

29301395

SCRTD
METRO RAIL PROJECT
SAFETY CERTIFICATION PROGRAM
CRITERIA CONFORMANCE CERTIFICATION

CONTRACT A710

ESCALATORS

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INTRODUCTION

This Criteria Conformance Verification package is submitted for review and compliance assessment in accordance with Rev. 1.1 of the SCRTD Metro Rail Project Safety Certification Plan dated June 1988. The purpose of this package is to document the incorporation of safety-related design criteria into the contract drawings and specifications. This activity is part of a multi-phased program to provide a traceable history of the Metro Rail Project Safety Program.

During design progression, MRTC Safety, Assurance & Security personnel, in conjunction with Rolf Jensen & Associates and the Metro Rail Project Fire/Life Safety Committee, have reviewed design documents at the 60%, 85% and 100% levels. The 100% design review for this document was held in January 1985. Comments were resolved, the document revised and then archived. The contract was originally advertised for bid in October 1987. A total of six addenda were issued against the October 1987 bid document. The contract was re-advertised for bid in June 1988. Design review checklists were utilized at each review level and appropriate design review comments generated. Subsequent reviews were initiated by determining the resolution status of comments. Unresolved comments were repeated at each review level until resolution was achieved and verified.

Design review checklists for the Fire/Life Safety, System Safety, Security and System Assurance design criteria were updated in December 1986 to reflect the significant revisions made through the Change Request process. A vertical bar in the Req. I.D. column of the checklist was used to indicate only those changes which impacted design. For clarity, editorial revisions and clarifications of intent were not indicated on the checklist; however, all revision are indicated in the text of the design criteria and pertinent Change Requests. The updated checklists were applied to the October 1987 bid document, taking into consideration comments made at the 100% level. Checklists were again applied to the June 1988 version of the bid document to verify that compliance with applicable design criteria was maintained.

The scope of this contract encompasses the furnishing, installation, and testing of station escalators for all MOS-1 stations, including escalators for the LRT station at 7th/Flower. *The comments included in this package represent the result of the 100% design review. The checklists included are the updated checklists applied to the June 1988 bid document. Only those portions of the checklists containing design criteria requirements directly applicable to this contract, including those for Fire/Life Safety, System Safety, Reliability, Maintainability, and Quality Assurance are included in this document. Responses to the comments are included in most cases, as well as

resolution verification by MRTC Safety, Assurance, and Security personnel. Supporting correspondence has been included where deemed appropriate. Addenda issued against the June 1988 bid document have been reviewed to determine impact on the Safety Certification Program. Addenda distribution letters, annotated to indicate results of the review, are included.

This verification package, once audited and confirmed by the SCRTD, will become the primary documentation to allow the SCRTD to issue a Criteria Conformance Certification Certificate. Once issued, the Certificate will be appended to this document.

* EXPLANATORY NOTE

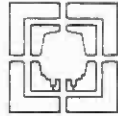
In order to promote competitiveness in the procurement of escalators and elevators for the Metro Rail Project, SCRTD decided to combine two previously separate contracts into a single contract. Contract A710 - Escalators and Contract A720 - Elevators are now combined in Contract A710 - Escalators and Elevators.

The Criteria Conformance Verification document for Contract A720 - Elevators was prepared and issued while the contract was still a stand-alone procurement. In order to avoid confusion, no attempt was made to combine the Criteria Conformance Verification documents for Contracts A710 and A720. Criteria Conformance Certification will be issued separately for Escalators and Elevators; however, only a single Specification Conformance Checklist will be developed based on the combined A710 - Escalators and Elevators Contract.



RTD
Metro Rail Project

**CRITERIA CONFORMANCE
 VERIFICATION**



Metro Rail Transit Consultants
 DMJM/PBQD/KE/HWA

Safety Certification Program

DESIGN REVIEW CONTRACT NUMBER A710 Elevators and Escalators

REVIEWING DISCIPLINE MRTC Safety, Assurance and Security

EXCEPTIONS NOTED: NONE

This verifies that the specifications and drawings of the above DESIGN REVIEW PACKAGE comply with the applicable SCRTD DESIGN CRITERIA for safety, fire/life safety, security and system assurance.

Signature J. N. Brown Date 8/22/88
 Manager - MRTC Safety, Assurance, and Security

Signature [Signature] Date 8/23/88
 Manager - MRTC Facilities Division



METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: FIRE/LIFE SAFETY - STATIONS

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A710

CRITERIA AND STANDARDS - VOL. 1, SECTION 2.2

REVIEW LEVEL: JUNE 1988 Re-Bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
2.2.2.8.3	Elevators and escalators shall be constructed of noncombustible materials and conform to CAC Titles 24 and 8.	✓		See Section 14310 Paragraph 1.2.A.2 & Section 16050 Paragraphs 1.4.D
2.2.2.9.1	Interior finishes shall be Class I (per UBC Chapter 42) for all exit access routes and exits. Platforms and mezzanines in transit stations shall be considered exit access routes for the purpose of determining interior finish requirements.	✓		See Section 14310 Paragraph 2.8
2.2.2.9.2	Interior finishes in all other areas shall be UBC Chapter 42, Class I or II.	✓		see Section 14310 Paragraph 2.8
2.2.3.1.1	Provisions shall be made for emergency ventilation for protection of patrons and employees from fire and products of combustion.			
2.2.3.1.3	Ventilation shaft terminals at grade shall be located as follows: A. Openings for blast relief shafts, and underplatform and smoke exhaust shafts at grade shall be separated by a minimum horizontal distance of 40 feet from the closest station entrance, surface emergency stair doorways, unprotected outside air intake or other openings, or from each other. o Where this distance is not practical, the horizontal distance may be reduced to 15 feet if the closest blast relief or underplatform and			N/A to this contract



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: FIRE/LIFE SAFETY - STATIONS

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A710

CRITERIA AND STANDARDS - VOL. 1, SECTION 2.2

REVIEW LEVEL: June 1988 Re-Bid

REQ. ID.	REQUIREMENT	YES	NO	COMMENT
	B. Gates at the top of each stairway shall swing in direction of access to platform and provide clear opening width of not less than 3 feet.			Not Applicable to this contract.
	C. Gates, stairs, and landings shall conform to NFPA 101 and applicable building codes.			
2.2.5.3.13	Vertical circulation elements shall be comprised of stairs or stair/escalator combinations. Escalators shall not account for more than half the units of exit at any one level in the public area.			Not Applicable to this contract
2.2.5.4	Means of egress shall be arranged in accordance with applicable codes and regulations, except that for the purpose of the criteria, exits from station ancillary occupancy areas into station public occupancy areas shall be considered as discharging into a protected passageway leading directly to a point of safety.			Not Applicable to this contract
2.2.5.5.1	Station structures shall be provided with an emergency lighting system in accordance with UBC except as noted in 2.2.	✓		fixtures provided in accordance with section 16500. Wiring provided by others
2.2.5.5.2	Emergency lighting system is installed and maintained per NFPA Article 700, "Emergency Systems" to provide an illumination level of 1 footcandle.	✓		see Section 01010 Paragraph 1.2



METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: FIRE/LIFE SAFETY - STATIONS

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 2.2

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
2.2.5.5.3	Exits shall be marked with readily visible signs complying with the requirements of UBC. Where emergency lighting is required, exit signs shall be illuminated from the emergency lighting source.			To Be Supplied by others. Not Applicable To This Contract.
2.2.5.5.4	Exit lights and essential signs shall be included in the emergency lighting system and be powered by an uninterruptible power supply. Emergency fixtures, exit lights, and signs shall be separately wired from the emergency distribution panels.	✓		See Section 14310 Paragraph 2.4.H Also see Drawing AP-104
2.2.5.5.5	Emergency lighting for stairs and escalators shall be designed to emphasize illumination on the top and bottom steps or landings. A minimum of one footcandle of emergency lighting shall be provided throughout the entire run of each stair and escalator (per UBC, Section 3312(a)).	✓		See Section 14310 Paragraph 2.4.H and Section 16500 Paragraph 2.1
2.2.6.1.1	Fire alarm control system shall be installed in each station facility, conforming to NFPA 72A and 72D and CAC Title 19: A. Fire alarm devices shall be protected by a proprietary system Style D and Style 2 per NFPA 72D, Tables 3-9.1 & 3-10.1.			To be Supplied by others. Not Applicable To This Contract.



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: SYSTEM SAFETY - STATION AND SITE

REVIEW REFERENCE: SCRTD Metro Rail System Design

CONTRACT No.: A 710

Criteria & Standards, Vol. I, Section 3.3,

REVIEW LEVEL: June 1988 Re-b. of

STATION AND SITE, 07/86 Revision 2

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
3.3.2	<u>Station Architectural Features</u>			
3.3.2.A	Signing			
3.3.2.A.1	Clear, legible, and well-illuminated signing and graphics shall be provided in stations.	✓		See Drawing AP-104
	The signing and graphics shall be located in a manner which enhances the safety and convenience of patrons.			
3.3.2.A.2	Right-hand traffic shall be maintained where possible through signing.	✓		See Location Plans and Configuration Drawings
3.3.2.B	Architectural Psychology			
	Any design features or vistas which may distract patrons at the head or foot of stairs and escalators shall be avoided.			N/A
3.3.2.C	Platform			
3.3.2.C.1	A platform safety strip shall be provided as follows:			
3.3.2.C.1.a	The width of the safety strip shall be 18 inches, which includes the tactile strip and edge material.			
3.3.2.C.1.b	The platform edge material shall be slip-resistant and different in color and texture to distinguish it from the main platform area.			N/A



METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: SYSTEM SAFETY - STATION AND SITE

REVIEW REFERENCE: SCRTD Metro Rail System Design

CONTRACT No.: A710

Criteria & Standards, Vol. I, Section 3.3,
STATION AND SITE, 07/86 Revision 2

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
3.3.3.A.1	Elevators shall meet the safety requirements in the elevator/escalator codes, ANSI A17.1, the handicapped requirements in ANSI A117.1, and Title 24 of the California Administrative Code.			N/A ↓
3.3.3.A.2	Two-way communication from within the elevator cab shall be provided between the patron and Rail Control Center (RCC).			
3.3.3.A.3	Elevators shall be sized to accommodate a horizontally positioned stretcher of the type carried in emergency vehicles.			
3.3.3.A.4	Remote elevator indicators and controls shall be provided at RCC for emergency operation.			
3.3.3.B	Escalators			
3.3.3.B.1	Escalators shall meet the safety requirements in the elevator/escalator code, ANSI A17.1.	✓		See Section 14310 Paragraph 1.2.A.4
3.3.3.B.2	Signing and graphics shall be provided to enable patrons to determine the direction of escalator motion prior to their arrival at, and well clear of, the landing plate.	✓		See Drawing AP-104 Also see Section 14310 Paragraph 2.2.0.1
3.3.3.B.3	Status indicators shall be provided.	✓		↓



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: SYSTEM SAFETY - STATION AND SITE

REVIEW REFERENCE: SCRTD Metro Rail System Design

CONTRACT No.: A710

Criteria & Standards, Vol. I, Section 3.3,

REVIEW LEVEL: June 1988 Re-Bid

STATION AND SITE, 07/86 Revision 2

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
3.3.3.B.4	Adequate queuing space shall be provided at both the top and bottom of escalators.	✓		See Configuration Drawings
3.3.3.B.6	An emergency stop capability shall be provided at the top and bottom of escalators and shall meet the requirements of Cal/OSHA.	✓		See Section 14310 Paragraphs 2.2.0.1 2.4
3.3.3.B.7	The clearance between the combplate and the steps and the balustrade and the steps shall be such that no shoes, clothing, or other similar articles may be trapped between these elements.	✓		See Typical Detail Drawing AP101 and Section 14310 Paragraph 2.2.K
3.3.3.B.8	Sufficient clearance shall be provided between the structure and escalator moving handrails to prevent hands or clothing from being trapped.	✓		Section 14310 Paragraph 2.4. A " Safety devices as required by ANSI A17.1
3.3.3.B.9	Safety devices shall include brakes that assure that the escalator will not move when power is removed and patrons are using the stopped escalator as a stairway.	✓		(See A17.1 part III 802.2a and 804.3a
3.3.4	<u>Stairs</u>			N/A
3.3.4.A	There shall be a minimum of one stair connecting all levels in the public area that meets Fire/Life Safety requirements.			↓
3.3.4.B	The tread-riser relationship shall meet the requirements of NFPA-101.			



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: SYSTEM SAFETY - STATION AND SITE

REVIEW REFERENCE: SCRTD Metro Rail System Design

CONTRACT No.: A 710

Criteria & Standards, Vol. I, Section 3.3,

REVIEW LEVEL: June 1988 Re-h.d

STATION AND SITE, 07/86 Revision 2

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
3.3.6	<u>Vehicle Approach System</u> A visual and audible method shall be provided to alert patrons of the impending arrival of a train.			N/A
3.3.7	<u>Other Design Features for Station and Site</u>			
3.3.7.A	Patron flow patterns shall maintain a right-hand circulation where possible and shall be as simple as practicable.	✓		See Location Plans and Configuration Drawings
3.3.7.B	Maps shall be provided and located in the Emergency Management Panel (EMP) which show locations of shutoff controls for water, gas, electricity and fuel lines.			N/A
3.3.7.C	Guards and restraining rails, and similar items, shall be installed in specific areas where trains pose a clear danger to patrons, personnel or equipment.			N/A
3.3.7.D	Adequate lighting of stairs and escalators shall be provided.	✓		See Section 16500 and Configuration Drawings





SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: RELIABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN
CRITERIA AND STANDARDS - VOL. 1, SECTION 5.2

CONTRACT No.: A710

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
5.2.1.B	<p>Manufacturers of the following system equipment shall be required, by contract, to establish and maintain a Reliability Program and Plan:</p> <p>Program and Plan:</p> <ol style="list-style-type: none"> 1. Vehicle 2. Train Control 3. Fare Collection. <p>Their plans shall be prepared using the SCRTD System Assurance Program Plan as a guide for style, content, and format.</p>	✓		See Section 01450 Paragraph 3.2 (see note 1 page 5)
5.2.2.C	<p>Contractors for the following systems shall be required to prepare and submit a FMECA to identify all critical single point failure modes. The FMECA shall be conducted to the lowest replaceable module.</p> <ol style="list-style-type: none"> 1. Vehicle 2. Train Control 3. Fare Collection. 			N/A
5.2.2.D	<p>Contractor for the Vehicle, Train Control, and Fare Collection systems shall be required to prepare and submit a Reliability Analysis which shall include, as a minimum:</p> <ol style="list-style-type: none"> 1. System definitions and related assumptions 	✓		See Section 01450 Paragraph 3.2.A (see Note 1 page 5)



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: RELIABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.2

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	<ol style="list-style-type: none"> 2. Functional flow and reliability block diagrams 3. Description of data base and any adjustment factors 4. System and subsystem failure assumptions and predicted MTBF, MTBSF, MCBF, as appropriate 5. Comparison of reliability predictions with allocations in the Reliability Requirements Report (Criteria R4) 6. Impact of operating or design changes on predicted values 7. Definitions of all interfaces, such that every part is identified as being part of a particular subsystem. 			
5.2.2.E	<p>The contractors for Vehicle, Train Control, Fare Collection, and Vehicle Propulsion systems shall be required to develop Reliability Demonstration Test Plans. The Reliability Test Plan shall include:</p> <ol style="list-style-type: none"> 1. Criteria to be used by the SCRTRD for evaluating the equipment under test 2. The failure reporting procedures to be used by the Contractor 3. The mathematical verification that the test shall demonstrate the required 	✓		See section 01450 Paragraph 3.2.D



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: RELIABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.2

REVIEW LEVEL: June 1988 Re-Bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	MTBF, MTBSF, MCBF, and failure rates as specified by contract.			
5.2.3.A	Contractors shall be legally bound to ensure that contractual reliability requirements are achieved.	✓		See Section 01450 Paragraph 3.2
5.2.4	The contractor shall demonstrate the achievement or prove the failure of reliability requirements incorporated into contractor specifications and track system reliability during testing and revenue service.	✓		See Section 01450 Paragraph 3.2.D
5.2.4.A	Contractors shall be required to use the format designed by the SCRTD for reporting failures.	✓		See Section 01450 Paragraph 3.2.B
5.2.5.A	The system elements, as described below, shall be suitable for a lifetime of use in the Southern California environment, with normal maintenance and overhaul, if required, for the number of years as outlined below: 1. Vehicle Body: 30 years 2. Train Control System: 25 years 3. Fare Collection System: 25 years 4. Tunnels: 100 years 5. Trackwork: 30 years.	✓		See Section 01450 Paragraph 3.2.C
5.2.5.B	The system elements shall be capable of being operated, stored, and maintained at specific performance levels without impairment resulting from the impact of			N/A



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance & Security DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: RELIABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN CRITERIA AND STANDARDS - VOL. 1, SECTION 5.2

CONTRACT No.: A 710

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	<p>the following environmental parameters throughout the indicated range of values:</p> <ol style="list-style-type: none"> 1. Air temperature: Minimum: 20°F Maximum: 110°F Average: 66°F 2. Relative humidity: 24 hour range: 45% to 85% 3. Rainfall in 24 hours: Maximum recorded: 6.11" 4. Rainfall in 1 hour: Maximum recorded: 1.87" 5. Wind speed: Average: 10 mph Maximum recorded: 49 mph 6. Seismic activity: (Reference "DESIGN EARTHQUAKE PARAMETERS" and "DESIGN FAULT PARAMETERS" tables of Criteria) 7. Air pollution: <ul style="list-style-type: none"> o Dust Particulates: Size: 1 to 200 microns Concentration: (max.) 0.248 mg/m³ (avg.) 0.142 mg/m³ o Acid Precipitation: pH of 4.41 o Gases and fumes: (Reference "Types" and "Concentrations" table of Criteria) 			<p>N/A</p>



METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

Certifiable Element: Escalators

GROUP: MRTC Safety, Assurance & Security

DATE: August 15, 1988

REVIEWER: R. L. Harvey

DISCIPLINE: Reliability

REVIEW REFERENCE: Metro Rail Project System

CONTRACT No.: A710

Design Criteria and Standards - Vol. 1 Section 5.2

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	<p>Note 1:</p> <p>Although the Metro Rail Project System Design criteria do not specifically address System reliability as it relates to escalators; due to their critical nature, reliability requirements have been imposed.</p>			





SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: MAINTAINABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN
CRITERIA AND STANDARDS - VOL. 1, SECTION 5.3

CONTRACT No.: A710

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
5.3.1.B	<p>Manufacturers of the following system equipment shall be required, by contract, to establish and maintain a Maintainability Program and Plan.</p> <ol style="list-style-type: none"> 1. Vehicle 2. Train Control 3. Communications 4. Fare Collection 5. Traction Power. <p>Their plans shall be prepared using the SCRTD System Assurance Plan as a guide for style, content, and format.</p>	✓		<p>See section 01450 Paragraph 3.3 (see Note 1 page 6)</p>
5.3.2.A	<p>A detailed Maintenance Concept shall be developed and submitted to the SCRTD by the contractors indicated in 5.3.1.B. The Maintenance Concept shall include a description of how the contractor intends to achieve the maintenance requirements identified in their contract. The Maintenance Concept shall cover the following, as a minimum:</p> <ol style="list-style-type: none"> 1. Maintenance Levels <ol style="list-style-type: none"> a. System repairs done on SCRTD property b. Module and component repairs done on SCRTD property c. Module and component repairs done at the contractor's facilities. 	✓		<p>see Section 01450 Paragraph 3.3.A</p>



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: MAINTAINABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.3

REVIEW LEVEL: June 1988 Re-Bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	2. Maintenance Tasks			
	a. Scheduled Maintenance			
	i. Preventive Maintenance			
	ii. Service Maintenance			
	b. Corrective Maintenance.			
	3. Shop Facilities			
	a. Union Station maintenance activities			
	b. Hollywood maintenance activities			
	c. Component Repair Facilities.			
	4. Shop Equipment and Tools			
	a. Furnished by Vehicle/Train Control/ Fare Collection Contractor			
	b. Furnished by Shop Equipment Contractor.			
	5. Spare Part Requirements			
	a. Expected Part Life			
	b. Consumables and Repairables.			
	6. Skill Levels and Mechanics Required.			
5.3.2.B	A Maintenance Analysis shall be developed and submitted to the SCRTD by the Vehicle,	✓		see Section 01450 Paragraph 3.3. B (see Note 1 Page 6)



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance & Security

DATE: 8-15-88

REVIEWER: R. Harvey

DISCIPLINE: MAINTAINABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.3

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
5.3.4.A	<p>Train Control, and Fare Collection contractors.</p> <p>The Maintenance Analysis shall be submitted iteratively (every 90-180 days) as the design develops.</p> <p>The analysis shall describe all the maintenance tasks SCRTD personnel may be required to perform on the system. The analysis shall include for each maintenance task, as a minimum:</p> <ol style="list-style-type: none"> 1. Frequency of task 2. Time to perform 3. Test equipment, tools, and facilities required 4. Crew size and skill level 5. Manuals and instructions needed. <p>All suppliers and contractors shall be required to submit maintenance manuals which contain all the information needed to service, maintain, repair, inspect, adjust, troubleshoot, replace, and overhaul each component or subsystem. Requirements for the maintenance manuals shall include, but not be limited to:</p> <ol style="list-style-type: none"> 1. Running Maintenance and Servicing Manuals 	✓		See Section 01730



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: MAINTAINABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A 710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.3

REVIEW LEVEL: June 1988 Re-bid

REQ. ID.	REQUIREMENT	YES	NO	COMMENT
5.3.4.B	<p>2. Heavy Repair Maintenance Manuals</p> <p>3. Parts Catalogs</p> <p>4. Test Equipment Maintenance Manuals.</p> <p>The manuals shall be designed for continuous, long term service in a maintenance shop environment.</p> <p>All manuals shall be in either pocket size (3-1/2" x 8" x less than 1" thick) or standard size (8-1/2" wide x 11" high).</p> <p>All manuals shall be prepared in accordance with normal commercial standards, using MIL-M-38784 and MIL-M-15071 as guides for format and technical content, respectively.</p>	✓		see section 14310 Paragraph 3.8.8-D and Section 01730
5.3.5.A	<p>Contractors shall be required to provide a comprehensive training program for SCRTD maintenance personnel.</p> <p>Contractors shall provide the SCRTD with course materials, instructors, training aids, equipment, and all literature required.</p> <p>The contractor shall train all SCRTD maintenance personnel to a level of competence such that work performed by these personnel will not void any of the warranties or guarantees in effect.</p>	✓		see section 14310 Paragraph 3.8.A



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: MAINTAINABILITY

REVIEW REFERENCE: METRO RAIL PROJECT SYSTEM DESIGN

CONTRACT No.: A710

CRITERIA AND STANDARDS - VOL. 1, SECTION 5.3

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
5.3.6.A	The contractors shall incorporate qualitative features into all equipment whenever feasible. MIL-STD-1472C shall be used as a guide, along with the design features in the "Maintainability Checklist" provided in paragraph 15.3.6 of UMTA Report No. IT-06-0027-A "Guideline Specification for Urban Rail Cars", March 1973.	✓		<i>Not Applicable to this contract</i>



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

Certifiable Element: Escalators

GROUP: MRTC Safety, Assurance & Security DATE: 04/29/88

REVIEWER: R. L. Harvey

DISCIPLINE: Maintainability

REVIEW REFERENCE: Metro Rail Project System CONTRACT No.: A710

Design Criteria and Standards - Vol. 1, Sec. 5.2 REVIEW LEVEL: 100%

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	<p>Note 1:</p> <p>Although the Metro Rail Project System Design does not specifically address system maintainability as it relates to Escalators; due to their critical nature, maintainability requirements have been imposed.</p>			





SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: Quality Assurance

REVIEW REFERENCE: SCRTD Metro Rail Project System

CONTRACT No.: A710

Design Criteria & Standards - Vol. 1, Sect. 5.4

REVIEW LEVEL: June 1988 Re-bid

REQ. ID.	REQUIREMENT	NC	COMMENT
5.4.1.B	<p>QUALITY ASSURANCE PROGRAM PLAN - CONTRACTORS</p> <p>Manufacturers of the following system elements shall be required by contract to establish and maintain a QA Program and Plan:</p> <ol style="list-style-type: none"> 1. Facilities 2. Vehicle 3. Train Control 4. Fare Collection 5. Communications 6. Escalators 7. Elevators 8. Auxiliary Vehicles <p>These plans shall be prepared using the SCRTD System Assurance Program Plan and the SCRTD QA Manual as a guide for style, content, and format.</p>	✓	See Section 14310 Paragraph 1.2 and Section .01450 Paragraph 3.1
5.4.2	<p>WARRANTIES</p> <p>A. Warranty provisions shall be included in all contracts, both civil and system.</p> <p>The following additional time warranties shall be included in the vehicle contract:</p> <ol style="list-style-type: none"> 1. Carbody - 5 years 2. Truck-Structural Elements - 5 years 3. Traction Motors, except brushes - 5 years 	✓	See Section 14310 Paragraph 3.8.B.1 and section 01740



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance, Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: Quality Assurance

REVIEW REFERENCE: SCRTD Metro Rail Project System

CONTRACT No.: A 710

Design Criteria & Standards - Vol. 1, Sect. 5.4

REVIEW LEVEL: June 1988 Re-bid

REQ. ID.	REQUIREMENT	YES	NO	COMMENT
5.4.3	4. Gear reducers for propulsion subsystem - 5 years.			
	QUALITY PROGRAM CONTENT			
	A. <u>Receiving Inspection</u> Contractors shall provide for the inspection of all incoming material. Statistical sampling is acceptable.	✓		See Section 01450 Paragraph 3.1.K
	All material certifications and test reports used as the basis for acceptance by the contractors shall be maintained as quality records.	✓		See section 01450 Paragraph 3.1.C
B. <u>Statistical Sampling Plans</u> Statistical sampling used in inspection shall be fully documented and based on generally recognized statistical practices, such as MIL-STD-105 or MIL-STD-414.	✓		see Section 01450 Paragraph 3.1.N	
C. <u>Changes to Drawings and Specifications</u> Contractors shall ensure that all inspection and acceptance test are based on the latest revision or changes to drawings and specifications. An acceptable configuration management and control system shall be established and maintained. The responsibility for control of changes shall extend to suppliers.			Not Applicable to this contract. Off-the-Shelf Equipment BUILT BASED ON PROVEN STANDARD DESIGN.	



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance & Security DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: Quality Assurance

REVIEW REFERENCE: SCRTD Metro Rail Project System

Design Criteria & Standards - Vol. 1, Sect. 5.4

CONTRACT No.: A710

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
D.	<p><u>Identification of Inspection Status</u></p> <p>Contractors shall maintain a system for identifying the progressive inspection status of components or materials as to their acceptance, rejection or non-inspection.</p>	✓		See Section 01450 Paragraph 3.1.0
E.	<p><u>Shipping Inspection</u></p> <p>Contractors shall provide for the proper inspection of products to ensure completion of manufacturing and conformance to contract requirements prior to shipment.</p>	✓		See Section 01450 Paragraph 3.1.M
F.	<p><u>Quality Assurance Organization</u></p> <p>The organization of each contractor's QA Program shall be well defined.</p> <p>QA personnel shall have sufficient, well-defined responsibilities and organizational freedom which encourage the identification and evaluation of quality problems.</p> <p>Contractors shall have a QA Program that can verify compliance with contract requirements.</p>	✓		See Section 01450 Paragraphs 3.1.A and 3.1.B
G.	<p><u>Qualification of Personnel</u></p> <p>Contractor personnel performing inspections, test or special processes shall be qualified for such work based on prior experience and training.</p>	✓		See Section 01 Paragraph 3.1.G



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety, Assurance, & Security

DATE: 8-15-88

REVIEWER: R. L. Harvey

DISCIPLINE: Quality Assurance

REVIEW REFERENCE: SCRTD Metro Rail Project System
Design Criteria & Standards - Vol. 1, Sect. 5.4

CONTRACT No.: A710

REVIEW LEVEL: June 1988 Re-bid

REQ. I.D.	REQUIREMENT	YES	NO	COMMENT
	Records of personnel qualifications shall be maintained and available for review.			
H.	<u>In-Process Inspection</u> The contractor shall ensure that all machining, wiring, batching, shaping, and all basic production operations, together with all processing and fabricating, shall be accomplished under controlled conditions.	✓	..	See Section 01450 Paragraphs 3.1.J.2 and 3.1.L
I.	<u>Handling, Storage and Delivery</u> Contractors shall provide adequate work and inspection instructions for handling, storing, preserving, packing, marking, and shipping to protect the quality of products and to prevent damage, loss, deterioration, or substitution thereof.	✓		See Section 01450 Paragraph 3.1.Q
J.	<u>Corrective Action</u> Contractors shall establish, maintain, and document procedures to ensure that conditions adverse to quality are promptly identified and corrected.	✓		See Section 01450 Paragraph 3.1.R
K.	<u>Nonconforming Material</u> Contractors shall establish and maintain an effective system for controlling nonconforming material including procedures for identification, segregation, and disposition.	✓		See Section 01450 Paragraph 3.1.S



SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT

METRO RAIL PROJECT DESIGN REVIEW CHECKLIST

CERTIFIABLE ELEMENT: Escalators

GROUP: MRTC Safety Assurance & Security DATE: 8-15-88

REVIEWER: R.L. Harvey

DISCIPLINE: Quality Assurance

REVIEW REFERENCE: SCR TD Metro Rail Project System
Design Criteria & Standards - Vol. 1, Sect. 5.4

CONTRACT No.: A710

REVIEW LEVEL: June 1988 Re-Bid

REQ. ID.	REQUIREMENT	YES	NO	COMMENT
	A Material Review Board consisting of appropriate SCR TD, contractor, QA and design personal shall be established.			Not Applicable to this contract







FACILITIES DESIGN REVIEW COMMENTS

REVIEWER Fred Wiechert FILE NO. S 200 A 710 X 082 DATE 1-28-85
 ORGANIZATION Safety, Assurance, Security - Q. A. 100 % SUBMITTAL FOR A-710 Escalators SHEET 2 OF 2

REF. NO.	PAGE NO.	DRAWING NO./ SPEC. SECTION	COMMENTS	RESPONSE	ACTION
		Generals #2	A Quality Assurance Section, presently missing in the A-710 Specifications, has to be added. A-710 is a Quality Category 3 Contract. According to the established Contract Quality Requirement Guide (Matrix) the following Q.A. requirements, copied from the Standard System Q.A. Spec's (Doc. No. SNT 7622) have to be included in the Contract:	Quality Assurance Section has been added. See Section 01450 See Paragraph 3.1	RM 1-29-85
			4.1 General . 4.2 Quality Assurance Program.		
			4.3 Organization . 4.4 Quality Procedures .		
			4.5 Evidence of Compliance . 4.6 Calibration/ Certification of Measuring Equipment and Tools.		
			4.7 Quality Assurance Records . 4.8 Verification.		
			4.9 Qualification and Certification of Personnel.		
			4.10 Special Processes . 4.12 Inspection and Test.		
			4.16 Acceptance . 4.19 Identification and Inspection Status. 4.21 Handling, Storage and Delivery.		
			4.22 Corrective Action . 4.23 Nonconformances .		
			4.25 Defects in Material or Work.		







METRO RAIL TRANSIT CONSULTANTS
DMJM/PBQD/KE/HWA

MEMORANDUM

DATE: August 14, 1984
 TO: Don Harmon
 FROM: ~~Metrolink~~ *M. Dugan*
 SUBJECT: Signage Requirements for Escalators
 FILE NO.: S440A710X008
 X081

Per your earlier request, a code search was conducted to determine the requirements for signage on escalators. The following documents were reviewed:

- Title 8, CAC, Part I, Chap. 4, Subchap. 6 - Elevator Safety Orders
- Title 24, CAC, Part 2 - State Building Code
- Uniform Building Code (1979) - Chapter 51 and Related Appendix
- ANSI A17.1-1981 - Safety Code for Elevators, Dumbwaiters, Escalators and Moving Walks - Part VIII

Attached are high-lighted excerpts from the UBC and ANSI A17.1 which are relevant to the referenced subject. Based on this code review, it is concluded that a sign which complies with ANSI A17.1, Section 805, Rule 805.2, placed at the top and bottom landing of each escalator, will satisfy the mandatory requirements.

MI:MI:et

Attachments

cc: H. Kivett - w/o att.
 G. Plazony - w/o att.
 T. Tanke - w/o att.
 K. Rummel - w/o att.
 R. Wood - SCRID - w/o att.
 DCC (2)
 Chron
 Subject





MEMORANDUM

REVIEW COMMENTS TRANSMITTAL

DATE: JAN. 31, 1985
 TO: JOE SESTAY
 FROM: TOM TANKE *16mm*
 SUBJECT: A-710 & A-720.- MOS 1 100% DESIGN
 REVIEW COMMENTS
 FILE NO: 5400 X082

In response to your memo of JAN. 14. 85 (date) regarding the subject mentioned above, attached are review comments by SAFETY ASSURANCE & SECURITY.

If you have any questions, please contact J. YEN x7136 (name).

Attachments

cc:	(w/attachment)	(w/o attachment)
	K. Rummel	
	T. Cook/Dr File	
	DCC	DCC
	J. SANDBERG	Chron
	L. WOOD	Subject
	J. YEN	File

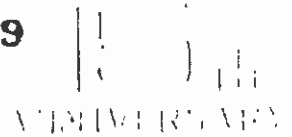
*Cross Reference:
 See Design Review II
 Comments section II
 Dated 1-28-85*





Rolf Jensen & Associates, Inc.
Fire Protection Engineers
Building Code Consultants

85-01709



RECEIVED

MAR 04 1985

D.C.C.

February 28, 1985

EXPRESS MAIL

Mr. Daniel K. Bloomfield
Metro Rail Transit Consultants
548 South Spring Street, Eleventh Floor
Los Angeles, California 90013

710
A-170; ESCALATORS, MOS-1
100% DESIGN REVIEW

Dan:

Enclosed are our comments on the subject submittal package.

Sincerely,

Christopher L. Vollman, P.E.

CLV:mrr - H3275 - Escalators

cc: Mr. Jim Yen

Enclosure

Cross Reference
see Section III
Design Review
Comments Dated
2-29-85





M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
SYSTEMS AND CONSTRUCTION SAFETY

DATE: February 4, 1988

TO: Distribution

FROM: Harold E. Storey *HES*

SUBJECT: News Media Report on Subway Fire Safety

RECEIVED

FEB 05 1988

~~CONFIDENTIAL~~

Attached for your information is a list of subway fire safety comments reported in the January, 1988, issue of Fire Control Digest.

Several comments are made in the articles which concern modern subway design/construction such as ours. They involve the use of materials and products (operational and maintenance) which give off toxic gases, and the use of aluminum (escalators at Montreal). The questions that come to mind ask: 1) are the materials and products we obtain versus proposed be low in toxicity, and 2) do we envision any structural or esthetic uses of aluminum in which its burning may hinder safety, because aluminum does burn at temperature levels easily induced by large electrical sources or energy, thus hindering its structural integrity.

Your consideration and thoughts on these two questions, or the article in general, would be appreciated. It appears that diligent review of contractor submittals and effective quality assurance/control is essential.

Attachment

Distribution: W. Rhine
J. Sandberg
D. Low
J. Crawley
S. Louis
H. Chaliff
K. Murthy
A. Dale
N. Brown
M. Ingram
M. Polacek
R. Frias

fighters, Local 36. Cox said fire department units assigned to the White House do not have so-called entry suits, which are worn by fire fighters who must walk through fire to save any victims in the event the President's helicopter should crash or burn.

Cox also said the suits being used allow a fire fighter only to go near a fire and are badly worn.

"The fire chief himself was at a union meeting April 13 of last year and addressed the problem face to face with the entire membership," Cox said. "Chief (Theodore) Coleman said he would take care of it. You can't go much higher than that.

"You're talking about the President of the United States, not just some Joe Blow off the streets," said Cox. "This thing is not something that's just surfaced. It's been known for years."

A fire department spokesman said the allegations were under review.

"We are obviously checking those suits at this time," said Capt. Theodore Holmes, who contradicted the union's claim that Coleman had been notified of an equipment problem within the White House detail.

"While the suits are not brand new," they are in adequate shape, Holmes said.

Regarding entry suits, Holmes said, "at this time, our safety office is looking at that. Whatever is needed between this fire department and the White House we are going to be certain that whatever is provided, will be provided."

Cox said the department missed an opportunity to obtain the entry suits when fire department officials were before Congress testifying on the city budget.

"They still had the opportunity to take advantage of the budget opportunity on (Capitol Hill) and they neglected to do that," Cox said. "We did our job."

The department conducted a "full-scale" fire drill Dec. 27 at the White House without the knowledge of many Secret Service agents on duty at the time.

"There were no problems whatsoever," said Holmes. "The department was more than up to doing its job."

Keeping Secret Service agents on duty uninformed about the drill was done so it "could be done as realistically as possible," said Holmes.

"There were key people on both sides of the fence who were informed," said Holmes. "We wanted it to be life-like."

Holmes said the White House is inspected annually by the department's fire prevention personnel. Drills, he said, are done on a "sporadic" basis. ■

SUBWAYS FIRE SAFE, BUT NO GUARANTEES

America's subway systems are safer than the 124-year-old London underground where 30 people died in November officials said, but there are no guarantees such a tragedy can be prevented.

"Could it happen here? Absolutely!" said Capt. Matthew Corbett of the Boston Fire Department. "Nothing is fireproof and nothing is foolproof. I imagine a lot of transit systems will be taking a look right now to determine how safe theirs is."

Corbett said Boston Transit officials have worked closely with the fire department to improve safety since the early 1970s, when at least two people were killed in subway fires.

Since then, the Massachusetts Bay Transit Authority has added alarms and provided the fire department with longer lasting breathing apparatus for underground fire fighting. The authority also added systems that allow fire fighters to pump water at ground level into reserves more easily accessible inside tunnels.

Washington, D.C.

In Washington, D.C., the leader of the District of Columbia Firefighters' Union says serious flaws in the Metro subway system make a fire disaster a likely possibility.

"There are transformers still in Metro that have PCBs as a coolant," said Tom Tippett, president of the International

Association of Firefighters, Local 36. "When that burns it's the most toxic gas known to man, the most deadly. It's not fire that kills people — it's the gas."

While Carlton Sickles, chairman of Metro's Safety Committee, acknowledged that PCBs were part of the Metrorail System, he said the subway could not be compared with the aged London system.

Sickles said Metro is phasing out all PCB-based transformers, and the last will be removed from the system by October 1990.

The 11-year-old system has never had a fire-related death, he noted.

New York

The nation's largest subway system is in New York City. The National Transportation Safety Board (NTSB) completed an investigation there two years ago and made a series of recommendations on how to reduce fire dangers. Most of the recommendations have been adopted since.

"Fire safety is critical in a rail rapid transit system because fire and smoke in the physical and operating environment of such a system can be extremely hazardous and difficult to control, particularly in a confined space of an underground subway tunnel," the NTSB noted in its report.

Transit Authority spokesman Jared Lebow said there are basic differences between the New York subway system and London's underground.

"The primary difference is the depth of the London system," Lebow said. "Our system is basically a covered trench. In London, they dug tunnels several hundred feet deep.

"It takes a lot longer to get out of one of their stations than one of ours," he said. "One of our advantages is our stations are not that far down."

Lebow noted that the 111 escalators in the New York system are all metal, not wooden like the ones in London.

Pittsburgh, Pa.

In Pittsburgh, Pa., the new subway system predominantly is made of materials such as concrete, granite and glass — materials that do not burn.

"Our modern subway was designed with safety and fire prevention in mind," said Debra DeCoursey, a Port Authority Transit of Allegheny County spokeswoman. "There are few combustible materials in our stations."

Baltimore, Md.

In Baltimore, Md., subway and fire officials insist their four-year-old system is one of the safest in the world.

"The whole system was designed as a very safe environment," said Anita Pesses, spokeswoman for the Mass Transit Administration, which runs the 14-mile subway.

Pesses, who said the system has had only one minor incident since opening in 1983, said stations and tunnels have sophisticated fire fighting equipment, heat and smoke detectors and sprinkler systems.

Each station also has a fire control panel that would show the attendant where a problem is located.

Stations and trains also have fire extinguishers and emergency lighting. There are emergency telephones in all stations and emergency call buttons on all trains.

"I think it's definitely more than adequate," Pesses said, noting that escape hatches leading to the street are situated in tunnels. A fan system is also situated in tunnels to control the direction smoke would blow in an emergency.

San Francisco, Calif.

In San Francisco, officials say they have made a series of improvements since a 1979 fire on a Bay Area Rapid Transit District train killed a fire fighter and injured 46 passengers.

The blaze broke out on a train in the 3.6-mile tunnel that runs under San Francisco Bay connecting San Francisco and Oakland, clogging the tunnel with smoke. The train was 132 feet inside the tube from the Oakland side.

"Since 1979 we have expended between \$40 million and \$45 million in making this perhaps the most fire-safe transit system in the world," BART spokesman Sy Moubert said.

"It would be virtually impossible to have a fire of the magnitude and structure of the 1979 fire from what we've done," Moubert said. "I'm not going to say we can't have a fire. But we would never have a fire like the '79 fire again."

BART completed installing new polyurethane seats in 1981 at a cost of \$25 million. Its cars were "fire-hardened" in 1986 at a cost of \$20 million with the addition of safeguards under the cars and the installation of new fire-resistant walls, floors and ceilings.

Canada

Across the border in Canada, two major fires in the early 1970s resulted in safety improvements being made in the Montreal subway system.

?
1.32
miles

On Dec. 9, 1971, a Metro car crashed and caught fire at a station, killing the train operator and causing \$7 million damage. Another blaze, on Jan. 23, 1974, destroyed a nine-car train caught between two stations and forced thousands of commuters to flee smoke-filled tunnels.

The Metro was subsequently equipped with emergency power generators, extra fire extinguishers and improved communications. Plastic seats on trains were replaced with flame-resistant fabric seats.

Water hydrants were built into subway tunnels and hand-operated extinguishers installed in all Metro stations. All terminal stations, garages and machine shop areas were also equipped with sprinkler systems. Cut-off switches were installed to shut down power on train tracks in the event of an emergency.

"It was a fortune, but the overhaul was done and Montreal now has one of the safest subways in the world," said Abe Limonchik, a city councillor who also sits on the Board of Directors of the Montreal Transit Commission.

"Compared to London's underground system . . . Montreal's is quite safe — made mostly of concrete with aluminum escalators," said Guy Chartrand of Transport 2000, a public transit lobby group.

In Toronto, the last major fire was in 1976 when an arsonist set fire to a train car. There were no injuries.

"We have a much newer system in Toronto," said Assistant Deputy Fire Chief Joe Underwood. "It's not built out of combustible material, such as wood and so on, like London's."

Added Toronto Transit Commission Chief General Manager Al Leach: "Knowing the design of our system, the fire precautions we have and the fact our system is brand new compared to London's, I would think the likelihood of something similar happening here would be remote." ■

LETTER TO THE EDITOR

Dear Mr. Thomas:

"In the December 1987 Volume 13 (No. 12) of the *Fire Control Digest* was an article called "Fire Sprinklers vs Smoke Detectors. I would like to comment on this article.

"First let me say that both the sprinkler and detector are wonderful devices for fire protection purposes. It's unfortunate they weren't available to the public twenty or more years ago.

"No one system is a guarantee, each has its draw backs. Both systems are designed by, installed by, sold by and maintained by 'MAN.' What really concerns me is that we are at a time that the fire service is making progress in the area of residential life and fire protection. Now is not the time to draw battle lines over which system is better. Should the fire protection service and industry get involved in the battle over the better system, we will weaken ourselves by being indecisive and strengthen our opponents.

"We must stick together to combat the loss of life and property from the destructive forces of fire."

/s/ Jack P. Graves, Fire Marshal
Emporia (KS) Fire Department ■

CONSUMER PRODUCT SAFETY COMMISSION TO DEVELOP CIGARETTE LIGHTER STANDARD

Trying To Make Them Child Resistant

The government's consumer protection agency has announced plans to develop a mandatory standard to make cigarette lighters child resistant.

The Consumer Product Safety Commission unanimously agreed to include all cigarette lighters, not just disposable ones, in a proposal to be developed after weighing concerns about injuries from the public and voluntary standards offered by lighter manufacturers.

The rule-making proceeding begins immediately and is expected to be completed in one year, officials said.

The agency concluded that children less than five years old die in home fires at a per capita rate twice the rate for all other age groups combined and one-third of them die in fires started by children playing with cigarette lighters or matches.

During 1985, an estimated 11,000 fire department attended fires were started by cigarette lighters. These fires resulted in 180 deaths, 1,150 injuries and \$84.5 million in property damage. One percent of the 11,000 fires were attributed to lighter malfunction.





Cross Reference
See Section II
Design Review
Comments Dated
2-9-88

88-00556

MEMORANDUM

February 10, 1988

TO: R. Keenan

FROM: ~~M. Ingram~~ *M. Ingram*

SUBJECT: Review Comments - Proposed Addendum No. 4
A710 Escalators

FILE NO: S440A710X028

In response to A. Sanderson's memo dated 2/4/88 on the referenced subject, MRTC Safety, Assurance & Security submits the attached comments for resolution.

Additionally, the following information is provided in response to your telecon this date pertaining to H. Storey's memo dated 2/4/88 (DCC #88-00501). One of the concerns briefly discussed in this memo centered on the safety issues associated with the use of aluminum in subway stations. Subsequent to your call, I talked to Hal on the specific issue of the use of aluminum in escalators. I informed Hal that the A710 specification allowed the use of aluminum in step assemblies (step frame, step treads, and step risers). Hal indicated his primary concern was the use of aluminum in structural support members that may lose structural integrity when subjected to fire. After additional discussion, it was determined that the use of aluminum as allowed by our current A710 specifications and proposed addendum did not result in unacceptable conditions from a standpoint of Fire/Life Safety, based on the following existing provisions:

- o Escalator trusses and associated support members are required to be constructed of structural steel, with very conservative design load safety factors required by ANSI A17.1.
- o Noncombustible products only are permitted to be used in escalator systems.
- o Escalator machine pits are sprinkled.
- o Electrical service must comply with the National Electrical Code, which provides short circuit and circuit overload protection.

15788

R. Keenan
February 10, 1988
Page 2

By copy of this memo, MRTC Safety, Assurance & Security is responding to the referenced H. Storey memo relative to the use of aluminum in escalators. Should you have further questions please contact me at extension 7134.

MI:djr

cc: J. N. Brown	A. Sanderson
H. J. Chaliff	H. Storey - SCRTD
A. M. Dale	DCC (2)
K. N. Murthy	Chron/Subject Files





MEMORANDUM

DATE: February 4, 1988
TO: Distribution
FROM: A. Sanderson *(Signature)*
SUBJECT: A710 Escalator -- Addendum 4

This memo transmits a proposed addendum (No. 4) for review and comments. Please return comments to MRTC (Keenan) by 2/9/88. The addendum will be scheduled for action by the CCB on 2/15/88 and for distribution to planholders on 2/18/88.

The revisions are being made because of comments transmitted to the District by potential bidders. The changes will permit suppliers to provide escalators closer to their proven, standard units than would be possible using the original specification.

cc: D. Schiehl, LA County Fire Dept.
K. Murthy, MRTC
A. Sanderson, MRTC
E. Pollan, SCRTD/SDA
M. Ingram, MRTC
H. Storey, SCRTD
D. Bartlett, LAFD
L. Pham, SCRTD
D. Vest, SCRTD
R. Sechler, SCRTD
R. Keenan, MRTC
H. Chaliff, MRTC



M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
SYSTEMS AND CONSTRUCTION SAFETY

DATE: February 26, 1988
TO: R. Keenan
FROM: H. Storey *HS*
SUBJECT: A710 Escalator Contract Comments

RECEIVED
FEB 29 1988
D. C. C.

The Systems and Construction Safety Department has reviewed the subject document and finds it complete. We have no further comments at this time.

cc: L. Boyden
L. Pham
~~M. Ingram~~





RTD

William J. Rhine
Acting Assistant General Manager
Transit Systems Development

88-01500

RECEIVED

APR 13 1988

D.C.C.

April 8, 1988

Mr. Steven A. Jablonsky
Executive Officer
Occupational Safety and Health Standards Board
1006 4th Street, 3rd Floor
Sacramento, CA 95814

SUBJECT: Request for Variance from Cal/OSHA Regulations Under
Section 3090,b,1,B of the Escalator Safety Orders
(CAC Title 8)

Dear Mr. Jablonsky:

The Southern California Rapid Transit District (SCRTD), 425 South Main Street, Los Angeles, California 90013, has undertaken design and construction of a subway transit system which will service the City and County of Los Angeles and interface with other public transportation serving the Southern California area. Stations within the SCRTD system will have stairs and escalators to be used as primary means of ingress and egress from street level to the train platforms. These elements will also be used for emergency exiting in the event of fire or other evacuation emergencies.

In the event of such an emergency, all escalators and stairs will be required to safely evacuate patrons and employees in the most rapid and orderly manner. This will require stopping of escalators so that they may be used for emergency egress. The method required for an emergency escalator stop will be by remote control from station Fire Department Emergency Management Panels preceded by a public address system message announcing that escalators are about to stop. However, station Emergency Management Panels, which will be in locations that allow best access for Fire Department personnel, will not be in sight of all escalator locations. To alleviate this circumstance, an automatic warning recording, which will be followed by a timed delay to permit patrons to leave the escalators, is being provided before the escalators can be stopped.

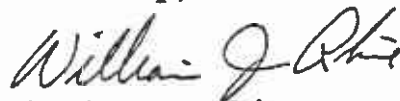
Emergency conditions confronting an underground transit system are unique in many respects and the occurrence of an emergency situation will require rapid and effective evacuation of patrons which will be controlled by Los Angeles City Fire Department personnel. Ample warning will precede the emergency action and patrons will generally be attempting to exit the station before escalators are stopped.

The Southern California Rapid Transit District and the Los Angeles City Fire Department have carefully analyzed all aspects of both patron and employee safety and firmly believe that this approach is the safest of all alternatives and provides a safer system than would be provided without the ability to stop all down moving escalators quickly and efficiently. It is estimated that patron panic accidents would far outweigh any advantages gained by requiring Fire Department personnel to proceed to each escalator location during an emergency to activate the stop button. For escalator maintenance, SCRTD employees will stop an escalator only through use of the stop button at each escalator.

Therefore, SCRTD requests variance for escalator remote-stop capability from the referenced safety order. The variance would affect escalators in 5 stations presently under construction in downtown Los Angeles and in approximately 12 additional stations to be constructed between downtown Los Angeles and North Hollywood as shown in the enclosure indicating the downtown alignment and the tentative extension to North Hollywood. Addresses of these stations are as indicated by the street intersections shown on the attached alignment drawings. Three copies of pertinent escalator contract drawings, specifications and other relevant materials are enclosed for your information and reference.

It is estimated that the approximate time required for the hearing will be one hour, and four witnesses would be called by the SCRTD. It would be appreciated if a hearing could be scheduled during the first week of May, 1988. If you have any questions, please contact Mr. Harold E. Storey, Director, Systems and Construction Safety, at telephone (213) 972-3441.

Sincerely,



William J. Rhine
Acting Assistant General
Manager
Transit Systems Development
Department

Attachments:

- o Letters to SCRTD Unions (Attachment A)
- o Notice to Employees - Escalator Variance (Attachment B)
- o Address Locations/Route Maps (Attachment C)
- o Drawings of Escalator and EMP Locations (Attachment D)
- o Drawings of Emergency Stop Button (Attachment E)
- o Drawings of EMP/PA Panel (Attachment F)
- o Specification - Emergency Stop Button (Attachment G)
- o Specification - EMP/PA Control Panel (Attachment H)

cc: Battalion Chief R. Aaron
Los Angeles City Fire Department
K. Yamanaka, Hearing Officer
Occupational Safety and Health Standards Board

bcc: C. Safer
H. Storey
D. Low
L. Pham
~~M. Ingram~~
J. Richeson



RECEIVED

JUN 21 1988

D. C. G.

M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
SYSTEMS AND CONSTRUCTION SAFETY

Date: June 16, 1988

To: Howard J. Chaliff

From: William J. Rhine



Subject: Notice of Hearings Concerning
Requests for Variances from Cal/OSHA Regulations
Involving Elevator Hoistway/Cab Glass and Escalator
Remote Stop Capability

For your information, I have attached copies of my June 16 and 17, 1988 correspondence to Mr. Charles Safer of the District's Legal Department concerning the subject notices of hearings involving requests for variances. You will note in this correspondence a need for Malcolm Ingram of your staff to accompany Harold Storey to Sacramento for two July 12, 1988 hearings before the California Occupational Safety and Health Standards Board. Please arrange to have Mr. Ingram participate in these two hearings.

In addition, I would like you to have the relevant MRTC staff involved in the design of the elevators, escalators and EMP panel available to brief Messrs. Storey, Ingram, Aaron and Schiehl on the details of these matters. Also, I would like you to provide Mr. Storey with the necessary assistance in the preparation of several graphic enlargements as outlined in the attached correspondence.

Attachments

cc: M. Ingram
C. Safer
H. Storey

REFERENCE 88-02717 for
ATTACHMENT relative to
Escalators.

MI
8/18/88



88-02717

Attachments to this
MEMO ARE ON file
with MRTC
Document (control)
CENTER UNDER THE
ABOVE ACCESSION NUMBER.

M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
SYSTEMS AND CONSTRUCTION SAFETY

 DATE: June 16, 1988
 TO: Charles Safer
 FROM: William J. Rhine *William J Rhine*
 SUBJECT: Request for Variances from CAL/OSHA
 Regulations Under Section 3090,b,1,B of the
 Escalator Safety Orders
 (CAC Title 8) OSHSB File No. 88-V-021

RECEIVED
 JUN 21 1988
 M I
 8/12/88
 D. C. G.

For your information and comment on the following, I have attached a Notice of Hearing dated June 13, 1988, from the State of California, Department of Industrial Relations, Occupational Safety and Health Standards Board. This hearing is scheduled for July 12, 1988, at 11:00 a.m. in Sacramento, California and is to be held in response to our request (copy to you) of April 8, 1988, for variance from the subject safety order.

As required by this Notice of Hearing, I will again be notifying the District's various Union Representatives and non-contract employees about this subject and hearing.

In addition, I have attached a copy of "Description of Variance Procedures Before the Occupational Safety and Health Standards Board" received from the OSHSB and from which I have excerpted the following:

The Standards Board recognizes that few applicants or employees have ever attended or taken part in an administrative law proceeding. Therefore, it is the goal of the Board to keep these proceedings as simple as possible so that an employer can represent itself. The Hearing Officer assigned to the case will explain the rules and procedures and assist the parties to the extent necessary. All testimony is taken under oath and all witnesses are subject to cross-examination by the parties of record.

The procedures are generally:

1. The Applicant will present its case to the Hearing Panel. The Hearing Officer will ask the Hearing Panel and parties if there are any questions about the proposal.
2. The Division representative will present any additional evidence regarding the Division's evaluation of the Applicant's proposed method of providing equivalent safety. Everyone will have an opportunity to ask the Division's representative about the Division's recommendation.
3. The Board's staff will also present any additional testimony regarding the findings from his or her independent investigation of the variance application. Everyone will have an opportunity to ask questions about the staff's recommendation.
4. If employees have party status, their representative will also participate in this process.

Also, on April 14, 1988 the OSHSB wrote:

The Board may grant a permanent variance only if it determines that the Applicant has demonstrated by a preponderance of evidence that the conditions, practices, means, methods, operations or processes used or proposed to be used by the employer will provide equivalent safety as that required by the regulation(s) from which the variance is being sought.

At this time it is my intent to have Harold E. Storey, Metro Rail Project Director of Systems and Construction Safety, present this case on behalf of the District, unless you deem it more appropriate for yourself or other District representation to fill this role. I also plan on having Los Angeles City and County Fire Department representatives, Battalion Chiefs R. Aaron and R. Schiehl, along with M. Ingram from MRTC (our design consultant), accompany H. Storey and present witness testimony in support of this variance.



M E M O R A N D U M

SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT
 TRANSIT SYSTEMS DEVELOPMENT DEPARTMENT
 SYSTEMS AND CONSTRUCTION SAFETY

RECEIVED

JUN 24 1988

D. C. C.

DATE: June 21, 1988

TO: Charles Safer

FROM: William J. Rhine

William J. Rhine

SUBJECT: Request for Variances from CAL/OSHA Escalator and
 Elevator Regulations
 OSHSB File No.'s 88-V-020 & 88-V-021

For your information, I have attached copies of two June 13, 1988 reports which were prepared by the staff of the Division of Occupational Safety and Health concerning the subject requests and forwarded to me on June 15, 1988. These reports concern my memorandums to you of June 16 and 17, 1988, outlining the pending hearings before the CAL/OSHA Standards Board on July 12, 1988.

The staff reports recommend to the Standards Board that the requested variances be granted at the hearing on July 12, pending several listed conditions. These conditions are in regard to escalator operating procedures and the type of glass to be used in the elevator doors. These conditions can be met by the District and are basically a verification that the District will construct and operate the escalators and elevators as described in our variance submittals of April 6 and 8, 1988.

With copy of this memorandum, I am forwarding these CAL/OSHA reports to Mr. Howard Chaliff of MRTC for review and comment by his staff before June 30, 1988.

Attachment

cc: H. Storey
 H. Chaliff
 R. Aaron
 R. Schiehl
 M. Ingram
 J. Richeson

OSHSB File No. 88-V-021 relative to
 Escalators follows.

OSHSB File No. 88-V-020 relative to
 ELEVATORS has been included in
 CRITERIA CONFORMANCE file for CONTRACT
 A720.

MI
 8/18/88

OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD
1006 FOURTH STREET
SACRAMENTO, CA 95814-3372
(916) 322-3640

RECEIVED
SORTD-TED
ASST. GENERAL MANAGER

JUN 20 1988

June 15, 1988

ITEM # _____
FILE # SI 2 CA

William J. Rhine
SOUTHERN CALIFORNIA RAPID
TRANSIT DISTRICT
425 South Main Street
Los Angeles, CA 90013

Dear Mr. Rhine:

SUBJECT: SOUTHERN CALIFORNIA RAPID TRANSIT DISTRICT (RTD)
OSHSB File No. 88-V-021

Attached is a copy of an evaluation report regarding your variance request in the above-referenced matter. This report was prepared by the staff of the Division of Occupational Safety and Health and will be discussed at the hearing on July 12, 1988. This report does not represent a decision of the Standards Board in this matter.

Sincerely,



GWEN JONES
Variance Secretary

Attachment

RECEIVED

JUN 14 1988

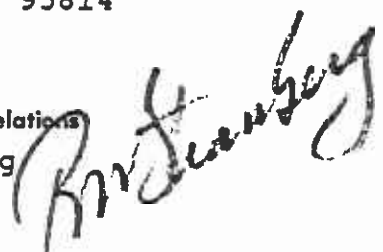
CAL/OSHA
STANDARDS BOARD

Date : June 13, 1988

Memorandum

To : Steven A. Jablonsky
Executive Officer
OSH Standards Board
1006 Fourth Street, Third Floor
Sacramento, CA 95814

From : Department of Industrial Relations
R. W. Stranberg
Chief - DOSH



Subject: Division's Review of the Application for Permanent Variance
Southern California Rapid Transit District (RTD)
OSHSB File No. 88-V-021

INTRODUCTION

On April 8, 1988, William J. Rhine, Acting Assistant General Manager of RTD, applied for a permanent variance from the provisions of the California Code of Regulations, Title 8, Section 3090(b)(1)(B) of the Elevator Safety Orders with respect to remote control of emergency escalator stops in addition to the emergency stop buttons on each escalator landing. Review of the application indicates that the correct section from which the variance is sought is 3090(b)(1)(C).

REASON FOR APPLICATION FOR PERMANENT VARIANCE

To provide quicker and more efficient control to stop the escalators in the event of fire or other emergency in order that the escalators in conjunction with stairways can be utilized to safely evacuate patrons and employees in the most rapid and orderly manner from underground transit stations.

SUMMARY

Section 3090(b)(1)(C) of the Elevator Safety Orders states, in part:

(C) Escalators may be arranged to be started and stopped from remote locations only with prior approval from the Division. Such approval will be based on, but not limited to the applicant demonstrating that:

1. There shall be provided an acceptable means of viewing the run and landing of the escalator at the remote location.

SURNAME



Ciofalo

Steven A. Jablonsky
Page 2
June 13, 1988

Subject: Division's Review of Application for Permanent Variance
Southern California Rapid Transit District (RTD)
OSHSB File No. 88-V-021

2. There shall be provided an acceptable means of communication between the escalator and the remote location.

It is from these regulations the RTD is seeking a permanent variance to stop the escalators from a remote location so patrons and employees can be evacuated.

It is the Division's opinion that stopped escalators should not be used as means for egress. However, the RTD and the Los Angeles City Fire Department are of the opinion that this proposed procedure will afford the safest of all alternatives for the evacuation of patrons and employees. The method proposed for an emergency escalator stop will consist of activation by Fire Department personnel preceded by a public address system warning and a time delay to permit persons to leave the escalator before the stop.

RECOMMENDATIONS

The Division is of the opinion that a permanent variance be granted subject to the following conditions:

1. Ample warning shall be provided to alert escalator riders that the device will be stopped following a time delay.
2. The activation of the remote control system shall be done only by an authorized person and after the warning.
3. The remote control system shall be arranged only to stop the escalators; no restarting of the escalators from the remote control panel is allowed.
4. The Fire Department emergency management panels shall not be accessible to unauthorized persons or be located where they could be damaged.

/lk

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

1006 FOURTH STREET
SACRAMENTO, CA 95814-3372
(916) 322-3640

DECLARATION OF SERVICE BY MAIL

I, Gwen Jones, declare as follows:

I am a citizen of the United States, over the age of 18 years and not a party to the within action; my place of employment and business address is 1006 - Fourth Street, Third Floor, Sacramento, California 95814.

On June 15, 1988, I served the attached Review of the Application for Permanent Variance for Southern California Rapid Transit District (RTD), from the provisions of the California Code of Regulations (formerly California Administrative Code), Title 8, Section 3090(b)(1)(C) of the Elevator Safety Orders, OSHSB File No. 88-V-021, by placing a true copy thereof in an envelope addressed to the persons named below at the address set out immediately below each respective name, and by sealing and depositing said envelope in the United States Mail at Sacramento, California, with postage thereon fully prepaid. There is delivery service by United States Mail at each of the places so addressed, or there is regular communication by mail between the place of mailing and each of the places so addressed:

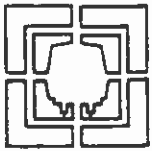
William J. Rhine
SOUTHERN CALIFORNIA RAPID
TRANSIT DISTRICT
425 South Main Street
Los Angeles, CA 90013

I declare under penalty of perjury that the foregoing is true and correct.

Executed on June 15, 1988, at Sacramento, California.


SIGNATURE





METRO RAIL TRANSIT CONSULTANTS
DMJM / PBQD / KE / HWA

RECEIVED
JUL 01 1988

June 30, 1988

Mr. William J. Rhine
Acting Assistant General Manager
Southern California Rapid Transit District
425 South Main Street
Los Angeles, California 90013

Subject: Request for Variances from CAL/OSHA Escalator
and Elevator Regulations
OSHSB File Nos. 88-V-020 and 88-V-021

Purpose: Information Transmittal

File No: P001X084

Dear Mr. Rhine:

Per your request, MRTC has reviewed the CAL/OSHA subject reports.
We take no exception to their analysis.

With the current documentation and hearings before the CAL/OSHA
Standards Board scheduled for July 12, 1988, SCRTD should be in
full compliance with the recommendations found in the reports.

Attached for your information are MRTC staff review comments on
the reports. If we can be of further assistance to you in this
matter, please contact me.

METRO RAIL TRANSIT CONSULTANTS

Howard J. Chaliff
Howard J. Chaliff
Project Director

HJC/RK/cla

Attachments

cc: J. E. Crawley
C. Safer
T. Richeson
H. Storey
R. Aaron
R. Schiel
DCC(2)

Only the info pertaining to OSHSB
File No. 88-V-021 (Escalators) is
included here. Info pertaining to
OSHSB File No. 88-V-020 (Elevators)
has been included in the Criteria
Conformance file for contract A720.
bcc: A. M. Dale
K. N. Murthy
M. Ingram
R. Keenan
B. E. Blakesley

MI
8/18/88

A640 Communications
A710 Escalators
OSHSB File No. 88-V-021
6/30/88

RESPONSE TO RECOMMENDATIONS

1. Refer to Contract A640 Technical Provisions Paragraph 10.4.2-D.3. An automatic public address announcement and time delay is required before the escalator power is interrupted.
2. The activation of the remote control is only via a pushbutton on the EMP. This button is behind locked steel doors. Refer to Contract A640 drawing N-050 and N-058.
3. No provision is made on the EMP, or elsewhere, to remotely restart the escalators. The control button in the EMP is labelled "ESCALATOR STOP." Refer to Contract A640 drawings N-058 and N-258.
4. The EMPs are flush mounted steel cabinets, located within the passenger stations, within view of the escalators. The doors are keyed in such a manner as to allow only emergency personnel access to the controls. Refer to Contract A640 drawing N-050 and Contract A640 Technical Provisions Paragraph 10.4.1.A.

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JUN 14 1988

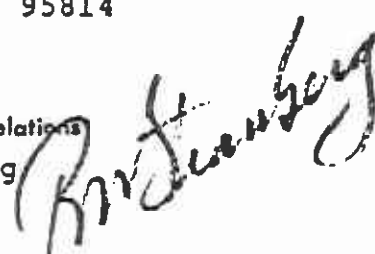
CAL/OSHA
STANDARDS BOARD

Date : June 13, 1988

Memorandum

To : Steven A. Jablonsky
Executive Officer
OSH Standards Board
1006 Fourth Street, Third Floor
Sacramento, CA 95814

From : Department of Industrial Relations
R. W. Stranberg
Chief - DOSH



Subject : Division's Review of the Application for Permanent Variance
Southern California Rapid Transit District (RTD)
OSHSB File No. 88-V-021

INTRODUCTION

On April 8, 1988, William J. Rhine, Acting Assistant General Manager of RTD, applied for a permanent variance from the provisions of the California Code of Regulations, Title 8, Section 3090(b)(1)(B) of the Elevator Safety Orders with respect to remote control of emergency escalator stops in addition to the emergency stop buttons on each escalator landing. Review of the application indicates that the correct section from which the variance is sought is 3090(b)(1)(C).

REASON FOR APPLICATION FOR PERMANENT VARIANCE

To provide quicker and more efficient control to stop the escalators in the event of fire or other emergency in order that the escalators in conjunction with stairways can be utilized to safely evacuate patrons and employees in the most rapid and orderly manner from underground transit stations.

SUMMARY

Section 3090(b)(1)(C) of the Elevator Safety Orders states, in part:

(C) Escalators may be arranged to be started and stopped from remote locations only with prior approval from the Division. Such approval will be based on, but not limited to the applicant demonstrating that:

1. There shall be provided an acceptable means of viewing the run and landing of the escalator at the remote location.



Steven A. Jablonsky
Page 2
June 13, 1988

Subject: Division's Review of Application for Permanent Variance
Southern California Rapid Transit District (RTD)
OSHSB File No. 88-V-021

2. There shall be provided an acceptable means of communication between the escalator and the remote location.

It is from these regulations the RTD is seeking a permanent variance to stop the escalators from a remote location so patrons and employees can be evacuated.

It is the Division's opinion that stopped escalators should not be used as means for egress. However, the RTD and the Los Angeles City Fire Department are of the opinion that this proposed procedure will afford the safest of all alternatives for the evacuation of patrons and employees. The method proposed for an emergency escalator stop will consist of activation by Fire Department personnel preceded by a public address system warning and a time delay to permit persons to leave the escalator before the stop.

RECOMMENDATIONS

The Division is of the opinion that a permanent variance be granted subject to the following conditions:

1. Ample warning shall be provided to alert escalator riders that the device will be stopped following a time delay.
2. The activation of the remote control system shall be done only by an authorized person and after the warning.
3. The remote control system shall be arranged only to stop the escalators; no restarting of the escalators from the remote control panel is allowed.
4. The Fire Department emergency management panels shall not be accessible to unauthorized persons or be located where they could be damaged.

/lk





88-03231

RECEIVED
JUL 19 1988

July 19, 1988

Mr. Keith T. Yamanaka
Hearing Officer
Occupational Safety and Health Standards Board
1006 Fourth Street
Sacramento, California 95814-3372


Re: Southern California Rapid Transit District
OSHSB NO. 88-V-021

Dear Mr. Yamanaka:

Thank you for your letter of July 14, 1988, concerning the District's request for variance from escalator code section 3090(b)(1)(B).

Please amend the District's request for variance to read, "variance from section 3090(b)(1)(C)" so as to cite the appropriate code as suggested in your Division's report of June 13, 1988 and at the hearing on July 12, 1988.

Sincerely,


Harold E. Storey
Director
Systems and Construction Safety
Transit Systems Development
Department

cc: R. Aaron

R. Schiehl

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

1006 FOURTH STREET
SACRAMENTO, CA 95814-3372
(916) 322-3640



July 14, 1988

RECEIVED
SCRTD - TSD
SYSTEMS & CONSTRUCTION SAFETY

JUL 19 1988

ITEM # _____

FILE # _____

Harold Storey
Transit Systems Development
Director of Systems and Construction Safety
Southern California Rapid Transit District
425 South Main Street
Los Angeles, CA 90013

Re: Southern California Rapid Transit District
OSHSB No. 88-V-021

Dear Mr. Storey:


At the July 12, 1988, hearing in this matter, testimony was taken from SCRTD witnesses and the Division witness about the application for a permanent variance. The Division testified about the four recommended conditions in its June 13, 1988, memorandum, and you indicated on behalf of SCRTD that there were no objections to the conditions and that, in fact, the Metro Rail Project would be in compliance with the recommended conditions.

However, I note that your application was from a variance from section 3090(b)(1)(B), while the Division's recommendations were made with respect to 3090(b)(1)(C). The Division stated in its report that section 3090(b)(1)(C) was the appropriate section.

I assume that you would want your application to be amended to request a variance from section 3090(b)(1)(C) instead of section 3090(b)(1)(B), but the amendment must be accomplished formally.

Therefore, if you would like your application amended to section 3090(b)(1)(C), please send me a letter stating your request as soon as possible so that the proposed decision will not be delayed.

Sincerely,


Keith Tohru Yamanaka
Hearing Officer

cc: R. W. Stranberg, DOSH



MI
8/9/88

A D D E N D U M

covering

CHANGE IN SPECIFICATIONS AND/OR PLANS

Date Issued: July 12, 1988

Addendum No: A710-1

Addendum Date: July 11, 1988

Bid No: _____

Contract: A710: ESCALATORS AND ELEVATORS

INTENT

1. This addendum is issued prior to receipt of bids to provide for modifications in Contract Drawings and Specifications. Acknowledgement of this addendum shall be made, and cost of work included or excluded, in bidder's proposal.

2. This addendum consists of the following items:

The Bid Opening date has been changed from July 11, 1988 to August 12, 1988.

Revisions to the following Specification Sections and the pages included:

- Outside Cover.
- Inside Cover Page.
- Table of Contents. Pages 1 of 2 and 2 of 2.
- Invitation to Bid. Pages 1 and 2.
- Instructions to Bidders. Pages 7, 8, 11, 12, 13 and 14.
- Proposal Letter. Page 1 of 4.
- Schedule of Quantities and Prices.
(Bid Form A). Pages 1 of 3 through 3 of 3.
(Bid Form C). Page 1 of 1.
- List of Proposed Subcontractors. Page 1 of 2.
- List of Proposed DBEs. Page 1 of 2.
- Good Faith Efforts Certificate. Page 1 of 1.
- Buy America Certificate for Compliance. Page 1 of 1.
- Buy America Certificate for Non-Compliance. Page 1 of 1.
- Bidders Qualifications and Business References Questionnaire. Page 1 of 6.
- Contract Agreement. Page 1 of 2.
- Performance Bond. Pages 1 of 2.
- General Conditions. Pages 33 of 91, 34 of 91, 43 of 91, 44 of 91, 77 of 91, 78 of 91, 81 of 91 and 82 of 91.

- ° Special Conditions. Pages 1 of 4 through 4 of 4.
- ° Minimum Wages. Pages 1 of 68 through 68 of 68.

- ° Specification Table of Contents. Page 1 of 1.
- ° Section 01010, Summary of the Work. Pages 1 through 5.
- ° Section 01200, Contract Meetings. Pages 1 and 2.
- ° Section 01450, System Assurance. Pages 1 through 9.
- ° Section 01710, Cleaning. Pages 1 and 2.
- ° Section 01730, Operation and Maintenance Data. Pages 1 through 6.
- ° Section 14310, Escalator. Pages 9, 10, 13, 14, 17 and 18.
- ° Section 16050, Basic Electrical Materials and Methods. Pages 1 through 8.
- ° Section 16500, Lighting. Pages 1 and 2.

Specification addendum revisions are identified by the Addendum Number in the margins before and after each line modified. Pages changed due to relocation of lines or paragraphs that are not modified by addendum will not have identifying numbers, but are included to keep the Contract Specifications Book intact and continuous. Please place the enclosed pages in your Contract Specifications Book and remove amended pages.

The following Sections have been ADDED:

- ° Section 01412, Testing Laboratory. Pages 1 and 2.
- ° Section 09900, Painting. Pages 1 through 12.
- ° Section 14200, Elevators. Pages 1 through 25.
- ° Section 16640, Cathodic Protection. Pages 1 through 5.

The Bid Form B has been DELETED.

A new drawing package has been ISSUED with this addendum. Discard the previous set and replace with the attached set which includes the following drawings:

<u>Sheet No.</u>	<u>Drawing No.</u>	<u>Sheet No.</u>	<u>Drawing No.</u>
Title Page		15	AP-014
Cover Page with Signatures		16	AP-015
3	AP-001	17	AP-016
4	AP-003	18	AP-017
5	AP-004	19	AP-018
6	AP-005	20	AP-019
7	AP-006	21	AP-020
8	AP-007	22	AP-021
9	AP-008	23	AP-022
10	AP-009	24	AP-023
11	AP-010	25	AP-024
12	AP-011	26	AP-025
13	AP-012	27	AP-026
14	AP-013	28	AP-027

Sheet No.

Drawing No.

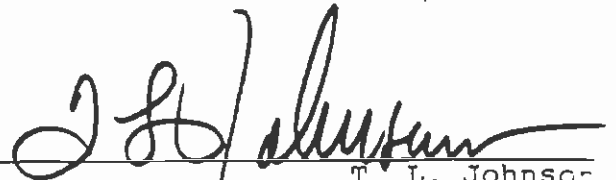
Sheet No.

Drawing No.

29	AP-028
30	AP-029
31	AP-102
32	AP-104
33	AP-105
34	ES-064D
35	HP-001
36	HP-002
37	HP-003

38	HP-004
39	HP-005
40	HP-006
41	HP-007
42	HP-008
43	HP-019
44	HP-011
45	AS-018
46	AS-025

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T. L. Johnson
Assistant Director
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Procurement and Materiel

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8/9/88

A D D E N D U M

covering

CHANGE IN SPECIFICATIONS AND/OR PLANS

Date Issued: August 2, 1988

Addendum No: A710 -2

Addendum Date: August 2, 1988

Bid No: _____

Contract: A710R: ESCALATORS AND ELEVATORS

INTENT

1. This addendum is issued prior to receipt of bids to provide for modifications in Contract Drawings and Specifications. Acknowledgement of this addendum shall be made, and cost of work included or excluded, in bidder's proposal.

2. This addendum consists of the following items:

The Bid Due Date has been changed from August 12 to August 19, 1988.

Revisions to the following Specification Sections and the pages included:

- ° Table of Contents. Pages 1 of 2 and 2 of 2.
- ° Invitation to Bid. Pages 1 and 2.
- ° Bid Form A. Pages 1 through 3.
- ° Special Conditions. Pages 1 and 2.

- ° Specifications Table of Contents. Page 1 of 1.
- ° Section 14200, Elevators. Pages 1 through 27.
- ° Section 14310, Escalators. Pages 5 through 22.

Specification addendum revisions are identified by the Addendum Number in the margins before and after each line modified. Pages changed due to relocation of lines or paragraphs that are not modified by addendum will not have identifying numbers, but are included to keep the Contract Specifications Book intact and continuous. Please place the enclosed pages in your Contract Specifications Book and remove amended pages.

Revised and New Contract Drawings as follows:

Revised Drawings:

Revised Drawings:

<u>Sheet No.</u>	<u>Drawing No.</u>	<u>Sheet No.</u>	<u>Drawing No.</u>
<u>A710</u>			
6	AP-005	becomes 38	HP-004
38	HP-004	becomes 6	AP-005
3	AP-001		

NOTE: drawing index continues on sheet 35.

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