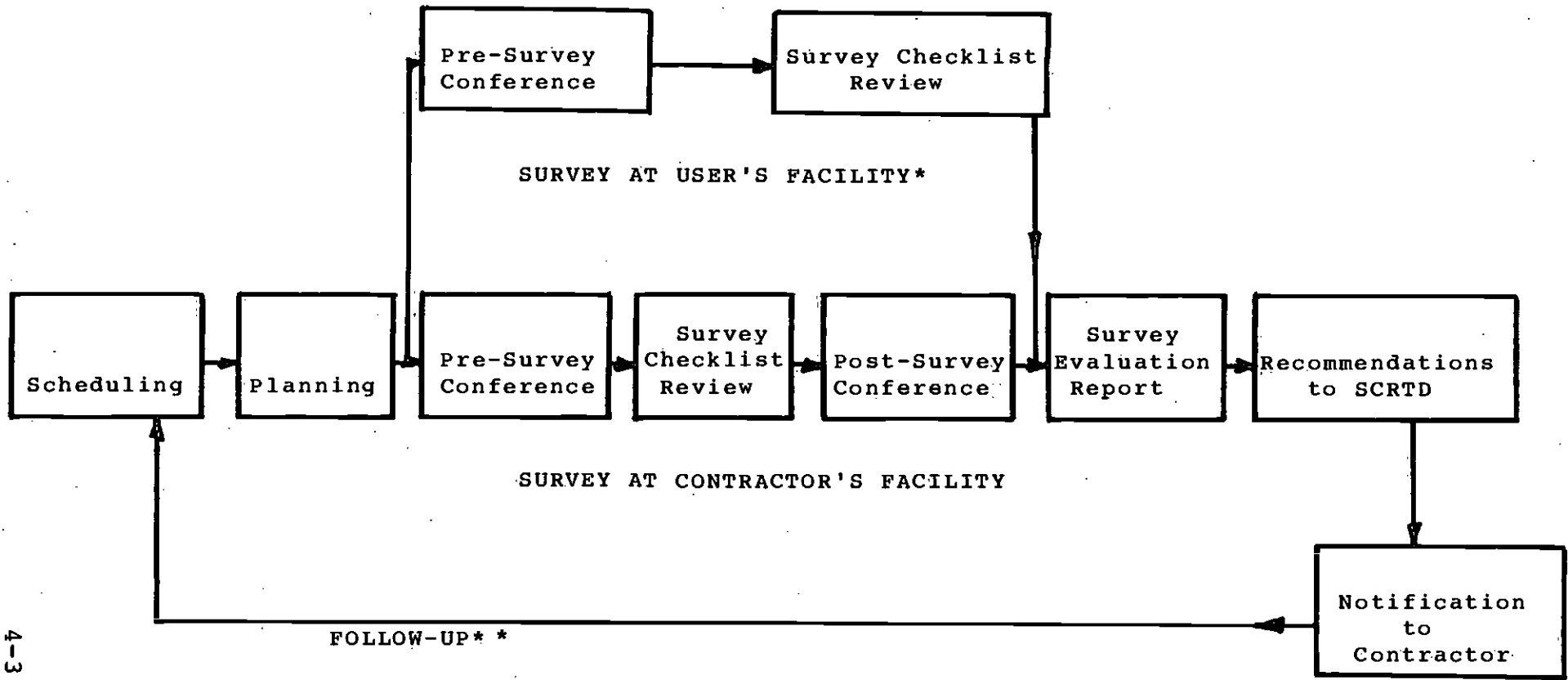
- Assemble a survey and evaluation team
- Plan and organize the survey and evaluation
- Review the purpose, technique, and schedule of the evaluation at the introductory meeting with the contractor's personnel
- Coordinate the survey and evaluation of the contractor's compliance with applicable quality assurance requirements
- Conduct a post-survey critique with contractor personnel to describe the deficiencies observed and changes that may be required contractually.

4.2 PROCESS FOR SCHEDULING AND CONDUCTING SURVEY AND EVALUATION

The suggested survey and evaluation process is shown in Exhibit 4-1.

4.2.1 Scheduling

The date of survey shall be determined by the SCRTD in consultation with the contractor for a mutually convenient time. The duration of the survey should be commensurate with the magnitude of the contractor's activities and objectives to be achieved. The evaluation should be accomplished as quickly as practicable.



4-3

- * On an as-required basis
- ** May require a limited re-survey

Process for Scheduling and Conducting Survey and Evaluation

4.2.2 Planning

Survey planning shall be coordinated by the the survey team leader. The planning activities of the survey team will include review of the contractor's quality assurance data package included with the bid submittal and preparation of a detailed survey and evaluation checklist. The survey team leader will assemble a team to conduct the survey and evaluation. The evaluation checklist will be finalized following an internal review by the SCRTD and its consultants. The SCRTD will then notify the contractor of the general quality assurance areas scheduled for evaluation sufficiently in advance of the date of the survey.

4.2.3 Survey at Contractor's Facility

The survey at the contractor's facilities will include:

- Pre-Survey conference
- Survey checklist review
- Post-survey conference.

4.2.3.1 Pre-Survey Conference

Upon arrival, a pre-survey conference will be held at the contractor's facility. The objective of the pre-survey conference is to establish a satisfactory rapport and framework for conducting the survey.

It is desirable that the survey team members be well qualified. Suggested basic requirements for a survey team member include the following:

- Familiarity with quality assurance program requirements
- Knowledgeability of the assigned activity area
- Ability to converse effectively with contractor personnel and thereby obtain evidence concerning the extent of the contractor's quality assurance program implementation.

The pre-survey conference will be chaired by the survey team leader and should be attended by survey team members and the contractor's staff. Items to be discussed will include introduction of the survey team, areas to be evaluated, an explanation of how the survey will be conducted, and the detailed schedule for the survey. The time for the post survey conference should also be established during the pre-survey conference.

4.2.3.2 Survey Checklist Review

Responsibility for review of specific checklist items will be established by the survey team leader. A close coordination between survey team members should be maintained throughout the survey. In selected areas, the entire survey team may wish to meet with appropriate contractor personnel in a single meeting so that interlocking issues may be discussed together. Deviations from the survey plan may be necessary due to changes in schedule or indication of possible problem areas not in the survey plan.

The checklist item reviews should be comprised of examination of statements of fact, quantitative and qualitative information on record pertaining to the quality of an item or service. Observations, measurements, or tests must be verifiable. The survey team must use a "Show Me" approach and not base findings on verbal explanation. For each review, the contractor's representative should thoroughly describe its organization, function, operating procedures, practices, and relationship to other functional units. If possible, agreement with the contractor should be reached during the survey as to the validity of the findings. The survey team will record findings based on established criteria, and must avoid giving advice during the course of the survey review. Under no circumstances should any survey team member approve an item or procedure. The survey team members should be encouraged to record positive as well as negative observations. The team members should take adequate notes for subsequent evaluation of each checklist item.

The survey team will periodically review progress of the checklist item review. Following the checklist review, the team will evaluate the observations and consolidate their findings in preparation for the post-survey conference.

4.2.3.3 Post Survey Conference

Following the survey checklist item review, the post-survey conference should be held with representatives from the areas evaluated in order to ensure that the contractor's organization is informed of all findings and observations. The survey team leader will chair the post-survey conference. Attendees will normally be the survey team and the representatives of management from the contractor's organization deemed appropriate by their management.

4.2.4 Survey at User's Facility

The survey at the facility of the user of contractor's equipment or system should be conducted on an as required basis to verify the quality of the hardware delivered. This survey could be conducted prior to or following the survey at the contractor's facility. The format of this survey should include a:

- Pre-survey conference
- Survey checklist review.

The details of these two steps will be similar to the steps in the survey to be conducted at the contractor's facility.

An informal post-survey conference should be held to express gratitude to the user for extending his cooperation to the visiting survey team.

4.2.5 Survey Report and Recommendations to SCRTD

The survey team shall make a report of survey findings and recommendations as soon as possible after the survey. It should include documentation of commitments made by the contractor's organization for correction of deficiencies. The report must be factual, understandable, and void of irrelevancies. The report may include as a finding any observation that the survey team considers relevant to the assessment of the contractor's ability to meet SCRTD's quality assurance requirements. Items of major concern should be indicated as conclusions in the summary portion of the formal report.

4.2.6 Follow-Up

Follow-up action may be accomplished by written communication, review of revised procedures, resurvey, or other appropriate means.

5.0 SURVEY AND EVALUATION DOCUMENTATION

5.0 SURVEY AND EVALUATION DOCUMENTATION

Contained in this chapter are the documentation and instructions for conducting the survey and performing the evaluation.

5.1 DESCRIPTION OF THE WORK PAGES

The survey and evaluation process can be divided into three steps:

- Preparation for the survey
- Conducting the survey
- Evaluation and findings.

The documentation for the survey and evaluation is shown in Exhibit 5-1. The survey and evaluation report shall consist of:

- Data Sheet (Exhibit 5-1 (a))
- Survey Summary Sheet (Exhibit 5-1 (b))
- Survey Checklist (Exhibit 5-1 (c))
- Comment Sheet (Exhibit 5-1 (d))
- Evaluation Sheets. (Exhibit 5-1 (e)).

The survey checklists contained in Chapter 6 address typical quality assurance items. The checklists shall be completed and updated during the preparation for the survey. The comments and observations for each key requirement of the survey criteria shall be entered on the comment sheets when the survey is conducted. The data sheet and the survey summary sheet shall be completed upon the conclusion of the survey and during the evaluation. The evaluation sheets shall be filled in upon the analysis of the information and data obtained during the survey.

EXHIBIT 5-1 (a)

QUALITY PRE-AWARD SURVEY AND EVALUATION
DATA SHEET

Page ___ of ___

CONTRACT:

CONTRACT NO.:

CONTRACTOR:

SURVEY TEAM (NAMES, ORGANIZATIONS AND TITLES)

TEAM LEADER:

- MEMBERS: 1.
2.
3.
4.
5.

ATTACHMENTS

TOTAL PAGES

- 1. SURVEY SUMMARY SHEET
- 2. SURVEY CHECKLIST
- 3. COMMENT SHEET
- 4. EVALUATION SHEET

OTHER ATTACHMENTS

TOTAL PAGES

- 1. SCHEDULE OF SURVEY ACTIVITIES
- 2.
- 3.
- 4.

FINDINGS:

- CONTRACTOR IS UNCONDITIONALLY QUALIFIED
- CONTRACTOR IS CONDITIONALLY QUALIFIED
- CONTRACTOR IS NOT QUALIFIED

SIGNATURE(S):

TEAM LEADER: _____

- SURVEY TEAM: 1. _____
2. _____
3. _____
4. _____
5. _____

QUALITY PRE-AWARD SURVEY AND EVALUATION
SURVEY SUMMARY SHEET

Page ___ of ___

Chronological Account of Meeting Sessions:

Names of Persons Participating in Each Session:

Survey Team

Contractor

Important Observations:

QUALITY PRE-AWARD SURVEY AND EVALUATION
SURVEY CHECKLIST

Page ___ of ___

CRITERION:

KEY REQUIREMENTS:

QUALITY PRE-AWARD SURVEY AND EVALUATION
COMMENT SHEET

Page ___ of ___

SURVEYOR:

SURVEY DATE:

CONTRACTOR PERSONNEL CONTACTED AND TITLE(S):

1.

2.

CRITERIA	KEY REQUIREMENT	COMMENT	RESPONSE/ ACTION
----------	-----------------	---------	---------------------

QUALITY PRE-AWARD SURVEY AND EVALUATION
EVALUATION SHEET

Page ___ of ___

EVALUATOR:

DATE:

IMPLEMENTATION
STATUS

SURVEY CRITERIA AND KEY REQUIREMENTS

6.1 ORGANIZATION

KEY REQUIREMENT 1 2 3 4 5 6 7 8 9
SATISFACTORY
UNSATISFACTORY

6.2 QUALIFICATION OF PERSONNEL

KEY REQUIREMENT 1 2 3 4 5
SATISFACTORY
UNSATISFACTORY

6.3 PROCUREMENT QUALITY ASSURANCE

KEY REQUIREMENT 1 2 3 4 5 6 7 8
SATISFACTORY
UNSATISFACTORY

6.4 INSPECTION AND TESTING

KEY REQUIREMENT 1 2 3 4 5 6 7 8 9 10 11 12 13 14
SATISFACTORY
UNSATISFACTORY

KEY REQUIREMENT 15 16 17 18 19 20 21 22 23 24 25 26
SATISFACTORY
UNSATISFACTORY

6.5 CORRECTIVE ACTIONS AND CONTROLS

KEY REQUIREMENT 1 2 3 4 5 6 7 8 9 10 11 12
SATISFACTORY
UNSATISFACTORY

6.6 CONFIGURATION MANAGEMENT

KEY REQUIREMENT 1 2 3 4 5 6 7 8 9 10
SATISFACTORY
UNSATISFACTORY

EXHIBIT 5-1 (e)

QUALITY PRE-AWARD SURVEY AND EVALUATION
EVALUATION SHEET
(Continued)

Page ___ of ___

EVALUATOR:

DATE:

IMPLEMENTATION
STATUS

SURVEY CRITERIA AND KEY REQUIREMENTS

6.7 CALIBRATION AND CERTIFICATION OF EQUIPMENT AND TOOLS

KEY REQUIREMENT 1 2 3 4 5 6 7 8
SATISFACTORY
UNSATISFACTORY

6.8 QUALITY ASSURANCE RECORDS AND PUBLICATIONS

KEY REQUIREMENT 1 2 3 4 5 6 7
SATISFACTORY
UNSATISFACTORY

6.9 AUDITS

KEY REQUIREMENT 1 2 3 4 5 6
SATISFACTORY
UNSATISFACTORY

6.10 QUALITY HISTORY

KEY REQUIREMENT 1 2
SATISFACTORY
UNSATISFACTORY

FINDINGS: (USE ADDITIONAL PAGES IF NECESSARY)

5.2 PREPARATIONS OF THE WORK PAGES

The work pages will be completed in by the survey team members. Personnel responsible for preparing the survey, conducting and performing the evaluation will be referred to as "surveyor" throughout these instructions.

It is recommended that the surveyor should collect all documentation pertinent to the contractor's quality assurance program which is submitted with his bid submittal package. This documentation should be reviewed and the surveyor should update the survey checklist sheet for each survey criterion with specific checklist items applicable to the contract to be surveyed. A cursory evaluation of the contractor's quality assurance program may be performed at the contractor's facility during the survey. It is recommended, however, that a comprehensive evaluation be performed by the surveyors at the SCRTD after returning from the survey.

The survey and evaluation report preparation responsibilities are shown below. Instructions to fill in the work pages are described below.

<u>Report Work Page</u>	<u>Responsibility</u>
• Data Sheet	• Survey Team Leader Surveyors
• Survey Summary Sheet	• Survey Team Leader or Designee Surveyor
• Survey Checklist	• Surveyors
• Comment Sheet	• Surveyors
• Evaluation Sheet	• Surveyors

5.2.1 Data Sheet (Exhibit 5-1 (a))

CONTRACT: Enter the name of the contract to be surveyed.

CONTRACT NO.: Enter the contract number of the contract to be surveyed.

CONTRACTOR: Enter the name and address of the contractor for the above contract to be surveyed.

SURVEY TEAM: Enter the name, organization, and title of each survey team member and the survey team Leader.

ATTACHMENTS: Fill in total pages for each of the four attachments.

OTHER ATTACHMENTS: List all other attachments to be included with the report and the total pages for each attachment.

FINDINGS: Enter "X" in the appropriate finding block.

SIGNATURE(s): Sign each signature block in the same order of names as the names listed in the "Survey Team" above.

5.2.2 Survey Summary Sheet (Exhibit 5-1 (b))

Provide a general summary of the actual survey activities which should include as a minimum:

- A chronological account of the meeting sessions held at the contractor's facility
- Names of survey team members and the contractor personnel participating in each meeting session and the major issues of discussion
- Important observations made during the survey.

5.2.3 Survey Checklist (Exhibit 5-1 (c))

CRITERION: Enter one survey criterion from the sections in Chapter 3.

KEY REQUIREMENTS: Fill in all applicable key items and requirements associated with the "criteria" listed above. If necessary, continue listing the requirements on additional survey checklist sheets.

Typical summary checklists for survey criteria are included in Chapter 6. They need to be adapted to specifically fit each contract.

5.2.4 Survey Comment Sheet (Exhibit 5-1 (d))

SURVEYOR: Enter the name of the individual who conducted the survey for the specific "key requirement".

SURVEY DATE: Enter the date of survey conducted.

CONTRACTOR PERSONNEL CONTACTED AND TITLE(s): List the names of all contractor's personnel and their titles involved in the survey session.

CRITERIA AND KEY REQUIREMENT: Enter the reference number of the criteria and the key requirement from the Survey Checklist sheet.

COMMENT: Write all comments related to the "key requirement" which are discussed during the survey session.

RESPONSE/ACTION: Indicate any further response/action required either from the contractor or from the SCRTD/survey team.

PAGE OF: Fill in total pages required to complete the comments related to all "key requirements" of each survey criteria.

5.2.5 Evaluation Sheet (Exhibit 5-1 (e))

EVALUATOR: Enter the name(s) of the individual(s) who performed evaluation.

DATE: Enter the date of evaluation conducted.

SURVEY CRITERIA AND KEY REQUIREMENTS: Based on the examination of the contractor's response for each key requirement of each survey criterion, enter an "X" either in the "Satisfactory" or "Unsatisfactory" row below each "Key Requirement" reference number.

FINDINGS: Enter findings whether the contractor's quality assurance program is satisfactory or unsatisfactory. If not completely satisfactory, indicate the further response/action required. Use additional pages, if necessary, to complete the findings.

6.0 SURVEY CHECKLIST

6.0 SURVEY CHECKLIST

This chapter lists the key requirements for each criterion of the quality assurance program which needs to be surveyed. The checklist addresses only the typical requirements and is provided on the survey checklist form in Exhibits 6-1 through 6-10.

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

CRITERION:

ORGANIZATION

KEY REQUIREMENTS:

1. The contractor has an organizational structure responsible for establishment and execution of a quality assurance program.
2. The organizational structure is documented with authority and duties of individuals indicated. If multiple organizational arrangements exist, the responsibility of each organization is clearly established.
3. The person or organization responsible for the quality assurance program is:
 - A. Designated
 - B. Independently directing and controlling the quality assurance program
 - C. Provided direct access to responsible management
 - D. Sufficiently independent from the pressures of schedules, production, and cost
 - E. Reporting regularly on the effectiveness of the quality assurance program.
4. Persons performing quality related functions are able to:
 - A. Identify quality problems
 - B. Initiate, recommend, or provide solutions to quality problems
 - C. Verify implementation of solutions
 - D. Control the processing of nonconforming items.

EXHIBIT 6-1
(Continued)

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

Page 2 of 2

CRITERION:

ORGANIZATION

KEY REQUIREMENTS:

5. The contractor has a documented quality assurance program.
6. The contractor's management regularly assesses the effectiveness of its quality assurance program.
7. The management identifies items/service to be covered by the quality assurance program.
8. Measures developed and implemented to ensure activities affecting quality are:
 - A. Delineated and documented in instructions, procedures, and drawings
 - B. Accomplished in accordance with the requirements specified in these instructions, procedures, and drawings.
9. Instructions and procedures contain:
 - A. A detailed description of the activity to be performed
 - B. Appropriate qualitative/quantitative acceptance criteria.

EXHIBIT 6-2

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

Page 1 of 1

CRITERION:

QUALIFICATION OF PERSONNEL

KEY REQUIREMENTS:

1. The contractor has developed and implemented measures to ensure special processes including welding, heat treating, and nondestructive testing (such as radiography, magnetic particle, liquid penetrant, ultrasonic, etc.) are controlled in accordance with applicable codes, standards, specifications, and procedures.
2. Special processes are performed by certified personnel utilizing qualified, approved procedures and equipment.
3. The qualifications of procedures, personnel, and equipment are kept current and specifically applicable to the material or equipment used.
4. Documentary evidence associated with the qualifications of procedures, personnel, and equipment and the performance of special processes is maintained.
5. A program is provided for indoctrination and training of personnel performing activities affecting quality as necessary and also to assure that suitable proficiency is achieved and maintained.

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

CRITERION:

PROCUREMENT OF MATERIALS AND EQUIPMENT FROM SUPPLIERS

KEY REQUIREMENTS:

1. The contractor assures transmission of all appropriate design, safety, maintainability, reliability, human factors, configuration, and quality requirements to the selected suppliers based on complexity and criticality of the procured products.
2. The contractor's purchase orders/contracts contain appropriate requirements such as the following:
 - A. A statement of the scope of work
 - B. Design/regulatory/code/standard/quality assurance requirements
 - C. Identification of required records, and requirements concerning their submittal to the contractor or retention by his suppliers
 - D. Requirements for the right of access for events such as hold points and notification points
 - E. Requirement for extension of applicable quality assurance requirements to sub-suppliers.
3. Procurement documents are reviewed by engineering, quality assurance, and other qualified personnel. Objective evidence of these reviews must be established and available for review.
4. The contractor has developed methods and identified the means of:
 - A. Selection of qualified procurement sources
 - B. Evaluation and assessment of the supplier's quality system.

EXHIBIT 6-3
(Continued)

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

Page 2 of 2

CRITERION:

PROCUREMENT OF MATERIALS AND EQUIPMENT FROM SUPPLIERS

KEY REQUIREMENTS:

- C. Transmission of all design, reliability, and quality requirements to suppliers; approval authority of all basic concepts and changes to design, quality, and product improvements
 - D. Monitoring of the suppliers' quality performance
 - E. Evaluation of procured items against purchase order requirements
 - F. Providing for early and effective information feedback and correction of nonconformances
 - G. Approval of acceptance tests, special process and qualification test procedures.
5. Measures are developed and implemented by the contractor for control of purchased material, equipment, parts, and services through the performance of audits/inspections/surveillance at supplier's facilities. For some less critical items, receiving inspection may be considered an adequate measure.
 6. Audits/inspections/surveillance of suppliers are planned and performed in accordance with procedures or checklists.
 7. The contractor performs a quality systems evaluation and documents and maintains evidence of those evaluations which establishes the acceptability of the quality assurance capabilities of his suppliers.
 8. Changes and/or revisions to purchase orders/contracts are subject to at least the same review and approval as the original document(s).

EXHIBIT 6-4

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

Page 1 of 4

CRITERION:

INSPECTION AND TESTING

KEY REQUIREMENTS:

1. Receiving inspection performed by the contractor of material, equipment, and parts is in accordance with predetermined inspection instructions or checklists which define the quality characteristics to be checked.
2. Documented evidence of the performance of receiving inspection is maintained.
3. The contractor has developed and implemented measures for conducting in-process/final inspections.
4. The contractor ensures that process control is provided.
5. The contractor has clear, complete, and current written procedures or checklists for the control of inspections.
6. Inspections are performed by qualified individuals who are not directly involved in performing the work being inspected and who do not report directly to the immediate supervisors responsible for the work being inspected.
7. The inspection results are documented and indicate the inspection procedure utilized, the accept/reject criteria, any quantitative/qualitative data obtained during the inspection, the inspection status, the inspector's identity, and the inspection date.
8. The results are reviewed by a responsible representative of the contractor's management.
9. The contractor has identified appropriate "hold" or "notification" points for inspections performed during fabrication, construction, and installation of critical systems, structures, and components prior to the start of the associated work.

EXHIBIT 6-4
(Continued)

QUALITY PRE-AWARD SURVEY

SURVEY CHECKLIST

Page 2 of 4

CRITERION:

INSPECTION AND TESTING

KEY REQUIREMENTS:

10. When a sampling method is used for verifying the acceptability of a group of items, the contractor has based his sampling procedure on recognized standard statistical practices and has provided adequate justification for the sample size and selection process.
11. Measures are developed and implemented for the performance and control of tests including proof tests, product acceptance tests, and operational tests.
12. Tests are conducted in accordance with written approved test procedures which:
 - A. Incorporate requirements identified in applicable specifications, codes, standards, and design documents
 - B. Contain appropriate quality assurance requirements to ensure the associated tests are satisfactorily completed.
13. Tests are conducted by qualified personnel utilizing properly calibrated test equipment and instrumentation.
14. Test measures are provided for the review and approval of test results by a responsible representative.
15. Measures are developed and implemented for identification and control of critical material, equipment, and parts, including partially fabricated assemblies, to ensure that the items identified can be traced to their associated documentation, such as drawings, specifications, purchase orders, manufacturing and inspection documents, deviation reports, and physical and chemical mill test reports.