CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**1**	Persons Contacted
Date of Audit	**5/10/05**	Larry Davis – Superintendent, Wayside Maintenance
Auditors	**Bill Mealor** **Raed Dwairi**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-86-408
2. CFR 49 Part 234

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

GATED GRADE CROSSINGS WARNING DEVICES – CPUC INSPECTOR

Utilizing the expertise of a FRA certified signal inspector from the Commission's Railroad Safety Branch, select a minimum of 4 gated crossings and perform detailed inspections to determine whether or not the selected crossings are in compliance with the applicable criteria.

RESULTS/COMMENTS

CPUC employee, Bill Mealor (FRA certified signal inspector) inspected the following gated grade crossings:

1. 2nd Avenue (PUC#83S2.15)
2. 21st Street & Freeport (PUC #83S-2.45)
3. 26th Avenue (PUC #83S4.09)
4. 47th Street (PUC #83S-5.40)

The scope of the inspections included checking the alignment of the warning lights, checking reflective striping on gate arms, and checking the voltage levels of the warning lights both in normal mode (AC power) and in standby mode (DC battery power).

Findings:

1. 2nd Avenue: No exceptions were noted.
2. 21st Street & Freeport: Gate arm not in horizontal position.
3. 26th Avenue: No exceptions were noted.
4. 47th Street: Lamp voltage on standby power less than 85% of prescribed lamp rating (tip voltage was 8.0 Volts and since SRTD uses a 10 Volt system the minimum should have been 8.5 Volts).

Comments:

1. Wayside Maintenance Superintendent instructed his maintenance staff to immediately repair the gated crossings on 21st and 47th Streets.
2. The CPUC auditor verified that gated crossings repairs pertaining to 21st and 47th Street locations were completed in a timely manner (see checklist No. 18)

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**2**	Persons Contacted
Date of Audit	**5/10/2005**	Larry Davis – Superintendent, Wayside Maintenance
Auditors	**Joseph Farley Bill Mealor Raed Dwairi**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. Code of Federal Regulations CFR 49, Part 213-Track Safety Standards
2. GO 143-B, Section 14.04-Track Maintenance Practices
3. LR-SOP-91-424

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACK INSPECTION – CPUC INSPECTORS

Randomly select at least two road crossing and two turnout/diamond crossing areas from the track system. Utilizing the expertise of a FRA certified track inspector from the Commission's Railroad Safety Branch, perform detailed visual & dimensional inspections/measurements to determine whether or not all track components within the areas selected are in compliance with the applicable track maintenance standards. Additionally, utilizing the expertise of a FRA certified signal inspector from the Commission's Railroad Safety Branch, perform an adjustment and functional check of at least one switch machine for each of the turnouts selected.

RESULTS/COMMENTS

CPUC employees, Joseph Farley (FRA certified track inspector) and Bill Mealor (FRA certified signal inspector) inspected switches and turnouts at 33 A&B, a switch and a turnout going into the yard on the N-Line (N35 at Milepost 5.5 while Wayside Maintenance personnel were performing a Quarterly Inspection), the sections of track south of 2nd and 47th Avenues on the South Line, and a crossover while being inspected just south of 47th Avenue.

Track Inspections included the following:

- Inspecting track structures (switches, turnouts, and track components such as pins),
- Inspecting track geometry (gauge, surface, and alignment),
- Inspecting the roadbed for both drainage and vegetation,
- Interview Wayside Maintenance staff while performing track work about the Worker Protection Program

Signal inspections included the following:

- An adjustment and functional check of the switches associated with the turnouts selected (switches N35 & 33A). This included obstruction and detector rod tests.
- Questions to Wayside Maintenance staff during their performance of the Quarterly inspection on the proper way to perform the ¼" obstruction test.

Findings:

1. Track structure was in an excellent condition.
2. Switches N35 indicated full normal with a ¼" obstruction. Switches N35 & 33A latch out devices were inoperable. The detector rods and the bushings were also worn out for these two switches.
3. Wayside Maintenance staff performing the Quarterly PM on switch N35 skipped the requirement of floating the detector rod in order to properly perform a ¼" obstruction test as required by SRTD Maintenance Procedures.

Comments:

The CPUC auditor verified that power switch repairs pertaining to switches N35 & 33A were completed in a timely manner (see checklist No. 17)

Recommendation:

SRTD should put controls in place to ensure Wayside Maintenance personnel properly perform the ¼ " obstruction test as part of quarterly power switch inspections.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**3**	Persons Contacted
Dates of Audit	**5/11 & 5/12/2005**	Rob Hoslett – Safety Specialist, Safety Department Ron Reneau – Supervisor, Wayside Maintenance Larry Davis – Superintendent, Wayside Maintenance Rufus Francis – Director, Safety Department
Auditors	**Brian Yu**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. CPUC General Order 95-Rules for Overhead Electric Line Construction
2. GO 143-B, Section 10-Traction Power Requirements, Section 14.06-Traction Power System Inspections
3. LR-SOP-86-405

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACTION POWER INSPECTION

A Utilities Engineer from the Commission's Rail Transit Safety Section will randomly select and inspect a minimum of 3 Overhead Contact System (OCS) sections to determine whether or not the sections selected are in compliance with Commission's General Order (GO) 95 requirements and applicable SRTD standards.

RESULTS/COMMENTS

Activities:

The following items were selected:

1. Two sections from each one of the North and South Lines,
2. Four sections from Folsom Line and Downtown Loop, and
3. Four Transit Power Substations (TPSS) along the selected sections for visual inspections.

Findings:

1. TPSS conditions were good and appeared well maintained. Onsite inspection logs were properly documented in the Weekly Inspection Journals.
2. Where measured, OCS heights were in compliance.
3. Overall maintenance of the OCS system was in good condition.
4. A number of GO 95 Rule 74.4F violations were noted at the following locations:
   - Balance Weight Terminations – N7630, between F2124&2123, F2165
   - Out of Running Catenary fixed terminations – N5536, F0880, F0881, S2528, S2563, S2622, S2656, F2283

- Mid Point fixed terminations – N5613, F2323
- Out of Running Contact terminations in Downtown Loop – N0355, N0356, between N0333&0331, between N0334&0332, F0862, F0949, F0948

5. SRTD Wayside Department personnel stated that parts of Folsom line and entire South line have “Tethers” installed at the Balance Weight Terminations to comply with GO 95 Rule 74.4F.
6. RT has submitted a letter addressed to Director Richard Clark dated April 19, 2005 presenting their plan for bringing the entire system into compliance with GO 95. RT proposed that all public access areas will be in compliance by the end of 2005 and non-public areas over the next four years.

Comments:

In SRTD’s letter addressed to Director Richard Clark, they have identified the trolley wire setup as an item not governed by Rule 74.4F of GO 95. It should be: the Out of Running Contact Wire fixed terminations should be addressed.

Recommendation:

SRTD should implement the proposed solutions to bring the entire overhead contact system into compliance with GO 95.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**4**	Persons Contacted
Date of Audit	**5/11/2005**	Vern D. Barnhart – Superintendent, LRV Maintenance Mark Nootenboom – Supervisor, LRV Maintenance
Auditors	**Don Miller**	
Department	**Vehicle Maintenance**	

REFERENCE CRITERIA

1. CPUC GO 143-B Section 14.04-Light Rail Vehicle Maintenance Practices
2. LR-SOP-86-200 through 202

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL VEHICLE INSPECTION – CPUC INSPECTOR

Utilizing the expertise of a FRA certified inspector from the Commission's Railroad Safety Branch, a random selection and inspection of at least four light rail vehicles will be performed to determine whether or not the vehicles selected are in compliance with the applicable maintenance standards of SRTD.

RESULTS/COMMENTS

CPUC employee Don Miller (FRA certified inspector) inspected Light rail Vehicle (LRV) Numbers 104, 117, 216 and 224 at the LVR Maintenance Facilities.

The scope of inspection included:

Visual checks of passenger cab/safety appliances, operator's cab/appurtenance, trucks/wheels components, traction motors, brake systems, pantographs, and coupling mechanism.

- Review of maintenance forms including Operator report, Daily Bulb Defect report, Weekly Inspection report, 10,000, 20,000 and 30,000 miles Inspection reports.
- Interviews with and observation of workmen during preventive maintenance inspection/repairs of LVR's Vehicle while on shop tracks.
- Comparison of operators reports against the actual work order authorizing repairs. Review of the gauge used to perform wheel maintenance.

Findings:

1. All inspected vehicle were in good repair. A review of maintenance records pertaining to CAF LRV #216 showed several repair items written up on the Weekly Inspection Report without any action being taken (LRV #216 was kept in service). Further investigation revealed this method of defect reporting was being used for warranty purposes and that the defects were properly handled.

Suggestion:

A notation should be placed on the Work Report to indicate the specific reason why the defect was not closed out.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**5**	Persons Contacted
Date of Audit	**6/21/2005**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department
Auditors	**Hani S. Moussa**	
Department	**Safety**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan, Revised 2/1999, Section 7.2.2 Internal Audits, Page 2A-13
2. SRTD Internal Safety Audit Program Manual, Effective 3/2/01
3. SA-SOP-01-007, Internal Safety Audit Program, Dated 04/15/01
4. CPUC General Order 164-C, Section 4 – Internal Safety Audit Requirements,
5. Code of Federal Regulations, CFR 49 Part 659
6. APTA Rail Safety Audit Program, Section 9 - Internal Safety Audit

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

INTERNAL AUDIT PROGRAM

Interview the SRTD representative in charge of the Internal Safety Audit Program and review the SRTD Annual Internal Safety Audit Reports for the years 2002, 2003, and 2004 to determine whether or not:

1. Annual internal safety audits were performed in accordance with the reference criteria.
2. All of the required safety program elements identified for ISA were completely covered within a three year period.
3. The annual ISA reports were prepared and submitted to the CPUC by February 15th of each year.
4. Corrective action plan recommendations were prepared, tracked and implemented in a timely manner.

RESULTS/COMMENTS

Activities:

I interviewed Mr. Rufus Francis, Director of Safety and Mr. Rob Hoslett, Senior Safety Specialist, to determine how the Internal Safety Audit (ISA) program is implemented at Sacramento Regional Transit District (SRTD) and requested copies of SRTD's Annual ISA Reports to the CPUC for Years 2002 – 2004.

Findings:

1. The Safety Department submitted SRTD's Year 2004 Annual ISA Report to the CPUC by February 15, 2005. The Year 2004 Annual ISA Report identified twenty-four elements; the Year 2003 Annual ISA Report identified seven elements; and the Year 2002 Annual ISA Report identified three elements that were scheduled for the ISA.
2. The ISA program schedule showed that SRTD completed the first ISA cycle of APTA

elements in Year 2001. The Second ISA cycle of APTA elements began in Year 2002 and the third ISA cycle of APTA elements begins in Year 2005.

3. The Annual ISA Reports contain the checklists used by SRTD to conduct their ISA, a summary of the items that were scheduled for the audit, and the status of each internal report. The individual checklists identify the department audited, contact person(s) interviewed, results of the audit, findings if any, and recommendations.
4. The CPUC's designated representative to SRTD witnessed the performance of a few ISA checklists; however, he is not identified on the checklists.
5. SRTD Safety Department staff tracks recommendations from findings and closure of items through an internal computer database. This program is accessible by the Safety Department to make revisions and provide updates to any corrective actions or open action items.
6. Findings and Recommendations are reported in SRTD's Annual ISA Reports to the CPUC.
7. The Senior Safety Specialist tracks the closure or full implementation of each recommendation through an internal computer database.
8. The Director of Safety updates top level management at weekly meetings regarding outstanding safety concerns, including CPUC triennial audit open items.
9. SRTD has completed their review of the APTA elements in accordance with the APTA Rail Safety Audit Program, Manual for the Development of Rail Transit System Safety Program Plans within the 3-year period required and will begin their next cycle of ISAs in Year 2005.
10. No exceptions were noted.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE

SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**6**	Persons Contacted
Date of Audit	**6/20/05**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department Mark Lonergan – Director, Light Rail Operations
Auditors	**Robert Strauss**	
Departments	**Safety and Light Rail**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan, Revised 2/1999, Section 5.2.5.1 (Page 2A-8) & Section 5.2.5.2 (Page 2A-9)
2. SA-SOP-00-006, Rail Accident Investigation Procedure, Dated 02/15/01
3. CPUC General Order 164-C, Sections 5 & 6,
4. Code of Federal Regulations, CFR 49 Parts 659.41 Investigations & 659.43 Corrective Actions
5. APTA Rail Safety Audit Program, Section 8 – Accident/Incident Reporting & Investigation

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

ACCIDENT/INCIDENT REPORTING & INVESTIGATION

Review the agency's accident investigation records and interview the manager(s) in charge of accident investigation function to determine whether or not:

1. Immediately reportable accidents were reported to the CPUC within 4 hours as required.
2. The accident investigation activities and reports were in accordance with the reference criteria
3. Interagency cooperation and coordination is at a sufficient level to assure that all causes are correctly identified and corrective action plans and implementation schedules are devised, tracked, and implemented in a timely manner.
4. All reportable accidents (which include immediately reportable accidents as a subset) and unacceptable hazardous conditions that appear on the monthly Forms V&T were adequately investigated as per Rule 6.1 of General Order 164-C.
5. Legal constraints do not impede or interfere with the accident investigation activities at SRTD.

RESULTS/COMMENTS

Findings:

1. Monthly Accident reports are filed on Rail Transit Form V. SRTD is using the form adopted on 8/7/96. This form was revised on 10/24/00.
2. Primary on-scene investigations are performed by transportation supervisors. They act as the site coordinator with police and emergency responders. They take measurements, take photos, collect witness cards, send train operators for drug testing if required, and release the train to operations control once evidence collection is complete. The transportation supervisor makes the initial accident report and this report is not subject to editing.

3. Safety does not respond to all accidents, but is more likely to respond to more serious accidents. Safety may perform independent investigations, or assist the transportation supervisor in collecting evidence. Safety receives the accident information (e.g. transportation supervisor's report, operator's statement, police report, etc.) and prepares the accident Investigation final report.
4. The accident investigative reports appear superficially to meet all requirements, but a closer examination raises concerns. The accident reports are notable for a lack of contributing or secondary causal factors. These secondary factors are of key importance in preventing accidents and do not appear to be full explored in the accident investigation reports. Both Safety and Light Rail stated that accident investigators limit their investigation to items related to an accident. This practice may tend to bias investigation results to obvious factors such as victim inattention without fully exploring non-obvious secondary causal factors such as inadequate warning devices, excessive speed, or fatigue.
5. Minor accidents, without a fatality or serious injury, are not fully investigated. In rare cases, the train operator may be the only accident investigator.
6. Accident investigation procedures are not sufficiently detailed to direct an investigation, but do provide basic responsibilities. For example, there is no formal procedure for the retention of event recorder data. Safety also uses a checklist "Immediately Reportable Accident Reporting Form" that contains a list of evidence to collect at an accident scene. Current procedures are not followed in all cases, for example the transportation supervisor releases the scene when an investigation is complete as opposed to Safety as stated in the procedures. Safety explained that revised accident investigation procedures have been developed and will be filed for Commission approval in the near future.
7. Safety Department accident investigative reports are subject to review and editing by Risk Management and Legal. There is an inherent conflict between the Safety role of detailing all possible contributing factors and developing safety enhancements, and the Risk Management role of limiting transit agency litigation exposure in part by limiting access to information. Safety expressed the opinion that legal and risk management departments do not want contributing factors mentioned in accident investigation reports.
8. Safety does not currently have a system for collecting, tracking, and analyzing accident information, including primary and contributing causal factors. The analysis currently being performed is not systematic and relies on the observations and memory of the Safety staff. The Safety Department stated they are purchasing a software database package that will support the statistical analysis of accident data and hope to have it in place by the end of the year.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**7**	Persons Contacted
Date of Audit	**6/20/2005**	John Segerdell – AGM of Engineering Buck Cutting – Senior Engineer, Systems Engineering Greg Austin - Manager, Systems Engineering Eric Oparko -
Auditors	**Anton Garabetian**	
Departments	**Engineering**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan, Revised 2/1999, Section 5.2.2 (Page 2A-7)
2. APTA Element #18 – Configuration Management
3. PC-SOP-96-001 Configuration Management Procedure, Dated 04/03/96

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

CONFIGURATION MANAGEMENT

Through interviews of representatives from departments affected by the Configuration Management Process and record reviews of randomly selected projects involving changes to Regional Transit owned and operated equipment, facilities, or procedures determine whether or not:

1. Changes have been properly and systematically planned, evaluated for safety impacts, and approved by all appropriate parties before such changes are made
2. Physical and/or operational changes have been properly documented and appropriately disseminated
3. Changes or modifications are properly incorporated into the existing as-built system
4. Inter-agency coordination and cooperation between the departments with membership to the Safety/Configuration Management Review Committee is at a sufficient level to assure that the objectives of the program are met
5. Adequate resources are available to meet the four objectives of the Configuration Management Program at SRTD.

RESULTS/COMMENTS

Activities:

I asked the attendees to provide records of randomly selected SRTD projects that follow the SRTD Configuration Management Process.

Findings:

1. I was told that throughout the past projects, the department followed SRTD's Configuration Management Process but did not keep official documentation. The documentation was only kept through e-mails. Therefore, I could not verify whether or not configuration management

changes have been properly and systematically planned, evaluated for safety impacts, and approved by all appropriate parties before such changes are made. The attendees provided a copy of the new SRTD Configuration Management Plan Dated June 2005, which is in circulation for approval by the management. SRTD reps told me that the Engineering and Operations Departments meet every two weeks to discuss system configuration changes, but they do not keep meeting minutes. Usually, system configuration changes are performed by contractors who provide copies of changed drawings to Engineering and Operations departments. I was given an example pertaining to the Oxford Grade Crossing Signal System Change Project. This project was a joint effort between the Engineering & Operations Departments and the City of Sacramento.

2. I could not verify whether or not physical and/or operational changes have been properly documented and appropriately disseminated because of the lack of documentation.
3. I could not verify whether or not changes or modifications are properly incorporated into the existing as-built system.
4. I could not verify whether or not inter-agency coordination and cooperation between the departments with membership to the Safety/Configuration Management Review Committee is at a sufficient level to assure that the objectives of the program are met because of the lack of documentation.
5. SRTD is planning to implement the new Configuration Management Plan and provide adequate resources to meet the plan objectives.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**8**	Persons Contacted
Date of Audit	**6/22/2005**	Douglas C. Miller Mariza Montung
Auditors	**Gary Rosenthal**	
Department	**Human Resources**	

REFERENCE CRITERIA

1. CFR 49 Parts 40 and 655
2. CPUC GO 143-B Section 12.03 Use of Alcohol, Narcotics, or Drugs
3. SRTD Drug & Alcohol Program
4. APTA Element #21 – Drug and Alcohol Abuse Programs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

DRUG & ALCOHOL POLICY

Interview the SRTD representative in charge of the Drug & Alcohol Program and determine whether or not:

1. The program complies with State and Federal regulations.
2. No corrective actions resulting from previous FTA audit recommendations remain open.
3. For each rail transit employee who tested positive for drugs or alcohol in the past three years and who is also currently employed in a safety sensitive position, review the appropriate records to determine whether or not:
    a. The employee was evaluated and released to duty by a Substance Abuse Professional (SAP)
    b. The employee was administered a return-to-duty test with verified negative results
    c. Follow-up testing was performed as directed by the SAP according to the required follow-up testing frequencies of the reference criteria after the employee has returned to duty.
    d. Consequences for repeat offenders were carried out as required by the D&A policy of SRTD.
4. Random testing of safety sensitive employees is performed within the allowed period without excusing individuals for illegitimate reasons as required.

RESULTS/COMMENTS

Activities:

I interviewed the Human Resources representatives and reviewed the appropriate Drug and Alcohol records.

Findings:

1. There was no evidence found that the program does not comply with 49 CFR Parts 40 and

655 or GO 143-B.

2. Records indicate that each of the seven deficiencies identified by the FTA, during its February 2001 audit, was subsequently addressed by SRTD.
3. Records indicate that each safety sensitive light rail employee who tested positive for illegal drugs or misuse of alcohol in the past three years, no longer works for SRTD or:

   a) The employee was evaluated and released to duty by an SAP;

   b) The employee was administered a return to duty test with verified negative results, and;

   c) Follow-up testing was performed as directed by the SAP in conformance with the required frequency.

   d) Employees who tested positive subsequent to initial positive tests were terminated or resigned.
4. During the years 2004 and 2005, there were periods when light rail employees were excused from random testing for invalid reasons. In each instance, SRTD appears to have responded promptly to correct these problems.

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
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Checklist No.	**9**	Persons Contacted
Date of Audit	**6/20/2005**	Mark Sakauye – Chief, Police Services Unit
Auditors	**Gary Rosenthal**	
Department	**Police Services**	

REFERENCE CRITERIA

1. SRTD System Security Program Plan, Revised 2/99
2. APTA Element #24 - Security

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL SECURITY

Interview the Chief of SRTD's Police Services Unit and review relevant documentation to determine whether or not:

1. Meetings were held on a regular basis to identify security breach causes following the collection of security-related statistical data and identification of trends during the past two years in order to recommend mitigating measures to minimize such occurrences.
2. Threat assessments have been performed and recommendations implemented
3. Periodic training on identifying and reporting suspicious behavior (anti-terrorism) is being provided
4. Security plan modification process was followed as a result of changing security needs and conditions of the rail transit environment at SRTD

RESULTS/COMMENTS

Findings:

1. It was disclosed that many meetings concerning SRTD security are conducted and the weekly Operations meetings are the most frequent.
2. Police Services is using WMD training and guidelines to perform threat assessments. The practice is not necessarily consistent with that described in the current system security program plan (SSPP).
3. Police Services has one full time position dedicated to providing security training to SRTD employees, emergency responders, schools, and other groups. Operators are given security training, including WMD related training, as part of the annual VTT training program. The training practice is not identified in the current SSPP.
4. There is no indication that the SSPP has been reviewed annually by the Public Safety and Security Committee and no modifications have been made to the SSPP since February 1999.
5. SSPP guidelines established by the FTA for transit security are inconsistent with the requirements and guidelines established by Homeland Security, the Transportation

Security Administration, and the Sacramento Police Department.

Recommendations:

1. 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.
2. SRTD should implement an annual review of its Security Plan to determine if it needs updating.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**10**	Persons Contacted
Date of Audit	**6/23/2005**	Gabe Avilia – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Gary Rosenthal**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. SRTD Light Rail Emergency Plan, Dated 11/15/96 (Disaster Drills E.6.6)
2. SRTD System Security Program Plan, Revised 2/99
3. APTA Element #14 – Emergency Response Planning, Coordination, Training

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

EMERGENCY RESPONSE

Through an interview with the manager-in-charge of the program and a 3-year record review determine whether or not:

1. Emergency drills or simulations were scheduled, planned, and carried out on an annual basis with the participation of the appropriate external agencies to test readiness in responding to unannounced, mock situations.
2. Training was provided for all emergency response agencies in areas where SRTD operates
3. Procedures and training for Metro Control Center in place to properly handle emergency situations, including but not limited to: possible bomb on train, earthquake, fire on train, or violent crime onboard a train.
4. Drills were thoroughly evaluated and critiqued to identify problems and find solutions.
5. Performance in responding to emergency situations is measured to enhance it in future drills.
6. Controls are in place to ensure that the required drills are scheduled and carried out as required.

RESULTS/COMMENTS

Findings:

1. An emergency drill was carried out in 2003 as an element of the South Line Safety Certification Plan. A tabletop drill was carried out in 2004. There was no record of any emergency drill in 2003. The emergency drill previous to these was estimated to have been in 1999. There is no indication that the most recent emergency exercises follow the provisions of the Disaster Drills section of the SRTD Light Rail Emergency Plan dated 11/15/96.
2. There was no evidence presented to establish that training was provided for any or all emergency response agencies in areas where SRTD light rail operates.
3. There was no evidence to indicate that drills were thoroughly evaluated and critiqued to

identify problems, find solutions, or take corrective actions.

4. There was no evidence identified that the response to simulate the emergencies is evaluated to identify problems and establish corrective actions that would result in improved response to actual emergencies or in future drills.
5. There was no evidence presented that any formal controls, beyond the SRTD Light Rail Emergency Plan, are in place to ensure that the required drills are scheduled and carried out at least annually. However, some form of emergency drill, even if not compliant with the Emergency Plan, occurred in 2003 and 2004. In addition, an emergency drill is scheduled as part of the safety certification of the Folsom Extension in 2005.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
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Checklist No.	**11**	Persons Contacted
Date of Audit	**6/23/2005**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department Frederick Carr – Safety Specialist, Safety Department J.M. Glenn P. Batilando – Safety Specialist II, Safety Dept.
Auditors	**Hani S. Moussa** **Dennis Reed**	
Department	**Safety**	

REFERENCE CRITERIA

1. SRTD Hazardous Materials Management Plan, Revised August 20, 2004.
2. APTA Element #20 – Hazardous Materials Programs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HAZARDOUS MATERIALS PROGRAMS/ENVIRONMENTAL MANAGEMENT

Interview the manager-in-charge and review the relevant documentation prepared during the last three years to determine whether or not:

1. All rail employees, including those newly hired or employees reassigned to a new position, completed their Hazardous Material Training as required by SRTD.
2. SRTD has adequate procedures in place to prevent the transport of flammable liquids (including gas powered scooters and such) onboard its trains.
3. Training program encompasses all hazardous materials used by the agency.
4. Refresher training provided periodically for all employees who deal with hazardous materials at SRTD.

RESULTS/COMMENTS

Activities:

I interviewed Mr. Rufus Francis, Director of Safety, Mr. Rob Hoslett, Senior Safety Specialist, Mr. Frederick Carr, Safety Specialist, and Mr. Glenn Batilando, Safety Specialist II to determine how the Hazardous Material Management Plan (HMMP) is implemented at Sacramento Regional Transit District (SRTD) and requested hazardous material employee training documentation for the past three years.

Findings:

1. The Director of Safety reported that the HMMP is up to date and provided a copy of the program dated August 20, 2004. The Safety Department is responsible for maintaining, evaluating, and updating the program annually.
2. Tool Box Safety Meetings help increase employee awareness of workplace chemicals and their potential health effects.

3. The incident coordinator, along with the area manager/supervisor and training specialist, conduct a program of classroom and on-the-job training that relates to the employees duties at the facility. The goal is to familiarize employees with the conditions in their work environment, and the use, location, and limitations of the emergency equipment.
4. SRTD's employee training program consists of: method for safe handling, storing, labeling, and disposing of hazardous materials; availability of assistance from local emergency response agencies; emergency response procedures; the use of communication or alarm systems; and notification procedures.
5. All new employees are required to complete their hazardous material training within six months after their employment or assignment to a new position at the facility. In addition, the area manager/supervisor will provide annual refresher training.
6. Material Safety Data Sheets (MSDS) are on file with the Safety Department. MSDSs are also electronically stored and updated regularly. All affected employees have the ability to retrieve and access the stored data.
7. Affected employees of LR Vehicle, Procurement, and Wayside are required to undergo hazardous material training.
8. A review of the records for the SRTD's affected employees of LR Vehicle, Procurement, and Wayside subject to hazardous material training requirements for the past three years showed that the training was completed, documented via computer program, and in compliance with SRTD's HMMP, Section 3.3.
9. Copies of each individual employee confirmation of attendance at the session are on file with the Safety Department.
10. In accordance with SRTD's Bus & Light Rail Timetable Book, effective June 13, 2004, Rules & Regulations, Page 21, "Carrying any explosive or acid, flammable liquid, or toxic or hazardous material in any SRTD vehicle or facility" is prohibited. (California Penal Code 640)
11. SRTD's Rail Operation Rules, Section 1.6, "Employees must report immediately to Metro Control all accidents, injuries, or conditions that they observe that may endanger the safety of passengers, employees, or the general public", also addresses the issue of flammable liquids being prohibited onboard trains.
12. No exceptions were noted.

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**12**	Persons Contacted
Date of Audit	**6/21/2005**	Mark Lonergan – Director, Light Rail Gabe Avila – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Dennis Reed**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. LR-04-003 Supervisor/Controller Certification Program, Dated 12/10/04
2. LR-SOP-99-029 Supervisor/Controller Certification Program dated 07/09/99
3. APTA Element #13 – Training and Certification Review

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SUPERVISOR/CONTROLLER CERTIFICATION PROGRAM

Interview the SRTD representative in charge of the Supervisor/Controller Certification Program and review relevant available documentation prepared during the last three years to determine whether or not the district complied with the requirements of the certification program for all Light Rail supervisors/controllers. Additionally, check to ensure that a comprehensive training program is in place including written procedures and verify that all controller certifications are current.

RESULTS/COMMENTS

Activities:

I interviewed John Darragh and Gabriel Avila, Light Rail Superintendents, to determine if a Supervisor/Controller Certification Program is in place and in compliance with procedures No. LR-SOP-99-029 and LR-04-003 (Supervisor/Controller Certification Program).

Findings:

1. The Supervisor/Controller Certification Program is comprehensive as Supervisor/controller candidates are evaluated through written examinations and field activities. This certification program can last approximately six months depending upon the experience in the following program areas:

   - Dispatching
   - Accident Investigation
   - Train Control/Problem Resolution
   - Troubleshooting
   - Progressive Disciplinary/Contact Interpretation
   - Operating Rules/Procedures
   - Supervisor Enforcement Authority
   - Signal, Switch and Event Recorder Operations

- Supervisory/Management Skills
- Radio Communications
- Worker Compensation Procedure

2. There are 27 supervisors and to maintain their certification they are evaluated on an annual basis in the following areas:

    - Field Supervision
    - Dispatching – Includes 12 hours in A.M. and 12 hours in P.M. dispatching
    - Radio Control – 24 hours of radio control

3. The Training records from the last supervisor hired in 2004 were reviewed. In addition six annual Supervisor/Controller evaluations were reviewed. All supervisors and controllers currently working are certified.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**13**	Persons Contacted
Date of Audit	**6/22/2005**	Mark Lonergan – Director, Light Rail Gabe Avila – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Dennis Reed**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. LR-SOP-99-027, Operator Efficiency Test, Dated 04/22/99
2. LR-SOP-99-02930, Operator Training Plan
3. APTA Element #13 – Training and Certification Review

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

OPERATOR TRAINING, RETRAINING, AND EFFICIENCY TEST RECORDS

Review relevant documentation prepared during the last three years to determine whether or not all Light Rail Operators meet the Operator Efficiency Test (Levels I-III), training, and retraining requirements of SRTD. Additionally, ensure that operator training is comprehensive and all its elements are written down in a specialized training program (emergency response training element of the operator training program must be a part of EITHER this or the Emergency Response Program mentioned in checklist #10).

RESULTS/COMMENTS

Activities:

I reviewed the Efficiency Test Logs from 2002, 2003 and 2004 to determine if the Light Rail Operators Efficiency Tests were being performed according to the operating procedure.

Findings:

The Operator Efficiency Test procedure is summarized below:

Level 1 – These tests are to be conducted every 90 days by a supervisor who will observe the operation of the vehicle to determine if safe operation procedures are being followed.

Level 2 – At least once every six months, will meet with his/her supervisor to discuss their performance.

Level 3 – At least once every twelve months, operators will be observed for compliance with rules governing signal indications, switch alignment, grade crossing protection, and/or other safety related operating practices.

Efficiency Testing Summary:

2002	Level 1	Level 2	Level 3	Comments
Four Tests	0	N/A	N/A	
Three Tests	8	N/A	N/A	
Two Tests	14	2	N/A - 2	
One Test	12	14	21	
Zero Tests	3	19	10	
Total	35	35	35	

2003	Level 1	Level 2	Level 3	Comments
Four Tests	3	N/A	N/A	
Three Tests	3	N/A	N/A	
Two Tests	12	0	N/A - 1	
One Test	15	6	26	
Zero Test	17	55	24	
Total	50	61	51	

2004	Level 1	Level 2	Level 3	Comments
Four Tests	17	N/A	N/A	
Three Tests	14	N/A	N/A	
Two Tests	10	17	N/A - 6	
One Test	7	21	49	
Zero Test	8	15	6	
Total	56	53	61	

Operator Training:

The Operator Training program was reviewed and summarized below:

1. There is a Light Rail Vehicle Operator Training Lesson Plan. This plan includes:

    - Week One – is primarily dedicated to learning and understanding the RT Light Rail Rule Book.
    - Week Two – Operators will become familiar with the right-of-way and operate trains on the main line, out of service.
    - Weeks Three and Four – Train Operators will be operating revenue trains under the instruction of Train Operators/Trainers.

    This training includes a review of Emergency Training procedures and being tested on these procedures.

2. The initial four week is also used to learn the Rule Book and this learning is reinforced through four quizzes and a final exam.

3. Approximately 30 calendar days after the student is revenue certified he/she will be scheduled for an 8 hour training session.

4. The Trainer thoroughly documents the progress of each student through the various stages of training.

5. The Operator Training program is to be reinforced through performance reviews and Efficiency Testing. The Efficiency Testing is not in compliance with the Efficiency Testing procedures.

6. A review of the Efficiency Tests shows that the Level 1 testing in 2002 and 2003 had a total of only three operators out of 85 that were tested 4 times during the year. During this same period only two operators received the testing at level 2. During 2002 – 2003 the Level 3 testing faired better with 50 out of 71 tested.

7. The Efficiency Testing during 2004 showed improvements over 2002 – 2003. During this period 17 Operators were tested 4 times at the Level 1 Efficiency Testing and the same number at Level 2. However, the most significant improvement was in the Level 3 testing where 55 Operators out of 61 were in compliance with the procedure.

Recommendation:

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).

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**14**	Persons Contacted
Date of Audit	**6/20/2005**	Mark Lonergan – Director, Light Rail Gabe Avila – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Dennis Reed**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. CPUC General Order 143-B, Section 12.01b, and 12.04
2. APTA Element #19 – Employee Safety Program

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HOURS OF SERVICE

Randomly select the names of at least four train operators and two supervisors/controllers and review their appropriate work records for the last 12 months to determine whether or not they abided by the hours-of-service rules as required by the reference criteria.

RESULTS/COMMENTS

Background:

General Order 143B Section 12.01B and 12.04 states: LRT systems shall not require or permit any safety sensitive employees to remain on duty for more than twelve (12) consecutive hours or more than an aggregate of twelve hours (12) spread over a period of 16 hours. A safety sensitive employee is defined as: An individual employed by an LRT system who operates LRVs, or who dispatches or controls the movements of such LRVs, or who is engaged in the installation or maintenance of LRVs, train control, train protection, or signaling systems.

Activities:

1. I reviewed two randomly selected supervisors' time sheets and the system data (SAP) that generates the payroll checks for a twelve month period from June 2004 – June 2005, and
2. Four (4) Train Operators systems data were reviewed for the same period.

Findings:

1. SRTD has approximately 200 employees in safety sensitive positions. SRTD follows a more stringent policy than that required by the CPUC and requires employees who are in safety sensitive positions to work no more than twelve (12) hours in a fifteen (15) hour period. This also applies to the district's bus drivers.

2. For the two supervisors selected there were no violations of the Hours of Service Rule.
3. For the four operators selected there were no violations of the Hours of Service Rule.
4. The Hours of Service data and logs were well organized.
5. No exceptions were noted.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**15**	Persons Contacted
Date of Audit	**6/21/2005**	Larry Davis – Superintendent, Wayside Maintenance Mike Cormiae – Supervisor, Wayside Maintenance
Auditors	**Brian Yu**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-86-405, Traction Power OCS-Quarterly Inspection, Dated 11/26/86
2. APTA Element #11 – Maintenance Audits/Inspections

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACTION POWER OVERHEAD CONTACT SYSTEM

Review the records of completed Overhead Contact System (OCS) inspections prepared during the last three years to determine whether or not:

1. OCS was inspected and adjusted at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner

RESULTS/COMMENTS

Findings:

1. The required quarterly OCS inspections were well documented. However, the inspection records were lacking the status of the line or completion of the repair orders that have been generated by the inspection. Since visual inspections of the OCS (see checklist No. 3) showed that the system is in good repair, the incomplete information noted regarding the status of the repair orders suggest the issue is only documentation. Finding No. 3 & 4 below indicate the tedious task of tracking a large number of repair orders generated by the department by only manual means.
2. A new OCS Quarterly inspection form which has more detail of inspection activity and status of the line is being developed by the Wayside Department.
3. The OCS repair orders were filed with other wayside repair order items (tracks, signals, crossing, etc.)
4. Wayside Department is keeping track of the inspection records manually.

Comments:

1. Wayside Department should consider implementing a computerized database solution to monitor the maintenance history of their Wayside systems.
2. The new OCS Quarterly inspection form seems thorough and effective. Wayside Department should implement this form and revise the existing SOP to reference the new form.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**16**	Persons Contacted
Date of Audit	**6/20/2005**	Larry Davis – Superintendent, Wayside Maintenance Mike Cormiae – Supervisor, Wayside Maintenance
Auditors	**Brian Yu**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-86-402, Traction Power Substation Weekly Inspection, Dated 10/29/86
2. LR-SOP-86-403, Traction Power Substations-Quarterly Inspection, Dated 11/03/93
3. LR-SOP-86-404, Traction Power Substations-Biennial Inspection, Dated 11/03/93

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACTION POWER SUBSTATION INSPECTION

Review the records of completed substation quarterly and biennial inspections prepared during the last three years to determine whether or not:

1. Substations were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner

RESULTS/COMMENTS

Findings:

1. Substations were inspected at the required frequencies.

2. Inspections were properly documented.

3. Currently, Wayside Department is in the process of revising its TPSS Maintenance Standard Operating Procedure (SOP): weekly inspection to bi-weekly, biennial inspection to quadrennial. The decision was based on the Wayside Department's past 19 years of experience in TPSS maintenance and review of the past maintenance history.

4. In addition to the required inspection cycles, the Traction Power Supervisor routinely visits the TPSS's to verify the linemen's proper documentation of works and the operational status of the TPSS's.

5. Wayside Department started developing a separate SOP for Biennial Protective Relay Test/Calibration which is currently being performed during Biennial Inspections.

6. Wayside Department doesn't have a computerized database to monitor the maintenance record. It is done manually. SRTD system has been expanding recently, but the number of wayside maintenance employee remained the same. Keeping track of maintenance history and following up on the status of the noted defects could become problematic in the future.

Comments:

1. Wayside Department should finish implementing the revised SOP for the Biennial Protective Relay Test/Calibration.
2. Wayside Department should consider implementing a computerized database system to monitor the maintenance history of their Wayside Systems

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**17**	Persons Contacted
Date of Audit	**6/21/2005**	Larry Davis – Superintendent, Wayside Maintenance
Auditors	**Anton Garabetian**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-89-406, Power Switch Machine Quarterly Inspection, Dated 11/03/93
2. LR-SOP-90-410, Power Switch Relay Case Monthly Inspection, Dated 11/03/93
3. LR-SOP-91-424, Power Switch Machine Semi-Monthly Inspection, Darted 09/25/91

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

POWER SWITCH MACHINES MAINTENANCE

Review completed power switch machines maintenance & inspection records prepared during the last three years to determine whether or not:

1. Power switch machines were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner

RESULTS/COMMENTS

Findings:

1. For power switch #N61, the quarterly maintenance and inspection records from April 9, 2002 to May 17, 2005 were properly documented and noted defects were corrected in a timely manner.
2. For power switch #N35, the quarterly maintenance and inspection records from April 24, 2002 to May 10, 2005 were properly documented and noted defects were corrected in a timely manner. CPUC inspector Bob Mealor had a written notification on this switch during his signal inspection conducted on 5/10/2005 (see checklist #2). The note said, 'Milepost 5.5 Switch No. N35 indicate full normal with a quarter inch obstruction, its latch out device in inoperable, and the detector rod and the bushing are worn out. Also Switch 33A latch out device is inoperable and the detector rod and its bushing are worn out." I checked the "Repair Orders" for the two aforementioned switches and both were repaired in a timely manner.
3. For power switch #156, the quarterly maintenance and inspection records indicated that this switch was removed from service after February 10, 2004.
4. For power switch #71, the quarterly maintenance and inspection records from April 24, 2002 to May 17, 2005 were properly documented and noted defects were corrected in a

timely manner.

5. Power switch relay case monthly plus power switch machine semi-monthly maintenance and inspection records from January 2003 to May 2005 were properly documented and noted defects were corrected in a timely manner.
6. I was informed by the Wayside Superintendent that starting June 2005, track inspections will be performed once every two weeks instead on weekly basis. He said that the new Wayside Procedure, which is in management signature circulation, will reflect the new inspection schedule.

Suggestion:

An engineering review should be performed prior to changing track inspection schedules.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**18**	Persons Contacted
Date of Audit	**6/21/2005**	Larry Davis – Superintendent, Wayside Maintenance
Auditors	**Anton Garabetian**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-86-411, Wayside Signal & Equipment Inspections, Dated 11/03/93
2. LR-SOP-87-412, Wayside Signal Troubleshooting & Repairs, Dated 09/26/91
3. LR-SOP-88-408. Grade Crossing Protection Inspection, Dated 11/26/86

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

WAYSIDE SIGNAL & EQUIPMENT INSPECTIONS

Review the records of completed wayside signal inspections (including at least two grade crossing warning systems) prepared during the last three years to determine whether or not:

1. Wayside signals were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner
4. Inspections were sufficiently comprehensive to identify potential problems.

RESULTS/COMMENTS

Background;

CPUC signal inspector Bill Mealor documented in his signal inspection of gated crossings conducted on 5/10/2005 (see checklist #1) the following findings:

1. 47th Street gated crossing: “Lamp voltage on standby power less than 85 percent of prescribed lamp rating”
2. 21st & Freeport gated crossing: “gate arm not in horizontal position”.

Activities:

The repair orders pertaining to the aforementioned gated crossings were reviewed.

Findings:

1. All defects noted on the repair orders pertaining to 47th Street and 21st Street crossings were repaired in a timely manner.

2. For the Butterfield crossing, its monthly, quarterly, and annual inspection records from May 8, 2002 to June 8, 2005 were properly documented and noted defects were corrected in a timely manner. These inspections were sufficiently comprehensive to identify potential problems.
3. For the Jackson Road grade crossing, its monthly, quarterly, and annual inspection records from May 8, 2002 to June 1, 2005 were properly documented and noted defects were corrected in a timely manner. These inspections were sufficiently comprehensive to identify potential problems.
4. No exceptions were noted.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**19**	Persons Contacted
Date of Audit	**6/21/2005**	Larry Davis – Superintendent, Wayside Maintenance
Auditors	**Anton Garabetian**	
Department	**Wayside Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-87-416, Track Inspections and Maintenance Standards, Dated 1/5/87
2. LR-SOP-87-413, Turnout Inspections, Dated 01/05/87
3. LR-SOP-87-414, Street Track Maintenance, Dated 09/26/91

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACK & TURNOUT INSPECTIONS

Review the records of completed track and turnout inspections prepared during the last two years to determine whether or not:

1. Track and turnouts were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner
4. Inspections were sufficiently comprehensive to identify potential problems

RESULTS/COMMENTS

Findings:

1. Turnouts 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.
2. Track weekly and monthly maintenance and inspection records from 2002 to 2005 were properly documented and noted defects were corrected in a timely manner. Inspections were sufficiently comprehensive to identify potential problems. I suggested to the wayside superintendent to add a column in the inspection summary cover sheet to indicate the noted defects closure date.
3. Track biannual maintenance and inspection records from 2002 to 2004 were properly documented and noted defects were corrected in a timely manner. Inspections were sufficiently comprehensive to identify potential problems.
4. Track biennial maintenance and inspection records from for 2004 and 2005 were properly documented and noted defects were corrected in a timely manner. Inspections were sufficiently comprehensive to identify potential problems. I suggested to the wayside superintendent to investigate the feasibility of purchasing an electronic track inspection

and maintenance tracking system.

Suggestions:

1. SRTD should add a column in the Track Inspection Summary cover sheet to indicate noted defects closure date.
2. SRTD should investigate the feasibility of purchasing an electronic track inspection and maintenance tracking system.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**20**	Persons Contacted
Date of Audit	**6/21/05**	Jeffrey Gualco – Manager, Civil & Track
Auditors	**Brian Yu**	
Department	**Engineering**	

REFERENCE CRITERIA

1. LR-SOP-88-420, Bridges/Structures-Inspections & Reports, Dated 11/11-/88

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

BRIDGES/STRUCTUIRES-INSPECTIONS & REPORTS

Review the records of completed biennial inspections of the Light Rail Transit (LRT) System bridges & structures prepared during the last three years to determine whether or not:

1. Bridges/structures were inspected at the required frequencies as specified in the reference criteria
2. Inspection reports and indications of failure were generated as required
3. Remedial actions were taken in a timely manner

RESULTS/COMMENTS

Findings:

1. The Biennial inspection of bridges was not performed in 2002 and 2004. The inspection records for 2000 and 2005 (late) were reviewed.

2. Six SRTD owned bridges, 3 Caltrans owned bridges and 1 Station Structure were on the list.

3. For Caltrans owned bridges, SRTD relies on the Caltrans' inspection reports. Caltrans conducts annual inspections on their bridges.

4. The inspection reports had recommendations but the completion of these recommendations could not be tracked.

5. The Standard Operating Procedure (SOP) that Mr. Gualco presented to me during the audit differed from the one I had. Mr. Gualco's version appeared older and the inspection responsibility was on Wayside Department instead of the Engineering Department. However, both old and new SOPs had the same SOP Number and revision dates.

Comments:

The current SOP should be revised to show the correct revision date. The method to track the recommendations generated by the biennial inspection reports should be included in the SOP.

The inspection responsibility between the SRTD and Caltrans should be described in the revised SOP.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**21**	Persons Contacted
Date of Audit	**6/21/2005**	Mark Nootenboom – Supervisor, LRV Maintenance
Auditors	**Brian Yu**	
Department	**LRV Maintenance**	

REFERENCE CRITERIA

1. LR-SOP-86-200, LRV Daily Inspection, Revision 101001-G
2. LR-SOP-86-201, LRV Weekly Inspection, Revision 060999-E
3. LR-SOP-86-202, LRV Mileage-Based Inspection Intervals, Revision 071096-B

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LRV Maintenance

Randomly select a minimum of four vehicles (two from the Siemens fleet and two from the CAF fleet) and for each selected review inspection records to determine whether or not:

1. Vehicles were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner

RESULTS/COMMENTS

Activities:

Selected 2 Siemens vehicles #106 & #115 in addition to 2 CAF vehicles #222 & #231 for the records review.

Findings:

1. Open repair orders that may have been closed by other subsequent repair orders cannot be tracked. Thus, creating an unnecessary back log for open repair orders.

2. Current vehicle mileage tracking system is unreliable and generates incorrect inspection schedules. Light Rail (LR) Maintenance Department tracks the mileage manually.

3. Some of the inspections were out of the 10K – 20K – 30K sequence.

4. ±1000 miles of the target mileage requirement for inspection cycles were exceeded in some cases.

5. When repair orders are completed, the repair order card is signed by the supervisor and filed.

6. 150K inspections are being performed but there isn't any SOP describing the inspection details.

Comments:

1. Light Rail Vehicle Maintenance Department should include the 150K inspection requirements in their SOP.

2. Light Rail Vehicle Maintenance Department should consider implementing a computerized tracking system for monitoring maintenance history, repair order completion status, and vehicle inspection schedules.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**22**	Persons Contacted
Date of Audit	**6/22/05**	Lynn Cain Ann Costa
Auditors	**Susan Feyl**	
Department	**Facilities Maintenance**	

REFERENCE CRITERIA

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

RIGHT-OF-WAY: FENCING & VEGETATION CONTROL

Review SRTD's records for fence inspections prepared during the last three years to determine whether or not all mainline fencing is being visually inspected on a periodic basis and noted defects are being corrected in a timely manner. In addition, survey all line segments where fencing is installed and determine whether or not the fence is in need of repair. Also survey the entire right-of-way currently in operation to see if it is clear of vegetation per Section 9.12 of General Order 143-B.

RESULTS/COMMENTS

Findings:

1. No formal systematic program to inspect and repair fencing or remove/control vegetation exists. A program was suggested as a result of the CPUC Triennial Audit in 1999. In the absence of a proactive policy for fencing repair and vegetation control, only problems that are observed by sweep trains, operators, or RT Wayside maintainers, get tracked to their resolution after work orders are generated via a computer tracking system.
2. There is a 3-year contract issued for weed abatement and another one for tree trimming. Some of the weeds have grown resistant to the weed killer used, so the company has started pulling weeds. Tree trimming and weed abatement are done as needed, not on a regular schedule.
3. Fencing problems were observed at the following locations:
    - Broken fence near substation 6 which was called in immediately
    - Fencing rail spread apart1/8 mile outbound of milepost 12.25
    - Broken fence near US 50
    - Fence post leaning, west of 59th Street Station
    - Hole in the fence near the 51st Street crossing
4. Vegetation problems were observed at the following locations:
    - Trees in the center of the track at Globe Avenue Station are very close to the dynamic envelope of the train
    - On the inbound side of College Greens Station, large plants block the operator's view of pedestrians

- Outbound at 65th Street Station , vegetation blocks the operator's view of pedestrians
- At the Arden/Del Paso Station tree branches are very close to the train dynamic envelope
- Near the Watt/I-80 Station there is an area full of weeds close to the American River Bridge
- Between Fruitridge and 47th Avenue Stations there are a number of trees on private property which are growing into the right-of-way. RT is negotiating with the owner regarding their removal.

Recommendation:

SRTD should develop a systematic program with appropriate checklists for fencing repair and vegetation control.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**23**	Persons Contacted
Date of Audit	**6/21/2005**	Lynn Cain Ann Costa
Auditors	**Susan Feyl**	
Department	**Facilities Maintenance**	

REFERENCE CRITERIA

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

STATION FACILITY MAINTENANCE

Review SRTD's station facility maintenance records for at least three stations prepared during the last three years to determine whether or not:

1. Stations were inspected at the required frequencies as specified in the reference criteria
2. Inspections were properly documented
3. Noted defects were corrected in a timely manner

RESULTS/COMMENTS

Findings:

1. No formal preventative maintenance program to identify deficiencies at passenger stations and ensure timely corrective actions to discrepancies found currently exists.
2. Facilities maintenance is responsible for landscape maintenance, operator restrooms, informational kiosks, lighting, broken tiles, signage, garbage removal, graffiti removal, and station cleaning. There is a log for night cleaning, none for day cleaning. Comprehensive inspection checklists are only being used at Park and Ride stations. For stations other than park and ride, work orders are generated from RT 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.
3. Broken concrete with a metal bar constitutes a tripping hazard and broken light fixture cover was observed at Globe Station.
4. Broken tile on a concrete seat, discolored light fixture, and a patron drinking alcohol out of a paper bag within sight of a security guard were observed at the Arden/Del Paso Station.
5. Missing seat, wasp nest in the shelter roof, missing light fixture and cover, and broken tile in walkway were observed at the Swanston Station.
6. Alkali Flat Station lighting was bright at both ends of the station and dark in the middle. This is an unsafe situation. A light fixture should be added in the middle of the station.
7. 13th Street Station was dark near the concrete planters.
8. Arden/Del Paso was dark on the south side.

9. Power Inn Station inbound side in the middle has a light out. The ramp from the parking lot is not ADA compliant.
10. Watt Manlove Station has 3 lights out and a big tree blocking the lights on the ramp.
11. Starfire Station has a light out.
12. Matherfield Station needs light in the center. The problem seems to be poor design.
13. Cordova Station has one dim light.
14. Sunrise Station has 2 lights out.

Suggestion:

The Safety Department should be involved in preliminary and final station design reviews to ensure proper lighting and avoid problems with trees which at some stations are blocking lighting, causing high maintenance, and growing into the dynamic envelope of the train (See also checklist 22).

Recommendation:

SRTD should expand on its current maintenance activities to address safety and security items such as station lighting and unsafe conditions.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**24**	Persons Contacted
Date of Audit	**6/24/05**	Dr. Beverly Scott - General Manager Mike Mattos – Chief, Facilities & Business Support Services Rufus Francis – Director, Safety Department
Auditors	**Robert Strauss**	
Department	**Senior Management**	

REFERENCE CRITERIA

1. CPUC General Order 164-C, Section 3-Requirements for System Safety Program Plan
2. CPUC Commission Resolution ST-58, Dated January 16, 2003
3. APTA Rail Safety Audit Program: Manual for the Development of Rail Transit System Safety Program Plans, Elements 2-4
4. SRTD System Safety Program Master Plan, Revised 2/1999, Chapter 3 Responsibility & Section 3.1 Authority. Section 4.2 Goals & Section 4.3 Objectives, Section 5.2.1 Senior Staff Oversight
5. Performance Evaluation Criteria for the Department Managers responsible for implementing safety, security, and quality requirements for their respective department as well as for achieving an integrated safety effort consistent with the System Safety Policy.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

AUTHORITY & RESPONSIBILITY FOR THE SYSTEM SAFETY PROGRAM

Interview the General Manager & Chief Operating Officer to evaluate the scope of Management involvement, coordination, and communication in SRTD's effort to implement the corrective action plan following the 2002 CPUC Triennial Audit. Specific commitments of review should include the following tasks:

1. Determine the scope, frequency, and depth of safety and security information provided to the General Manger
2. Determine the methods and incentives included in the management performance system to facilitate a system safety culture within the organization
3. Determine the involvement of management in accident/hazardous condition investigations and corrective actions
4. Determine the level where key safety and security decisions are made and the involvement of the management team in these decisions
5. Determine the level and depth of Management review and follow-up on corrective actions, including those triggered by accidents, hazardous conditions, internal audits, and triennial audits.

RESULTS/COMMENTS

The General Manager emphasized that the Safety Department has the authority and responsibility to take any action required to ensure safety. She is trying to encourage fresh perspectives that emphasize a safety/security attitude. In part, this results in a review of the rules and procedures to ensure they reflect current industry-wide safety and security practices.

Information:

The General Manager receives safety and security information through several methods:

- Monthly reports provide statistics on key operational issues including safety and security. The General Manager is trying to institutionalize the use of vital statistics.
- Weekly reports discuss open safety items, such as General Order 95 compliance
- Safety Manager's Report covers audit findings and corrective action plans and includes supporting documentation on the issues discussed.
- Major Incident notification
- An Employee Safety Committee, made up of Safety, union members and Risk Management, meets monthly on unsafe conditions and reports to the General Manager

Management Performance and Safety:
The General Manager uses vital statistics as performance indicators. Vital Statistics are also integrated into the budget as performance goals. SRTD has no performance based bonus program, but the Board is considering developing one.

Accident Investigations:
The General Manager is on the first contact list for major incidents, but relies on Operations and Safety to perform the work. The General Manager prioritizes investments and sets goals, Safety is #1 goal. This relates to both corrective action plans and longer term safety and security improvements.

Decision making:
Key safety sand security decisions are made by the SRTD board after recommendations of management committees. For example a new Board level Ad Hoc Security Committee discussed such issues as the number of security officers, areas of deployment, and software tracking systems. The Rail Activation Committee makes decisions on day to day issues involving major projects such as rail extensions.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**25**	Persons Contacted
Dates of Audit	**6/21 & 6/24/2005**	Mark Lonergan – Director, Light Rail Gabe Avila – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Gary Rosenthal**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. CPUC General Order 143-B, Section 13.04
2. Regional Transit Rail Operations Rules, Revised 7/22/03
3. Transportation Notices

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRAIN OPERATOR PERFORMANCE

Interview at least 3 operators to evaluate their knowledge and understanding of SRTD's Rail Operation Rules. Additionally, perform on-board train observations to determine if train operators perform their duties in accordance with the governing operating rules and notices.

RESULTS/COMMENTS

Findings:

1. Through interviews of six train operators at the Light Rail Conference Room regarding the meaning and application of six rules/procedures from the Regional Transit Rail Operations Rules (Rules 1.3, 1.5, 2.7, 2.30, 3.42, & 3.43, six operators were familiar with rule 3.42 but only one operator was familiar with the provisions of Rule 2.7 and, specifically, the "Slow" speed requirement.
2. 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.

Recommendation:

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.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**26**	Persons Contacted
Date of Audit	**6/21/05**	Mark Lonergan – Director, Light Rail Gabe Avila – Superintendent, Light Rail John Darragh – Superintendent, Light Rail
Auditors	**Mahendra Patel**	
Department	**Light Rail**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan Revised 2/1999 (5.2 Safety Review Processes)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

RULES AND PROCEDURES REVIEW

Conduct the necessary interviews and review appropriate records to determine whether or not:

1. Adequate procedures are in place for controlling the modification or deletion of district's rules/procedures
2. Adequate controls are in place to ensure that responsibilities for drafting modifications to Rules, including the need to distribute proposed modifications to departments with a need-to-know for review and comment, are clearly understood and practiced.
3. Adequate controls exist to minimize the possibility of improper procedures.
4. Adequate rules and procedures that particularly govern operational conduct on new or non-commissioned light rail extensions were developed and implemented.
5. All revised rules are distributed to rail employees and appropriate training provided.

RESULTS/COMMENTS

Activities:

I interviewed the above listed SRTD personnel in charge of the process for reviewing the rules and procedures of the light rail system.

1. I reviewed randomly selected samples of Light Rail Operating Bulletins and Transportation Notices.
2. I reviewed binders for SOPs, Departmental Procedures and Transportation Notices.
3. I reviewed the bulletin board displaying Transportation Notices.

Findings:

1. SOPs, Rulebook and other governing rail documents are reviewed and changes approved according to SRTD requirements.
2. All light rail departments including Safety Department, Training Department and Metro Control provide feedbacks for the rulebook revision. Transportation supervisor staff meeting is conducted at least once a month (the goal is to meet biweekly) to discuss

rulebook changes and other issues.

3. Everyone who is main line certified gets a copy of the rulebook and goes through the refresher training.
4. 07/25/03 revision of the Rulebook has been filed with Commission staff as required by GO 143-B. The next rulebook revision will incorporate Amtrak extension.
5. Transportation Notices are posted on the bulletin board in the operator's room. Old notices are removed and kept in binders. The binders contain all notices. Operators are required to read the notices posted on the bulletin board everyday. However, they are not checked for the notices in their efficiency testing.
6. There is a Rail Activation Committee (RAC) for new extension that meets regularly to discuss rules and procedures, design and construction issues, safety issues, safety certification process, etc. CPUC is invited to attend this meeting.
7. SRTD is in the process of reorganizing the SOPs per GM's directives. Procedures affecting SRTD system wide (e.g. SSPP, AIP, etc.) will be SOPs and signed by the GM. Remainder of the SOPs will be reclassified as Departmental Procedures (e.g. Safety, Transportation, Way Side Maintenance, Vehicle Maintenance, etc.) signed by the respective department directors.

Suggestion:

The Transportation Notices should be included in the Efficiency Testing.

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**27**	Persons Contacted
Date of Audit	**6/22/2005**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department Frederick Carr – Safety Specialist, Safety Department J.M. Glenn P. Batilando – Safety Specialist II, Safety Dept.
Auditors	**Hani S. Moussa**	
Department	**Safety**	

REFERENCE CRITERIA

1. APTA Elements 19 & 22
2. Injury and Illness Prevention Program, Issued July 1, 2004

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

EMPLOYEE AND CONTRACTORS SAFETY PROGRAMS

Conduct the necessary interviews and review appropriate records prepared during the last three years to determine whether or not:

1. All contractor personnel receive adequate training on SRTD's procedures
2. Adequate controls are in place to ensure that contractor personnel know and follow the procedures
3. Adequate sanctions are imposed when contractor personnel violate procedures.
4. Appropriate procedures exist for district employees to effectively report safety hazards and complaints
5. Timely follow-up ensues to investigate and mitigate identified hazards.

RESULTS/COMMENTS

Activities:

I interviewed Mr. Rufus Francis, Director of Safety, Mr. Rob Hoslett, Senior Safety Specialist, Mr. Frederick Carr, Safety Specialist, and Mr. Glenn Batilando, Safety Specialist II to determine how the Employee and Contractors Safety Program is implemented at Sacramento Regional Transit District (SRTD) and requested contractor personnel training documentation for the past three years.

Findings:

1. In accordance with Standard Operating Procedure (SOP) LR-SOP-86-014, Track Warrant, any contractor working on or within ten feet of the nearest rail is required to have a Track Warrant approved by SRTD Metro Control prior to performing the work.
2. The contractor's on-site contact representatives receives proper training on SRTD's procedures by being instructed to following the track warrant conditions, verifying the track warrant for each scheduled day of work with SRTD Metro Control, and obtaining an

authorization number from SRTD Metro Control for each scheduled day of work.

3. 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 contractor received training, was aware of the track warrant conditions, and in compliance with SRTD's SOP LR-SOP-86-014.
4. In accordance with SOP LR-SOP-86-014, a track warrant may be annulled at any time by SRTD Metro Control if deemed necessary. Reasons for annulment may be operational or for non-compliance with SRTD policies.
5. A Daily Light Rail Operating Bulletin identifies the contractor name, location, and time of a track warrant in effect.
6. SRTD's Injury and Illness Prevention Program (IIPP) was created to reduce the number of employee injuries and illnesses in the workplace by focusing on the hazards that may be present and finding ways to reduce or eliminate them.
7. SRTD's Report of Unsafe Condition or Hazard (Hazard Report) form must be used by employees for communicating to management and for identifying any type of SRTD problem regarding safety issues.
8. Monthly Safety Committee Meetings, attended by management, unions, safety department personnel, and employees, provide a forum in which employees and management can exchange information related to safety issues, programs, policies, procedures, and standards.
9. SRTD Safety Department staff maintains records of employee reports of hazards and corrective actions to be taken or planned through an internal computer database. This program is accessible by the Safety Department to make revisions and provide updates to any corrective actions.
10. A review of the records for the 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 IIPP, Section 3.1.
11. No exceptions were noted.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**28**	Persons Contacted
Date of Audit	**6/23/05**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department Diane Fite -
Auditors	**Mahendra Patel**	
Department	**Safety & Risk Management**	

REFERENCE CRITERIA

1. APTA Elements 16
2. SRTD System Safety Program Master Plan, Revised 2/1999 Section 7.3 Data Collection

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SAFETY DATA ACQUISITION/ANALYSIS

Conduct the necessary interviews and review appropriate records to determine whether or not the Safety Department collects, maintains, and distributes safety data relative to system operation and analyzes this data to determine trends in system operation to improve safety/ performance.

RESULTS/COMMENTS

Activities:

1. I interviewed the above listed SRTD personnel in charge of Safety Data Acquisition / Analysis.
2. I reviewed the binder containing Facility Inspection Reports from each department.
3. I obtained a copy of memo dated June 3, 2004 from Director of Safety to Chief of Facilities Management regarding Capitol Improvement Program (CIP) Committee – Request for Safety Improvements at Ahern Grade Crossing.
4. I obtained a copy of May 18, 2005 IBEW – RT Safety Committee meeting minutes.

Findings:

1. Safety Department acquires historical accident data from the Risk Management. Safety Department has the recent accident data (from October 2004 to present).
2. Safety Department received security incidents data from RT Police annually before 2005. From January 2005, this data is received monthly. A quarterly summary and an annual summary of security incidents are also provided to Safety Department by RT Police.
3. Safety Department receives Operator Occurrence Report, Supervisor Report and Hazard Report from Operations.
4. Safety Department receives monthly Facility Inspection Report from each department. Noted deficiencies are normally corrected within 30 days. Any deficiency that is not

corrected within 30 days is tracked by a corrective action matrix until it is corrected.

5. Safety Department analyzes the data collected to identify trends in system operation and makes appropriate recommendations to improve safety / performance. Improvement projects at Arden / Oxford grade crossing and Ahern grade crossing are examples of this activity.
6. IBEW – RT Safety Committee meets monthly. The agenda includes employees injuries/illness, accidents/incidents investigations, departmental safety meetings, occupational hazards, district-wide safety matters, matters arising from previous meetings, updates on action items, etc. Approved minutes of meeting are distributed to General Manager, Chief Legal Counsel and all departments.
7. SRTD has expanded the Safety Data Acquisition/Analysis section in the revised SSPP. This revised and approved version of the SSPP has been submitted to the CPUC for review and approval.
8. Safety Department is in the process of implementing Transit Safe program and expects it to be fully functional by the end of the year. This program will further improve the safety data acquisition / analysis process.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**29**	Persons Contacted
Date of Audit	**6/24/2005**	Mark Lonergan – Director, Light Rail Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department
Auditors	**Mahendra Patel** **Dennis Reed**	
Department	**Light Rail & Safety**	

REFERENCE CRITERIA

1. APTA Elements 17
2. SRTD System Safety Program Master Plan, Revised 2/1999

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

INTER-DEPARTMENTAL/INTERAGENCY COORDINATION

Conduct the necessary interviews and review appropriate records to determine whether or not:

1. An approved procedure exists that spells out in detail the necessary communication process between the various departments at SRTD as well as outside agencies with which SRTD must coordinate.
2. Deviations from this procedure are brought to the general management attention as part of the ongoing Internal Audit Process at SRTD.

RESULTS/COMMENTS

Activities:

We interviewed the above listed SRTD personnel in charge of the program.

Findings:

1. There is no approved procedure that spells out in detail the necessary communication process between the various departments as well as outside agencies. However, the existing committee structure, such as, Rail Activation Committee (RAC), Labor/Management Joint Safety Committee, IBEW Safety Committee, Emergency Preparedness Committee, Safety Configuration Management Review Committee, etc. provides inter-departmental and inter agency communication.
2. GM gets minutes of Labor/Management Joint Safety Committee meetings and IBEW Safety Committee meetings.
3. SRTD personnel told us that critical communication issues are brought to the attention of general management. For example, the issue of who is responsible for configuration management – engineering or safety – was discussed with the GM and it was decided to be engineering responsibility.
4. SRTD has expanded the Committee Safety Related Tasks section in the revised SSPP to further enhance the communication. This section includes descriptions of Hazard Resolution and Fire/Life Safety Committee (HRFLSC), Change Review Committee (CRC),

Interagency Coordination Committee (ICC), Rail Activation Committee (RAC), Capitol Program Committee (CPC) and Safety Committee (SC). The revised and approved version of the SSPP has been submitted to the CPUC for review and approval.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**30**	Persons Contacted
Date of Audit	**6/22/2005**	Randall Miller – Manager, Procurement Department Eric Oparko – Manager, Quality Assurance
Auditors	**Brian Yu**	
Departments	**Procurement & Engineering**	

REFERENCE CRITERIA

1. APTA Elements 23
2. SRTD System Safety Program Master Plan, Revised 2/1999

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

PROCUREMENT

Conduct the necessary interviews and review appropriate records to determine whether or not:
1. Adequate procedures & controls are in place to preclude the introduction of defective or deficient equipment into the rail transit environment at SRTD.
2. Adequate procedures are in place to safely deal with defective or deficient equipment in the event these are introduced to the rail transit environment at SRTD.

RESULTS/COMMENTS

Activities:

I interviewed SRTD Procurement Manager and Quality Assurance Manager to determine the adequacy of SRTD's Procurement Program.

Findings:

1. The Procurement Department is following the Procurement SOP which was developed according to the FTA guideline.
2. The procurement procedure covers the entire Sacramento Regional Transit District (including Bus, Admin, etc.)
3. The Engineering Department's Quality Assurance (QA) Manager develops a project specific Quality Assurance program.
4. For each Rail Transit projects, the project specific Quality Assurance Program is used to verify the procured system component is in compliance with the procurement specifications.
5. The QA Plan for the corporate level is being developed by the QA Manager.
6. SRTD doesn't have a QA Department. QA Manager reports to Engineering Department.

Comment:

In the future, SRTD should consider establishing an independent QA Department which is un-

influenced by other departments and has capability of reporting directly to the top management. A QA Manager reporting to the Engineering Department Manager has an inherent conflict and this may unintentionally bias QA functions.

Recommendation:

None.

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**31**	Persons Contacted
Date of Audit	**6/22/05**	Rufus Francis – Director, Safety Department Rob Hoslett – Senior Safety Specialist, Safety Department
Auditors	**Mahendra Patel**	
Department	**Safety**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan Revised 2/1999 Section 6.1.2 through 6.1.4
2. APTA Element #7

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HAZARD IDENTIFICATION RESOLUTION PROCESS

Conduct the necessary interviews and review appropriate records to determine whether or not:

1. A procedure exists that documents the hazard analysis process with appropriate sign-offs.
2. The hazard identification process is coordinated with other important activities such as accident/incident investigation and safety data acquisition/analysis.
3. All essential documentation is maintained showing the categorization of identified hazards and their resolution down to levels of risk acceptable to upper management.

RESULTS/COMMENTS

Activities:

1. I interviewed the above listed SRTD personnel in charge of Hazard Identification Resolution Process.
2. I reviewed the binder containing Preliminary Hazard Analysis Report for Limited Stop dated May 17, 2005 submitted by Booz Allen Hamilton.
3. I reviewed and obtained a copy of spreadsheet showing subject, description, date entered, department code, responsible individual and completion date compiling various hazard reports.
4. I reviewed and obtained a copy of a hazard report dated 8/14/97 for a tripping incident that occurred at Watt/I-80 light rail station.

Findings:

1. There is no approved procedure that documents the hazard analysis process. However, SRTD uses Military Standard 882(B) in conjunction with SSPP and APTA element 7 for hazard Identification / Resolution Process.
2. Hazard Report form is used to document any identified hazard. This form includes historical data, severity level estimate, probability level estimate, recommended plan of action (including temporary and permanent measures to correct the hazard), etc. All

identified hazards are entered in the database and tracked to completion by the safety department.

3. Hazard identification process is coordinated with accident/incident investigation and safety data acquisition/Analysis activities. Improvement projects at Arden / Oxford grade crossing and Ahern grade crossing are examples of this activity.
4. Safety Department is in the process of implementing Transit Safe program and expects it to be fully functional by the end of the year. This program will further improve the Hazard Identification Resolution Process.
5. SRTD is in the process of finalizing the Preliminary Hazard Analysis Report for Limited Station Stop. Residual Risk Index section of this report discusses various hazards and their resolutions down to levels of risk acceptable to upper management. This final report will be submitted to CPUC for review and approval.

Recommendation:

None

CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
SACRAMENTO REGIONAL TRANSIT DISTRICT

Checklist No.	**32**	Persons Contacted
Date of Audit	**6/20/2005**	John Segerdell - AGM of Engineering Buck Cutting - Senior Engineer, Systems Engineering Greg Austin – Manager, Systems Engineering Eric Oparko – Manager, Quality Assurance
Auditors	**Anton Garabetian**	
Department	**Engineering**	

REFERENCE CRITERIA

1. SRTD System Safety Program Master Plan Revised 2/1999 Section 5.2.2
2. APTA Element #15

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SYSTEM MODIFICATION REVIEW/APPROVAL PROCESS

Conduct the necessary interviews and review appropriate records to determine whether or not:

1. The CAF/Siemens Vehicle Compatibility Project has gone through the necessary detailed and documented approval process with specifics of sign-off requirements and exception capability.
2. Accepted risks and work-arounds, if any, that are associated with the aforementioned project were documented and tracked from the outset.

RESULTS/COMMENTS

Activities:

The CAF/Siemens Vehicle Compatibility Project Safety Certification documentation dated June 2003 was reviewed.

Findings:

1. The above document included contractor signatures verifying that safety impacted items were completed and project was safe to proceed. A matrix listed several workaround items. Some of these items were closed and some were still open. SRTD reps informed me that all the open items are closed out but could not provide this documentation.

Recommendation:

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.