TRIENNIAL ON-SITE SAFETY AUDIT OF THE SACRAMENTO REGIONAL TRANSIT DISTRICT

RAIL TRANSIT SAFETY SECTION
RAIL TRANSIT AND CROSSING BRANCH
CONSUMER PROTECTION AND SAFETY DIVISION
CALIFORNIA PUBLIC UTILITIES COMMISSION
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FINAL REPORT

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The Rail Transit Safety Section staff (staff) of the California Public Utilities Commission's (Commission) Consumer Protection and Safety Division conducted the third triennial, on-site, safety audit of the Sacramento Regional Transit District (SRTD) from June 20, 2005 to June 24, 2005. On Monday, June 20, 2005 a pre-audit conference was held with SRTD personnel, including Chief of Facilities and Business Support Services, various Managers, and Superintendents. A post-audit conference, also attended by SRTD personnel including General Manager, Chief Operating Officer, various Managers, and Superintendents, was held on Thursday July 7, 2005.

The audit results indicate that generally SRTD is effectively implementing its System Safety Program. Exceptions however were noted during the audit. These are described, where applicable, in the Results/Comments Section of each checklist along with recommendations to correct identified exceptions. Fourteen checklists contain recommendations.

Staff audited 10 SRTD departments on 32 separate subjects using specific criteria (checklists) and made 14 recommendations. The audit also identified areas where improvements should be made to further improve SRTD safety program. For example, the Safety Department needs to improve the quality of its accident investigation reports and enhance its accident investigation procedures (Checklist No. 6). Wayside Maintenance Department should correct the deficiency noted during the signal system inspection to properly perform ¼" obstruction tests of its power switches (Checklist No. 2). Vehicle Maintenance Department should adhere to Light Rail Vehicle (LRV) inspection frequencies (Checklist No. 21).

The introduction of this report is stated in Section 2. The background, Section 3, contains SRTD rail system description and 2002 audit results. Sections 4 and 5 respectively depict 2005 audit procedure, and findings and recommendations. The Acronyms are listed in Appendix A. SRTD 2005 Triennial Safety Audit Checklist Index, Recommendations List, and the Checklists are included in Appendices B, C, and D, respectively.

2. INTRODUCTION

The Commission's GO 164-C, Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems, and the Federal Transit Administration's (FTA) Final Rule, 49 CFR Part 659 require staff to perform triennial, on-site, safety audits of each transit agency. The purpose of these audits is to verify compliance with, and evaluate the effectiveness of, each rail transit agency's System Safety Program Plan (SSPP). SRTD was last audited in June 2002.

On April 8, 2005, staff sent a letter to SRTD General Manager (GM), advising her that the system inspection portion of the triennial audit would be scheduled on May 10, 2005 through May 13, 2005 and the second part of the third on-site triennial safety audit would be scheduled for the week of June 20. This letter included four checklists for light rail vehicle, track and switch, gated grade crossing warning devices, and traction power inspections. On May 20, 2005, staff sent a second letter confirming the audit dates for the second part and enclosed 28 checklists that would serve as the basis for the audit.

FRA-certified inspectors from the Railroad Operation and Safety Branch of the Commission's Consumer Protection and Safety Division inspected the SRTD light rail vehicle, track and switch, and gated grade crossing warning devices. Staff performed the traction power inspections on May 11 and 12, 2005. Staff conducted the third triennial, on-site, safety audit of SRTD from June 20 to June 24, 2005. The on-site audit was preceded by a pre-audit conference with SRTD personnel including Chief of Facilities and Business Support Services, various Managers and Superintendents, on Monday, June 20, 2005. A post-audit conference, also attended by SRTD personnel including Chief Operating Officer, various managers, and superintendents, was held on Thursday, July 7, 2005. At the post-audit conference, staff provided SRTD representatives a synopsis of the preliminary findings and recommendations from the 32 checklists. Staff explained that a preliminary draft audit report would be prepared for SRTD review and comments.

3. BACKGROUND

SRTD is governed by an 11-member Board of Directors comprised of members of the Sacramento, Rancho Cordova, Citrus Heights, Elk Grove, Folsom City Councils as well as the Sacramento County Board of Supervisors.

SRTD Rail System Description

SRTD currently operates approximately 30 miles, covering a 418 square-mile service area and 41 Stations. Light rail trains operate from 4:30 AM to 1:00 AM daily with service every 15 minutes during the day and every 30 minutes in the evening. Weekday ridership averages at least 41,000 passengers.

SRTD began operations in 1973 with the acquisition of the Sacramento Transit Authority. Over the next decade, SRTD continued to expand its bus service while a cooperative effort emerged among city, county and state government officials to develop a light rail system. In 1987 the 18.3-mile light rail system opened linking the northeastern (Interstate 80) and eastern (Highway 50) corridors with downtown Sacramento. SRTD completed its first light rail expansion in 1998 with the opening of the Mather Field extension. Additional system extensions are as follows:

South Line Phase I

The 6.3-mile South Line Phase I began service in September 2003 and extended the system from Downtown Sacramento to Meadowview Road. Seven new stations were added serving a minimum of 10,500 daily passengers.

South Line Phase II

The 4.9-mile light rail addition to Phase I will extend the system further south to the City of Elk Grove. This project is in its Preliminary Engineering (PE) stage.

Amtrak/Folsom Line

The Amtrak/Folsom light rail line is a 16-mile extension that follows Highway 50 and extends the system from the Amtrak Station in downtown Sacramento to the City of Folsom. The project consists of four areas of improvements that will add 10 new stations. Area 1 (Amtrak) is a 0.55-mile extension to the Sacramento Valley Station, which will be completed in 2006. Area 2 (Bee Bridge) has been built adding double tracking on an adjoining bridge from east of 16th Street to 23rd Street. Area 3 (Brighton to Sunrise) was completed in June 2004 with additional double tracking of previous single track areas and a 2.8-mile double track extension from Mather Field to Sunrise Boulevard and three stations. Area 4 (Sunrise to Historic Folsom) was completed in October 2005 adding 7.4 miles and four stations.

Yr 2002 Audit

Staff performed SRTD's second triennial on-site safety audit in June 2002. Twenty five checklists served as the basis for the audit. The audit resulted in eight recommendations.

Commission Resolution ST-58, dated January 16, 2003, ordered SRTD to develop an appropriate corrective action plan and implementation schedule to carry out these recommendations and keep staff advised of SRTD's progress through quarterly status reports. SRTD developed a corrective action plan to implement the recommendations. Only one recommendation remains open pertaining to the GO 95 Rule 74.4F for which SRTD has submitted a compliance plan on April 19, 2005 to Richard Clark, Director of the Consumer Protection and Safety Division. Implementation of this plan will bring the entire system into compliance with GO 95.

4. AUDIT PROCEDURE

Staff conducted the audit in accordance with Rail Transit Safety Section Procedure RTSS-4, Procedure for Performing Triennial Safety Audits of Rail Transit Systems. Staff developed 32 checklists to evaluate various departments with system safety responsibilities, using FTA and American Public Transit Association guidelines and the staff's knowledge of the transit system. The list of these 32 checklists is included in Appendix B.

Each checklist identifies the safety-related elements that staff audited, SRTD reference documents that established the acceptance requirements, and the method that staff used for evaluating compliance with the requirements. The methods used included:

- Discussions with SRTD management
- Reviews of procedures and records
- Observations of operations and maintenance activities
- Interviews with rank and file employees
- Inspections and measurements of equipment and infrastructure

The audit checklists concentrated on requirements that affect the safety of train operations and those requirements that are known or believed to be important to reducing safety hazards and preventing accidents.

5. FINDINGS AND RECOMMENDATIONS

Staff audited 10 SRTD departments with 32 checklists. This report documents areas where additional improvements are necessary to further improve SRTD safety program. Staff recorded the audit findings for each element/characteristic under the Results/Comments heading on each of the 32 checklists. Appendices B, C, and D depict SRTD 2005 Triennial Audit Checklist Index, Recommendation List, and Checklists respectively.

Following is a brief explanation of the responsibilities of each department, staff audit findings, comments, and recommendations for that department. There are 14 recommendations that are distributed among the Wayside Maintenance, Safety, Police Services, LRV Maintenance, Light Rail Operations, Engineering, and Facilities Maintenance. Staff did not make any recommendations for the senior management, human resources, and procurement departments.

1. Senior Management
(Checklist No. 24)

The SRTD General Manager (GM) has the overall management responsibility for all SRTD departments, including the authority and responsibility for System Safety. The GM provides overall direction for the transit system. The GM relies on the Chief Operating Officer (COO) and other senior managers for the day-to-day implementation of the safety program.

Findings – Conforming Conditions:

1. The General Manager gave the Safety Department the authority and responsibility to take any action required to ensure safety. Fresh perspectives that emphasize a safety/security attitude are encouraged. She receives safety and security information regularly.
2. The General Manager uses vital statistics as performance indicators. Vital statistics are also integrated into the budget as performance goals.
3. The General Manager is on the first contact list for major incidents. The General Manager prioritizes investments and sets goals with Safety being the #1 goal of the district.
4. Key safety and security decisions are made by the SRTD Board after recommendations of management committees.

Findings – Non-Conforming Conditions:

None

Recommendations:

None

2. Human Resources Department
(Checklist No. 8)

The Human Resources Department is responsible for implementing the drug and alcohol program and ensuring that the program complies with state & federal regulations.

Findings - Conforming Conditions:

The Drug & Alcohol Program complies with the FTA 49 CFR Parts 40 and 655 regulations. Furthermore, SRTD resolved all deficiencies identified by the FTA during the federal agency's previous audits of SRTD's Drug & Alcohol Program.

Findings – Non-Conforming Conditions:

None

Recommendations:

None

3. Procurement Department
(Checklist No. 30)

The Procurement Department is responsible for all contracting opportunities and purchases at the bus and rail sides of the district.

Findings - Conforming Conditions:

1. The Department follows comprehensive procurement procedures which were developed according to FTA guidelines.
2. The Department developed adequate quality assurance measures to verify compliance of the procured equipment with safety and reliability specifications.

Findings – Non-Conforming Conditions:

None

Recommendations:

None

4. Wayside Maintenance Department
(Checklist Nos. 1, 2, 3, 15, 16, 17, 18, and 19)

The Wayside Maintenance Department is responsible for the maintenance of track, traction power, and wayside signaling.

Findings - Conforming Conditions:

1. FRA-certified CPUC Signal Inspectors did not identify any deficiencies at the 2nd and 26th Avenue gated crossings warning devices. (Checklist No. 1)
2. FRA-certified CPUC Track Inspector determined that the track is in excellent condition. (Checklist No. 2)
3. Traction Power Sub Station (TPSS) units were well maintained. On-site inspection logs were properly documented in weekly inspection journals. Measured overhead contact system heights were in compliance with GO 95. No deficiencies were noted in the maintenance records of the overhead contact system. (Checklist No. 3)
4. Quarterly overhead contact system inspections were well documented. A new SRTD quarterly inspection form which will have more details about the inspection & repair activities is being developed by the department. (Checklist No. 15)
5. Substations were inspected at the required frequencies and inspections were well documented. A new biennial protective relay test/calibration Standard Operating Procedure (SOP) is being developed. (Checklist No. 16)
6. The quarterly maintenance records pertaining to power switches N61, N35, and N71 were properly documented and noted defects were corrected in a timely manner. Power switch relay case plus power switch machine semi-monthly inspection records were properly documented and noted defects corrected in a timely manner. (Checklist No. 17)
7. Wayside signal and equipment maintenance records pertaining to Butterfield and Jackson Road crossings were well documented and noted defects were corrected in a timely manner. (Checklist No. 18)
8. Turnout & track weekly and monthly maintenance and inspection records for 2004 and 2005 were properly documented and noted defects were corrected in a timely manner. Inspections were sufficiently comprehensive to identify potential problems. (Checklist No. 19)

Findings – Non-Conforming Conditions:

1. FRA-certified CPUC Signal Inspector found the crossing arm of 21st Street gated crossing in unacceptable horizontal position during the CPUC inspection. Furthermore, inspectors found 47th Street gated crossing lamp voltage to be approximately 8.0 Volts which is less than 85% of prescribed lamp rating. These exceptions were corrected in a timely manner, as was verified (see Checklist No. 18) through a review of Repair Orders pertaining to the aforementioned gated crossings. (Checklist No. 1)
2. FRA-certified CPUC Signal Inspector found switch N35 to indicate full normal with a ¼" obstruction test. He found Switches N35 & 33A latch out devices in inoperable condition with worn out detector rods and bushings. These exceptions were corrected in a timely manner as was verified (see checklist No. 17) through a review of Repair Orders pertaining to the aforementioned switches. (Checklist No. 2)
3. Staff found the Overhead Contact System to have a number of GO 95 Rule 74.4F violations. (Checklist No. 3)

Recommendations:

1. SRTD should put controls in place to ensure Wayside Maintenance personnel properly perform the ¼" obstruction test as part of quarterly power switch inspections. (Checklist No. 2)
2. SRTD should implement the proposed solutions to bring the entire overhead contact system into compliance with GO 95. (Checklist No. 3)

5. <u>Light Rail Vehicle Maintenance Department</u>
(Checklist Nos. 4 and 21)

The Department is responsible for the maintenance, overhaul, and repair of LRV fleet.

Findings - Conforming Conditions:

1. FRA-certified Motor Power and Equipment Inspector found all randomly inspected LRVs to comply with SRTD's maintenance practices. (Checklist No. 4)
2. The LRV Maintenance Supervisor signs and files completed repair orders as required. (Checklist No. 21)

Findings Non-Conforming Conditions:

Open LRV repair orders that may have been closed out by other subsequent repair orders cannot be easily tracked. This creates an unnecessary back log for open repair orders. Light Rail (LR) Maintenance Department records included cases where inspection schedules were bypassed by 1000 miles.

Recommendation:

3. SRTD should perform mileage-based vehicle maintenance inspections at the required intervals and in the required sequence per LR-SOP-86-202, LRV Mileage-Based Inspection Intervals. (Checklist No. 21)

6. <u>Safety Department</u>
(Checklist Nos. 5, 6, 11, 27, 28, 29, and 31)

The Safety Department is responsible for the internal safety audit program, accident/incident investigations, employee and contractor safety program, and hazardous materials management.

Findings - Conforming Conditions:

1. The Internal Safety Audit (ISA) program at SRTD is in compliance with GO 164-C and 49CFR Part 659 regulations. (Checklist No. 5)

2. The Safety Department responds to serious accidents and performs investigations independent of those performed by Light Rail Transportation Supervisors. (Checklist No. 6)
3. A review of the records for SRTD's affected employees of Light Rail Operations, Procurement, and Wayside Departments subject to hazardous material training requirements for the past three years showed that the training was completed and in compliance with SRTD's HMMP, Section 3.3. (Checklist No. 11)
4. A review of the records for the SRTD's Light Rail Track Warrants issued and approved by Metro Control for the past three years showed that the contractors involved received the required training, were aware of the track warrant conditions, and that the program is in compliance with SRTD's applicable procedures. A review of the records for SRTD's employees who filed a hazard report for the past three years showed that the reported hazards were mitigated in a timely manner, documented via computer program, and in compliance with SRTD's Injury & Illness Prevention Program (IIPP), Section 3.1. (Checklist No. 27)
5. Safety Department acquires safety & security data from a variety of sources. It uses the data collected to identify trends in system operation. (Checklist No. 28)
6. Existing committees provide adequate inter-departmental and inter-agency communication. (Checklist No. 29)
7. Safety Department identifies and tracks hazards. (Checklist No. 31)

Findings – Non-Conforming Conditions:

Current accident investigation procedures are not consistently followed. The Safety Department does not currently have a system for collecting, tracking, and analyzing accident information, including primary and contributing causal factors. (Checklist No. 6)

Recommendation:

4. SRTD should revise its accident investigation procedures to ensure all contributing factors are addressed; statistical data is recorded for all accidents (including contributing factors); statistical data is analyzed regularly; and safety initiatives undertaken in response to the analysis. (Checklist No. 6)

7. <u>Engineering Department</u>
(Checklist Nos. 7, 20, and 32)

The Engineering Department ensures that the rail system is designed and constructed safely and reliably.

Findings – Conforming Conditions

A draft Configuration Management Plan dated June 2005 has been recently developed and is currently in circulation for review and approval by management. (Checklist No. 7)

Findings Non-Conforming Conditions

1. The Engineering Department does not keep official configuration management documentation. (Checklist No. 7)
2. The required biennial inspections of bridges were not performed in 2002 and 2004. Staff reviewed bridge inspection records for 2000 and 2005. These reports included recommendations which could not be tracked to completion. (Checklist No. 20)
3. The Engineering Department did not provide the necessary documentation to show that all open items pertaining to the CAF/Siemens Vehicle Compatibility Project were closed out. (Checklist No. 32)

Recommendations:

5. SRTD should issue and start implementing the Configuration Management Plan, dated June 2005. It should further revise its SSPP to include this Configuration Management Plan (Checklist No. 7)
6. SRTD should ensure that the Engineering Department either revise or adhere to LR-SOP-88-420, Bridges/Structures-Inspections & Reports, dated November 11, 1988, and implement a method to track the recommendations contained in these reports. (Checklist No. 20)
7. SRTD should obtain official documentation from its contractor to certify that the open items in the CAF/Siemens Vehicle Compatibility Project Safety Certification Report were completed. (Checklist No. 32)

8. <u>Police Services Department:</u>
(Checklist No. 9)

The Police Services Department is responsible for the security of the system and responds to accidents.

Findings – Conforming Conditions

1. Meetings concerning SRTD security are routinely conducted. The weekly Operations Meetings are the most frequent of such meetings.
2. Police Services Unit at SRTD provides security training to SRTD employees, emergency responders, schools, and other groups. Operators are given security training, including Weapons of Mass Destruction (WMD) related training (used to perform threat assessment), as part of the annual training program.

Recommendations:

8. SRTD should update the security portion of its SSPP to include the following items:
    a. Active committees with security program related tasks;
    b. Threat assessment procedures and practices, and;
    c. Security training procedures and practices.

9. SRTD should implement an annual review of its Security Plan to determine if it needs updating. (Checklist No. 9)

9. Light Rail Operations Department

(Checklist Nos. 6, 10, 12, 13, 14, 25, and 26)

Light Rail Operations Department oversees all aspects of safely operating the light rail system, conducts operational training of rail employees, ensures compliance with all operations procedures, plans for emergency response drills, and participates in accident notifications and investigations.

Findings – Conforming Conditions

1. Transportation Supervisors perform primary on-scene investigations. (Checklist No. 6)
2. SRTD carried out an emergency response drill in 2003 as an element of the South Line Safety Certification Plan. SRTD carried out a tabletop exercise in 2004 and is planning another as part of the safety certification of the Folsom Extension in 2005. (Checklist No. 10)
3. Staff reviewed training records for the last supervisor hired in 2004. Six additional annual Supervisor/Controller evaluations were reviewed by staff. All supervisors and controllers currently working at the department are certified. (Checklist No. 12)
4. Random review of records for two supervisors and two operators indicated no violations of the Hours of Service Rule. (Checklist No. 14)
5. Through train observations of six trains on the North Line, South Line, and F Line with each trip ranging from four to eight stations in length, no unusual occurrences or violations of operating rules or procedures were recorded. (Checklist No. 25)
6. SOPs, Rulebook and other governing rail documents are reviewed by all affected departments and final changes approved by upper management according to SRTD requirements. (Checklist No. 26)

Findings Non Conforming Conditions:

1. No documentation was found to show that the most recent emergency exercises follow the provisions of the Disaster Drills section of the SRTD Light Rail Emergency Plan, dated November 15, 1996. There was no evidence presented to establish that training was provided for all emergency response agencies in areas where SRTD light rail operates. No documentation was presented to show that drills were thoroughly evaluated and critiqued by all affected departments and outside agencies to identify problems, find solutions, or take corrective actions. (Checklist No. 10)
2. The Operator Efficiency Testing is not in compliance with the Efficiency Testing procedure LR-SOP-99-027 in ensuring that operators are tested per the required frequencies at the three Levels of testing identified in this procedure. (Checklist No. 13)
3. Five out of six operators interviewed did not provide the full definition of slow speed. (Checklist No. 25)

Recommendations:

10. SRTD should implement formal controls to plan, schedule and carry out annual emergency drills and/or simulations with the participation of the appropriate external agencies to test readiness and response to emergencies. The agency should thoroughly evaluate and critique emergency drills, with all participating parties, to identify problems, find solutions, and implement corrective actions to enhance actual emergency response as well as future drills. (Checklist No. 10)
11. SRTD should develop a plan to ensure that Efficiency Testing of all its operators is kept current per its Efficiency Testing Procedure (LR-SOP-99-027). (Checklist No. 13)
12. SRTD should ensure its operators understand the slow speed requirements pertaining to Rule 2.7 during annual refresher training and validate their knowledge by the written rulebook exam. (Checklist No. 25)

10. Facilities Maintenance Department

(Checklist Nos. 22 & 23)

The Facilities Maintenance Department is responsible for the inspection and repair of SRTD's facilities including stations and right-of-way-fencing. The department is also responsible for vegetation control.

Findings – Conforming Conditions

1. Comprehensive inspection checklists are being used at Park and Ride stations. For stations other than park and ride, work orders are generated from SRTD staff, including cleaning crews and landscape workers. They are entered into a computer tracking system and signed off by the author when the repairs are completed. (Checklist No. 22)
2. Facilities Maintenance Department is meeting its responsibilities for landscape maintenance, operator restrooms, informational kiosks, lighting, broken tiles, signage, garbage removal, graffiti removal, and station cleaning. (Checklist No. 23)

Findings Non Conforming Conditions:

1. No formal systematic program to inspect and repair fencing or remove/control vegetation exists. In the absence of a proactive policy for fencing repair and vegetation control, only problems that are observed by sweep trains, operators, or SRTD Wayside maintainers, get tracked to their resolution after work orders are generated via a computer tracking system. Fencing and vegetations problems were observed at several locations (Checklist No. 22)
2. The preventative maintenance computer program SRTD currently utilizes does not currently include safety and security items, such as lighting. (Checklist No. 23)

Recommendations:

13. SRTD should develop a systematic program with appropriate checklists for fencing repair and vegetation control. (Checklist No. 22)

14. SRTD should expand on its current maintenance activities to address safety and security items such as station lighting and unsafe conditions. (Checklist No. 23)

APPENDICES

Appendix A

Acronyms List

ACRONYM	MEANING
APTA	American Public Transportation Association
AREMA	American Railway Engineering Association Manual
CAF	Manufacturer of SRTD's new Light Rail Vehicles (Construcciones y Auxiliar de Ferrocarriles)
CFR	Code of Federal Regulations
COO	Chief Operating Officer
CPSD	Consumer Protection and Safety Division of CPUC
CPUC (Commission)	California Public Utilities Commission
CSP	Contractor Safety Program
DCN	Design Change Notice
ESP	Employee Safety Program
FRA	Federal Railroad Administration
FTA	Federal Transportation Administration
GM	General Manager
GO	General Order
HMMP	Hazardous Materials Management Program
IIPP	Injury and Illness Prevention Program
ISA	Internal Safety Audit
LR	Light Rail
LRV	Light Rail Vehicle
MP	Mile Post
OCS	Overhead Catenary System or Overhead Contact System
PE	Preliminary Engineering
PM	Preventative Maintenance
QA	Quality Assurance
ROW	Right Of Way
RAC	Rail Activation Committee
RTSS	Rail Transit Safety Section of the Commission's CPSD
RWP	Road Worker Protection
SAP	Substance Abuse Professional
SRTD	Sacramento Regional Transit District
SOP	Standard Operating Procedure
SSPP	System Safety Program Plan
TPSS	Traction Power Sub Station
WMD	Weapons of Mass Destruction

Appendix B

SRTD 2005 TRIENNIAL SAFETY AUDIT CHECKLIST INDEX

Checklist No	Element/Characteristics	Checklist No	Element/Characteristics
1	Gated Grade Crossings Warning Devices	17	Power Switch Machines Maintenance
2	Track and Signal Inspections	18	Wayside Signal & Equipment Inspections
3	Traction Power Inspection	19	Track & Turnout Inspections
4	Light Rail Vehicle Inspection	20	Bridges/Structures-Inspections and Reports
5	Internal Safety Audit (ISA) Program	21	LRV Maintenance Records
6	Accident/Incident Reporting & Investigation	22	Right-of-Way Fencing and Vegetation Control
7	Configuration Management	23	Station Facility Maintenance
8	Drug & Alcohol Policy	24	Authority and Responsibility for the System Safety Program
9	Light Rail Security	25	Train Operator Performance
10	Emergency Response	26	Rules and Procedures Review
11	Hazardous Materials Programs / Environmental Management	27	Employee & Contractors Safety Programs
12	Supervisor/Controller Certification Program	28	Safety Data Acquisition/Analysis
13	Operator Training, Retraining, and Efficiency Testing Records	29	Interdepartmental/Interagency Coordination
14	Hours of Service	30	Procurement
15	Overhead Contact System Records	31	Hazard Identification Resolution Process
16	Substation Inspection Records	32	System Modification Review Approval Process

Appendix C

SRTD 2005 TRIENNIAL SAFETY AUDIT RECOMMENDATIONS LIST

No.	Recommendations	Checklist No.
1	SRTD should put controls in place to ensure Wayside Maintenance personnel properly perform the ¼"obstruction test as part of quarterly power switch inspections.	2
2	SRTD should implement the proposed solutions to bring the entire overhead contact system into compliance with GO 95.	3
3	SRTD should perform mileage-based vehicle maintenance inspections at the required intervals and in the required sequence per LR-SOP-86-202, LRV Mileage-Based Inspection Intervals.	21
4	SRTD should revise its accident investigation procedures to ensure all contributing factors are addressed; statistical data is recorded for all accidents (including contributing factors); statistical data is analyzed regularly; and safety initiatives undertaken in response to the analysis.	6
5	SRTD should issue and start implementing the Configuration Management Plan, dated June 2005. It should further revise its SSPP to include this Configuration Management Plan.	7
6	SRTD should ensure that the Engineering Department either revise or adhere to LR-SOP-88-420, Bridges/Structures-Inspections & Reports, dated November 11, 1988, and implement a method to track the recommendations contained in these reports.	20
7	SRTD should obtain official documentation from its contractor to certify that the open items in the CAF/Siemens Vehicle Compatibility Project Safety Certification Report were completed.	32
8	SRTD should update the security portion of its SSPP to include the following items: a) Active committees with security program related tasks; b) Threat assessment procedures and practices, and; c) Security training procedures and practices	9
9	SRTD should implement an annual review of its Security Plan to determine if it needs updating.	9

No.	Recommendations	Checklist No.
10	SRTD should implement formal controls to plan, schedule and carry out annual emergency drills and/or simulations with the participation of the appropriate external agencies to test readiness and response to emergencies. The agency should thoroughly evaluate and critique emergency drills, with all participating parties, to identify problems, find solutions, and implement corrective actions to enhance actual emergency response as well as future drills.	10
11	SRTD should develop a plan to ensure that Efficiency Testing of all its operators is kept current per its Efficiency Testing Procedure (LR-SOP-99-027).	13
12	SRTD should ensure its operators understand the slow speed requirements pertaining to Rule 2.7 during annual refresher training and validate their knowledge by the written rulebook exam.	25
13	SRTD should develop a systematic program with appropriate checklists for fencing repair and vegetation control.	22
14	SRTD should expand on its current maintenance activities to address safety and security items such as station lighting and unsafe conditions.	23

Appendix D

SRTD 2005 TRIENNIAL SAFETY AUDIT CHECKLISTS

(1 THROUGH 32)