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Southern California Rapid Transit District

METRO RAIL PROJECT



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SAFETY CERTIFICATION PLAN
T A B L E O F C O N T E N T S

<u>CHAPTER</u>	<u>PAGE NUMBER</u>
1.0 INTRODUCTION	1-1
1.1 Safety Objectives	1-2
1.2 Definition of Safety Certification	1-2
1.3 Goals	1-3
1.4 Scope	1-3
1.5 Relationship of Safety Certification to the Metro Rail Test Program	1-4
1.6 Authority	1-5
1.7 Organization of the Safety Certifica- tion Plan	1-5
2.0 SAFETY CERTIFICATION PROCESS	2-1
2.1 Overview	2-1
2.2 Safety Certification Review Team	2-7
2.3 Documentation and Reporting Requirements	2-8
3.0 CRITERIA CONFORMANCE CERTIFICATION PROCEDURE	3-1
3.1 Purpose	3-1
3.2 Documentation	3-1
3.3 Procedure	3-4
4.0 SPECIFICATION CONFORMANCE CERTIFICATION PROCEDURE	4-1
4.1 Purpose	4-1
4.2 Documentation	4-1
4.3 Procedure	4-5
5.0 METRO RAIL SAFETY TEST CERTIFICATION PROCEDURE	5-1
5.1 Purpose	5-1
5.2 Documentation	5-1
5.3 Procedure	5-4
6.0 SAFETY-RELATED PROCEDURES AND TRAINING CERTIFICATION PROCEDURE	6-1
6.1 Purpose	6-1
6.2 Documentation	6-1
6.3 Procedure	6-5

SAFETY CERTIFICATION PLAN
I N D E X O F E X H I B I T S

<u>EXHIBIT NUMBER</u>		<u>PAGE NUMBER</u>
2-1	Safety Certification Process	2-2
2-2	List of Certifiable Elements for MOS-1	2-3
2-3	Safety Certification Review Team	2-9
3-1	Criteria Conformance Checklist	3-2
3-2	Criteria Conformance Certificate	3-3
4-1	Specification Conformance Checklist	4-2
4-2	Certificate of Compliance	4-3
5-1	Test Program Checklist	5-2
6-1	Procedures and Training Material Review Cycle	6-2
6-2	Procedure/Training Material Review Checklist	6-4

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Revision 1.1

1.0 INTRODUCTION

1.0 INTRODUCTION

The primary goal of the Metro Rail system is to provide safe, reliable, and cost-effective transportation. Toward this end, the Southern California Rapid Transit District (SCR TD) has established a comprehensive safety and system assurance program. The program is documented in the Metro Rail System Safety and Security Program Plan and System Assurance Program Plan. These program plans identify the technical and management tasks that must be performed to ensure that safety, security, reliability, maintainability, quality assurance, and maintenance planning is systematically integrated with all design, construction/procurement, testing, and system start-up activities.

To verify that all the elements of a safe transit system are present prior to revenue service, the SCR TD has developed a comprehensive safety certification program. The safety certification program is designed to document that:

- Safety-related design criteria are properly reflected in procurement and construction specifications and standard and directive drawings
- Safety-related requirements in the specifications are incorporated into the final products
- Tests are conducted to verify the ability of equipment and personnel to function safely
- Plans, procedures, and training programs are developed and thoroughly reviewed prior to the start of revenue service
- Responsible program participants certify the above to provide a traceable history of the safety program.

The concept of the program is explained in the Safety Certification Methodology.¹ The Safety Certification Methodology required that a comprehensive Safety Certification Plan be developed. This Safety Certification Plan describes the process, responsibilities, documentation, and procedures needed for certification. The major emphasis of the Safety Certification Plan is to:

- Identify a final list of certifiable elements

1 SCR TD Metro Rail Project, Safety Certification Methodology, prepared by Booz, Allen & Hamilton, February 1985.

- Establish the Safety Certification Review Team (SCRT) and designate SCRT participants
- Define documentation and procedures for reviewing safety compliance.

The intent of the safety certification program is to ensure that all Metro Rail facilities, equipment, procedures, and training programs are systematically reviewed for compliance with safety requirements and certified by the SCRTD on a timely basis prior to the start of revenue service.

The Safety Certification Plan is a baseline document of the Metro Rail Project. Any change to the Plan must be approved by the Configuration Control Board.

1.1 SAFETY OBJECTIVES

The SCRTD's safety objectives for the Metro Rail Project are to:

- Provide a level of safety for patrons and employees equal to or greater than that of any existing rail rapid transit system in the United States
- Provide a level of safety which complies with all applicable codes, guidelines, regulations, and standards
- Eliminate or control hazards to employees, patrons, and equipment consistent with operational effectiveness.

1.2 DEFINITION OF SAFETY CERTIFICATION

Safety certification may be defined as the process of verifying satisfactory compliance with a set of formal safety requirements. Specifically, it involves issuing Criteria Conformance Certificates and Certificates of Compliance that document satisfactory compliance with a formal list of safety requirements. The requirements are developed from the following SCRTD documents, which define the safety baseline of the Metro Rail system:

- The Metro Rail System Design Criteria and Standards, which are used as the basis for evaluating whether all safety requirements in the contract specifications comply with the intended design
- The contract specifications, which are used as the basis for evaluating whether the safety features of the end products comply with the specified design

- The Metro Rail Test Program Plan, which covers both performance and safety tests, and is used as the basis for determining that safety-related tests have been conducted and that all facilities, equipment, and procedures can function safely together in revenue service
- The System Safety and Security Program Plan and System Assurance Program Plan, which are used as the basis to ensure that safety-related operations and maintenance procedures and training programs are developed, reviewed, approved, and implemented.

1.3 GOALS

The safety certification program is designed to:

- Establish a formalized certification process which is sufficiently documented to verify compliance with safety requirements
- Ensure that safety is an integral part of design, procurement, construction, testing, and operations
- Ensure that safety decisions are made by responsible SCRTD management
- Provide information for periodic reports to the California Public Utilities Commission (CPUC) and SCRTD senior management
- Ensure that any hazards that become apparent during design reviews, audits, inspections, or system testing are resolved, either by redesign or by implementation and enforcement of special procedures
- Ensure that the SCRTD and outside agencies are prepared to respond to normal, abnormal, and emergency situations.

1.4 SCOPE

The program scope encompasses safety certification of equipment, facilities, safety-related procedures, and training programs in the following areas:

- Systemwide Elements. Systemwide elements include passenger vehicles, automatic train control system, communications (fire and emergency management, gas and seismic detection, telephone, radio, public address, etc.), fare collection, traction power, and auxiliary vehicles.

- Facilities. Facilities include stations, tunnel segments, and the yard and shops.
- Procedures and Training Programs. These include such items as the Emergency Procedures Manual, Transit Police Training Program, Accident/Incident Investigation and Reporting Procedure, Vehicle Operator's Rulebook, Standard Operating Procedures, etc.

For the systemwide elements and facilities, the items covered by the safety certification process are defined by their respective contract units. (For a complete listing of MOS-1 systemwide elements and facilities contracts covered by the safety certification process, see Exhibit 2-2. Safety-related plans, procedures, and training programs considered certifiable elements for MOS-1 may also be found in the same exhibit.) "Safety" is defined to include fire/life safety, operational and system safety, and employee occupational safety during revenue service. Requirements for the safety of construction employees are the responsibility of contractors and are not included in this certification program.

1.5 RELATIONSHIP OF SAFETY CERTIFICATION TO THE METRO RAIL TEST PROGRAM

Concurrent with the implementation of the safety certification program, a Metro Rail test program is being implemented. Although the two programs are separately managed and the focus of each is different, they complement and reinforce each other.

The safety certification program documents that all safety requirements in design criteria and specifications are achieved, and that the safety content of test plans and procedures are systematically reviewed.

The Metro Rail test program provides assurance that equipment and facilities function as specified, and that all system elements (including software, procedures, and training programs prepared by different contractors and departments) function together to provide safe and dependable service.

The two programs overlap and are coordinated in the area of safety-related tests. The Specification Conformance Checklists (see Chapter 4.0), prepared as part of safety certification, identify contractual requirements for safety-related tests. The Metro Rail test program identifies contractual and non-contractual tests which must be conducted to verify that the Metro Rail system can operate as designed.

Results of safety-related tests are used for certification documentation. Any hazards uncovered during testing require either system redesign (which is handled through the formal change control process) or implementation of special procedures

(which must be incorporated into procedures manuals and training programs). Safety reviews of procedures and training materials, conducted as part of the certification process, may identify additional requirements for system testing.

1.6 AUTHORITY

California enabling legislation, under Public Utilities Code Part 3, created the SCRTD. The law included a mandate to develop a rapid transit system. Chapter 5, Article 5, Section 30646 of the Public Utilities Code empowered the CPUC to provide oversight and regulate the safety aspects of rapid transit systems. Under this authority, the CPUC governs the safety appliances and procedures of the SCRTD, monitors the use of appliances from the aspect of safety, and conducts inspections to monitor adherence to the rules and regulations.

Other state and local agencies with some level of responsibility and/or authority over safety-related activities, procedures, and equipment include the California Occupational Safety and Health Administration (Cal/OSHA), under California Administrative Code (C.A.C.) Title 8, and the city and county fire departments. Cal/OSHA has regulatory and enforcement powers over construction activities and operational occupational safety. The fire departments, under C.A.C. Title 19, have jurisdiction over fire and panic safety. NFPA 130 (Standards for Fixed Guideway Transit System) is used for guidance only; the Metro Rail Fire/Life Safety Committee has established Metro Rail fire and life safety criteria, which form the basis for fire/life safety considerations.

Because the Metro Rail Project is in part federally funded, all program activities, including safety certification, fall under the purview of the Urban Mass Transportation Administration (UMTA) and are subject to UMTA review. The National Transportation Safety Board (NTSB) has the responsibility and authority to conduct investigations of transportation accidents and to make recommendations.

The SCRTD has established a Safety Certification Review Team, charged with the safety review, compliance assessment, and overall administration of the certification program.

1.7 ORGANIZATION OF THE SAFETY CERTIFICATION PLAN

Following this introduction, the Safety Certification Plan is organized as follows:

- Chapter 2.0 describes how the certification process functions. It provides an overview of the process, describes the Safety Certification Review Team, and identifies documentation and reporting requirements.

- Chapter 3.0 presents the procedures for issuance of Criteria Conformance Certificates.
- Chapter 4.0 presents the procedures for issuance of Certificates of Compliance for systems and facilities.
- Chapter 5.0 presents the procedures for review and approval of test activities involving safety.
- Chapter 6.0 presents the procedures for review and approval of procedures and training programs which relate to safety.

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2.0 SAFETY CERTIFICATION PROCESS

2.0 SAFETY CERTIFICATION PROCESS

Chapter 2.0 describes how the safety certification process will function. The discussion includes an overview of, and identifies documentation and reporting requirements for, the certification process.

2.1 OVERVIEW

The certification process is illustrated in Exhibit 2-1. As is evident from the exhibit, Metro Rail safety certification is a multiphased program designed to verify that:

- The design criteria and standards related to safety are properly incorporated into the appropriate contract specifications and standard and directive drawings
- The safety requirements included in contract specifications are properly designed and incorporated into the final end products
- All safety-related tests are conducted as part of the Metro Rail test program
- Safety-related plans, procedures, and training materials are developed, reviewed, and approved prior to the start of revenue service.

The first task of the certification program is to identify those Metro Rail elements that need to be certified. A list of the certifiable elements for the Metro Rail system (MOS-1 only) is shown in Exhibit 2-2. The elements are identified by contract unit in the areas of systemwide and facilities contracts. Safety-related plans and procedures are also identified, as are training programs.

For each phase of the certification program, three basic steps are performed:

- Identify the safety requirements
- Review compliance with the requirements
- Document the review and approval process.

Step 1--Identify the Safety Requirements. Checklists for criteria and specification conformance are developed for each of the systemwide elements and facilities that must be certified. The Criteria Conformance Checklists are developed based on the Metro Rail System Design Criteria and Standards, which cover fire/life safety, system safety, security, and system

EXHIBIT 2-1
 Safety Certification Process

06/88
 Revision 1.1

2-2

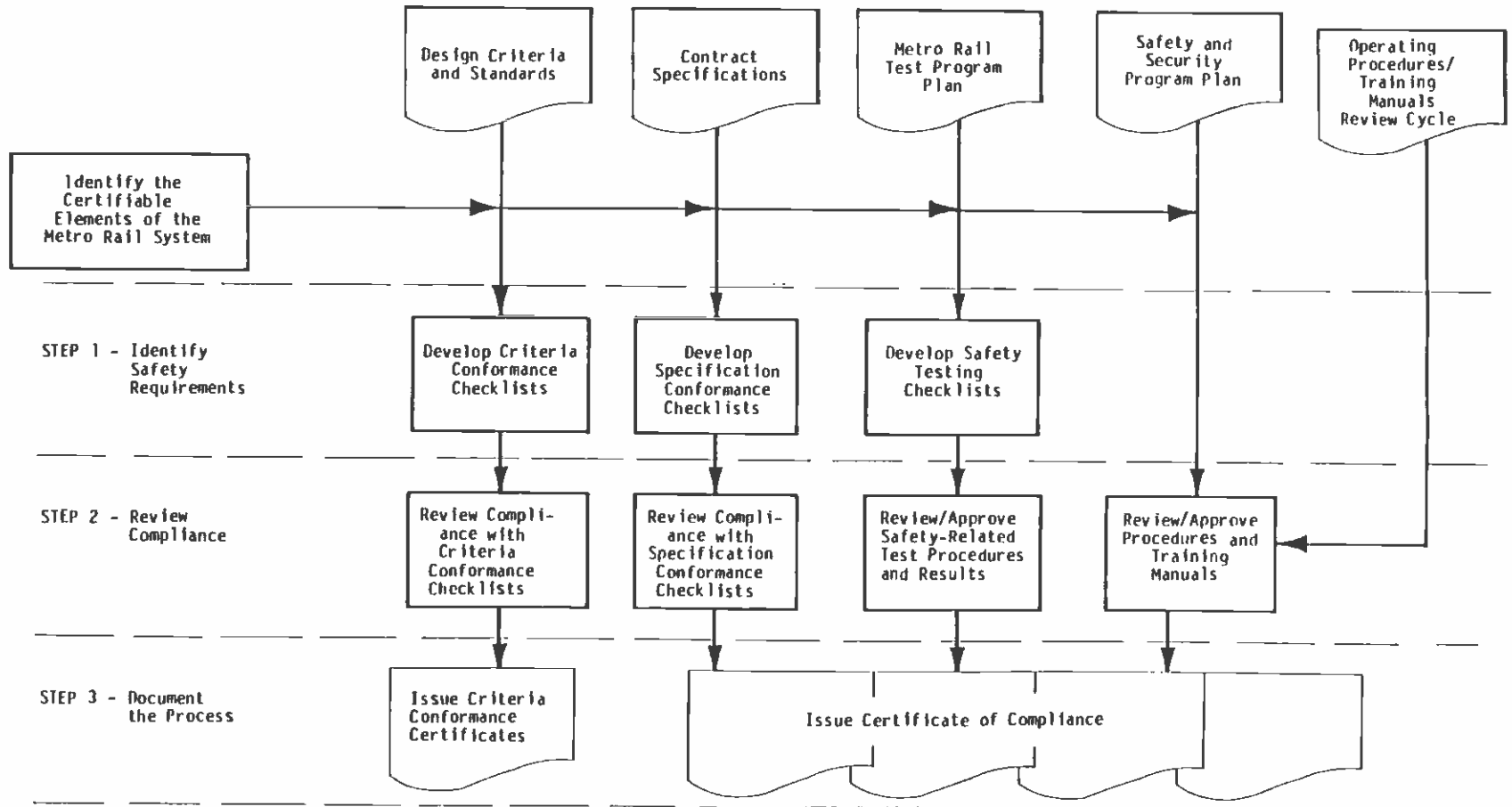


EXHIBIT 2-2
List of Certifiable Elements for MOS-1

Page 1 of 3

SYSTEMWIDE ELEMENTS

<u>Certifiable Element No.</u>	<u>Contract Number</u>	<u>Certifiable Element Name</u>
1	A612	Contact Rail
2	A615	Protective Coverboard
3	A616	Direct Fixation Fasteners
4	A620	Automatic Train Control
5	A630	Traction Power Equipment
6	A631	Traction Power Installation
7	A640	Communications
8	A650	Passenger Vehicles
9	A660/H840	Fare Collection
10	A671	Locomotive
11	A672	Flat Cars
12	A675	Crane
13	A680	Operational Graphics
14	A710	Escalators
15	A720	Elevators
16	A730	Fixed Shop Equipment
17	A735	Free Standing Shop Equipment
18	A740	Ventilation
19	A745	Air Handling Equipment
20	A760	Signs and Graphics
21	A770	Rubber-Tired Vehicles
22	A775	Mobile Emergency and Maintenance Equipment
23	A785	Fire Suppression Equipment
24	A790	First Stores and Consumables
25	A795	Uninterruptible Power Supply

FIXED FACILITIES

<u>Certifiable Element No.</u>	<u>Contract Number</u>	<u>Certifiable Element Name</u>
26	A111	Santa Fe Restoration
27	A112	Main Shop Building
28	A115/610	Trackwork Installation/Yard Storage Area
29	A116	Site Security Fencing
30	A117	Site Lighting
31	A118	Site Landscaping
32	A121	M-O-W Building
33	A130	Yard Leads and Transfer Zone
34	A135	Union Station Stage I

EXHIBIT 2-2 (Continued)
List of Certifiable Elements for MOS-1

FIXED FACILITIES (Continued)

<u>Certifiable Element No.</u>	<u>Contract Number</u>	<u>Certifiable Element Name</u>
35	A136	Union Station Stage II
36	A138	Union Station Sitework
37	A139	Union Station Landscaping
38	A141	Line: Union Station to 5th/Hill Civic Center Stage I
39	A147	Civic Center Stage II
40	A145	5th/Hill Stage I
41	A157	5th/Hill Stage II
42	A146	Line: 5th/Hill to 7th/Flower
43	A165	7th/Flower Stage I
44	A167	7th/Flower Stage II
45	A171	Line: 7th/Flower to Wilshire/Alvarado
46	A175	Wilshire/Alvarado Stage I
47	A185	Wilshire/Alvarado Restoration
48	A186	Wilshire/Alvarado Landscaping
49	A187	Wilshire/Alvarado Stage II

SAFETY-RELATED PLANS AND PROCEDURES

<u>Certifiable Element No.</u>	<u>Certifiable Element Name</u>
50	Hazard Resolution Procedure
51	System Safety and Security Program Plan-- Operations
52	Standard Operating Procedures
53	Emergency Procedures Manual
54	Security Operating Procedures
55	Vehicle Operator's Rulebook
56	Maintenance Guidebook
57	Metro Rail Test Program Plan
58	System Integration Test Procedures
59	Pre-Revenue Test Procedures
60	System Integration Test Results
61	Pre-Revenue Test Results
62	Accident/Incident Investigation and Reporting Procedure
63	Fire Protection Features Manual
64	Fire and Police Communications System Handbook
65	Continuing Safety Certification and Audit Program

EXHIBIT 2-2 (Continued)
List of Certifiable Elements for MOS-1

Page 3 of 3

TRAINING PROGRAMS

<u>Certifiable Element No.</u>	<u>Certifiable Element Name</u>
66	Vehicle Operators Training Program
67	RCC Personnel Training Program
68	Yard and Tower Personnel Training Program
69	Maintenance Personnel Training Program
70	Transit Police Training Program
71	Fire Department Training Program
72	Public Education Program
73	Other Outside Agency Training (DWP, LAPD, LACSD)
74	Emergency Team Training Exercises and Drills

assurance. The Specification Conformance Checklists identify each of the safety requirements included in each specification. The checklists are used during contractor design reviews, quality and safety audits, and inspections and tests, as a tool to identify, collect, and document the approval of evidence that demonstrates safety requirements have been achieved.

The Metro Rail Test Program Plan (TPP) identifies the tests that need to be conducted to ensure the system can operate safely, as well as perform as specified. The TPP, developed during the construction/acquisition phase of the Metro Rail Project, defines a broad-based program which covers all testing activities including design verification tests, production/construction verification, installation, acceptance, system integration, pre-revenue, and reliability demonstration tests.

Operating and maintenance plans, procedures, and training programs which affect safety are identified in the System Safety and Security Program Plan. However, their specific content is not defined. The most effective method for ensuring that required information is included is a widespread review and comment cycle for each. A formal procedure for the review of all plans, procedures, and training materials must include input and discussions with Rail Control Center (RCC) supervisors, emergency response personnel (fire and police), maintenance personnel, management, safety staff, and design engineers. Special emphasis must be placed on ensuring that those people who will operate, maintain, and police the Metro Rail have thorough discussions with the engineers who designed the system.

Step 2--Review Compliance with the Requirements. The Safety Certification Review Team (SCRT) has been established by the SCRTD to review and approve compliance with the various checklists. During the final design review process, the Criteria Conformance Checklists are used to verify that all appropriate design requirements, as identified in the criteria, have been incorporated into the appropriate contract specifications and standard and directive drawings. In a similar fashion, each safety requirement on the Specification Conformance Checklist must be reviewed and verified to demonstrate its achievement. This evidence is presented during design reviews, as part of contract deliverables, and during audits and inspections of equipment or facilities. Completion of the certification requirements in the test program and a thorough review of all safety-related procedures and training programs must also be verified.

Step 3--Document the Review and Approval Process. The SCRT is responsible for reviewing the evidence and recommending to Metro Rail senior management that a certifiable element is

safe for public use. When the SCRT determines that all safety criteria are properly contained in the contract specifications for a certifiable element, the SCRT recommends that the element receive a "Criteria Conformance Certificate." The certificate attests to the fact that the specifications reflect and conform with the safety requirements contained in the design criteria. If the SCRT believes that specification language or drawings do not comply with the intent of the design criteria, it has the responsibility for withholding a recommendation that the element receive a "Criteria Conformance Certificate."

Similarly, upon receiving evidence that safety requirements in the contract specifications have been achieved in the end product, that all safety-related testing has been accomplished, or that a plan, procedure, or training program has been thoroughly reviewed for its safety content, the SCRT recommends that the element receive a "Certificate of Compliance."

2.2 SAFETY CERTIFICATION REVIEW TEAM

Certification-related activities continue from final design until the start of revenue service. Furthermore, tasks within the certification process are conducted by various groups within the SCRTD. The success of the certification process largely depends on how closely and effectively the work progress is monitored.

A group of knowledgeable senior personnel has been assembled to function as an SCRT, each of whom has specific expertise in a safety-related function. The SCRT is responsible for safety review, compliance assessment, and making recommendations to SCRTD senior management regarding safety certification of system elements. The members of the SCRT include representatives from local fire departments and from the following SCRTD organizations:

- Systems and Construction Safety
- Systems Design and Analysis
- Rail Facilities Engineering
- Construction Management
- Rail Operations
- Facilities Maintenance
- Equipment Maintenance
- Transit Police.

Personnel from the following organizations provide information, assistance, support, and advice to the SCRT, as required:

- General Consultant
- Construction Management (CM) Consultant
- Systems Engineering and Analysis (SE&A) Consultant.

The SCRT structure is shown in Exhibit 2-3. The SCRT holds meetings to assess certification work progress. The meetings are directed by the SCRT Chairperson. The SCRT meets on a monthly basis. Later, after site installation and testing begin, the SCRT will schedule more frequent meetings.

The SCRT reviews evidence of compliance, assigning responsibilities for open items to staff or consultants, and approving certification documents. Preparation of all materials for SCRT meetings is the responsibility of the Chairperson. The General Consultant is responsible for issuing the minutes of each meeting.

2.3 DOCUMENTATION AND REPORTING REQUIREMENTS

The documentation system for the safety certification process provides accountability, timeliness, and accessibility. These elements are described below:

- Accountability--To ensure that all checklists and certificates are accurately completed and signed by the appropriate levels of authority, and that decisions made by the SCRT are documented.
- Timeliness--To ensure that each subsystem and/or component is certified as safe prior to public use. Delays in issuing certificates must be recognized immediately.
- Accessibility--To enable verification that each element has been issued a certificate, as well as to provide any other information required to substantiate the certificate.

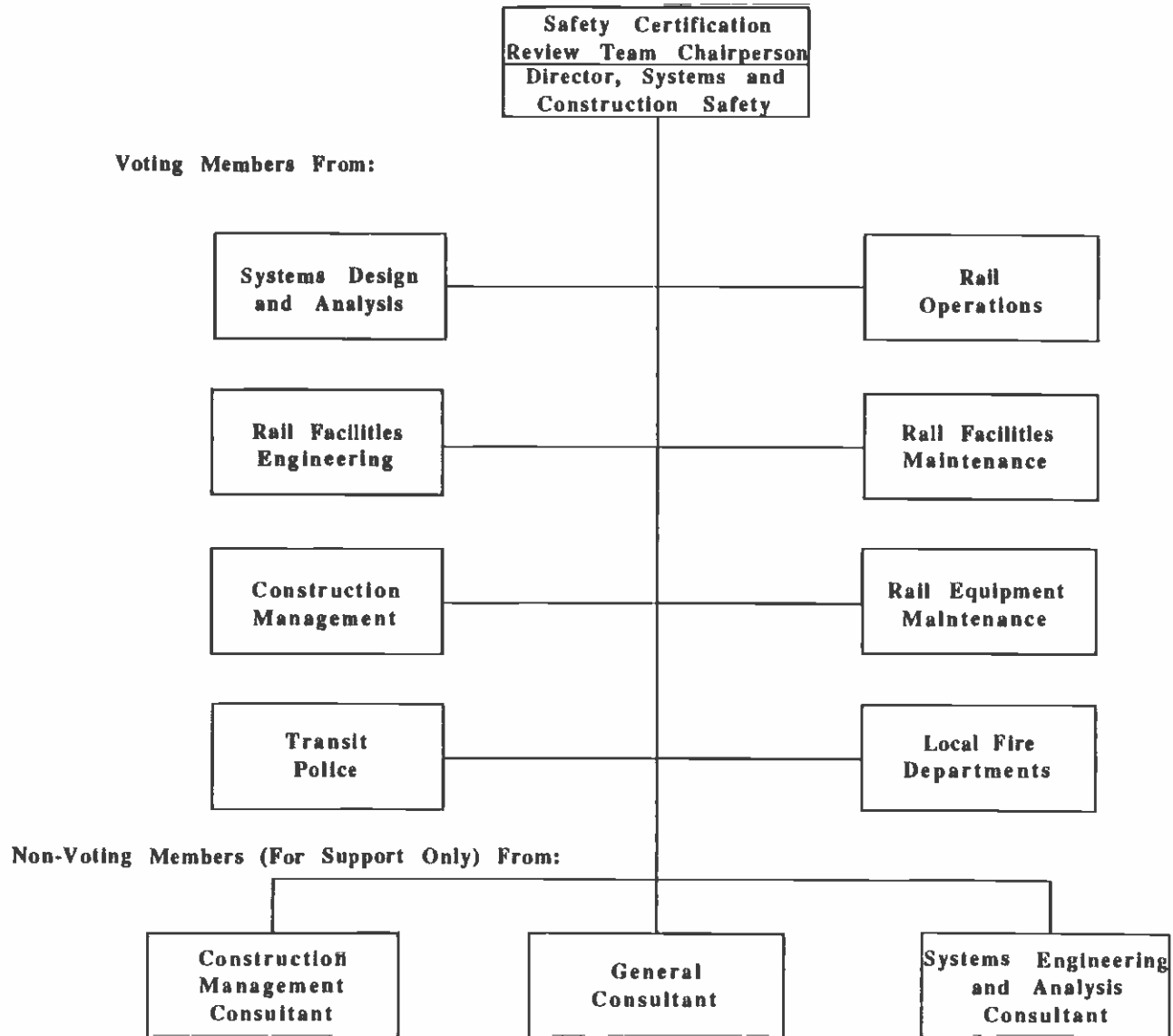
2.3.1 Filing System

To satisfy these requirements, a documentation system of safety certification files has been established and is maintained by the Systems and Construction Safety Office.¹

The documentation system includes a master file containing systemwide certification program information and a series of individual files containing certifiable element information. The completed files contain the documents indicated below:

1 The General Consultant temporarily maintains the safety certification files for the SCRTD.

EXHIBIT 2-3
Safety Certification Review Team



• Master File

- File index
- List of all certifiable element files
- A copy of the current revision of the Safety Certification Plan
- Master list of certifiable elements
- Certificate of Conformance and/or Certificate of Compliance for each certifiable element
- Certification status reports and final report
- SCRT meeting minutes
- Supporting documentation:
 - Safety and Security Program Plan
 - System Assurance Program Plan
 - Safety Program document
 - One set of blank design review checklists
 - Safety Certification Methodology document
 - A copy of the current revision of the Contract Unit Descriptions Book.
- SCRT membership list, including designees
- Open items tracking list.

• Certifiable Elements File

- Criteria
 - Certificate of Conformance
 - Supporting documentation--completed checklist package
 - SCRT recommendations
 - References to storage location of information pertaining to certificates.

- Specifications
 - .. Certificate of Compliance
 - .. Specification Conformance Checklist--initial and final (completed)
 - .. Inspection/Test Plan for Certifiable Element
 - .. Copies of applicable Inspection/Test Reports.
- Test Program Plan
 - .. Certificate of Compliance
 - .. Approved Test Program Plan (and Appendices)
- Safety-Related Test Procedures
 - .. Certificate of Compliance
 - .. Approved Safety-Related Test Procedures
 - .. Relevant SCRT meeting minutes
 - .. Approved Test Schedule
 - .. Completed Review/Comment Forms for each test procedure
 - .. Copies of test reports
 - .. Relevant correspondence.
- Operating/Maintenance Procedures
 - .. Certificate of Compliance
 - .. Completed review checklist
 - .. Completed Review/Comment Forms for each operating procedure
 - .. Approved Operating Procedure
 - .. Relevant SCRT meeting minutes
 - .. Relevant correspondence.

- Training Manuals

- .. Certificate of Compliance
- .. Completed review checklist
- .. Completed Review/Comment Forms
- .. Approved Training Manual
- .. Relevant SCRT meeting minutes
- .. Relevant correspondence

2.3.2 Change Control

Documentation for the safety certification program consists of two types of forms: a checklist for each element; and a form to issue Certificates of Conformance or Compliance. The specific checklists and forms are described in the following chapters.

Changes to the certifiable elements identified in the Safety Certification Plan or to the checklists are subject to formal change control.² Each checklist is subject to the same control as the Safety Certification Plan itself. Once a contract package is advertised for bid, any changes to the package, including addenda, are subject to approval by the Configuration Control Board (CCB).

Any time a change to the design criteria or contract specifications affects a safety requirement, the Criteria Conformance or Specification Conformance Checklists are also modified. The Director of Systems and Construction Safety, who is a member of the CCB, is responsible for ensuring that all Change Requests are reviewed for safety implications and that any approved changes are reflected in the checklists.

2.3.3 Reporting Progress

Reporting requirements are necessary to periodically inform SCRTD management as to the status of the safety certification program. Quarterly progress reports are prepared by the Systems and Construction Safety Department to provide SCRTD management with the following information:

- Certificates completed during the quarter
- Problems encountered

2 For a detailed description of the change control process, refer to the SCRTD Metro Rail Project, Change Control Procedure--Construction/Installation and Procurement Contracts, Rev. 1, March 1988.

- Certificates expected to be issued in the coming period
- Certification progress to date (schedule to be updated each quarter)
- Changes to the list of certifiabile elements.

Preparation of the quarterly reports encourages the timely review of all safety-related items and the prompt resolution of any problems relating to the issuance of certificates. If necessary, later during the project, the progress reports may be issued on a monthly basis.

A final report must be prepared before the Metro Rail begins revenue service to:

- Summarize the safety certification program history, achievements, and problems
- Describe current certification status
- Recommend actions that should be taken to eliminate remaining restrictions
- Provide a recommended schedule for eliminating restrictions.

Chapters 3.0 through 6.0 describe procedures for each of the four phases of the safety certification program.

3.0 CRITERIA CONFORMANCE CERTIFICATION PROCEDURE

3.0 CRITERIA CONFORMANCE CERTIFICATION PROCEDURE

Chapter 3.0 describes the documentation and procedure for criteria conformance certification.

3.1 PURPOSE

The purpose of this procedure is to provide a uniform methodology for:

- Listing safety-related criteria for each certifiable systemwide element and facility
- Verifying that all safety criteria are included in the appropriate contract specifications and standard and directive drawings.

3.2 DOCUMENTATION

Documentation for the criteria conformance certification process consists of two forms: a Criteria Conformance Checklist and a Criteria Conformance Certificate. Their formats are shown in Exhibits 3-1 and 3-2, respectively.

The Criteria Conformance Checklist contains the following information:

- Certifiable Element--Title of certifiable element from Exhibit 2-2 for which Criteria Conformance Checklist is developed.
- Group--Title of the group within SCRTD or the consultant responsible for preparing the checklist.
- Reviewer--Name of the individual preparing the checklist.
- Discipline--Applicable SCRTD safety, fire/life safety, security, or system assurance criteria.
- Review Reference--Applicable volume and section number of the System Design Criteria and Standards.
- Date--Date of checklist preparation.
- Contract No.--SCRTD contract number for the certifiable element.



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: _____
GROUP: _____ DATE: _____
REVIEWER: _____
DISCIPLINE: _____ CONTRACT NO.: _____
REVIEW REFERENCE: _____ REVIEW LEVEL: _____

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT

CRITERIA CONFORMANCE CERTIFICATE
SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
SAFETY CERTIFICATION PROGRAM

Completion of this Certificate indicates that the specifications and drawings of the Certifiable Element indicated below comply with all applicable SCRTD safety, fire/life safety, security, and system assurance criteria.

CERTIFIABLE ELEMENT _____ **No.** _____

CONTRACT SPECIFICATION(S) INCLUDED:

EXCEPTIONS NOTED:

As Applicable:

Chairperson, Safety Certification Review Team Date

Director, Systems Design and Analysis Date

Director, Rail Facilities Engineering Date

- Review Level--Checklist preparation level (e.g., preliminary, in-progress, pre-final, final).
- Req. I.D.--Applicable chapter, paragraph, or section reference number from the Review Reference document.
- Requirement--Description of the safety criterion.
- Yes/No--Whether the requirement is or is not included in the contract specification and drawings.
- Comment--Applicable chapter, paragraph, or section reference if the criterion is included, or other explanation if the criterion is not included, in the contract specification and drawings.
- Page of--Actual page number of the total pages of the checklist document.

The Criteria Conformance Certificate contains the following information:

- Certifiable Element and Number--Title and the number of the certifiable element as listed in Exhibit 2-2.
- Contract Specifications Included--Titles of the applicable contract specifications and drawings containing safety criteria related to the certifiable element.
- Exceptions Noted--Explanation regarding nonconformance or deviations related to the required criteria.
- Signatures, Dates--Signature and date of signing the certificate by the Chairperson, SCRT, and the Director of Systems Design and Analysis or Rail Facilities Engineering, as applicable.

3.3 PROCEDURE

The following actions describe, in sequential order, the procedure for issuing the Criteria Conformance Certificates:

1. The General Consultant develops a draft Criteria Conformance Checklist for each systemwide element and facility listed in Exhibit 2-2.
2. The draft checklists are submitted to the Director, Systems and Construction Safety (S&CS).

3. The Director, S&CS distributes the draft checklists to members of the SCRT for review and comment.
4. The Director, S&CS collects and compiles the comments of the SCRT members.
5. The Director, S&CS meets with the General Consultant to discuss and resolve the review comments.
6. The General Consultant revises the draft checklists to incorporate review comments, and prepares final Criteria Conformance Checklists.
7. Using the final Criteria Conformance Checklists, the General Consultant reviews contract specifications and drawings to verify that all safety criteria are included in the specifications. The General Consultant periodically informs the Director, S&CS on the progress of the work and any problems encountered.
8. For each contract, the General Consultant assembles a Criteria Conformance Verification package for transmittal to the SCRTD. The package contains:
 - A Criteria Conformance Verification Form signed by the General Consultant's Manager, Safety, Assurance & Security, and the appropriate Division Manager (Systems or Facilities)
 - Copies of Criteria Conformance Checklists
 - Review and Comment Forms
 - Related correspondence
 - Addenda.
9. The Director, S&CS distributes the Criteria Conformance Verification package to members of the SCRT.
10. The Director, S&CS and his staff review and audit the checklists against the specifications and drawings to ensure they are complete and the sections referenced are accurate. When the Director, S&CS is satisfied with the completed checklists, recommendation for certification is scheduled for the next SCRT meeting.
11. The SCRT convenes to discuss the evidence and issues its recommendations to either the Director, Systems Design and Analysis or Director, Rail Facilities Engineering.

During the SCRT review, apparent nonconformance or deviations to required criteria (called "exceptions") may be observed and brought up for discussion. In such cases, the SCRT tries to resolve the exceptions noted. For those exceptions judged not to adversely impact safety, the SCRT may choose to defer resolution so as not to delay criteria conformance certification. Nevertheless, the exceptions are documented, and their resolutions tracked, under the open items tracking list of the safety certification files. Outstanding exceptions are periodically reviewed during SCRT meetings so that progress on their resolution can be monitored.

12. The Criteria Conformance Certificate for each certifiable systemwide element and facility is signed by the Director, Systems Design and Analysis or Director, Rail Facilities Engineering.
13. After the certificate has been signed by either the Director, Systems Design and Analysis or the Director, Rail Facilities Engineering, the SCRT Chairperson validates it with his signature.
14. The original certificate is filed in the Master File. A copy is filed in the appropriate Certifiable Element File, along with the completed checklists and the minutes of the SCRT meeting.
15. When evidence becomes available establishing that exceptions noted have been resolved, the original conformance certificate is annotated to reflect that required resolution actions have been completed. The annotation includes all relevant information, including what actions were taken, when, and by whom, and references to any Change Order, as appropriate. After the certificate is annotated, it is refiled following the procedure in step 14.

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06/88
Revision 1.1

4.0 SPECIFICATION CONFORMANCE CERTIFICATION PROCEDURE

4.0 SPECIFICATION CONFORMANCE CERTIFICATION PROCEDURE

Chapter 4.0 describes the documentation and procedure for specification conformance certification.

4.1 PURPOSE

The purpose of this procedure is to provide a uniform methodology for:

- Listing safety requirements from the contract specification documents for each certifiable systemwide element and facility
- Verifying that all contractual safety requirements are satisfactorily achieved.

4.2 DOCUMENTATION

Documentation for the specification conformance certification process consists of two forms: a Specification Conformance Checklist and a Certificate of Compliance. Their formats are shown in Exhibits 4-1 and 4-2, respectively.

The Specification Conformance Checklist contains the following information:

- Contract--Title of the SCRTD contract for the certifiable element.
- Contract No.--SCRTD contract number for the certifiable element.
- Certifiable Element--Title of the certifiable element from Exhibit 2-2.
- Subsystem--Name of the applicable subsystem within the certifiable element.
- Revision--Checklist preparation completion or revision level (i.e., draft, final, A, B, C, D, etc).
- Date--Date of checklist preparation.
- Prepared by--Name of the individual preparing the checklist and his/her organization.
- Approved by--Name of the individual approving the checklist and his/her organization.

EXHIBIT 4-2
Certificate of Compliance

CERTIFICATE OF COMPLIANCE

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
METRO RAIL PROJECT
SAFETY CERTIFICATION PROGRAM**

Completion of this Certificate indicates that the Certifiable Element indicated below complies with all applicable specification safety requirements and is judged safe for public use/revenue service.

CERTIFIABLE ELEMENT: _____

DATE OF CERTIFICATION: _____

RESTRICTIONS:

APPROVALS:

As Applicable:

Chairperson, Safety Certification Date
Review Team

Director, Construction Management Date

Assistant General Manager, TSD Date

Director, Systems Design and Analysis Date

Director, Rail Facilities Engineering Date

- Page of--Actual page number of the total pages of the checklist document.
- Item No.--Serial number of each safety requirement listed in the checklist.
- Safety Requirement--Description of the safety requirement.
- Specification Reference: Section-Page--Applicable section and page reference number of the safety requirement from the contract specification.
- Specification Reference: Paragraph--Applicable paragraph reference number of the safety requirement from the contract specification.
- Evidence: Verification Responsibility--Aboreviation of the name of the individual and/or the organization responsible for verifying the specific safety requirement.
- Evidence: Stage--Description of the contract execution stage (e.g., design, manufacturing, fabrication, assembly, testing, procurement, installation) when the requirement will be verified.
- Evidence: Document Reference--Abbreviated alpha-numeric reference number of the document provided by the contractor for the evidence verification.
- Evidence: Verified/Date--Actual date of evidence verification.
- Evidence: Verified/By--Initials of the individual verifying the evidence.

The Certificate of Compliance contains the following information:

- Certifiable Element--Title of the certifiable element as listed in Exhibit 2-2.
- Date of Certification--Date on which the certificate is issued.
- Restrictions--Explanation regarding any temporary nonconformance or deviations related to the certifiable element safety requirements.
- Approvals--Signature and date of signing the certificate by the SCRT Chairperson, appropriate SCRTD Director, and the Assistant General Manager, TSD.

4.3 PROCEDURE

The following actions describe, in sequential order, the procedure for issuing a Certificate of Compliance:

1. The General Consultant develops a draft Specification Conformance Checklist for each systemwide element and facility listed in Exhibit 2-2. The evidence portion of the checklist form is left blank during development of the checklist.
2. The draft checklists are submitted to the Director, S&CS.
3. The Director, S&CS distributes the draft checklists to members of the SCRT for review and comment.
4. The Director, S&CS collects and compiles the comments of the SCRT members.
5. The Director, S&CS meets with the General Consultant to discuss and resolve the review comments. At that time, the verification responsibility column for each safety requirement item is completed by the Director, S&CS.
6. The General Consultant revises the draft checklists to incorporate review comments, and prepares final Specification Conformance Checklists.
7. Using the final Specification Conformance Checklists, the CM Consultant's Manager of Quality Assurance/Control or the SE&A Consultant's Safety Analyst identifies those items on the Resident Engineer's Inspection and Test Plan Checklist that require safety certification documentation. (In the Specification Conformance Certification Procedure, the SE&A Consultant has the same responsibilities for the passenger vehicle and fare collection contracts as the CM Consultant has for all other contracts.)
8. As the contracts for each certifiable element progress toward completion, the individuals with verification responsibility review each safety requirement for satisfactory completion. The Director, S&CS is periodically informed of work progress and any problems encountered.
9. The individual with evidence collection responsibility identifies the stage of the project/contract at which the information that verifies compliance is available. If possible, the specific time is pinpointed (e.g.,

Final Design Review, First Article Inspection, Mock-Up Review, etc.). The responsible individual documents the reference which incorporates the safety requirements (e.g., subsystem hazard analysis, hazard #103-B, or quality audit #3, checklist #4, etc.), along with the document number, if any.

10. After construction is complete or the equipment is delivered or installed, the Director, S&CS determines that the following evidence is available:

- Completed checklists
- Certifiable Element File containing certification documentation and references to all evidential material.

11. The Director, S&CS and his staff review and audit the checklists against the evidential material to ensure that the checklists are complete and the referenced documents are accurate. When the Director, S&CS is satisfied with the completed checklists, recommendation for certification is scheduled for the next SCRT meeting.

12. The SCRT convenes to discuss the evidence and issues its recommendations to the appropriate SCRTD Director.

During the SCRT review, apparent nonconformance or deviations related to the certifiable element safety requirements may be observed. If a safety requirement cannot be achieved prior to revenue service, a Certificate of Compliance may be issued with "restrictions." A restriction may require temporary procedures to be implemented until the safety requirement is achieved. The restrictions are documented, and their resolutions tracked, under the open items tracking list of the safety certification files. Outstanding restrictions are periodically reviewed during SCRT meetings so that progress on their resolutions can be monitored.

13. The Certificate of Compliance for the subject certifiable systemwide element or facility is prepared. The SCRT Chairperson and appropriate SCRTD Director sign the Certificate of Compliance and forward it, along with the SCRT recommendations, to the Assistant General Manager, TSD for his signature.

14. The original certificate is filed in the Master File. A copy is filed in the appropriate Certifiable Element File, along with the completed checklists, the minutes of the SCRT meeting, and the recommendation for certification.

15. When evidence becomes available establishing that restrictions are no longer necessary, the original Certificate of Compliance is annotated to reflect that required resolution actions have been completed. The annotation includes all relevant information, including what actions were taken, when, and by whom, and references to any change order, as appropriate. After the certificate is annotated, it is refiled following the procedure in step 14.

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5.0 METRO RAIL SAFETY TEST CERTIFICATION PROCEDURE

5.0 METRO RAIL SAFETY TEST CERTIFICATION PROCEDURE

Chapter 5.0 describes the documentation and procedure for ensuring all system-level safety-related tests are conducted as part of the Metro Rail test program.

5.1 PURPOSE

The purpose of this procedure is to provide a uniform methodology for:

- Identifying system-level safety-related tests
- Verifying each safety-related test is successfully completed.

As discussed in section 1.5, the test program, while managed separately, complements and reinforces the safety certification program. System-level tests identified as part of the Test Program Plan are primarily concerned with:

- Performance--to verify that the equipment can function in the Metro Rail operational environment, meets the requirements of the specifications, and can be integrated with other equipment to provide dependable service
- Safety--to verify that personnel, procedures, and equipment can function safely together in normal, emergency, and abnormal conditions.

Those tests that verify the ability of the system to operate safely are a key element of the certification program. The interfaces between the test program and safety certification ensure that:

- Necessary safety-related tests are identified as part of test planning, and test procedures document and verify system safety
- Hazards that become apparent during system testing are reported and resolved, either by system redesign or the imposition of special procedures.

5.2 DOCUMENTATION

The documentation related to safety certification for the test program consists of two forms: a Test Checklist and a Certificate of Compliance. The format for the Checklist is shown in Exhibit 5-1. The format for the Certificate of Compliance is the same as that shown in Exhibit 4-2.

EXHIBIT 5-1
Test Program Checklist

06/88
Revision 1.1

Master List of Metro Rail Test Program Tests

Contract Number: A650
Contract: Passenger Vehicle
Contract Date: 10/01/85

Sheet: 9 of 10
Revision:
Date: 2/27/87

Item	Test Number	Test Title	Specification Reference Section	Test Frequency	Safety Test YES/NO	Test Group	Scheduled Completion Date	Current Status
36	A650 N Q XXX-RO	Propulsion Subsystem Tests (continued)	21.6.8					
		Regeneration transient test	21.6.8.E			CO		planned
37	A650 N D XXX-RO	Friction Brake Tests	21.6.9					
		Dynamometer test	21.6.9.A			CO		planned
		Endurance	21.6.9.B			CO		planned
		Service life demonstration	21.6.9.C			CO		planned
		Brake rate characteristics demonstration	21.6.9.D			CO		planned
38	A650 N D XXX-RO	HVAC Tests	21.6.10.A					
		Cooling capacity	21.6.10.A.1			CO		planned
		Heating capacity	21.6.10.A.2			CO		planned
		Over-temperature operation	21.6.10.A.3			CO		planned

5-2

The Test Checklist is prepared as part of test program development, and contains the following information:

- Contract No.--Contract number for the contract.
- Contract--Title of the contract for which verification tests will be conducted.
- Contract Date--Date of the contract for which verification tests will be conducted.
- Sheet--Actual page number and total pages of the review form document.
- Revision--Review form preparation completion or revision level (i.e., draft, final, A, B, C, D, etc.).
- Date--Actual date of review form preparation or revision.
- Item--Serial number of each test requirement listed in the review form.
- Test Number--Control number assigned to the test requirement by the CM Consultant's Automated Document and Material Control System; the test control number contains identifiers to enable tracking of the test status.
- Test Title--Title or description of the test requirement.
- Specification Reference Section--Applicable section and page reference number of the test requirement from the contract specifications, if any.
- Test Frequency--Frequency with which the test is performed; also refers to the stage of contract execution when the test is to be performed.
- Safety Test (Yes/No)--Indication of whether the test is safety-related or not.
- Test Group--Name of organization responsible for performing, or ensuring performance of, the test.
- Scheduled Completion Date--Date when the test is scheduled to be completed.
- Current Status--Status of the test as of the date of checklist preparation or revision (e.g., on hold, completed, in progress).

5.3 PROCEDURE

Because issuing a separate Certificate of Compliance for every safety-related test and procedure in the test program is not practical, a total of five certificates will be issued:

- Certifiable Element No. 56: Test Program Plan. This certificate documents that a comprehensive test plan has been developed which provides proper management controls for conduct of the test program and the inclusion and identification of safety-related tests
- Certifiable Element No. 57: System Integration Test Procedures. This certificate documents that non-contractual systems integration tests have been identified, and that test procedures have been prepared.
- Certifiable Element No. 58: Pre-Revenue Test Procedures. This certificate documents that non-contractual pre-revenue tests have been identified, and that test procedures have been prepared.
- Certifiable Element No. 59: System Integration Test Results. This certificate documents that safety-related, non-contractual system integration tests have been successfully completed in accordance with the test procedures, and that the test results are satisfactory and meet the SCRT's acceptance criteria.
- Certifiable Element No. 60: Pre-Revenue Test Results. This certificate documents that safety-related, non-contractual pre-revenue tests have been successfully completed in accordance with the test procedures, and that the test results are satisfactory and meet the SCRT's acceptance criteria.

The following steps describe, in sequential order, the procedure for issuing a Certificate of Compliance for each of the above elements.

5.3.1 Test Program Plan

1. The SE&A Consultant, under the direction of the Manager, Systems Engineering and Analysis (SEA), develops a draft Test Program Plan. The plan identifies:
 - The process for managing the development of test procedures, identification of test requirements, and establishment of pass/fail criteria

- Necessary test requirements, both contractual and noncontractual, desired by SCRTD
 - Test execution sequence and schedule
 - Test documentation requirements.
2. The Manager, SEA distributes the draft Test Program Plan to the following for review and comment:
 - Director, Systems and Construction Safety
 - Director, Rail Facilities Engineering
 - Director, Construction Management
 - Director, Systems Design and Analysis
 - Directors, Rail Equipment and Facilities Maintenance
 - Director, Rail Operations
 - General Consultant
 - CM Consultant
 - Fire/Life Safety Committee
 - Transit Police.
 3. The Manager, SEA collects and compiles comments from the above organizations.
 4. The Manager, SEA meets with the SE&A Consultant to discuss and resolve the review comments.
 5. The SE&A Consultant revises the Test Program Plan to incorporate review comments.
 6. Upon final revisions to the Test Program Plan, the Manager, SEA requests that the SCRT convene to approve the safety-related content of the Test Program Plan.
 7. After review, the SCRT convenes to discuss the Test Program Plan and issues its recommendations to the Director, Systems Design and Analysis, and the Director, Construction Management.

8. The Certificate of Compliance for the Test Program Plan is signed by the SCRT Chairperson and the appropriate SCRTD Directors. It is forwarded, along with the SCRT recommendations, to the Assistant General Manager, TSD for his signature.
9. The original certificate is filed in the Master File. A copy is filed in the appropriate Certifiable Element File, along with the minutes of the SCRT meeting and the recommendation for certification.

5.3.2 System Integration and Pre-Revenue Test Procedures

1. Test procedures are prepared for each required test. Respective contractors develop the test procedures for their contractual test requirements. The Manager, SEA is responsible for coordinating development of test procedures for non-contractual test requirements.

Contractually required tests that relate to safety are included in the Specification Conformance Checklists. They are verified as part of the certification procedure described in the previous chapter.

2. Non-contractual test procedures are prepared by the CM and SE&A Consultants for the system integration and pre-revenue tests identified in Appendix C of the Test Program Plan.
3. The SCRT convenes regularly to review and approve non-contractual test procedures as they are written.
4. When all non-contractual safety-related test procedures are completed, the SCRT Chairperson determines that the following evidence is available:
 - Completed review and comment forms on the procedures for all safety-related tests
 - Approval by the Director, S&CS of the completeness and accuracy of the safety-related test procedures.
5. The SCRT convenes to review the evidence and issues its recommendations to the appropriate SCRTD Director.
6. One Certificate of Compliance is prepared for System Integration Test Procedures, and another is prepared for the Pre-Revenue Test Procedures. The SCRT Chairperson and the appropriate SCRTD Director sign the Certificates of Compliance and forward them, along with the SCRT recommendations, to the Assistant General Manager, TSD for his signature.

7. The original certificates are filed in the Master File. A copy of each is filed in the appropriate Certifiable Element File, along with the safety test procedures, the minutes of the SCRT meeting, and the recommendations for certification.

5.3.3 System Integration and Pre-Revenue Test Results

1. System integration and pre-revenue tests are conducted in accordance with schedules developed by the SCRTD's Test Engineer and in accordance with approved test procedures.
2. Each test procedure identifies success/failure parameters, test duration, and the sequence of test steps. As each test step is successfully accomplished, test data sheets are annotated. Tests involving safety are witnessed by a member of the SCRT.
3. The Test Engineer reviews the data gathered during the test and determines if the test was successfully completed.
4. Upon successful test completion, a test report is prepared. The report includes a copy of approved test procedures and associated annotated data sheets.
5. The SCRT convenes regularly to review the safety-related test reports as they are completed. When all non-contractual safety-related tests are completed and the test results found satisfactory, the SCRT convenes to issue its recommendations to the appropriate SCRTD Director.
6. One Certificate of Compliance is prepared for the system integration test results, and another is prepared for the pre-revenue test results. The SCRT Chairperson and the Director, Systems Design and Analysis sign the Certificates of Compliance and forward them, along with the SCRT recommendations, to the Assistant General Manager, TSD for his signature.
7. The original certificates are filed in the Master File. A copy of each is filed in the appropriate Certifiable Element File, along with the safety test procedures, the minutes of the SCRT meeting, and the recommendations for certification.

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06/88
Revision 1.1

6.0 SAFETY-RELATED PROCEDURES AND TRAINING
CERTIFICATION PROCEDURE

6.0 SAFETY-RELATED PROCEDURES AND TRAINING CERTIFICATION PROCEDURE

Chapter 6.0 describes the documentation and procedure for certifying that all safety-related operating and maintenance procedures, as well as the safety content of training programs, are thoroughly reviewed prior to revenue service.

6.1 PURPOSE

The purpose of this procedure is to provide a uniform methodology for:

- Identifying operations and maintenance procedures and training programs required for safe operation of the Metro Rail system
- Reviewing the safety content of the procedures and training programs
- Verifying that all procedures and training program materials have successfully completed a comprehensive review cycle.

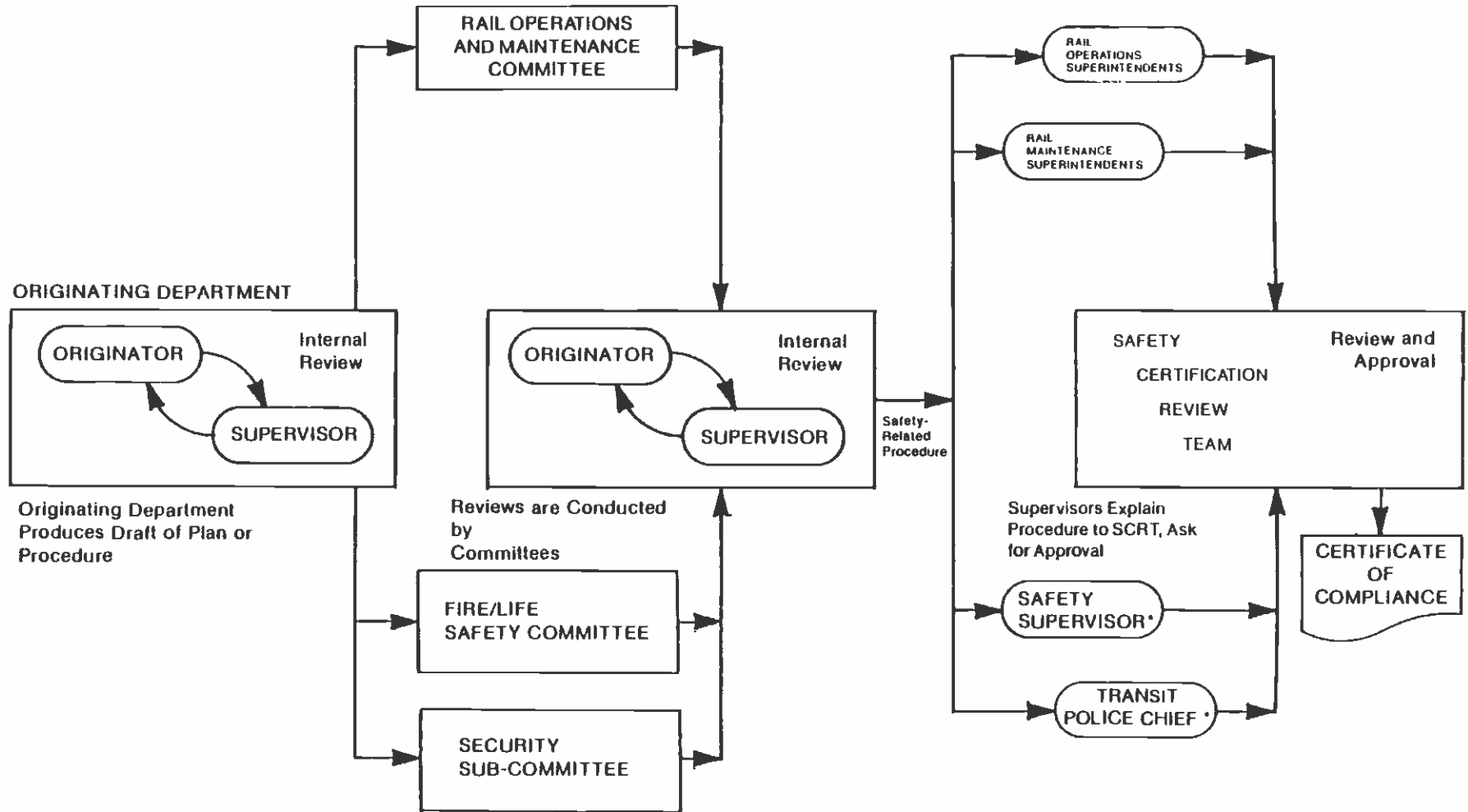
The SCRTD's System Safety and Security Program Plan identifies the safety-related procedures and training activities the SCRTD must develop or perform prior to revenue service, but there are no identified requirements for their specific content.

The most effective method for ensuring that procedures and training materials include requisite safety content is a widespread review and comment cycle involving engineering, safety, operations, and maintenance personnel. A formal process must be established by the SCRTD to review procedures, training manuals, and other documents as they become available in the year or two prior to revenue service. The reviews must include input from and discussions with emergency response personnel (fire and police), operations and maintenance managers, safety staff, and design engineers and consultants. Special emphasis must be placed on ensuring that those people who will operate, maintain, and police the Metro Rail have thorough discussions with the engineers who designed the system. Once a safety-related procedure or training manual has completed the review cycle and conflicts are resolved, the document can be certified. A typical review cycle is illustrated in Exhibit 6-1.

6.2 DOCUMENTATION

Documentation for the review of procedures and training material consists of two forms: a Procedure/Training Material Review Checklist and a Certificate of Compliance. The format

EXHIBIT 6-1
Procedures and Training Material Review Cycle



*or designate

for the Procedure/Training Material Review Checklist is shown in Exhibit 6-2. The format for the Certificate of Compliance is the same as that shown in Exhibit 4-2.

A Procedure/Training Material Review Checklist is prepared for each procedure developed for the operation or maintenance of Metro Rail and contains the following information:

- Manual Title--title of the document under review (e.g., Standard Operating Procedures Manual, Vehicle Operator's Rulebook, Fire Department Training Program).
- I.D. No.--SCRTD document reference number.
- Review Level--preliminary, final, or baseline review.
- Date Out/Date Due--dates when the document is sent out for review and when comments are due back.
- Responsible Department/Section--organization responsible for developing the manual (e.g., Systems and Construction Safety, Facilities Maintenance, Transit Police, General Consultant).
- Safety Content/Certifiable Element--indication by the Director, S&CS as to whether the manual needs to be reviewed for safety content. If it does, the certifiable element's name is inserted.
- Review Responsibility--the group responsible for performing the review. All documents are reviewed by expert committees (Rail Operations and Maintenance, Fire/Life Safety, and Security). In addition, documents may be reviewed by other SCRTD departments (Contracts, Procurement and Materiel, Risk Management, etc.) and outside agencies (DWP, CPUC, Coroner/Medical Examiner Office, etc.).
- Reviewed By--names of the persons requested to review and submit comments.
- Comments Received--whether written comments were provided by the reviewer.
- Date--date the comments were received.
- Results/Approval--general assessment of whether the reviewer found the document acceptable. Results may include:
 - Acceptable with no comments
 - Not acceptable, needs rework
 - Acceptable if comments are incorporated.

EXHIBIT 6-2
 Procedure/Training Material Review Checklist

**SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 METRO RAIL PROJECT**

PROCEDURE/TRAINING MATERIAL REVIEW CHECKLIST

MANUAL TITLE: _____ DATE OUT: _____
 I.D. NO: _____ REVIEW LEVEL: _____ DATE DUE: _____
 RESPONSIBLE DEPARTMENT/SECTION: _____
 SAFETY CONTENT? NO YES CERTIFIABLE ELEMENT NUMBER: _____

REVIEW RESPONSIBILITY	REVIEWED BY:	COMMENTS RECEIVED (DATE)	RESULTS		ACCEPT W/ CHANGES
			ACCEPT	NOT ACCEPTED	
Rail Operations and Maintenance Committee					
Fire/Life Safety & Security					
Others					

6.3 PROCEDURE

The following items describe, in sequential order, the procedure for issuing a Certificate of Compliance for operating and maintenance procedures and training materials.

1. The SE&A Consultant, under the direction of the Manager, SEA develops a draft Metro Rail Activation Plan. The Plan identifies:

- The process for managing the development of operating and maintenance procedures and training programs, identification of course requirements, and testing
- Necessary procedures needed to provide dependable, safe, and cost-efficient service
- Responsibility for content development and schedule for preparation.

2. The Manager, SEA distributes the draft document to the following for review and comment:

- Director, Systems and Construction Safety
- Director, Rail Facilities Engineering
- Director, Construction Management
- Director, Systems Design and Analysis
- Directors, Rail Equipment and Facilities Maintenance
- Director, Rail Operations
- General Consultant
- CM Consultant.

Each organization provides written comments on SCRTD review and comment forms.

3. The Manager, SEA collects and compiles comments from the above organizations.
4. The Manager, SEA meets with the SE&A Consultant to discuss and resolve the review comments. The Director, S&CS identifies those procedures that have safety content and those that do not. The Manager, SEA assigns responsibility for the development of each identified procedure.

5. The SE&A Consultant revises the document to incorporate comments and prepares a final version of the Metro Rail Activation Plan.
6. Procedures are written in accordance with the responsibilities assigned in the Rail Activation Plan.
7. The SCRTD departments submits procedures and training materials for review in accordance with the schedule contained in the Rail Activation Plan.
8. The SCRT convenes periodically to review progress on procedure and training material development.
9. When all reviewers have completed the review of a safety-related document, the SCRT Chairperson determines that the following evidence is available:
 - Completed Procedure/Training Material Review Checklist for the certifiable element
 - Approval from the Director, S&CS on the completeness and accuracy of the safety-related contents in the manual.
10. The SCRT convenes to review the evidence and issues its recommendations to the appropriate SCRTD Director.
11. A Certificate of Compliance is prepared and is signed by the SCRT Chairperson and the appropriate SCRTD Director. The Certificate of Compliance is forwarded, along with the SCRT recommendations, to the Assistant General Manager, TSD for his signature.
12. The original certificate is filed in the Master File. A copy is filed in the appropriate Certifiable Element File, along with the appropriate manual, the minutes of the SCRT meeting, and the recommendation for certification.

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