TRIENNIAL ON-SITE SAFETY AUDIT OF THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

RAIL TRANSIT SAFETY SECTION
RAIL TRANSIT AND CROSSING BRANCH
CONSUMER PROTECTION AND SAFETY DIVISION
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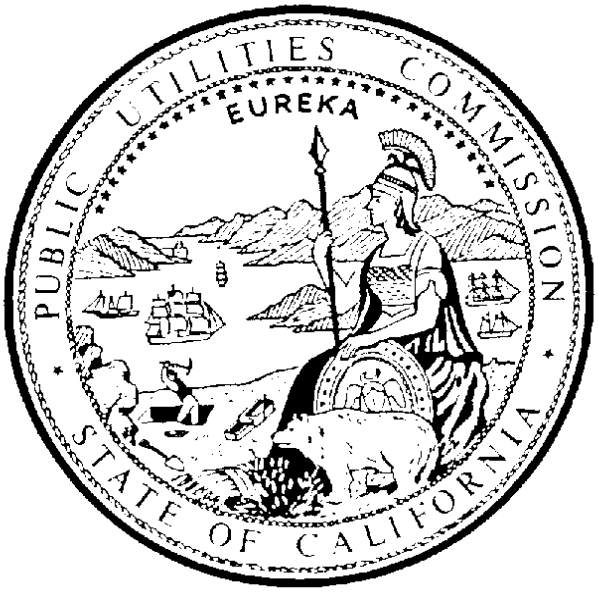
FINAL REPORT



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1. EXECUTIVE SUMMARY

The Rail Transit Safety Section staff (staff) of the California Public Utilities Commission's (Commission) Consumer Protection and Safety Division conducted the third triennial, on-site, safety audit of the Los Angeles County Metropolitan Transportation Authority (LACMTA) from June 14 to June 25, 2004. The on-site audit was preceded by a pre-audit conference with LACMTA personnel, on Monday, June 14, 2004. A post-audit conference, also attended by LACMTA personnel, was held on Thursday June 24, 2004. LACMTA senior management attended these meetings.

The audit results indicate that LACMTA made significant safety process improvements since the 2001 Commission audit. Generally, the audit found that LACMTA has a comprehensive System Safety Program Plan (SSPP) and is effectively carrying out that plan.

Consumer Protection and Safety Division Director Richard Clark wishes to personally acknowledge LACMTA Chief Executive Officer Roger Snoble, Deputy Chief Executive Officer John Catoe, and Metro Rail General Manager Gerald Francis for their leadership and personal dedication to resolving the management related non-conforming conditions contained in the Commission's 2001 Triennial Audit of LACMTA.

The staff audited 10 LACMTA departments on 38 separate subjects using specific criteria (checklists) and made 26 recommendations. The audit results indicate that LACMTA made significant progress between 2001 and 2004 audit in the areas of inspection, documentation, and training. However, it also identifies areas where additional improvements should be made to further improve LACMTA safety program. The Wayside Systems Department needs to improve its inspection programs, especially track (Checklist No. 2) and light rail traction power (Checklist No. 3). Fleet Services Department made significant improvements in fleet inspection and maintenance documentation and tracking but it lagged in immediately addressing non critical problems (Checklist No. 4). Rail Operations Safety (ROS) should improve accident investigation reporting and should develop accident investigation recommendation implementation process (Checklist No. 21).

In several cases, LACMTA responded quickly to staff findings and corrected deficiencies before the onsite audit activities were completed. LACMTA also reported that it corrected most of the remaining deficiencies within the first few months following the audit.

The introduction of this report is stated in Section 2. The background, with LACMTA rail system description and 2001 audit results are written in Section 3. Sections 4 and 5 respectively depict 2004 audit procedure and findings and recommendations. The Acronyms are listed in Appendix A. LACMTA 2001 Triennial Safety Audit Checklist Index, Recommendations List and Commission Resolution ST-54 are stated in Appendices B, C, and D respectively. LACMTA 2004 Triennial Safety Audit Checklist Index, Recommendations List, and the Checklists are respectively written in Appendices E, F, and G.

2. INTRODUCTION

The Commission's GO 164-C, Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems, and the Federal Transit Administration's (FTA) Final Rule, 49 CFR Part 659 require the staff to perform triennial, on-site, safety audits of each transit agency. The purpose of these audits is to verify compliance with, and evaluate the effectiveness of, each rail transit agency's SSPP. LACMTA was last audited in June 2001.

In April 2004, staff sent a letter to LACMTA Chief Executive Officer (CEO), advising him that the triennial audit for system inspections would be scheduled in May and June, 2004, and the third on site triennial safety audit would be scheduled from June 14 to June 25, 2004. This letter included four checklists for track, traction power, signal, and fleet services inspections. In May 2004, staff sent a second letter confirming the audit dates and enclosed 38 checklists that would serve as the basis for the audit.

The Railroad Operation and Safety and Rail Transit Safety sections of the Commission Consumer Protection and Safety Division conducted the LACMTA track, traction power, signal, and fleet services system inspections in May and June, 2004. Staff conducted the third triennial, on-site, safety audit of LACMTA from June 14 to June 25, 2004. The on-site audit was preceded by a pre-audit conference with LACMTA personnel on Monday, June 14, 2004. A post-audit conference was held on Thursday June 24, 2004. At the post-audit conference, staff provided LACMTA representatives a verbal synopsis of the preliminary findings and recommendations from the 38 checklists. Staff explained that a preliminary draft audit report would be prepared for LACMTA review and comments. LACMTA senior management attended these meetings.

3. BACKGROUND

LACMTA is the transportation agency of Los Angeles County. LACMTA is governed by a 13-member Board of Directors comprised of: five Los Angeles County Supervisors, the Mayor of Los Angeles, three Los Angeles mayor-appointed members, four city council members representing the other 87 cities in Los Angeles County, and one non-voting member appointed by the Governor of California.

LACMTA Rail System Description

LACMTA rail system consists of the Metro Blue, Red, Green, and Gold lines with the Gold Line Eastside Extension under construction and two other proposed extensions. The total system is about 74 miles with 65 stations. The average ridership of the system is approximately 191,000 per day.

Metro Blue Line

The Metro Blue Line (MBL) is a light rail line that runs between downtown Los Angeles and downtown Long Beach. It has 22 stations over a 22-mile route. The Metro Blue Line connects to the Metro Green Line at Rosa Parks/Imperial station in Compton and connects to the Metro Red Line at 7th/Metro Station in downtown Los Angeles. Currently two-car and three-car trains are running depending on the time of the day. The average boarding is about 66,000 per day and the 2003 total yearly boarding was about 24 million.

Metro Red Line

The Metro Red Line (MRL), a heavy rail subway, runs under downtown Los Angeles between Union Station and North Hollywood. It has 16 stations over its 17.4-mile route. The Metro Red Line connects to the Metro Blue Line at 7th/Metro Station in downtown Los Angeles and connects to the Amtrak and Metrolink commuter rail, as well as the Gold Line, at Union Station. Either a four-car train or a six-car train is running depending on the time of the day. The average boarding is about 90,000 per day and the 2003 total yearly boarding was about 33 million.

Metro Green Line

The Metro Green Line (MGL) is a light rail line that runs east-west along the median of the Glenn Anderson (Century) Freeway (I-105) through Los Angeles County between the City of Norwalk and the City of Redondo Beach. It has 14 stations over its 20 miles of service route. It connects to the Metro Blue Line at Imperial/Wilmington (Rosa Parks) Station in Compton. Currently, a two-car configuration is running. The average boarding is about 25,000 per day and the 2003 total yearly boarding was about 9.1 million.

Metro Gold Line

The Metro Green Line is a light rail line that runs from Los Angeles Union Station to Pasadena Sierra Madre Villa Station. The Metro Gold Line revenue operation service started in July 2003. It has 13

stations over 14 miles of service rout. It connects to the Metro Red Line at Union Station. Currently, a two-car train is running. The average boarding is about 13,000 per day.

Metro Gold Line Eastside Extension Project

The proposed Metro Gold Line East Side Extension project is under construction. It is a six-mile, dual track light rail system with eight new stations and one station modification. The system originates at Union Station in downtown Los Angeles, where it connects with Pasadena Gold Line and Metro Red Line, traveling east to Pomona and Atlantic Boulevards. The scheduled revenue opening service is in 2008.

Mid-City/Exposition Light Rail Transit Project

Current plans call for a 9.6-mile line extending along LACMTA-owned Exposition right-of-way from the existing Metro Rail station at 7th/Metro Center in downtown Los Angeles to Venice/Washington Boulevard in Culver City. The Mid-City/Exposition Light Rail Transit Project will include seven new stations plus upgrades to three existing stations, providing a total of ten stations for the length of the initial segment of the route to Culver City. The alignment will primarily be at-grade. The project is in the preliminary engineering stage.

Metro Gold Line Foothill Extension Light Rail Project

Current plans call for an eastward 24-mile extension of the Pasadena Gold Line starting from Sierra Madre Villa Station in Pasadena to Montclair. The proposed alignment of Metro Gold Line Foothill Extension follows the old Burlington Northern Santa Fe (BNSF) railroad corridor. The project will include twelve new stations. The alignment will primarily be at-grade. The project is in environmental impact study phase.

2001 Audit

Staff performed the second LACMTA System Safety Program safety audit in June 2001. The 39 checklists (See Appendix B) resulted in 32 recommendations (See Appendix C). The majority of the recommendations focused on preventive maintenance inspections and training/certification programs. LACMTA developed a corrective action plan to implement the recommendations. Thirty of the 32 recommendations are closed and two recommendations, No. 17 and 26, still remain open. Recommendation No. 17 states, "LACMTA should extend the insulators closer to the feeder pole, away from the dynamic weight system, as required by GO 95, Rule 74.4-F." Recommendation No. 26 states, "LACMTA should implement the requirements of the LACMTA AIP and GO 164-B, Section 6." LACMTA did not mitigate the GO 95 traction power system violations and it does not follow the GO 164-B requirements for accident investigations.[1]

[1] LACMTA (November 20, 2003) and several other transit agencies requested deviations from GO 95 Rule 74.4F. At the time there was an open rulemaking proceeding seeking revisions to GO 95. The California Transit Association, of which LACMTA is a member, discussed with staff a modification to the general order to eliminate the need for the deviations, but no proposal was filed in the proceeding.

4. AUDIT PROCEDURE

Staff conducted the audit in accordance with Rail Transit Safety Section 4, Procedure for Performing Triennial Safety Audits of Rail Transit Systems. Staff developed 38 checklists to evaluate the various departments with system safety responsibilities, using FTA and American Public Transit Association guidelines and the staff's knowledge of the transit system. The list of the 38 checklists is included in Appendix E.

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

- discussions with LACMTA management
- reviews of procedures and records
- observations of operations and maintenance activities
- interviews with rank and file employees
- inspections and measurements of equipment and infrastructure

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

5. FINDINGS AND RECOMMENDATIONS

Staff audited 10 LACMTA departments with 38 checklists. Generally, the audit found that LACMTA has a comprehensive SSPP and is effective in carrying out that plan. The results indicate that LACMTA made significant safety process improvements within the last 3 years. Staff recorded the audited findings for each element/characteristic under the Results/Comments heading on each of the 38 checklists. Appendices E, F, and G depict the LACMTA 2004 Triennial Audit Checklist Index, Recommendation List, and Checklists.

Following is a brief explanation of the responsibilities of each department, staff audit findings, comments, and recommendations for that department. There are 26 recommendations that are distributed among the Wayside Systems, Operations / Transportation, Rail Fleet, Rail Operations Safety, Corporate Safety, and Quality Assurance departments. Staff did not make any recommendations for the senior management, Security, Human Resources, and Procurement departments.

1. Management

The LACMTA CEO has the overall management responsibility for all of the LACMTA departments, including the authority and responsibility for System Safety. The Commission's 2001 audit found significant non-conforming conditions. Our 2004 audit does not.

Findings – Conforming Conditions:

Staff interviewed LACMTA management to determine the scope of management involvement, coordination, and communication to satisfy the commitments and recommendations for improving and implementing the SSPP. The CEO has many resources and tools available to track system safety. These include:

1. The Metro Rail General Manager and CEO receive monthly and quarterly reports on safety measures. The reports contain statistics on accident and worker's compensation incident rates. They discuss the serious accidents at safety meetings. The upper management has been directly involved in the safety education program and has provided significant funding for the program (See Checklist No. 5).
2. Rail Operations Safety is responsible for tracking accident corrective actions and keeps the Metro Rail General Manager informed on their status (See Checklist No. 5).
3. The Performance Appraisal Process has a section on strategic planning goals and performance objectives. It is not clear from the material provided how safety is weighted among the competing goals, and whether the performance objectives of key managers relate to safety (See Checklist No. 5).
4. LACMTA management is involved in the audit process and expressed concern to immediately respond to any issues raised by the audit.

Findings – Non-Conforming Conditions:

None

Recommendations:

None

2. Operations / Transportation Department and Support

The Rail Operations / Transportation Department is responsible for ensuring the overall safety requirements of Metro Rail operations and maintenance. This department is also responsible for establishing and implementing training requirements of all rail maintenance supervisors and other maintenance employees, Rail Transportation Operations Supervisors, and provides operational training to other employees as required to ensure compliance with Standard Operating Procedures (SOP).

Findings - Conforming Conditions:

1. The light and heavy rail license, training, certification, and re-certification records, including Operator/Student Performance Sheets, for the selected train operators, Rail Operations Control (ROC) controllers, yard controllers, signal maintenance inspectors, track maintenance inspectors, and fleet services employees are complete and current (See Checklist Nos. 6 and 7).
2. The light and heavy rail accident follow-up ride checks are performed as soon as possible following an accident or within two weeks after an operator returns to duty (See Checklist Nos. 6 and 7).
3. LACMTA has developed a light and heavy rail comprehensive Program of Operational Evaluations with complete records (See Checklist No. 8).
4. LACMTA MRL, MBL, and Gold Line train operators are generally knowledgeable about and complied with operating rules and procedures (See Checklist No. 9 and 10).
5. LACMTA heavy and light rail train controllers generally are knowledgeable about and complied with operating rules and procedures (See Checklist Nos. 11 and 12).
6. All the required documentation for project configuration management change is available for all the projects (See Checklist No. 23).
7. LACMTA held regularly scheduled emergency drills for the MBL, MRL, and MGL and held a number of drills for Metro Gold Line before revenue operation service. In all, the participants evaluated the emergency drills (See Checklist No. 32).
8. LACMTA is in charge of contractors' safety and it can remove any contractor or representative who fails to meet work site safety requirements. All contractors are provided safety training. Contractors must follow the track allocation process (See Checklist No. 33).
9. All audited train operators, rail transit operations supervisors, and rail fleet services personnel are in compliance with the hours of service requirements of GO 143-B (See Checklist No. 35).
10. LACMTA has a newly developed Metro Rail Standard Operating Procedure process (See Checklist No. 37).

Findings – Non-Conforming Conditions:

1. The light and heavy rail ROC controllers are not completing their quarterly proficiency rides on a consistent basis as required by LACMTA (See Checklist Nos. 6 and 7).

2. On heavy rail, there are a variety of operator interpretations and performances of the look back procedure, such as when to look back after the operator closes the train side doors and prepares to depart stations (See Checklist No. 9).
3. The MBL train operator compliance with a variety of rules and procedures is inconsistent. The MGL train operators are not consistently in compliance with and knowledgeable about operating rules and procedures (See Checklist No. 10).
4. The light rail ROC Daily Incident Log periodically lists open safety items but it is not clear who at ROC management is responsible for tracking and ensuring the open safety items are corrected, verified, and closed and how that process takes place (See Checklist No. 11).
5. ROC SOPs address a number of safety related train equipment failures. However, there are safety related train equipment failures, such as dynamic brake failure indications, that are not specifically addressed in the SOP (See Checklist No. 12).
6. The Engineering Department director's signature is missing from the Blue Line Yard Expansion Acceptance for Release document.

Comments:

1. Rail Transportation Instruction Department continues to develop changes to improve the Program of Operational Evaluations adopted in February 2003, including proposed revision of forms, clarification of procedures, publication of performance data, and expansion of the kinds of tests and observations performed. As these proposed improvements are evaluated and adopted by LACMTA, staff suggests that the Program of Operational Evaluations control document also be revised as directed in the current version (See Checklist No. 8).
2. Staff suggests that Rail Transportation Instruction Department revise the Program of Operational Evaluations to include monitoring and evaluating all supervisors' quality of performance in conducting operators' evaluation tests and observations and take necessary actions to ensure a consistent high level of program implementation and administration (See Checklist No. 8).
3. Staff suggests that tests on the Program of Operational Evaluations and the Train Operator Training Program always include the "Look Back" procedure (See Checklist No. 9).
4. Staff suggests that the Program of Operational Evaluations and the Train Operator Training Program for the light rail systems continue to include and actively address knowledge of and compliance with operating rules and procedures (See Checklist No. 10).
5. Staff suggests that LACMTA consider a periodic review and evaluation of ROC procedures and practices, including the ROC Procedure Notices, to assure documents are current and are effectively addressing safety issues concerning the control of light rail operations (See Checklist No. 11).
6. Staff suggests that LACMTA ensure that all the required signatures are obtained for project documentation and approval (See Checklist No. 23).
7. Staff suggests that, since the Metro Rail Standard Operating Procedure process is new, LACMTA re-evaluates it through the internal safety audit process (See Checklist No. 37).

Recommendations:

1. LACMTA should ensure that the quarterly proficiency rides are completed for all affected employees (See Checklist Nos. 6 and 7).

2. LACMTA should implement the means necessary for train operators to effectively monitor the side of trains at MRL station platforms, including the continued installation of wayside mirrors where appropriate, to ensure safety as the side doors are closed and the trains depart stations (See Checklist No. 9).
3. LACMTA should ensure all light rail train operators are consistently knowledgeable about operating rules and procedures and those rules are consistently followed (See Checklist No. 10).
4. LACMTA should implement procedures to ensure that all open safety items recorded in the ROC Daily Incident Log are properly evaluated, corrected, and closed as required by the hazard identification and resolution requirements in the LACMTA System Safety Program Plan (See Checklist No. 11).
5. LACMTA should implement procedures to address potential train equipment failures that can occur while trains are being operated, with or without passengers. Those procedures should establish appropriate operating safety mitigations until those equipment failures can be corrected or the train is removed from service (See Checklist No. 12).
6. LACMTA should update Section 4.5 of the SSPP regarding Rules/Procedures Review. (See Checklist No. 37).

3. Wayside Systems Department

The Wayside Systems Department is responsible for maintaining wayside systems including Communications Systems for Rail Operations, Custodial Services, Rail facilities Maintenance, SCADA, Signal, Track, and Traction Power.

Findings - Conforming Conditions:

1. Staff inspected applicable light and heavy rail grade crossings and interlocking signal equipment and found no exception (See Checklist No. 1).
2. Staff inspected and measured the MBL, MGL, Metro Gold Line, and MRL track gage, elevation, guard check, guard face, and switches at several locations and found no exceptions (See Checklist No. 2).
3. Staff measured applicable MBL, MGL, Metro Gold Line OCS wire height at several grade crossing and station platforms and found no exceptions (See Checklist No. 3).
4. LACMTA performed applicable heavy and light rail grade crossing, mainline switch, and interlocking signal inspections and tests at the required maintenance intervals and staff determined that records are in order (See Checklist Nos. 13 and 14).
5. LACMTA records indicated that MRL and MGL vital relay tests are on schedule. The heavy and light rail vital relays are readily available in the storage room and are properly controlled and calibrated against certified standard at prescribed intervals as required by applicable procedures. Vital relays have been marked, tagged or otherwise identified to show their calibration status (See Checklist No. 13 and 14).
6. LACMTA records indicated that selected heavy and light rail signal measurement equipment calibration is on schedule (See Checklist Nos. 13 and 14).
7. The heavy and light rail Wayside System / Signals, Track, and Traction Power departments follow the closure of maintenance items. The management is alerted if a defect is not corrected on time through inspection reports and spreadsheets (See Checklist Nos. 13, 14, 15, 16, 17, and 18).

8. The applicable heavy and light rail mainline and yard track, switch, and frog inspections, track ultrasonic tests, direct fixation track inspections, overall track tamping, rail production grinding, and floating slab inspections are performed at the required maintenance intervals. Staff determined that records are in order (See Checklist Nos. 15 and 16).
9. LACMTA performs the applicable light and heavy rail Overhead Catenary System (OCS), third rail, auxiliary power equipment, UPS, emergency vent fans, and electric power substations inspections at the required maintenance intervals. Staff determined that the records are in order (See Checklist Nos. 17 and 18).
10. LACMTA calibrates the heavy and light rail traction power measuring and test equipment at the required intervals. Staff determined that the records are in order (See Checklist Nos. 17 and 18).
11. Staff did not take any exceptions for heavy and light rail communications system and facilities inspections records (See Checklist Nos. 28).

Findings – Non-Conforming Conditions:

1. By the switch #2 track at Sierra Madre Villa, staff found 5 conduits that are not covered by ballast. These uncovered conduits present hazard for maintenance and operations workers that need to walk along at that location (See Checklist No. 1).
2. Staff noticed vegetation growth at several locations on MBL, MGL, and Metro Gold Line (See Checklist No. 2).
3. LACMTA Wayside Systems Maintenance Plan, Track System (Plan), effective January 2004, (See Checklist No. 2) states that, "All tracks will be inspected and maintained in accordance with the Federal Railroad Administration Guidelines Title 49, Part 213 for a class of track ONE (1) class above the operating speed for particular track". The Plan is not consistent with SSPP and CFR 49, Part 213 and does not include procedures for:
   - Providing track inspectors adequate written track speed information to determine proper classes of track, to ensure proper remedial action is invoked for the specified section of track.
   - Installing, adjusting, maintaining, and inspecting continuous welded rail (CWR).
   - Performing detail monthly switch inspections of all yard tracks.
4. GO 95 Infractions (See Checklist No. 3).
   a. GO 95 Rule 74.4F: Throughout the street running portions of the MBL, where head span wires are used to suspend the OCS contact wire, single point failure on a head span wire will result in Rule 74.4F exception.
   b. GO 95 Rule 31.1 (General Maintenance):
      - At several locations on the MBL and MGL the traction power system requires down guy tail trimming. Also noticed broken "Dropper" (hanger wire) and missing (stolen) OCS pole grounding wire at the MBL.
      - Throughout the MGL, the rod insulators used on the OCS cantilever on the OCS poles showed rust on their surface.
      - Staff noticed shiny spots on the MGL OCS contact wires, which may indicate worn OCS wires.
   c. GO 95 Rule 35: At several locations at the MBL, vegetation appeared too close to the OCS wires (See Checklist No. 2 and 3).

5. Wayside Systems, Facilities maintenance Plan is not in conformance to SSPP (See Checklist No. 29). Subsequent to the audit, LACMTA informed staff through E-mail that it will follow the SSPP quarterly tunnel inspection frequency.

Comments:

1. LACMTA is responsible to bring the head span design within compliance of GO 95 Rule 74.4F (See Checklist No. 3).
2. Wayside Systems / Tracks Department currently records floating slab inspection and finding (if any) on the FRA inspection form used for mainline track inspections. Staff suggests that when the next revision of the Wayside Systems Maintenance Plan Track Systems – All Lines Standard Operating Procedures occurs, an additional line for Section 1.11, Floating Slab Structure, should be added to identify floating slab inspections are recorded on the FRA Inspection form used for mainline track inspections (See Checklist No. 16).

Recommendations

7. LACMTA should inspect the conduits on all the light rail lines and make sure that they are covered with ballast (See Checklist No. 1).
8. LACMTA should recognize vegetation as a track safety defect (GO 95 and GO 143-B) and track inspectors should record vegetation growth exceptions around the tracks on inspection reports (See Checklist No. 2).
9. LACMTA Track Systems inspectors should take proper remedial action to control vegetation and comply with the CPUC Generals Orders 95 and 143-B governing adequate side and overhead clearances reports (See Checklist No. 2).
10. LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for installing, adjusting, maintaining, and inspecting CWR (See Checklist No. 2).
11. LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for providing track inspectors adequate written track speed information to determine proper classes of track to ensure proper remedial action is invoked for the specified section of track (See Checklist No. 2).
12. LACMTA Wayside Systems Maintenance Plan, Section 6.0 of the Track System portion, should be revised to include the operation of all yard switches during switch inspections. (See Checklist No. 2).
13. LACMTA should revise the SSPP to reflect the latest Wayside Systems Maintenance Plan, Track System inspection criteria (See Checklist No. 2).
14. LACMTA should correct the head span design on the MBL per GO 95 Rule 74.4F requirement (See Checklist No. 3).
15. LACMTA should survey its entire light rail lines and address the general maintenance issues identified in the Findings section of checklist No. 3 in regards to GO 95 Rules 31.1 and 35 exceptions (See Checklist No. 3).
16. LACMTA should revise Wayside Systems Maintenance Plan, Traction Power to ensure that exceptions of GO 95 Rules 31.1 and 35 are identified and corrected (See Checklist No. 3).

17. LACMTA should inspect the tunnels according to the SSPP tunnel inspection frequencies until it can show the change of inspection frequency will not impair safety. Accordingly the SSPP and the Wayside Systems Maintenance Plan should be brought into agreement (See Checklist No. 29).

4. Rail Fleet Department

The Rail Fleet Department ensures a safe and mechanically reliable fleet of rail cars and non-revenue equipment. It utilizes programs that involve performing maintenance on vehicles at regularly scheduled mileage intervals. The intent is to retain vehicles in a condition compatible with safety, dependability, and appearance standards. The Rail Fleet Department ensures fleet services personnel are trained and have the required licenses and certifications.

Findings - Conforming Conditions:

1. Staff did not find any exceptions during Metro Gold Line vehicle inspections (See Checklist No. 4).
2. LACMTA performed Metro Gold Line and MRL preventive maintenance inspections within the required mileage interval. All the PMI Work Order activities are readily available on M3 program screen, including the assigned employee and supervisor. Staff determined that the Rail Equipment Maintenance Supervisor's Post Inspection Forms are in order (See Checklist No. 30).
3. The Metro Gold Line and MRL Division Manager and supervisors review the vehicle mileage twice daily on the "View Mileage" screen of the Spears program (See Checklist Nos. 30 and 31).
4. Staff determined that Metro Gold Line and MRL fleet services tool calibration, other than seldom used tools, is in order and records are on file (See Checklist Nos. 30 and 31).

Findings – Non-Conforming Conditions:

1. MGL vehicle inspections revealed axial brushes wiring insulation extremely worn. LACMTA is aware that this condition is known to be a manufacturer problem throughout the fleet yet LACMTA did not increase inspection activities to detect this condition sooner (See Checklist No. 4).
2. MRL vehicle inspections revealed leaking oil from air compressor filter. Work report covering the previous inspection had notation showing this condition was observed but LACMTA did not repair it (See Checklist No. 4).
3. There is a lack of standard throughout the various facilities as it pertains to the use and display of Blue Light Signal protection (See Checklist No. 4).
4. Several Metro Gold Line and MRL Line Corrective Work Orders remained open for over one month (See Checklist No. 30 and 31).
5. MRL fleet services tools that are seldom used skipped annual calibration (See Checklist Nos. 30 and 31).
6. LACMTA personnel could not locate a torque wrench albeit it is shown "in stock" on the records (See Checklist No. 31).

Comments:

1. Staff suggests that LACMTA implement automatic "Flagging" of the overdue PMI (Fleet Systems personnel informed staff that they have scheduled "flagging" for implementation) (See Checklist Nos. 30 and 31).
2. Staff suggests that LACMTA close all corrective work orders within 30 days since minor issues may have safety implications (See Checklist Nos. 30 and 31).
3. Staff suggests that LACMTA give the vehicle maintainers the flexibility to inspect and repair, if necessary, all known defects on vehicles, at every vehicle inspection period, rather than wait for the vehicle scheduled inspection (See Checklist No. 4).

Recommendations:

18. LACMTA should immediately inspect and repair, if necessary, all the axial brushes wiring insulation on the Metro Green Line fleet (See Checklist No. 4).

19. LACMTA should ensure that its rail fleet database for Corrective Work Order (CWO) is updated as the CWOs are corrected and closed (See Checklist Nos. 30 and 31).
20. LACMTA Rail Fleet Department should develop a systematic method to keep track and control the tools that are being checked out to ensure that properly calibrated tools are available when needed (See Checklist No.31).
21. LACMTA Rail Fleet Department should annually calibrate seldom-used tools since no one can predict when the tool might be used (See Checklist No.31).

5. Corporate Safety Department

Corporate Safety Department provides leadership and dedicates its resources to maintain and improve the culture and philosophy of continuous safety improvement for the benefit of LACMTA employees, customers, community, and business partners.

Findings - Conforming Conditions:

1. For the Metro Gold Line operations safety certification, LACMTA established a safety certification procedure or plan and implemented for the project (See Checklist No. 19).
2. No exceptions are taken for LACMTA internal rail system safety audit program (See Checklist No. 20).
3. No exceptions are taken for LACMTA Employee Safety Program and Safety Data Acquisition (See Checklist Nos. 25 and 26).

Findings Non-Conforming Conditions

1. LACMTA has not always been timely in filing CPUC Form Vs and Ts. Staff has noticed errors in the filed reports (See Checklist No. 21).

2. Wayside Systems Department affected employees, excluding Rail Facilities, did not receive Hazardous Communication Program (HCP) training for calendar year 2003 to present because they were already trained prior to calendar year 2003. Rail Facilities affected employees have not received the required HCP training (See Checklist No. 24).

Recommendations

22. LACMTA should take the steps necessary to ensure that all affected employees receive HCP training (See Checklist No. 24).

6. Rail Operations Safety Department

Rail Operations Safety Department is responsible for chairing the hazard resolution committee, coordinating its activities, and reporting its findings and recommendations. It responds to emergencies and major accidents and reviews rail system operational accidents, incidents, injuries, and property losses. It makes recommendations to mitigate or prevent recurrences. The Rail Operations Safety Department analyzes rail accident / incident trends.

Findings - Conforming Conditions:

1. LACMTA is using information derived from incidents to develop and implement safety enhancements (See Checklist No. 21).
2. The Rail Operations Safety Department monitors and analyzes the trends and patterns of the summary report to identify rail safety recommendations. LACMTA's rail operation management receives recommendations from the Rail Operations Safety Department through Board Reports and Memoranda's (See Checklist No. 25).
3. No exceptions are taken for interdepartmental / interagency coordination (See Checklist No. 27).

Findings – Non-Conforming Conditions:

1. Review of several incident reports revealed several non-conforming results of LACMTA accident reporting, investigating, recommending corrective actions, and tracking and verifying the implementation of the recommendations (See Checklist No. 21).
2. Staff is free to examine all documents and review any video or audio tapes relating to an investigation, but must do it on site at LACMTA. However LACMTA does not allow staff to take notes or make copies (See Checklist No. 21).
3. Rail Operations Safety does not track accident investigation recommendations (See Checklist No. 21).

Recommendations:

23. LACMTA should develop, adopt, and use a standard practice and/or procedure for writing investigative reports that clearly identifies how to classify information, how to present evidence, how to make and present conclusions based on the strengths and weaknesses of the available information, and when recommendations are warranted (See Checklist No. 21).

24. LACMTA should develop and implement a process that identifies recommendations made as a result of an incident investigation, tracks recommendations through the approval process, and track implementation of the recommendation to completion (See Checklist No. 21).
25. LACMTA should give CPUC staff full access to information relevant to accident investigations. This includes the ability to take notes when reviewing information and the ability to make copies of all relevant information (documents and tapes) (See Checklist No. 21).

7. Security Department

The Security Department is responsible for establishing security policies, security design criteria, administering and overseeing the law enforcement efforts at LACMTA.

Findings – Conforming Conditions

1. LACMTA Security Department follows the national threat level designated by Homeland Security Department. It shares intelligence information with government and local law enforcement agencies. The department raises the employee and public threat awareness by different programs. Makes the employees and public aware of security threats (See Checklist No. 22).
2. LAPD and LACSD assessed the system threat vulnerability. FTA reviewed and approved the recommendations. Terrorism contingency plans and employee training are in place. No exception is taken for LACMTA security preparedness (See Checklist No. 22).

Findings Non-Conforming Conditions

None

Comments:

Staff suggests that LACMTA finalize the Homeland Security Training schedule and notify the Commission staff (See Checklist No. 22).

Recommendations:

None

8. Human Resources Department

One of the functions of Human Resources Department is administering the LACMTA Alcohol and Drug-Free Work Environment Policy. This department ensures that the supervisors are trained and fulfill their responsibilities related to the policy.

Findings – Conforming Conditions

1. The current drug and alcohol policy training is in compliance with FTA guidelines, and all employees and supervisors are being trained and tested to these guidelines. A total of 1398 drug and alcohol tests are taken with 10 employees testing positive. The total number of rail employees is 807 (See Checklist No. 34).
2. No exceptions are taken for Human Resources Department (See Checklist No. 34).

Findings Non Conforming Conditions:

None

Recommendations:

None

9. Quality Assurance Department

One of the roles of Quality Assurance Department is agency Environmental Compliance and Hazmat Response.

Findings – Conforming Conditions

1. A comprehensive program is in place to ensure that materials and services obtained by LACMTA do not degrade the safety of the transit system (See Checklist No. 36).
2. The introduction of new chemicals receive the review and concurrence of Operations Safety, Quality Assurance, user department/project managers and Material Department, as appropriate, for occupational and environmental safety requirements (See Checklist No. 36).

Findings Non Conforming Conditions:

SSPP Section 4.13, Hazardous Materials Programs, does not clearly show that all employees who work with chemicals are provided refresher classes on an annual basis

Recommendations:

26. LACMTA should review the Hazard Communications Program to identify if any refresher training requirements apply to employees who work with chemicals according to CALOSHA regulations (See Checklist No. 36).

10. Procurement Department

The procurement function ensures that material and services obtained by LACMTA do not degrade the safety of the transit system. It monitors safety requirements in contracts and obtains Material Safety Data Sheets.

Findings - Conforming Conditions:

1. A comprehensive program is in place to ensure that materials and services obtained by LACMTA do not degrade the safety of the transit system. This program complies with established procedures for the evaluation of materials and products used by LACMTA (See Checklist No. 38).
2. No exceptions are taken for Procurement Department (See Checklist No. 38).

Findings Non Conforming Conditions:

None

Recommendations:

None

APPENDICES

A. Acronyms List

B. LACMTA 2001 Triennial Safety Audit Checklist Index

C. LACMTA 2001 Triennial Safety Audit Recommendations List

D. LACMTA 2001 Triennial Safety Audit Commission Resolution ST-54

E. LACMTA 2004 Triennial Safety Audit Checklist Index

F. LACMTA 2004 Triennial Safety Audit Recommendations List

G. LACMTA 2004 Triennial Safety Audit Checklists

Appendix A

Acronyms List

Acronym	Meaning
AIP	Accident Investigation Plan
APTA	American Public Transportation Association
BNSF	Burlington Northern Santa Fe
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
CPUC	California Public Utilities Commission
CWO	Corrective Work Order
CWR	Continuous Weld Rail
FRA	Federal Railroad Administration
FTA	Federal Transportation Administration
GO	General Order
HCP	Hazardous Communications Program
IIPP	Injury and Illness Prevention Program
IRSSA	Internal Rail System Safety Audit
LACMTA	Los Angeles County Metropolitan Transportation Authority
LAFD	Los Angeles Fire Department
LAPD	Los Angeles Police Department
LACSD	Los Angeles County Sheriff Department
MBL	LACMTA Metro Blue Line
MGL	LACMTA Metro Green Line
MOW	Maintenance of Way
MRL	LACMTA Metro Red Line
MSDS	Material Safety Data Sheet
NFPA	National Fire Protection Association
NTD	National Transit Database
OCS	Overhead Catenary System
OEHS	Occupational, Environmental, Health and Safety
PBLCA	Pasadena Blue Line Construction Authority
PM	Preventative Maintenance
PMI	Preventative Maintenance Inspection
PPE	Personal Protective Equipment
QA	Quality Assurance
RASOPC	Rules and Standard Operating Procedures Committee
ROC	Rail Operations Control
ROLE	Rail Operations Law Enforcement Committee
ROS	Rail Operations Safety
RTDF	Return to Duty/Follow up
RTIA	Rail Transportation Instruction Administration
RTOS	Rail Transit Operations Supervisors
RTSS	Rail Transit Safety Section
SAP	Substance Abuse Professional
SCADA	Supervisory Control and Data Acquisition
SHARP	Safety and Health Assessment Review Program
SOP	Standard Operating Procedure
SSPP	System Safety Program Plan
TO	Train Operator

Appendix B
LACMTA 2001 Triennial Safety Audit Checklist Index

Checklist No	DEPARTMENT	ELEMENT/CHARACTERISTIC
I-1	Signal Maintenance	Signal Inspection
I-2	Track Maintenance	Track Inspection
I-3	Traction Power	Traction Power Inspection
I-4	Vehicle Maintenance	Vehicle Inspection
1	Human Resources	Drug and Alcohol Testing Program
2	Quality Assurance Rail	Inspection of Rail Vehicles and Systems Involved in Accidents
3	Quality Assurance Rail	Rebuilt Rail Components
4	Rail Operations	Heavy Rail Operations Training & Certification
5	Rail Operations	Light Rail Operations Training & Certification
6	Rail Operations	Red Line Train Operator Performance
7	Rail Operations	Blue Line & Green Line Train Operator Performance
8	Rail Operations & Maintenance	Hours of Service – Safety Sensitive Employees
9	Rail Operations Control	Training & Certification of Light & Heavy Rail Operations Controllers
10	Rail Operations Control	Blue Line & Green Line Rail Operations Controllers Activities
11	Rail Operations Control	Red Line Rail Operations Controllers Activities
12	System Engineering	Configuration Change Control
13	Rail Operations Support	Concrete Inspection - Annually
14	Security	Security
15	System Safety	Accident/Incident Reporting & Investigation
16	System Safety	Reporting of Hazardous Conditions
17	System Safety	Safety Data Acquisition/Analysis
18	System Safety	Vehicle Safety Certification
19	System Safety	Internal Safety Audits Program
20	Facilities Maintenance	Blue Line Inspections
21	Facilities Maintenance	Green Line Inspections
22	Facilities Maintenance	Red Line Inspections
23	Signal Maintenance	Mainline Switches Inspection – Quarterly
24	Signal Maintenance	Interlocking Tests
25	Signal Maintenance	Vital Relays
26	Signal Maintenance	Training & Certification of Signal Inspectors – Every Two Years
27	Signal Maintenance	Grade Crossing Protection – Monthly
28	Signal Maintenance	Calibration of Measuring & Test Equipment
29	Track Maintenance	Visual Track & Switch Inspection
30	Track Maintenance	Track Inspector Qualifications
31	Track Maintenance	Track Annual Maintenance
32	Track Maintenance	Rail Track Maintenance Work
33	Traction Power	Emergency Trip Stations
34	Traction Power	Overhead Catenary System – Annually
35	Traction Power	Emergency Vent Fans – Semi-Annual
36	Traction Power	Calibration of Measuring & Test Equipment
37	Vehicle Maintenance	Training & Certification of Transit Vehicle Equipment Maintenance Personnel – Every Two Years
38	Vehicle Maintenance	Review of Preventative Maintenance Program Documentation for Transit Vehicles
39	Vehicle Maintenance	Calibration of Measuring & Test Equipment

Appendix C
LACMTA 2001 Triennial Safety Audit Recommendations List

No.	Recommendations
1	LACMTA should evaluate the test procedures of vital relays and establish a range of values that the vital relay should meet in order to pass the test. If a relay fails, LACMTA should replace it immediately. Vital relays should be readily available in the storage room.
2	Once LACMTA establishes the procedures, it should develop a training plan and train the employees. Refer to Checklist No. 25 for more detail about this recommendation.
3	LACMTA should develop, adopt, and implement procedures to ensure that MOW and Vehicle Maintenance employees, who are required or allowed to operate or otherwise control the operation of any trains or other on rail equipment, are currently trained and certified. The procedures should also ensure that appropriate operations entities and the respective maintenance departments are provided with and maintain a current roster of maintenance employees who are required or allowed to be operations trained and certified along with those employees' current training and certification status. It is particularly important that LACMTA Yard Control and ROC have current information about all employees authorized to operate trains or other on track equipment. Also, LACMTA should clearly establish and designate the custodian of MOW and Vehicle Maintenance employees' complete operations training and certification records. Checklists No. 4 and 5 depict these recommendations in detail.
4	LACMTA Rail Operations Safety Department should investigate future incidents such as the January 31, 2001 MBL yard split switch incident. The ROS did not perform any investigation during this incident, which staff finds questionable. Checklist No. 5 explains this recommendation in detail.
5	LACMTA should reevaluate the Operator/Student Performance Sheet used to document the operating performance evaluation for all employee classifications. Also, LACMTA should ensure that performance evaluation checklists reflect the established requirements for each employee classification and are properly prepared to record that information. Checklists No. 4 and 5 detail these recommendations.
6	LACMTA should evaluate the current Operations' training program given to employees from the ROC Center, MOW, and Equipment Maintenance departments. LACMTA should adopt and implement both the Heavy Rail and Light Rail Instruction Training Matrix or a similar document as a formal, controlled program element to specify the operations training and certification requirements for designated employee classifications. Also, LACMTA should develop, adopt, and implement as a formal procedure a process for the periodic review and updating of the operations training and certification program, including appropriate change controls. Checklists No. 4, 5 and 9 depict these recommendations in detail.
7	LACMTA should provide a report to the staff explaining why controllers have not been re-certified since 1998 as required by GO 143-B. The report should include the corrective action plans and schedules that LACMTA will promptly implement to comply with GO 143-B, Section 13. Checklist No. 9 provides more detail about this recommendation.
8	LACMTA should provide the staff with a written report explaining why it did not implement the 1998 Triennial Audit Recommendation No. 1. This report should explain why LACMTA did not implement the accident follow-up check ride program and what actions will be taken to restore the program. Checklist No. 5 details about this recommendation.
9	LACMTA should finalize, adopt and implement the draft LACMTA Program of Operational Evaluations in accordance with GO 143-B, Section 13.04. Checklists No. 4, 5, 6 and 7 provide more details about this recommendation.
10	LACMTA should complete development, adopt, and implement separate hours of service and minimum rest requirements for all Heavy Rail supervisors/train controllers, TO and other employees performing safety sensitive activities. Also, LACMTA should develop the controls necessary to ensure these requirements are followed. Checklist No. 8 has more detail about this recommendation.
11	LACMTA should establish a training course for the use of the Dictaphone by all senior management

	personnel. Checklist No. 10 depicts more detail about this recommendation.
12	LACMTA should finalize the draft Maintenance Plan and distribute for use. Provide justification why the requirements for track inspection, tamping, rail production grinding, floating slab inspection and bolt tests have been revised in the draft Maintenance Plan. Checklists No. I-2, 31 and 32 have more details about these recommendations.
13	LACMTA should require Supervisor signature on the LACMTA Monthly Switch and Frog Inspection Reports.
14	LACMTA should document on the Monthly Switch and Frog Inspection Reports the date that a reported track defect is corrected at the Light Rail Track Department.
15	LACMTA should evaluate whether FRA Part 213, Track Safety Standards, Subpart F, Section 213.233 is being properly implemented. Checklist No. 29 has more details about these recommendations.
16	LACMTA should implement the 1998 LACMTA Triennial Audit Recommendation No. 17.
17	LACMTA should extend the insulators closer to the feeder pole, away from the dynamic weight system, as required by GO 95, Rule 74.4-F. Checklist No. I-3 gives more detail about this recommendation.
18	LACMTA should finalize and implement the draft Traction Power Maintenance Plan. LACMTA should confirm that all the required traction power tests and inspections are performed based on the required frequencies in a timely manner. LACMTA should develop a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner, particularly when more than one location/department is involved. Checklists No. 33 and 34 have more details about these recommendations.
19	LACMTA should direct the MRL Vehicle Maintenance Department to evaluate the vehicle mileage tracking methods currently in use for scheduling preventative vehicle maintenance inspections. The system should be improved to alert vehicle maintenance personnel to take revenue vehicles out of service before the maximum allowable mileage between vehicle inspection intervals are exceeded.
20	LACMTA should reevaluate the frequency of the vehicle Preventative Maintenance schedule and the frequencies that inspections of truck and gearbox related components are inspected.
21	LACMTA should improve the random check program by tracking which vehicles are checked by the supervisory staff and signed by the supervisor.
22	LACMTA should ensure that the Brake Disk Inspection Form, which includes making a Concave Dimensional Measurement, is being completed. Refer to Checklists No. I-4 and 38 for more details about these recommendations.
23	LACMTA should develop a mechanism to confirm that Location 34 personnel regularly perform all monthly station maintenance inspections. More importantly, LACMTA should confirm that the defects noted on the monthly inspection forms are closed out in a timely manner.
24	LACMTA should develop a system between Locations 34 & 61 to confirm that the defects noted on the inspections performed by Location 34 personnel that are to be corrected by Location 61 personnel are properly communicated and tracked to completion through appropriate means of documentation. The developed process should alert LACMTA management when the communication fails between the two locations. Checklists No. 20, 21 and 22 depict more details for these recommendations.
25	LACMTA should review and revise the SSPP to reflect the current organizational practice. It should submit subsequent revisions of the SSPP to the staff for review and approval as required by GO 164-B. Checklist Nos. 4, 5, 10, 11 and 12 contain more detail about this recommendation.
26	LACMTA should implement the requirements of the LACMTA AIP and GO 164-B, Section 6. Checklist No. 15 has more details about this recommendation
27	LACMTA should follow its own requirements as identified in the Safety Certification Plan for Construction for all projects including procurement projects. Checklist No. 18 contains more detail about this recommendation.

28	LACMTA should implement 1998 Triennial audit recommendation 16 which states, " *An appropriate program and procedure to cover the periodic review and analysis of statistical accident data to identify and correct any apparent negative trends should be prepared and put into use*". Checklist No. 17 has more details about this recommendation.
29	LACMTA should include the APTA Security element in the Internal Safety Audit Program and System Safety Department should conduct an internal safety audit for Security during its current 3-year audit cycle. Checklist No. 19 lists more details about this recommendation.
30	LACMTA should continue implementing the 1998 Triennial Audit Recommendation No. 12. LACMTA should develop a process that documents all departmental submittals to Engineering Configuration Management, as required by the Rail Configuration Plan. All departments should submit these documents on a timely basis as outlined in the Rail Configuration Plan. LACMTA should distribute the Rail Configuration Plan to all departments and itemize the documents that should be submitted to the Configuration Management Department. Refer to Checklists No. 4, 5, 9, and 12 for more details.
31	LACMTA should implement concrete inspection. If the LACMTA Board does not approve subcontracting of these inspections, LACMTA should establish a program to perform the required concrete inspections in accordance with the requirements of the Los Angeles Metro Rail Existing Structures Evaluation and Inspection Manual. Refer to Checklist No. 13 for more details.
32	LACMTA should review and revise the System Security Program Plan to reflect the existing work practices, including the section on the firearm permits and the list of training manuals. The plan should have a page showing all the appropriate approval signatures with dates. LACMTA should also update and submit the plan to the staff for review and approval.

Appendix D

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Consumer Protection & Safety Division
Rail Transit Safety Section

Resolution ST-54
November 7, 2002

R E S O L U T I O N

RESOLUTION ST-54. GRANTING APPROVAL OF A FINAL REPORT OF AN ON-SITE SAFETY AUDIT OF THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY PERFORMED BY THE RAIL TRANSIT SAFETY SECTION OF THE CONSUMER PROTECTION AND SAFETY DIVISION

SUMMARY

This resolution grants the request of the Consumer Protection and Safety Division for Commission approval of the Rail Transit Safety Section's final audit report entitled, Triennial On-Site Safety Audit of the Los Angeles County Metropolitan Transportation Authority, dated October 4, 2002.

BACKGROUND

Both Commission General Order No. 164-B, "Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems" and Federal Transit Administration (FTA) Final Rule 49 CFR, Part 659, "State Safety Oversight of Rail Fixed Guideway Systems" require the Commission, as the designated state safety oversight agency for California, to conduct an on-site safety audit of each transit agency operating a rail fixed guideway system at least once every three years. Following the completion of each audit, the Commission is required to issue a report containing its findings and recommendations. This report must also, at a minimum, include an analysis of the efficacy of the transit agency's system safety program plan and a determination of whether or not the plan needs to be updated.

After the 1998 triennial audit of Los Angeles County Metropolitan Transportation Authority (LACMTA), the Commission approved Resolution ST-38. This resolution ordered LACMTA to implement twenty (20) recommendations developed by staff to improve the safety of the LACMTA system and to report progress in semi-annual reports.

DISCUSSION

Staff of the Rail Transit Safety Section conducted an on-site, safety audit of the LACMTA rail transit system during June 2001. The methods used to conduct the audit included:

- Discussions with LACMTA management
- Reviews of procedures and records
- Observations of operations and maintenance activities
- Interviews with rank and file employees
- Inspections and measurements of equipment and infrastructure
- Follow-up to the 1998 LACMTA Triennial Audit

The audit concentrated on requirements that affect the safety of operations and are known or believed to be important to minimizing safety hazards and preventing accidents. A full description of the audit, including the procedure, findings, recommendations and conclusions is contained in the final audit report which is included with this resolution as Appendix A. The audit findings are recorded directly on the forty-three (43) checklists that are included as a part of the final audit report. Based upon these recorded findings, staff made thirty-two (32) recommendations to effect improvements in LACMTA's system safety program.

The results of the audit show that LACMTA is inconsistent in implementing its System Safety Program Plan. LACMTA personnel demonstrated that some departments are effectively carrying out safety related policies and procedures, while other departments need improvement.

In particular, LACMTA has failed to fully implement seven (7) of the recommendations made in the 1998 triennial audit and ordered by Resolution ST-38. For some of the 1998 audit recommendations, LACMTA performed the appropriate analysis and developed acceptable plans but failed to implement those plans.

PROTESTS

On July 27, 2001, staff provided LACMTA with the preliminary draft triennial audit report. The letter directed attention to the draft recommendations and informed LACMTA that the thirty-day (30) review and comment period would end on August 27, 2001. On August 20, 2001, LACMTA provided staff with forty (40) comments regarding the draft audit report.

On June 6, 2002 staff provided LACMTA with a revised draft of the triennial audit report. On August 14, 2002 LACMTA provided staff with seventy-seven (77) comments regarding the draft report. Staff has reviewed LACMTA's comments and modified the report as appropriate.

COMMENTS

The draft Resolution was mailed to parties in accordance with Public Utilities Code Section 311(g) on October 4, 2002. On October 22, 2002, LACMTA filed comments.

LACMTA opposes adoption of the staff report. LACMTA opposes three of the reports thirty-two recommendations, and disagrees with the reports identifying most of the recommendations as "open" including four of the seven recommendations from the 1998 that the report identifies as open. In addition, LACMTA requests the corrective action status reports be required on a quarterly basis, rather than the monthly basis recommended by staff.

The three recommendations in LACMTA does not agree with are:

17. LACMTA should extend the insulators closer to the feeder pole, away from the dynamic weight system, as required by GO 95, Rule 74.4-F.
26. LACMTA should implement the requirements of the LACMTA AIP and GO 164-B, Section 6.
27. LACMTA should follow its own requirements as identified in the Safety Certification Plan for Construction for all projects including procurement projects.

The Commission has reviewed the comments and made changes in the Resolution and attachments as appropriate.

THEREFORE, IT IS ORDERED that:

1. The Consumer Protection and Safety Division's request for Commission approval of the Rail Transit Safety Section's report entitled, Triennial On-Site Safety Audit of the Los Angeles County Metropolitan Transportation Authority, dated October 4, 2002, is granted.

2. LACMTA shall submit to the Staff for its approval a set of project plans and schedules for implementing all recommendations contained in the final audit report within 60 days. The plans and schedules shall:

- Contain step-by-step descriptions of the tasks required to complete each recommendation.
- Establish milestone target dates for each step in each task with start dates and completion dates.
- Identify the person assigned responsibility for implementing the plan and schedule for each recommendation

3. LACMTA shall implement all recommendations contained in the report, in accordance with the plans and schedules submitted to the staff.

4. Within 90 days, LACMTA shall provide the Commission with monthly written status reports until all thirty-two (32) recommendations are fully implemented. The status reports shall include the project plan and schedule updates that show the work completed and the work remaining for each of the thirty-two (32) recommendations. The LACMTA Rail Operations Safety Department shall monitor the work performed to assure it is fully responsive to the recommendations, and shall verify compliance by signing each of the monthly status reports identifying the work actually performed.

5. This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted by the Commission at its regularly scheduled meeting on November 7, 2002. The following Commissioners voted favorably thereon:

/s/ WESLEY M. FRANKLIN

WESLEY M. FRANKLIN
Executive Director

LORETTA M. LYNCH
President
HENRY M. DUQUE
CARL W. WOOD
GEOFFREY F. BROWN
MICHAEL R. PEEVEY
Commissioners

Appendix E

LACMTA 2004 TRIENNIAL SAFETY AUDIT OF CHECKLIST INDEX

Check List No	Element/Characteristics	Check List No	Element/Characteristics
1	Signal Inspection	20	Internal Safety Audit Program
2	Track Inspection	21	Accident/Incident Reporting & Investigation
3	Traction Power Inspection	22	Security
4	Vehicle Inspection	23	System Modification Review and Control and Configuration Management
5	Authority and Responsibility for System Safety program	24	Hazardous Materials Programs
6	Heavy Rail Operations Training And Certification	25	Safety Data Acquisition/Analysis
7	Light Rail Operations Training And Certification	26	Employee Safety Program
8	Heavy and Light Rail Train Operator Performance Evaluation Program	27	Interdepartmental / Interagency Coordination
9	Heavy Rail Train Operator Performance	28	Heavy and Light Rail Communications Inspections
10	Light Rail Train Operator Performance	29	Heavy and Light Rail Facilities Inspections
11	Light Rail Operation Controllers Activities	30	Light Rail Transit Vehicles Preventive Maintenance Program and Documentation and Calibration of Measuring & Test Equipment
12	Heavy Rail Operation Controllers Activities	31	Heavy Rail Transit Vehicles Preventive Maintenance Program and Documentation and Calibration of Measuring & Test Equipment
13	Light Rail Signal Maintenance and Inspection	32	Emergency Response Agency Familiarization Program
14	Heavy Rail Signal Maintenance and Inspection	33	Contractor Safety Coordination
15	Light Rail Track and Switch Inspection	34	Drug And Alcohol Testing Program
16	Heavy Rail Track and Switch Inspection	35	Hours of Service – Safety Sensitive Employees
17	Light Rail Traction Power Inspection and Measuring & Test Equipment Calibration	36	Hazardous Materials Programs
18	Heavy Rail Traction Power Inspection and Measuring & Test Equipment Calibration	37	Heavy and Light Rail Operating Rules and Procedures
19	Safety Certification of PGL	38	Procurement

Appendix F

LACMTA 2004 TRIENNIAL SAFETY AUDIT RECOMMENDATION LIST

No.	Recommendations	Checklist No.
1	LACMTA should ensure that the quarterly proficiency rides are completed for all affected employees.	6 and 7
2	LACMTA should implement the means necessary for train operators to effectively monitor the side of trains at MRL station platforms, including the continued installation of wayside mirrors where appropriate, to ensure safety as the side doors are closed and the trains depart stations..	9
3	LACMTA should ensure all light rail train operators are consistently knowledgeable about operating rules and procedures and those rules are consistently followed.	10
4	LACMTA should implement procedures to ensure that all open safety items recorded in the ROC Daily Incident Log are properly evaluated, corrected, and closed as required by the hazard identification and resolution requirements in the LACMTA System Safety Program Plan.	11
5	LACMTA should implement procedures to address potential train equipment failures that can occur while trains are being operated, with or without passengers. Those procedures should establish appropriate operating safety mitigations until those equipment failures can be corrected or the train is removed from service.	12
6	LACMTA should update Section 4.5 of the SSPP regarding Rules/Procedures Review.	37
7	LACMTA should inspect the conduits on all the light rail lines and make sure that they are covered with ballast.	1
8	LACMTA should recognize vegetation as a track safety defect (GO 95 and GO 143-B) and track inspectors should record vegetation growth exceptions around the tracks on inspection reports.	2
9	LACMTA Track Systems inspectors should take proper remedial action to control vegetation and comply with the CPUC Generals Orders 95 and 143-B governing adequate side and overhead clearances reports	2
10	LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for installing, adjusting, maintaining, and inspecting CWR.	2
11	LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for providing track inspectors adequate written track speed information to determine proper classes of track to ensure proper remedial action is invoked for the specified section of track.	2
12	LACMTA Wayside Systems Maintenance Plan, Section 6.0 of the Track System portion, should be revised to include the operation of all yard switches during switch inspections.	2
13	LACMTA should revise the SSPP to reflect the latest Wayside Systems Maintenance Plan, Track System inspection criteria	2
14	LACMTA should correct the head span design on the MBL per GO 95 Rule 74.4F requirement.	3

No.	Recommendations	Checklist No.
15	LACMTA should survey its entire light rail lines and address the general maintenance issues identified in the Findings section of checklist No. 3 in regards to GO 95 Rules 31.1 and 35 exceptions.	3
16	LACMTA should revise Wayside Systems Maintenance Plan, Traction Power to ensure that exceptions of GO 95 Rules 31.1 and 35 are identified and corrected.	3
17	LACMTA should inspect the tunnels according to the SSPP tunnel inspection frequencies until it can show the change of inspection frequency will not impair safety. Accordingly the SSPP and the Wayside Systems Maintenance Plan should be brought into agreement..	29
18	LACMTA should immediately inspect and repair, if necessary, all the axial brushes wiring insulation on the Metro Green Line fleet.	4
19	LACMTA should ensure that its rail fleet database for Corrective Work Order (CWO) is updated as the CWOs are corrected and closed.	30 and 31
20	LACMTA Rail Fleet Department should develop a systematic method to keep track and control the tools that are being checked out to ensure that properly calibrated tools are available when needed.	31
21	LACMTA Rail Fleet Department should annually calibrate seldom-used tools since no one can predict when the tool might be used.	31
22	LACMTA should take the steps necessary to ensure that all affected employees receive Hazardous Communications Program training	24
23	LACMTA should develop, adopt, and use a standard practice and/or procedure for writing investigative reports that clearly identifies how to classify information, how to present evidence, how to make and present conclusions based on the strengths and weaknesses of the available information, and when recommendations are warranted.	21
24	LACMTA should develop and implement a process that identifies recommendations made as a result of an incident investigation, tracks recommendations through the approval process, and track implementation of the recommendation to completion.	21
25	LACMTA should give CPUC staff full access to information relevant to accident investigations. This includes the ability to take notes when reviewing information and the ability to make copies of all relevant information (documents and tapes).	21
26	LACMTA should review the Hazard Communications Program to identify if any refresher training requirements apply to employees who work with chemicals according to CALOSHA regulations.	36

Appendix G

LACMTA 2004 TRIENNIAL SAFETY AUDIT CHECKLISTS

(1 THROUGH 38)

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**1**	Persons Contacted
Inspection Date		Marty Magard, Wayside Systems Manager, Signal Joe Knapic, Assistant Manager, Wayside Systems, Signal Alan Clark, Assistant Manager, Wayside Systems, Signal Filipe Aveiro, Rail Signal Supervisor Moses Jones, Rail Signal Supervisor Tom McFadden, Rail Signal Supervisor Monte Wilson, Rail Signal Supervisor
Inspectors	**Gerald Muffley and Michael Robertson**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.3, Rail Signal Maintenance.
2. Code of Federal Regulations CFR 49, Part 234, Grade Crossing Signal System Safety, Latest Edition.
3. LACMTA Wayside Systems Department Maintenance Plan, Effective January 2004, Signal Systems – All Lines.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SIGNAL INSPECTION

A Federal Railroad Administration (FRA) certified signal inspector from the Commission's Railroad Operations & Safety Section shall arbitrarily select, inspect and take measurements to verify if the selected grade crossings and interlocking/crossovers are in compliance with LACMTA's Signal System Maintenance Plan:

- 3 grade crossings and 3 interlocking/crossovers on the Metro Blue Line.
- 3 grade crossings and 3 interlocking/crossovers on the Metro Gold Line.
- 3 interlocking/crossovers on the Metro Green Line.
- 3 interlocking/crossovers on the Metro Red Line.

RESULTS/COMMENTS

Findings:

I, Gerald Muffley, inspected the following signal systems:

June 1, 2004, Metro Blue Line (MBL) Crossings
1. 119th Street, CPUC Crossing No. 84L-9.80
2. 124th Street, CPUC Crossing No. 84L-10.10
3. El Segundo Blvd., CPUC Crossing No. 84L-10.40

I checked the plans if they matched the existing equipment, tested the audible warning devices, grounds, standby power, light units, gate operation, warning times, and signs. No defects were found.

MBL Signal Equipment:
At Imperial interlocking, I tested three switches for point detection, point locking, and motor blow

down. I also tested the switches for route locking, loss of shunt, and signal indication. I did not find any defects.

June 1, 2004, Metro Green Line Signal Equipment
At Wilmington East interlocking, I tested three switches tested for point detection, point locking, and motor blow down. Also the interlocking for route locking, loss of shunt, and signal indication were tested and found no defects.

June 2, 2004 Metro Gold Line Crossings
1. Del Mar Ave., CPUC Crossing No. 84P-9.04
2. California Blvd., CPUC Crossing No. 84P-8.71
3. Glenarm Street, CPUC Crossing No. 84P-8.14

I checked the plans if they matched the existing equipment, tested the audible warning devices, grounds, standby power, light units, gate operation, warning times, and signs. No defects were found at all three crossings.

Metro Gold Line Signal Equipment
At Sierra Madre Villa interlocking, I tested two switches for point detection and point locking and found no defects. Also switches for point route locking, loss of shunt, and signal indication were tested and found no defects.

By the switch #2 track at Sierra Madre Villa, the inspector found 5 conduits that were not covered by ballast. These uncovered conduits present hazard for maintenance and operations workers that need to walk in that location.

I tested one switch point at Del Mar for point detection and point locking with no defects found. I also tested for route locking, loss of shunt, and signal indication and found no defects.

June 3, 2004, Metro Red Line Signal Equipment
I tested two switches at the North Hollywood, Universal City, and Union Stations for point detection and point locking. I also tested the switches for route locking and signal indication and found no defects.

<u>Recommendations:</u>

LACMTA should inspect the conduits on all the light rail lines and make sure that they are covered with ballast.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**2**	Persons Contacted
Inspection Date		Robert Chappell, DEO Wayside Systems Keith Kranda, Manager Wayside Systems, Tracks Jeff Rooth, Assistant Manager, Wayside Systems, Tracks Paul Squires, Assistant Manager, Wayside Systems, Tracks Eddie Bogossian, Manager, Rail Operations Safety Vijay Khawani, Director, Rail Operations Safety
Inspectors	**Eddie Damron** **Anton Garabetian**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.1, Track Maintenance.
2. Code of Federal Regulations CFR 49, Part 213, Latest Edition.
3. CPUC General Order 143-B, Dated January 20, 2000, Section 14.05, Track Maintenance Practices and Records.
4. LACMTA Wayside Systems Department Maintenance Plan, Effective January 2004, Track Systems – All Lines.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACK INSPECTION

A Federal Railroad Administration (FRA) certified track inspector from the Commission's Railroad Operations & Safety Section shall arbitrarily select, inspect, and take measurements to verify if the selected tracks are in compliance with LACMTA's track system maintenance plan:

- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Blue Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Gold Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Green Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Red Line.

RESULTS/COMMENTS

Findings:

Eddie Damron, an FRA certified track inspector, visually inspected the tracks and measured track gage and cross-level on tangent tracks and verified maximum speeds on curves using a 4" unbalance V-Max formula at the following locations:

Metro Blue Line:
He inspected the north and southbound track curves at Washington and Long Beach Boulevards. The inspector measured track gage, elevation, guard check, and guard face. No defects were found. He also checked the manual switch at the Washington tail track and found no defects. We rode the train from Washington Station to Long Beach terminal point for visual inspection of the tracks. We noticed vegetation growing close to the tracks between Del Amo and Artesia Boulevards

and north of Artesia Station.

At north and south bound North Willow pocket and tangent tracks, we inspected and took four measurements of main turnouts for guard check and track gage. No defects were found.

Curve Nos. 283 and 179 at 108th Street were selected for curve inspection. The design specifications showed these curves to be 2.5 degrees with 2" of elevation indicating a maximum allowable speed of 59 mph. The on-site field inspection of this curve substantiated the design specifications.

Metro Green Line:

We rode the train from Wilmington Station to Marine Station and back for visual inspection of the tracks. After Marine Station and before Douglas / Rosecrans Station, we noticed vegetation growing over the sound wall. We took six measurements of the tangent and main turnouts for guard check and track gauge at pocket tracks located west of Wilmington Station. No defects were found.

Curve Nos. 17-3 and 17-4 were selected (approximate mile post 7.1). The design specifications showed these curves to be 1 degree with 2" of elevation indicating a maximum allowable speed of 93 mph, the same as the curve on the Gold Line. The on-site field inspection of these curves verified the degree of curvature at 1 degree. However, there was a significant difference in the elevation of the east bound curve (No. 17-3). The field elevation measurement of this curve was 2.625, a 5/8 " difference from the design specifications. The westbound curve (No. 17-4) elevation measured 1.875", a difference of 1/8" from the design specifications. These differences do not impact the operations of the Green Line since the maximum allowable speeds using the 4" V-Max formula would be significantly higher than the actual operating speeds imposed by the MTA. Wayside Systems manager informed the auditor that LACMTA had tamped the green line to correct minor deviations in surface and alignment of tracks and may have changed the physical configuration of these curves.

Metro Gold Line:

We rode the train from Union Station to Sierra Madre Villa Station for visual inspection of the tracks. We noticed vegetation growing close to the tracks at several locations throughout the line segment. We took six measurements of the tangent and main turnouts for guard check and track gauge at the crossovers and diamonds north of Southwest Museum Station. No defects were found.

The curve at "Arroyo Verde" grade crossing was selected primarily due to its ease of access. The design data indicated this to be a 1-degree curve with 2" elevation. Using the 4" unbalance V-Max formula, the maximum allowable speed would be 93 mph. The on-site field inspection of this curve substantiated the design specifications.

Metro Red Line:

We rode a hi-rail vehicle from North Hollywood Station to Union Station for visual inspection of the tracks. We took measurements of the curve No. 2740 at track between Universal City and Hollywood Highland Stations at mile post 750+00 on the AL tunnel side. Ten measurements were taken at 15'6" stations in determining the average degree and elevation of this curve. The curve average of 4" elevation and 4 degrees of curvature substantiated the design specifications. Based on LACMTA track design criteria, the speed limit is within acceptable limits.

Several measurements of the tangent track and main turnouts were taken to verify guard check and

gage at the turnout north of Vermont and Wilshire Station and at Union Station East diamond. No defects were found.

Assistant Manager, Tracks, stated that track inspectors are not provided adequate timetable and track speed information to determine proper classes of track to ensure proper remedial action is invoked for the specified section of track.

LACMTA Wayside Systems Department Maintenance Plan, Effective January 2004, Track Systems – All lines Review

I reviewed the Wayside Systems Department Maintenance Plan (Plan). The Plan did not include:

- Procedures for installing, adjusting, maintenance, and inspection of CWR as required in CFR 49 Part 213.119 of the Federal Track Safety Standards.
- Procedures for providing track inspectors adequate written track speed information to determine proper classes of track, as identified in CFR 49 Part 213.9, to ensure proper remedial action is invoked for the specified section of track.
- Procedures for more than visual switch inspections should be performed monthly of all yard tracks in compliance with CFR 49 Part 213.235(a).
- The plan states that, “All tracks will be inspected and maintained in accordance with Federal Railroad Administration Guidelines Title 49, Part 213 for a class of track one (1) class above the operating speed for particular track.” The LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.1, states that, “All rail systems will be inspected and maintained in accordance with FRA Guidelines Title 49, Part 213 for a class of track two (2) classes above the operating speed for particular track.

<u>Recommendations:</u>

1. LACMTA should recognize vegetation as a track safety defect (GO 95 and GO 143-B) and track inspectors should record vegetation growth exceptions around the tracks on inspection reports.
2. LACMTA Track Systems inspectors should take proper remedial action to control vegetation and comply with the CPUC Generals Orders 95 and 143-B governing adequate side and overhead clearances reports.
3. LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for installing, adjusting, maintaining, and inspecting CWR.
4. LACMTA Wayside Systems Maintenance Plan, Track System should include procedures for providing track inspectors adequate written track speed information to determine proper classes of track to ensure proper remedial action is invoked for the specified section of track.
5. LACMTA Wayside Systems Maintenance Plan, Section 6.0 of the Track System portion, should be revised to include the operation of all yard switches during switch inspections.
6. LACMTA should revise the SSPP to reflect the latest Wayside Systems Maintenance Plan, Track System inspection criteria.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**3**	Persons Contacted
Inspection Date	**6/7/04 ~ 6/9/04**	Andy Hughes – LACMTA Traction Power Leroy Bonifay – LACMTA Traction Power Frank Hernandez – LACMTA Traction Power Raymond Torres – LACMTA Traction Power Vijay Khawani – LACMTA Safety Abdul Zohbi – LACMTA Safety
Inspectors	**Brian Yu**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.2 Traction Power Maintenance.
2. CPUC General Order 95.
3. CPUC General Order 143-B, Dated January 20, 2000, Sections 10 & 14.06.
4. LACMTA Wayside Systems Department Maintenance Plan, Effective January 2004, Traction Power – All Lines.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

TRACTION POWER INSPECTION

A CPUC inspector will take random measurements and inspect the Metro Blue Line, Green Line, and Gold Line Overhead Catenary System to determine if the selected items are in-compliance with LACMTA's traction power system maintenance plan and GO 95.

RESULTS/COMMENTS

I conducted field inspection of the LACMTA Metro Blue Line, Metro Green Line, and Metro Gold Line Overhead Catenary System (OCS) on the dates that are indicated below. The field inspections were mainly visual inspection of the OCS system looking for exceptions on GO 95 requirements. I also measured the OCS contact wire heights at selected locations to verify the GO 95 compliance.

Findings:

6/7/04 Metro Blue Line

1. OCS Height Measurement
   a. Measured at 11 locations – All in compliance with GO 95 requirement.
   b. GO 95 specifies the OCS contact wire to be 18 feet from the top of the rail.
   c. Locations:
      - Flower/12th St. Crossing on North Bound Track – 19 feet 5 inches
      - San Pedro/Washington Crossing on North Bound Track – 20 feet
      - Griffith/Washington Crossing on South Bound Track – 20 feet 1 inches
      - 24th Street Crossing on North Bound Track – 22 feet 6 inches

- Midway between Pole 2038 & 2039 on North Bound Track – 19 feet 6 inches
- Gage Street Crossing on South Bound Track – 19 feet 4 inches
- Wilmington Crossing on North Bound Track – 19 feet 5 inches
- South of 16th Street Crossing on South Bound Track – 19 feet 8 inches
- North of Anaheim Street Crossing on South Bound Track – 20 feet 4 inches
- 1st/Pine Avenue Crossing on South Bound Track – 19 feet 7 inches
- Broadway/Pacific Crossing on North Bound Track – 19 feet

2. GO 95 Infractions
   a. GO 95 Rule 74.4F:
      - Throughout the street running portions of the Metro Blue Line where Head Span Wires were used to suspend the OCS contact wire, single point failure on a Head Span Wire will result in Rule 74.4F exception: broken Head Span Wire will be energized by touching the contact wire and fall within 10 feet from ground.
      - At least 11 locations were noted for this infraction during the inspection.
      - According to LACMTA personnel, the Head Span design is the same for the Metro Blue Line street-running portions.
   b. GO 95 Rule 31.1 (General Maintenance):
      - Down Guy Tail Trimming needed – Pole 2012 Pole 2021 Pole 2047
        - Pole 2048 Pole 2113
      - Broken "Dropper" (Hanger Wire) – North of Pole 2110 on North Bound Track
      - Missing (stolen) OCS Pole Grounding Wire – Pole 2106 Pole 2228
        Poles 2229 ~ 2243
   c. GO 95 Rule 35
      - Residential tree adjacent to the North Bound Track at midway between OCS Pole 2115 and 2116 appeared too close to the messenger wire.
      - GO 95 Table 1, Case 13C specifies 18 inches of radial clearance from "contact" wires.
      - Exact measurement of the radial clearance couldn't be obtained.
      - Since this inspection was conducted in the beginning of summer, there might be a chance that the tree branch would grow and touch the messenger wire. Therefore, it would be better to trim the branch before it becomes hazard.

6/8/04 Metro Green Line

1. OCS Height Measurement (Clearance from Station Platform Edges)
   a. Measured at 4 locations – All in compliance with GO 95 requirement.
   b. GO 95 Specifies the OCS contact wire within an exclusive right-of-way to be 14 feet from the top of rail. Metro Green Line OCS contact wire on the main line was not measured because it appeared higher than required 14 feet.
   c. GO 95 specifies the OCS contact wire from the Station Platform Edges to have more than 10 feet of radial clearance.
   d. Locations:

- Imperial Station: East Bound Track – 11 feet 9 inches
  - West Bound Track – 11 feet 6 inches
- Vermont Station: East Bound Track – 11 feet 3 inches
  - West Bound Track – 11 feet 2 inches
- Other locations appeared to have enough clearance, thus, they were not measured.

2. GO 95 Infractions
   a. GO 95 Rule 31.1 (General Maintenance) – Insulators on OCS Cantilever
      - Throughout the Metro Green Line, the Rod Insulators used on the OCS cantilever on the OCS Poles showed rust on their surface.
      - The rust trails on insulators could be signs of deterioration of the connections.
      - These insulators are part of the structural support of OCS cantilever, thus, the integrity of the connections is vital.
      - Excessive rust covering on the insulator might allow currents through using the rust covering as conductive path, thus, forfeiting the purpose of insulators.
      - Insulators with excessive rust covering need to be cleaned.
      - Insulators with excessive rust covering need to be inspected/tested for structural integrity.
   b. GO 95 Rule 31.1 (General Maintenance) – OCS Wire Thickness
      - Between Poles 6001 and 6006, “shiny spots” on the OCS contact wires were noticed.
      - Shiny spots are indication of worn OCS contact wires.
      - At minimum, this area should be inspected for correct OCS contact wire thickness.

6/9/04 Metro Gold Line

1. OCS Height Measurement
   a. Measured at 7 locations – All in compliance with GO 95 requirements.
   b. GO 95 specifies the OCS contact wires to be 14 feet high from the top of rail within fully exclusive right of way; 18 feet high from the top of rail elsewhere.
   c. Locations:
      - Mile Post 11.5 on South Bound Track – 14 feet 7 inches
      - Morengo Box on South Bound Track – 14 feet 5 inches
      - Indiana Street Crossing on North Bound Track – 18 feet 22 inches
      - El Centro Crossing – 17 feet 11 inches (within 5% allowance from 18 feet requirement per GO 95 Table 1, Case 2C (eee))
      - Avenue 60 Crossing on North Bound Track – 18 feet
      - Avenue 61 Crossing on South Bound Track – 18 feet 2 inches
      - Union Station Platform on South Bound Track – 12 feet 10 inches from the platform edge (GO 95 requirement is 10 feet radial clearance from the platform edge)
2. GO 95 Infractions
   a. GO 95 Rule 31.1 (General Maintenance)

- Down Guy Tail Trimming Needed – Pole 700+70 Pole 691+35

Comments:

It is LACMTA's responsibility to determine a method to bring the Head Span design into compliance with GO 95 Rule 74.4F.

Recommendations:

1. LACMTA should correct the head span design on the MBL per GO 95 Rule 74.4F requirement..
2. LACMTA should survey its entire light rail lines and address the general maintenance issues identified in the Findings section of checklist No. 3 in regards to GO 95 Rules 31.1 and 35 exceptions.
3. LACMTA should revise Wayside Systems Maintenance Plan, Traction Power to ensure that exceptions of GO 95 Rules 31.1 and 35 are identified and corrected.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**4**	Persons Contacted
Inspection Date		Blue Line- Anthony Precie, Assistant Rail Fleet Manager. Morry Bonakdar, Rail Equipment Maintenance Supervisor. Green Line- Edward Smith, Rail Fleet Service Manager. Dave Schlesinger, Rail Fleet Services Supervisor. Gold Line- James Q. Poe, Rail Fleet Service Manager. Brian E. Rydell, Rail Fleet Service Manager. Red Line- Manuel R. Precie, Assistant Rail Equipment Manager. Timothy A. Porter, Rail Equipment Supervisor.
Inspectors	**D. Miller** **A. Garabetian**	
Department	**Vehicle Maintenance**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.3 Rail Equipment Maintenance.
2. CPUC General Order 143-B, Dated January 20, 2000, Section 14.04, Light Rail Vehicle Maintenance and Records.
3. LACMTA Breda 650 Base & Option Car Preventive Maintenance Inspections, Revision 1, Dated November 25, 2003.
4. LACMTA Siemens 2000 Preventive Maintenance Inspections, Revision 1, Dated February 19, 2004.
5. LACMTA Nippon Sharyo 865 &2020 Preventive Maintenance Inspections, Revision 2, Dated November 11, 2003.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

VEHICLE INSPECTION

A Federal Railroad Administration (FRA) certified vehicle inspector from the Commission's Railroad Operations & Safety Section will take measurements and visually inspect the Metro Blue, Green, Gold, and Red Line fleet to determine if the selected items are in-compliance with CPUC and LACMTA's vehicle maintenance standards:

- 3 vehicles from Metro Blue Line vehicles
- 2 vehicles for each type of Red Line vehicle: Base and Option
- 3 vehicles from Metro Green Line
- 3 vehicles from the Metro Gold Line

RESULTS/COMMENTS

At Metro Vehicle Maintenance Facilities, the following vehicles were chosen for visual inspection:

Metro Blue Line— Vehicles 129,112, 158
Metro Green Line---Vehicles 221,222, 211
Metro Gold Line-----Vehicles 244, 249, 242
Metro Red Line------Vehicles 585/586, 509/508, 527/522, and 599/600

The scope of the inspection included inspecting the following major components:
A. Traction motors/ trucks and wheel assemblies
B. Pantograph/ power collectors
C. Brakes, friction tread / disc and dynamic

D. Controller assemblies and related components
E. Coupler drawbar assemblies / safety appliances
F. Doors, windows, and seats in passenger/ operators compartment

Findings:

1. Blue Line - Visual inspection of the vehicles found vehicle 158 with C "truck" brake disc worn into the wear groove (75/1000"). Overall, the brake disc was not condemnable yet but it was very close to condemnation. Recently, vehicle 158 had a 5K inspection. No exception taken to vehicles 129 and 112.
2. Green Line - 3 vehicles inspected 221, 211, and 222, which was recently out of 5K inspection. Even though axial brushes wiring insulation inspection is not part of 5K inspection, the insulation was extremely worn. The lack of maintenance can cause fire and failure to motors/generators. This condition was known to be a manufacturer problem throughout the fleet yet there seems to be no increase inspection activities that would detect this condition sooner.
3. Gold Line - 3 vehicles inspected 244, 249, and 242 with no exception taken.
4. Red Line - 4 vehicle inspected 585/586, 509/508, 527/522, and 599/600. Exception is taken to air compressor filter leaking oil on car 599. Oil level low as indicated by sight glass. Work report covering the previous inspection had notation showing this condition was observed and not repaired. Air compressor filter leaking oil does cause maintenance problem and shows need for improvement in quality control procedures. Red Line Vehicle Maintenance Manual states that Air compressor oil level must be checked and add oil if necessary.
5. The inspector observed the lack of standard throughout the various facilities as it pertains to the use and display of Blue Light Signal protection. Some facilities display the Blue Light Signal inside the vehicle and others display them outside of the vehicle.

Comments:

Staff suggests that LACMTA give the vehicle maintainers the flexibility to inspect and repair, if necessary, all known defects on vehicles, at every vehicle inspection period, rather than wait for the vehicle scheduled inspection.

Recommendations:

LACMTA should immediately inspect and repair, if necessary, all the axial brushes wiring insulation on the Metro Green Line fleet
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2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**5**	Persons Contacted
Date of Audit	**June 23, 2004**	Roger Snoble, CEO John Catoe, Deputy CEO Gerald Francis, General Manager Metro Rail Vijay Khawani, Director Rail Operations Safety
Auditors	**Richard Clark, Vahak Petrossian, Robert Strauss**	
Department	**LACMTA Chief Executive Officer (CEO), Deputy Chief Executive Officer, and Metro Rail General Manager**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003.
2. Commission Resolution ST-54, Dated November 7, 2002.
3. CPUC General Order 164-C, Dated February 27, 2003, Section 3, Requirements for System Safety Program Plan.
4. Safety and Security Issues Periodic Reports provided to the CEO

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

AUTHORITY AND RESPONSIBILITY FOR SYSTEM SAFETY PROGRAM

Interview LACMTA CEO, Deputy Chief Executive Officer, and Metro Rail General Manager as a group and/or individually to evaluate the scope of management involvement, coordination, and communication in LACMTA efforts to satisfy the commitments & recommendations of the Resolution ST-54 for improving the System Safety Program Plan. Specific commitments of review should include the following tasks:

1. Determine the source, frequency, and depth of safety and security information provided to the Chief Executive Officer.
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 initiated by accidents, hazardous conditions, internal audits, and triennial audits.
6. Determine management awareness about ST-54 SSPP violations and recommendations, such as GO 95 insulator violations, and ST-54 monthly updated reports provided to CPUC.

RESULTS/COMMENTS

Findings:

The CEO and Deputy CEO discussed the focus and vision of the safety program. They discussed the safety education program at length.

The Metro Rail General Manager receives a monthly report and the CEO receives a quarterly report

on safety measures. The quarterly report is derived from the monthly report. MTA supplied a copy of a monthly report (April 2004). The report contains statistics on accident rates and worker's compensation incident rates.

Accidents are investigated by Rail Operations Safety. Upper management is informed of serious accidents and discusses them at safety meetings. Rail Operations Safety requests funding for safety corrective actions through the safety meetings. Rail Operations Safety is responsible for tracking corrective actions and keeping the Metro Rail General Manager informed on their status.

Safety Education is a major component of corrective actions associated with MTA accidents. Upper management has provided significant funding for safety education and has been directly involved in the safety education program.

On MTA's Performance Appraisal Process, safety is one of seven core values. The Performance Appraisal Process has a section on strategic planning goals and performance objectives. It is not clear from the material provided how safety is weighted among the competing goals, and whether the performance objectives of key managers relate to safety.

Recommendations:
None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**6**	Persons Contacted
Date of Audit	**June 22 & 23, 2004**	Wyman Jones, Supervising Engineer Byron England, Rail Integration & Instruction Manager Eugene Adams, Rail Division Transportation Manager Rob Chappell, Deputy Executive Officer, Rail Operations Dave Kubicek, Deputy Executive Officer, Rail Operations Russell Homan, Senior Instructor, Rail Fleet Services Roman Alarcon, Central Control Facility Manager
Auditors	**Hani Moussa** **Michael Robertson**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.6, Training and Certification.
2. LACMTA Heavy Rail Standard Operations Procedures, Dated June 30, 1996.
3. LACMTA Rail Operations Control Manual, Dated October 1, 1998.
4. LACMTA Rail Transportation Instruction Training Matrix 4, Dated March 26, 2004.
5. CPUC General Order 143-B, Dated January 20, 2000, Sections 12.02, 13.03, and 14.03.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL OPERATIONS TRAINING & CERTIFICATION

Review the current training, certification and re-certification programs for each of the following classification to determine if they are complete and current.

- Train Operators
- Rail Transit Operations Supervisors (Includes ROC Controllers & Yard Controllers)
- Wayside Systems personnel
- Fleet Services personnel

From the overall employee list, select the records of 3 train operators, 3 ROC controllers, 3 yard controllers, 3 signal maintainers/inspectors, and 3 fleet services employees. Review their training, certification, and re-certification records to determine if they are complete, current, and in compliance with the reference criteria and programs.

Review Discipline and Accident/Incident Records for all classifications involved in an accident in the past 1-year. Determine if LACMTA performed the accident follow-up ride checks not later than two weeks, after an operator returns to duty, or within 30 days of the accident.

Verify if LACMTA developed a training plan and trained its employees after it established new Heavy Rail operations procedures.

RESULTS/COMMENTS

Findings:

1 The auditors randomly selected the names of eighteen LACMTA employees from those in the classifications of Train Operator, ROC Controller, Yard Controller, Signal Maintenance Inspector, Track Maintenance Inspector, and Fleet Services. The auditors then reviewed those records for the length of each employee's employment to determine whether or not each had:

- A current driver's license
- A Hi-Rail license (Track Inspectors)
- Completed the required Train Operator initial training program
- Been re-certified every two years at the required frequency

2 The auditors found that the licenses, training, certification and re-certification records for the selected Train Operators, ROC Controllers, Yard Controllers, Signal Maintenance Inspectors, Track Maintenance Inspectors, and Fleet Services employees were complete, current, and in compliance with the reference criteria.

3 The LACMTA Operator/Student Performance Sheets currently used by the Instruction Department to document the operating performance evaluation of employees during the certification and re-certification process were found current and filled out completely.

4 The auditors reviewed Discipline/Accident records for all classifications involved in an accident for the past year and determined that accident follow-up ride checks are being performed in a timely manner following an accident or within two weeks after an operator returns to duty.

5 The auditors found that Heavy Rail ROC controllers are not completing their quarterly proficiency rides on a consistent basis as required by LACMTA. The records reviewed for the three randomly selected Heavy Rail ROC controllers revealed that at least one or more quarterly proficiency rides was not completed for the past three years.

6 New Heavy Rail operating procedures are currently being developed by LACMTA and are not in effect yet. The training department is also developing a new training plan that will train all rail affected employees after the established Heavy Rail operating procedures are approved and issued for use by LACMTA management.

Recommendations:

LACMTA should ensure that the quarterly proficiency rides are completed for all affected employees..

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**7**	Persons Contacted
Date of Audit	**June 22 & 23, 2004**	Wyman Jones, Supervising Engineer Byron England, Rail Integration & Instruction Manager Hector Guerrero, Rail Division Transportation Manager Rob Chappell, Deputy Executive Officer, Rail Operations Dave Kubicek, Deputy Executive Officer, Rail Operations Russell Homan, Senior Instructor, Rail Fleet Services Roman Alarcon, Central Control Facility Manager
Auditors	**Hani Moussa** **Michael Robertson**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1 LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.6, Training and Certification.
2 LACMTA Light Rail Standard Operations Procedures, dated June 30, 1996.
3 LACMTA Rail Operations Control Manual, Dated October 1, 1998.
4 LACMTA Rail Transportation Instruction Training Matrix 4, Dated March 26, 2004.
5 CPUC General Order 143-B, dated January 20, 2000, Sections 12.02, 13.03, and 14.03.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL OPERATIONS TRAINING & CERTIFICATION

Review the current training, certification and re-certification programs for each of the following classification from Metro Blue Line to determine if they are complete and current.

- Train Operators
- Rail Transit Operations Supervisors (Includes ROC Controllers & Yard Controllers)
- Wayside Systems Personnel
- Fleet Services Personnel

From the overall employee list, select the records of 3 train operators, 3 ROC controllers, 3 Yard controllers, 3 signal maintainers/inspectors, and 3 fleet services employees. Review their training, certification, and re-certification records to determine if they are complete, current, and in compliance with the reference criteria and programs.

Review Discipline and Accident/Incident Records for all classifications involved in an accident in the past 1 year. Determine if LACMTA performed accident follow-up ride checks not later than two weeks, after an operator returns to duty, or within 30 days of the accident.

Verify if LACMTA developed a training plan and trained its employees after it established new Light Rail operations procedures.

RESULTS/COMMENTS

Findings:

1 The auditors randomly selected the names of eighteen LACMTA employees from those in the classifications of Train Operator, ROC Controller, Yard Controller, Signal Maintenance Inspector, Track Maintenance Inspector, and Fleet Services. The auditors then reviewed those records for the length of each employee's employment to determine whether or not each had:

- A current driver's license
- A Hi-Rail license (Track Inspectors)
- Completed the required Train Operator initial training program
- Been re-certified every two years at the required frequency

2 The auditors found that the licenses, training, certification and re-certification records for the selected Train Operators, ROC Controllers, Yard Controllers, Signal Maintenance Inspectors, Track Maintenance Inspectors, and Fleet Services employees were complete, current, and in compliance with the reference criteria.

3 The LACMTA Operator/Student Performance Sheets currently used by the Instruction Department to document the operating performance evaluation of employees during the certification and re-certification process were found current and filled out completely.

4 The auditors reviewed Discipline/Accident records for all classifications involved in an accident for the past year and determined that accident follow-up ride checks are being performed in a timely manner following an accident or within two weeks after an operator returns to duty.

5 The auditors found that Light Rail ROC controllers are not completing their quarterly proficiency rides on a consistent basis as required by LACMTA. The records reviewed for the three randomly selected Light Rail ROC controllers revealed that at least one or more quarterly proficiency rides was not completed for the past three years.

6 New Light Rail operating procedures are currently being developed by LACMTA and are not in effect yet. The training department is also developing a new training plan that will train all rail affected employees after the established Light Rail operating procedures are approved and issued for use by LACMTA management.

Recommendations:

LACMTA should ensure that the quarterly proficiency rides are completed for all affected employees.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**8**	Persons Contacted
Date of Audit	**June 14, 2004**	Byron England, Rail Integration & Instruction Manager Orleatha Smith, Assistant
Auditors	**Gary Rosenthal**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.6, Training and Certification.
2. LACMTA Program of Operational Evaluations, Rev 0, Dated December 2002.
3. CPUC General Order 143-B, Dated January 20, 2000, Sections 13.04 and 14.03.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY and LIGHT RAIL TRAIN OPERATOR PERFORMANCE EVALUATION PROGRAM

Interview the Instruction Department representatives in charge of the subject program and review supporting documentation and records to determine if LACMTA developed a Program of Operational Evaluations, with appropriate written procedures and record forms, and implemented for:

1. Heavy rail train operators and
2. Light rail train operators

Review the program records for the last 6 months to determine:

1. The number of performance evaluations performed for each selected operator
2. The operating standards evaluated
3. The performance observed
4. Subsequent actions taken.

Review the records for failed operator tests. Determine if these operators are re-tested at their division and the test results are in the files at the Instruction Department.

RESULTS/COMMENTS

Findings:

I found that LACMTA has developed a comprehensive Program of Operational Evaluations, with written procedures and record forms for heavy rail train operators and light rail train operators. The program was implemented January 1, 2004. Program records were available through May 31, 2004.

There were complete records for:

1. Each light rail and heavy rail train operator's performance evaluations;
2. The operating standards that were evaluated;
3. The operator's performance that was observed and;
4. The actions taken for each train operator that performed inadequately including re-instruction and subsequent testing.

Comments:

1. Rail Transportation Instruction continues to develop changes to improve the Program Of Operational Evaluations adopted in February 2003, including proposed revision of forms, clarification of procedures, publication of performance data, and expansion of the kinds of tests and observations performed. As these proposed improvements are evaluated and adopted by LACMTA, the Program Of Operational Evaluations control document should also be revised as directed in the current version.
2. Rail Transportation Instruction should monitor and evaluate all supervisors' quality of performance in conducting the tests and observations and take necessary actions to ensure a consistent high level of program implementation and administration.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**9**	Persons Contacted
Date of Audit	**June 15 & 18, 2004**	Edward Adams, Assistant Divison Manager
Auditors	**Gary Rosenthal, Dennis Reed**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.6, Training, and Certification.
2. LACMTA Program of Operational Evaluations, Rev 0, Dated December 2003.
3. CPUC General Order 143-B, Dated January 20, 2000, Sections 13.04, and 14.03.
4. LACMTA Heavy Rail Operations Rulebook, Undated.
5. LACMTA Heavy Rail Standard Operating Procedures, effective 2-1-98
6. LACMTA Heavy Rail - Rail Operations Bulletins
7. LACMTA Heavy Rail - Rail Operations Procedure Notices, Special Notices, and General Notices

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL TRAIN OPERATOR PERFORMANCE

Observe, on-board Metro Red Line train, the operations of two trains for four stations, to determine if:

1. Each train operator performs in compliance with the governing orders, rules and procedures, etc.
2. Each operator possesses the required on-board safety equipment, rule books, radios, etc.

Interview at least two Metro Red Line train operators to evaluate their knowledge and understanding of LACMTA's rules and procedures related to mainline and yard operations.

RESULTS/COMMENTS

Findings:

I found that the LACMTA Metro Red Line train operators were generally knowledgeable about and complied with operating rules and procedures. Each train operator checked had the required on-board safety equipment, operating rulebook, radio, keys, safety vest, flashlight, etc.

I did note, however, that there were a variety of interpretations and performances of the look back procedure, which is required as the trains' side doors are closed and trains depart the stations. Aside from the varying interpretations, system vehicle and station design factors also limit how train operators can perform the look back procedure.

I learned that LACMTA has installed wayside mirrors at some Red Line stations to assist the train operators' ability to monitor the side of trains and the platforms as train side doors are closed and

trains depart the stations.

Comments:

The Program of Operational Evaluations and the Train Operator Training Program should continue to include and consistently address the look back procedure.

Recommendations:

LACMTA should implement the means necessary for train operators to effectively monitor the side of trains at MRL station platforms, including the continued installation of wayside mirrors where appropriate, to ensure safety as the side doors are closed and the trains depart stations.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**10**	Persons Contacted
Date of Audit	**June 15, 2004**	Duane Martin, Metro Gold Line Division Manager Hector Guerrero, Metro Blue Line Division Manager Michael Moore
Auditors	**Gary Rosenthal**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.6, Training and Certification.
2. LACMTA Program of Operational Evaluations, Rev 0, Dated December 2003.
3. CPUC General Order 143-B, Dated January 20, 2000, Sections 13.04 and 14.03.
4. Light Rail Operations Rulebook, Undated.
5. LACMTA Light Rail Standard Operating Procedures, effective January 1, 1998.
6. LACMTA Light Rail - Rail Operations Bulletins.
7. LACMTA Light Rail - Rail Operations Procedure Notices, Special Notices, and General Notices.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL TRAIN OPERATOR PERFORMANCE

Observe, on-board Metro Blue, Green, and Gold Line train, the operations of two trains for four stations, to determine if:

1. Each train operator performs in compliance with the governing orders, rules and procedures, etc.
2. Each operator possesses the required on-board safety equipment, rule books, radios, etc.

Interview at least two Metro Blue, Green, and Gold Line train operators to evaluate their knowledge and understanding of LACMTA's rules and procedures related to mainline and yard operations.

RESULTS/COMMENTS

Findings:

I found that the LACMTA Gold Line train operators that I observed and interviewed were generally knowledgeable about and complied with operating rules and procedures. Each train operator checked required on-board safety equipment, rulebook, radios, keys, safety vest, etc.

I found that LACMTA Blue Line train operators that I observed and interviewed were generally knowledgeable about operating rules and procedures. However, I found that train operator's compliance with a variety of rules and procedures was inconsistent.

I found that the LACMTA Green Line train operators that I observed and interviewed were not consistently knowledgeable about operating rules and procedures. I also found that the train operators' compliance with rules and procedures was inconsistent as well.

Comments:

The Program of Operational Evaluations and the Train Operator Training Program for the light rail systems should continue to include and actively address knowledge of and compliance with operating rules and procedures.

Recommendations:

LACMTA should ensure all light rail train operators are consistently knowledgeable about operating rules and procedures and those rules are consistently followed.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**11**	Persons Contacted
Date of Audit	**June 17, 2004**	Roman Alarcon, ROC Manager Patty Alexander, Assistant ROC Manager
Auditors	**Gary Rosenthal**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 3.2.2, Rail Operations Control.
2. LACMTA Light Rail Operations Rule Book, undated
3. LACMTA Standard Operating Procedures, Metro Blue Line, Los Angeles/Long Beach Light Rail System
4. LACMTA Standard Operating Procedures, Metro Green Line, Norwalk/Redondo Beach Light Rail System
5. LACMTA Light Rail – Rail Operations Bulletins
6. LACMTA Light Rail – Rail Operations Procedure Notices, Special Notices, and General Notices
7. LACMTA ROC Manual, effective 10-01-98

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL OPERATION CONTROLLERS ACTIVITIES

Audit the safety related duties and responsibilities of LACMTA personnel assigned to the ROC to determine if they are being properly performed by a combination of the following:

- First hand observations for a minimum of one hour.
- One on one interviews with randomly selected Light Rail ROC employees
- Review a random sample of forms, cards, documented voice data, computer files and other documentation prepared during the past six months

A list of specific items to be included in the audit follows:

- Rail Controllers shall maintain ROC SOPs, maintain as required, and have their SOPs available while in the performance of duties. (ROC SOP 101.1)
- Unusual Occurrence Reports and the Open Incidents Log for the past six months
- Wayside Restriction Orders (ROC SOP 104.19)
- Clearance Cards (ROC SOP 104.17)
- Communications with Union Pacific for at the Amoco Line Train Movements. (ROC SOP 107.1)

RESULTS/COMMENTS

Findings:

I found that LACMTA Blue, Gold, and Green Lines light rail train controllers that I observed and interviewed were generally knowledgeable about and complied with operating rules and procedures. They were alert and responded quickly to changing operational conditions. The various controllers' logs, Unusual Occurrence Reports, Incident Logs, forms, etc. appeared to be current.
The most recent ROC Procedure Notice, listing all revised Standard Operating Procedures, was dated July 1, 2001. However, additional Standard Operating Procedures revisions have been issued through March 10, 2002.

The Daily Incident Log periodically lists open safety items but it was not clear who is responsible for tracking and ensuring the open safety items are corrected, verified, and closed and how that process takes place.

Comments:

LACMTA should consider a periodic review and evaluation of ROC procedures and practices, including the ROC Procedure Notices, to assure documents are current and are effectively addressing safety issues concerning the control of light rail operations.

Recommendations:

LACMTA should implement procedures to ensure that all open safety items recorded in the ROC Daily Incident Log are properly evaluated, corrected, and closed as required by the hazard identification and resolution requirements in the LACMTA System Safety Program Plan.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**12**	Persons Contacted
Date of Audit	**June, 17, 2004**	Roman Alarcon, ROC Manager Patty Alexander, Assistant ROC Manager
Auditors	**Gary Rosenthal**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 3.2.2, Rail Operations Control.
2. LACMTA Heavy Rail Operations Rule Book, undated
3. LACMTA Standard Operating Procedures, Metro Red.
4. LACMTA Heavy Rail – Rail Operations Bulletins
5. LACMTA Heavy Rail – Rail Operations Procedure Notices, Special Notices, and General Notices
6. LACMTA ROC Manual, effective 10-01-98

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL OPERATION CONTROLLERS ACTIVITIES

Audit the safety related duties and responsibilities of LACMTA personnel assigned to the ROC to determine if they are being properly performed by a combination of the following:

- First hand observations for a minimum of one hour.
- One on one interviews with randomly selected Light Rail ROC employees
- Review a random sample of forms, cards, documented voice data, computer files and other documentation prepared during the past six months

A list of specific items to be included in the audit follows:

- Rail Controllers shall maintain ROC SOPs, maintain as required, and have their SOPs available while in the performance of duties. (ROC SOP 101.1)
- Unusual Occurrence Reports and the Open Incidents Log for the past six months
- Wayside Restriction Orders (ROC SOP 104.19)
- Clearance Cards (ROC SOP 104.17)

RESULTS/COMMENTS

Findings:

I found that LACMTA heavy rail train controllers were generally knowledgeable about and complied with operating rules and SOPs.

I found that the various controllers' logs, Unusual Occurrence Reports, Incident Logs, forms, etc. appeared to be current.

I found that there are SOPs to address a number of safety related train equipment failures. However, I also found that there are safety related train equipment failures, such as dynamic brake failure indications, that are not specifically addressed.

Recommendations:

LACMTA should implement procedures to address potential train equipment failures that can occur while trains are being operated, with or without passengers. Those procedures should establish appropriate operating safety mitigations until those equipment failures can be corrected or the train is removed from service.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**13**	Persons Contacted
Date of Audit	**June 21, 2004**	Forest Adams – Rail Signal Supervisor, Wayside Systems Moses Jones – Rail Signal Supervisor, Wayside Systems / Signals Vijay Khawani – Director of Safety
Auditors	**Joey Bigornia**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 3.4.3, Rail Signal Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective January 2004.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL SIGNAL MAINTENANCE AND INSPECTION

Review two samples, where applicable, of each Metro Blue, Green, and Gold Lines completed signal inspection, maintenance, and test records, since January 2004, as follows:

- Grade Crossing Protection of highway, pedestrian, gate arm mechanism, and flasher units
- Main line switch tests of point detector/lock rod and obstruction
- Interlocking tests of loss of shunt and route/time/approach/traffic/switch locking
- Vital relays
- Measuring and test equipment calibration

Determine if

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements.
2. All the noted defects were posted in the Maintenance Log Sheet and corrected in a timely manner.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.
4. LACMTA established a range of values that the vital relay should meet in order to pass field acceptance test. If a relay failed, LACMTA replaced it immediately. Vital relays are readily available in the storage room. The vital relays are properly controlled and calibrated against certified standard at prescribed intervals as required by applicable procedures. Vital relays have been marked, tagged or otherwise identified to show their calibration status.
5. Measuring and test equipment are properly inventoried, controlled and marked, tagged or otherwise identified to show their current calibration status. The items are calibrated against certified standards. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Findings:

A. Metro Blue Line

1. Reviewed grade crossing inspection records for 48th Street and 103rd Street dated January - June 2004. The monthly inspections were performed at the required maintenance interval. No exceptions were noted.

2. Reviewed mainline switch inspection records for Artesia and Florence dated January – June 2004. The monthly switch inspections were performed at the required maintenance interval. No exceptions were noted.

3. Reviewed interlocking tests for Artesia performed on April 15-18, 2003 and Florence performed on May 21 – June 19, 2003. The inspections were performed at the required maintenance interval and the next scheduled interlocking inspection is Year 2007. No exceptions were noted.

B. Metro Green Line

1. There are no mainline grade crossings on the Green Line.

2. Reviewed mainline switch inspection records for Crenshaw and Lynwood dated January – June 2004. The monthly switch inspections were performed at the required maintenance interval. No exceptions were noted.

3. Reviewed interlocking tests for El Segundo performed on January 1-6, 2004 and Lynwood performed on March 29 – May 18, 2004. The inspections were performed at the required maintenance interval and the next scheduled interlocking inspection is Year 2008. No exceptions were noted

C. Metro Gold Line

1. Reviewed grade crossing inspection records for Ave. 45 and Ave. 59 dated January - June 2004. The monthly inspections were performed at the required maintenance interval. No exceptions were noted.
2. Reviewed mainline switch inspection records for Sierra Madre and Indiana dated January – June 2004. The monthly switch inspections were performed at the required maintenance interval. No exceptions were noted.
3. Interlocking tests have not been performed on the Gold Line since it has been revenue service for one-year. The first 4-year Inspection will occur in Year 2007.

D. Vital Relays on Green Line

1. Selected the following relays currently in use at Wilmington West – Train Control Communications Room for review:

    a. 7NWZR, s/n B4092279
        1. Relay was tested on June 5, 2003. Next scheduled 4-year test is Year 2007.

    b. BHFLR, s/n B1393084
        1. Relay was tested on June 5, 2003. Next scheduled 4-year test is Year 2007.

    c. 14CHR, s/n B4092477

1. Relay was tested on June 5, 2003. Next scheduled 4-year test is Year 2007.

d. 12EVRSPR, s/n B3193054
   1. Relay was tested on June 6, 2003. Next scheduled 4-year test is Year 2007.

e. 14WVSR, s/n B4192358
   1. Relay was tested on June 6, 2003. Next scheduled 4-year test is Year 2007.

f. 3NWPR, s/n B3193091
   1. Relay was tested on June 7, 2003. Next scheduled 4-year test is Year 2007.

No exceptions were noted.

E. Selected the following measurement equipment for review with the following results:

1. Fluke Multi-meter, s/n 63980826
   a. Last calibration occurred on August 6, 2003 and next calibration is due August 6, 2004.

2. Fluke Multi-meter, s/n 67840061
   a. Last calibration occurred on May 13, 2004 and next calibration is due May 13, 2005.

3. Fluke Multi-meter, s/n 67140013
   a. Last calibration occurred on May 28, 2004 and next calibration is due May 28, 2005.

4. Fluke Mego-meter, s/n 80980005
   a. Last calibration occurred on May 24, 2004 and next calibration is due May 24, 2005.

5. Fluke Clamp-meter, s/n 79621447
   a. Last calibration occurred on April 5, 2004 and next calibration is due April 5, 2005.

No exceptions were noted.

F. The Wayside System /Signals Department tracks the closure of maintenance defects found on an inspection by trouble tickets. The trouble ticket is generated for each defect found, repairs to defect, repair date, and a signature sign-off to acknowledge closure of the defect are shown on this record. Copies of trouble tickets are filed with the inspection records. No exceptions were noted.

G. The Wayside System / Signals Department process for alerting management on the status of inspections is the Annual check-off list that shows the monthly inspection completion dates posted outside of the crew leaders office. The inspectors fill in the date as inspections are

completed. Supervisors review the inspection report entries and provide a weekly report to the assistant manager. The data entered on a spreadsheet located in a folder on the network drive can be accessed and reviewed by management at any time.

H. The Wayside System / Signals Department uses the relay manufacturer's engineering data sheet and field application limits as the basis for the range of values the relays must meet to pass field acceptance tests. The manufacturer data sheets are included on the Relay Test Manuals, which are provided to the work crews.

I. Vital relays are readily available in the storage room and are properly controlled and calibrated against certified standard at prescribed intervals as required by applicable procedures. Vital relays have been marked, tagged or otherwise identified to show their calibration status.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**14**	Persons Contacted
Date of Audit	**June 22, 2004**	Alan Clark – Assistant Manager, Signal Wayside Systems Moses Jones – Rail Signal Supervisor, Wayside Systems / Signals Monte Wilson – Rail Signal Supervisor Vijay Khawani – Director of Safety
Auditors	**Joey Bigornia**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003,Section 3.4.3, Rail Signal Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective January 2004.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL SIGNAL MAINTENANCE AND INSPECTION

Review two samples of Metro Red Line completed signal inspection, maintenance, and test records, since January 2004, as follows:

- Main line switch tests of point detector/lock rod and obstruction
- Interlocking tests of loss of shunt and route/time/approach/traffic/switch locking
- Vital relays
- Measuring and test equipment calibration

Determine if

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements
2. All the noted defects were posted in the Maintenance Log Sheet and corrected in a timely manner.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.
4. LACMTA established a range of values that the vital relay should meet in order to pass field acceptance test. If a relay failed, LACMTA replaced it immediately. Vital relays are readily available in the storage room. The vital relays are properly controlled and calibrated against certified standard at prescribed intervals as required by applicable procedures. Vital relays have been marked, tagged or otherwise identified to show their calibration status.
5. Measuring and test equipment are properly inventoried, controlled and marked, tagged or otherwise identified to show their current calibration status. The items are calibrated against certified standards. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Findings:

1. Reviewed mainline switch tests of point detector/ lock rod & obstruction reports dated January – June 2004 for Vermont / Santa Monica and North Hollywood – Tail Track. The monthly inspections were performed at the required maintenance interval. No exceptions were noted.

2. Reviewed interlocking tests for Union Station performed on February 20, 2001 and interlocking tests for Westlake performed on January 29, 2001. The inspections were performed at the required maintenance interval and the next scheduled interlocking inspection is Year 2005. No exceptions were noted.

3. Selected the following relays currently in use at "Bungalow B" in the Red Line Yard, for review:

    a. YL-LESR, s/n 44911I010
        1. Relay was tested on June 20, 2001. Next scheduled 4-year test is Year 2005.

    b. 113-607LR, s/n 44911018
        1. Relay was tested on June 20, 2001. Next scheduled 4-year test is Year 2005

    c. 105B-7B-TR, s/n 50915I003
        1. Vane relay was tested on September 3, 2003. Next scheduled 2-year test is Year 2005.

    d. YR-WSR, s/n 44911I014
        1. Relay was tested on June 20, 2001. Next scheduled 4-year test is Year 2005.

    e. YR-LTYPSR, s/n 449I009
        1. Relay was tested on June 20, 2001. Next scheduled 4-year test is Year 2005.

    f. 105-7TR, s/n 4496SI005
        1. Vane relay was tested on October 7, 2003. Next scheduled 2-year test is Year 2005.

    No exceptions were noted.

4. Selected the following measurement equipment for review with the following results:

    a. Fluke Multi meter, s/n 54950821
        1. Last calibration occurred on August 21, 2003 and next calibration is due August 21, 2004.

    b. Fluke Multi meter, s/n 65170296
        1. Last calibration occurred on August 21, 2003 and next calibration is due August 21, 2004.

    c. Oscilloscope, s/n B037427
        1. Last calibration occurred on September 24, 2003 and next calibration is due September 23, 2004.

d. Volt/Ohm Meter, s/n 168995
    1. Last calibration occurred on August 22, 2003 and next calibration is due August 22, 2004.

e. Volt/Ohm Meter, s/n 1698031
    1. Last calibration occurred on August 20, 2003 and next calibration is due August 20, 2004.

No exceptions were noted.

5. The Wayside System /Signals Department tracks the closure of maintenance defects found on an inspection by trouble tickets. The trouble ticket is generated for each defect found, repairs to defect, repair date, and a signature sign-off to acknowledge closure of the defect are shown on this record. Copies of trouble tickets are filed with the inspection records. No exceptions were noted.

6. The Wayside System / Signals Department process for alerting management on the status of inspections is the Annual check-off list that shows the monthly inspection completion dates posted outside of the crew leaders office. The inspectors fill in the date as inspections are completed. Supervisors review the inspection report entries and provide a weekly report to the assistant manager. The data entered on a spreadsheet located in a folder on the network drive can be accessed and reviewed by management at any time.

7. The Wayside System / Signals Department uses the relay manufacturer's engineering data sheet and field application limits as the basis for the range of values the relays must meet to pass field acceptance tests. The manufacturer data sheets are included on the Relay Test Manuals which are provided to the work crews.

8. Vital relays are readily available in the storage room and are properly controlled and calibrated against certified standard at prescribed intervals as required by applicable procedures. Vital relays have been marked, tagged or otherwise identified to show their calibration status.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**15**	Persons Contacted
Date of Audit	**June 21, 2004**	Jeff Root - Assistant Manager, Wayside Systems - Track
Auditors	**Joey Bigornia**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003,Section 3.4.1, Track Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective date January 2004.
3. Code of Federal Regulations (CFR) 49, Part 213, Latest Edition.
4. CPUC General Order 143-B, dated January 20, 2000, Section 14.05, Track Maintenance Practices and Records.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL TRACK & SWITCH INSPECTION

Review a randomly selected sample of completed track system inspection, maintenance, and test records, as specified in the Wayside System Maintenance Plan, effective January 1, 2004, for Metro Blue, Green and Gold Lines as follows:

- Mainline and yard track inspections and maintenance: visual / riding / walking
- Mainline and yard switch inspection and maintenance
- Track ultrasonic testing
- Torque on Direct Fixations
- Track tamping
- Rail production grinding

Determine if:

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements
2. All the noted defects were documented and corrected in a timely manner, and the supervisor signed the completed forms.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.

RESULTS/COMMENTS

Findings:

A. Mainline and Yard Track Inspections
    1. Metro Blue Line
        a. Reviewed weekly mainline and yard track inspections for the Blue Line dated January – June 2004. The track inspections were inspected once/week by walking and once/week by hi-rail at the required maintenance interval.

Supervisor signature was shown on completed forms. No exceptions were noted.

2. Metro Green Line
    a. Reviewed weekly mainline and yard track inspections for the Green Line dated January – June 2004. The track inspections were inspected once/week by walking and once/week by hi-rail at the required maintenance interval. Supervisor signature was shown on completed forms. No exceptions were noted.

3. Metro Gold Line
    a. Reviewed weekly mainline and yard track inspections for the Gold Line dated January – June 2004. The track inspections were inspected once/week by walking and once/week by hi-rail at the required maintenance interval. Supervisor signature was shown on completed forms. No exceptions were noted.

B. Mainline and Yard Switch Inspections and Maintenance
1. Metro Blue Line
    a. Reviewed monthly mainline and quarterly yard switch inspection reports for the Blue Line dated January – June 2004. The mainline and yard switches were inspected at the required maintenance intervals. Supervisor signature was shown on completed forms. No exceptions were noted.

2. Metro Green Line
    a. Reviewed monthly mainline and quarterly yard switch inspection reports for the Green Line dated January – June 2004. The mainline and yard switches were inspected at the required maintenance intervals. Supervisor signature was shown on completed forms. No exceptions were noted.

3. Metro Gold Line
    a. Reviewed monthly mainline and quarterly yard switch inspection reports for the Gold Line dated January – June 2004. The mainline and yard switches were inspected at the required maintenance intervals. Supervisor signature was shown on completed forms. No exceptions were noted.

C. Ultrasonic Testing of Track
1. Metro Blue Line
    a. Reviewed ultrasonic test reports of the Blue Line prepared by Herzog Services, Inc. dated November 8, 2003. The mainline was tested at the required maintenance interval and the next scheduled ultrasonic test is November 2004. No exceptions were noted.

2. Metro Green Line
    a. Reviewed ultrasonic test reports of the Green Line prepared by Herzog Services, Inc. dated November 6 and 9, 2003. The mainline was tested at the required maintenance interval and the next scheduled ultrasonic test is November 2004. No exceptions were noted.

3. Metro Gold Line
    a. Review ultrasonic test reports of the Gold Line prepared by Herzog Services, Inc. dated November 7, 2003. The mainline was tested at the required maintenance interval and the next scheduled ultrasonic test is November

2004. No exceptions were noted.

D. Torque on Direct Fixation
    1. Metro Blue Line
        a. Reviewed the direct fixation inspection reports dated January – June 2004. The Blue Line was inspected on January 30, 2004. No exceptions were noted.

    2. Metro Green Line
        a. Reviewed the direct fixation inspection reports dated January – June 2004. The Green Line was inspected on January 30-31, 2004 and May 12-13, 2004. No exceptions were noted.

    3. Metro Gold Line
        a. Direct fixation inspection records were not available for review since the inspection for Year 2004 has not been performed. The inspection is scheduled for late Summer 2004.

E. Track Tamping
    1. Metro Blue Line
        a. Reviewed the Wayside Systems – Track: Maintenance Log Sheet for Year 2004 to current date which identifies station location where tamping was performed on the Blue Line. Tamping was performed on February 16-19, 23-24, 2004. No exceptions were noted.

    2. Metro Green Line
        a. Reviewed the Wayside Systems – Track: Maintenance Log Sheet for Year 2004 to current date which identifies station location where tamping was performed on the Green Line. Tamping was performed on January 4, 8, 13-15, 19, 2004. No exceptions were noted.

    3. Metro Gold Line
        a. Reviewed the Wayside Systems – Track: Maintenance Log Sheet for Year 2004 to current date which identifies station location where tamping was performed on the Gold Line. The Gold Line began revenue operation on July 2003 and track tamping was not performed since it is not necessary at this time.

F. Rail Production Grinding
    1. Metro Blue Line / Green Line / Gold Line
        a. Reviewed the Wayside Systems – Track: Maintenance Log Sheet for Year 2004 to current date which identifies station location where grinding was performed. Grinding was not performed on any of the three lines since it is not necessary at this time.

G. The Wayside System / Track Department process for alerting management on the status of inspections is Supervisors and Inspectors have access to and constantly update a weekly maintenance log book for each line. Each line's log book shows any and all track repair conditions noted at the appropriate sections of the log book called Work Blocks. All maintenance generated from inspection reports, maintenance log sheets completed by repair crews, and the status of any track conditions that are reported or monitored for future scheduled repairs are recorded in the Work Block.

Logbooks are used by inspectors to check weekly if any condition observed (by walking or hi rail inspection) in their assigned areas has been previously reported, the current status, repair schedule, or if condition is repaired, reported and signed off. Supervisors check the Logbook to schedule repairs and close out with appropriate documentation.
No exceptions were noted.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**16**	Persons Contacted
Date of Audit	**June 22, 2004**	Paul Squires – Assistant Manager Wayside Systems, Track Vijay Khawani – Director of Rail Operations Safety
Auditors	**Joey Bigornia**	
Department	**Track Maintenance**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.1, Track Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective January 2004.
3. Code of Federal Regulations (CFR) 49, Part 213, Latest Edition.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL TRACK & SWITCH INSPECTION

Review a randomly selected sample of completed track system inspection, maintenance, and test records (one month period if applicable), as specified in the Wayside System Maintenance Plan, effective January 1, 2004, for Metro Red Line as follows:

- Mainline and yard track inspections and maintenance: visual / riding / walking
- Mainline and yard switch inspection and maintenance
- Track ultrasonic testing
- Torque on Direct Fixations
- Floating slab inspection
- Rail production grinding

Determine if:

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements
2. All the noted defects were documented and corrected in a timely manner, and the supervisor signed the completed forms.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.

RESULTS/COMMENTS

Findings:

1. Reviewed mainline track and yard inspection records dated January – June 2004. The weekly mainline inspection was performed by hi-rail as required. Supervisor signature was shown on completed forms. No exceptions were noted.
2. Reviewed yard track inspection records dated January – June 2004. The weekly inspection was performed on-foot as required. Supervisor signature was shown on completed forms. No exceptions were noted.

3. Reviewed mainline switch & frog inspection records dated January – June 2004. The monthly mainline inspections were performed as required. Supervisor signature was shown on completed forms. No exceptions were noted.
4. Reviewed yard switch & frog inspection records dated January – June 2004. The quarterly mainline inspections were performed as required. Supervisor signature was shown on completed forms. No exceptions were noted.
5. Reviewed ultrasonic test reports of the Red Line prepared by Herzog Services, Inc. dated October 7, 2003. The mainline was tested at the required maintenance interval next scheduled ultrasonic test is Fall 2004. No exceptions were noted.
6. Review Torque on Direct Fixation inspection records dated January – June 2004. The Red Line was inspected on June 8, 10, 30, 2003 and July 15, 16, 2003 and the next scheduled inspection is mid-Summer 2004. No exceptions were noted.
7. Torque on Floating Slabs are checked and recorded on the same FRA inspection form used for mainline track inspections. Floating slab inspections are performed at the same time a switch & frog inspection occurs.
8. Rail production grinding is captured on a summary database called the Wayside Systems – Track: Maintenance Log Sheet. Year 2004 to current date was reviewed which identifies station location where grinding was performed. Grinding was not performed on the Red Line since it is not necessary at this time.
9. The Wayside System / Track Department process for alerting management on the status of inspections at the Redline is similar to the process currently utilized for the light rail department for uniformity. The process is Supervisors and Inspectors have access to and constantly update a weekly maintenance log book. The book shows any and all track repair conditions noted at the appropriate sections of the log book called Work Blocks. All maintenance generated from inspection reports, maintenance log sheets completed by repair crews, and the status of any track conditions that are reported or monitored for future scheduled repairs are recorded in the Work Block.

   Log books are used by inspectors to check weekly if any condition observed (by walking or hi rail inspection) in their assigned areas has been previously reported, the current status, repair schedule, or if condition is repaired, reported and signed off. Supervisors check the Log Book to schedule repairs and close out with appropriate documentation.
   No exceptions were noted.

Comments:

1. Wayside Systems / Tracks Department currently records floating slab inspection and finding (if any) on the FRA inspection form used for mainline track inspections. It is suggested when the next revision of the Wayside Systems Maintenance Plan Track Systems – All Lines Standard Operating Procedures occurs, an additional line for Section 1.11 Floating Slab Structure should be added to identify floating slab inspections are recorded on the FRA Inspection form used for mainline track inspections.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**17**	Persons Contacted
Date of Audit	**June 21, 2004**	Leroy Bonifay – Assistant Manager, Wayside Systems – Traction Power Daniel Sussman – Rail Traction Supervisor, Wayside Systems Andy Hughes – Wayside Systems Manager
Auditors	**Joey Bigornia**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.2, Traction Power Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective January 2004.
3. CPUC General Order 143-B, dated January 20, 2000, Section 14.06,Traction Power System Inspection and Records.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL TRACTION POWER INSPECTION AND MEASURING & TEST EQUIPMENT CALIBRATION

Review a randomly selected sample of completed traction power inspection, maintenance, and test records, as specified in the Waysides Systems Maintenance Plan, effective January 1, 2004, for Metro Blue, Green and Gold Lines as follows:

- Overhead Catenary System (OCS)
- Auxiliary power equipment
- UPS
- Electric power substations
- Measuring and test equipment calibration
  - High voltage gloves
  - Power relays of protect devices
  - Relay test equipment

Determine if:

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements
2. All the noted defects were documented and corrected in a timely manner.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.
4. Measuring and test equipment are properly inventoried, controlled and marked, tagged or otherwise identified to show their current calibration status. The items are calibrated per certified standards and frequency requirement. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Findings:

A. Overhead Catenary System (OCS) Inspection.
   1. Metro Blue Line

a. Reviewed OCS inspection reports for the Transit Mall through Willow Pocket dated January 2004 and the Artesia Interlocking through Imperial Interlocking dated May 2004. The OCS inspections were performed at the required maintenance interval. No exceptions were noted.

2. Metro Green Line
    a. Reviewed OCS inspection reports for the Norwalk West Interlocking through the Paramount Interlocking dated February 2004 and the Paramount Interlocking through Lynwood Interlocking dated March 2004. The OCS inspections were performed at the required maintenance interval. No exceptions were noted.

3. Metro Gold Line
    a. Reviewed OCS inspection reports for the Union Station Interlocking dated February 2004 and the Southwest Museum Interlocking through Indiana Interlocking dated May 2004. The OCS inspections were performed at the required maintenance interval. No exceptions were noted.

B. Auxiliary Power Equipment Inspection
1. Metro Blue Line
    a. Reviewed substation inspection reports for Florence Substation and Pacific Substation dated January – June 2004. The auxiliary power equipment inspections were performed at the required maintenance interval. No exceptions were noted.

2. Metro Green Line
    a. Reviewed substation inspection reports for the Long Beach Substation and Vermont Substation dated January – June 2004. The auxiliary power equipment inspections were performed at the required maintenance interval. No exceptions were noted.

3. Metro Gold Line
    a. Reviewed substation inspection reports for the French Substation and Glenarm Substation dated January – June 2004. The auxiliary power equipment inspections were performed at the required maintenance interval. No exceptions were noted.

C. UPS
1. Metro Blue Line
    a. Reviewed substation inspection reports for Florence Substation and Pacific Substation dated January – June 2004. The UPS inspections were performed at the required maintenance interval. No exceptions were noted.

2. Metro Green Line
    a. Reviewed substation inspection reports for the Long Beach Substation and Vermont Substation dated January – June 2004. The UPS inspections were performed at the required maintenance interval. No exceptions were noted.

3. Metro Gold Line
    a. Reviewed substation inspection reports for the French Substation and Glenarm Substation dated January – June 2004. The UPS inspections were

performed at the required maintenance interval. No exceptions were noted.

D. Electric Power Substation
    1. Metro Blue Line
        a. Reviewed substation inspection reports for Florence Substation and Pacific Substation dated January – June 2004. The electric power substation inspections were performed at the required maintenance interval. No exceptions were noted.

    2. Metro Green Line
        a. Reviewed substation inspection reports for the Long Beach Substation and Vermont Substation dated January – June 2004. The electric power substation inspections were performed at the required maintenance interval. No exceptions were noted.

    3. Metro Gold Line
        a. Reviewed substation inspection reports for the French Substation and Glenarm Substation dated January – June 2004. The electric power substation inspections were performed at the required maintenance interval. No exceptions were noted.

E. Measuring & Test Equipment Calibration
    1. The Wayside Department sends equipment to Burlington Safety Laboratory of California, Inc. for calibration. The Traction Power Manager maintains an equipment status list which identifies the equipment, serial number, location, test date and expiration date / date due for calibration.

    2. Selected one maintenance vehicle home based at Location 61 generally dispatched to the Metro Blue, Green or Gold Line for OCS maintenance. Reviewed on-board equipment with the following results:
        a. 40 kV Insulated Glove, s/n 3461015
            1. Glove was tested on March 11, 2004. Gloves have an expiration date of 6-months from stamp date from Burlington Safety Laboratory. Wayside Department recalls gloves prior to expiration date and replaces it with new pair.

        b. Hot Stick Dielectric Tester, s/n 3460432
            1. Hot Stick Dielectric Tester was tested on March 2004. Next scheduled 2-year test is March 2006.

        c. 4” Hot Stick, s/n 3460103
            1. 4” hot stick was tested on March 2004. Next scheduled 2-year test is March 2006.

        No exceptions were noted.

F. The Wayside System /Traction Power Department tracks the closure of maintenance defects found on an inspection by trouble tickets. The trouble ticket is generated for each defect found, repairs to defect, repair date, and a signature sign-off to acknowledge closure of the defect are shown on this record. Copies of trouble tickets are filed with the inspection records. No exceptions were noted.

G. The Wayside System / Traction Power Department has established a maintenance schedule spreadsheet that identifies the inspection frequency type (ie.3-month, 6-month, 12-month, 24-month) due for each substation component. The LACMTA's process to alert management when required inspections are not performed or repairs are not closed out in a timely manner is a monthly schedule shown at the bottom of the spreadsheet identifies what maintenance interval is scheduled and if task is complete. The spreadsheet is available on the mainframe and can be accessed by Supervisors or Inspectors to check on the status of inspections at any time

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**18**	Persons Contacted
Date of Audit	**June 22, 2004**	Leroy Bonifay – Assistant Manager, Wayside Systems – Traction Power Sayed Rasoul – Traction Power Supervisor Vijay Khawani – Director of Safety
Auditors	**Joey Bigornia**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.4.2, Traction Power Maintenance.
2. LACMTA Rail Operations Wayside Systems: Maintenance Plan Signal, Track, and Traction Power, effective January 2004.
3. CPUC General Order 143-B, Dated January 20, 2000, Section 14.06 Traction Power System Inspections and Records.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY RAIL TRACTION POWER INSPECTION AND MEASURING & TEST EQUIPMENT CALIBRATION

Review a randomly selected sample of completed traction power, inspection, maintenance, and test records, as specified in the Waysides Systems Maintenance Plan, effective January 1, 2004, for Metro Red Line as follows:

- Third rail system
- Auxiliary power equipment
- UPS
- Emergency vent fans
- Electric power substations
- Measuring and test equipment calibration
  - High voltage gloves
  - Power relays of protect devices
  - Relay test equipment

Determine if:

1. Inspection, maintenance, and tests were performed and documented according to the reference criteria requirements
2. All the noted defects were documented and corrected in a timely manner.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.
4. Measuring and test equipment are properly inventoried, controlled and marked, tagged or otherwise identified to show their current calibration status. The items are calibrated per certified standards and frequency requirement. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Findings:

A. Third Rail System Inspection
   1. Reviewed third rail system inspection records for Yard through Union (A-1) Interlocking dated February 2004 and Macarthur Pocket Interlocking through Wilshire/Vermont Interlocking dated April 2004. The third rail was inspected at the required maintenance interval. No exceptions were noted.

B. Auxiliary Power Equipment Inspection
   1. Reviewed substation inspection reports for Union Station dated January – June 2004. The auxiliary power equipment inspections were performed at the required maintenance interval. No exceptions were noted.

   2. Reviewed substation inspection reports for the Vermont / Santa Monica Station dated January – June 2004. The auxiliary power equipment inspections were performed at the required maintenance interval. No exceptions were noted.

C. UPS
   1. Reviewed substation inspection reports for Union Station dated January – June 2004. The UPS inspections were performed at the required maintenance interval. No exceptions were noted

   2. Reviewed substation inspection reports for the Vermont / Santa Monica Station dated January – June 2004. The UPS inspections were performed at the required maintenance interval. No exceptions were noted.

D. Emergency Vent Fans
   1. Reviewed substation inspection reports for Union Station dated January – June 2004. The emergency vent fan inspections were performed at the required maintenance interval. No exceptions were noted.

   2. Reviewed substation inspection reports for Vermont / Santa Monica Station dated January – June 2004. The emergency vent fan inspections were performed at the required maintenance interval. No exceptions were noted.

E. Electric Power Substations
   1. Reviewed substation inspection reports for Union Station dated January – June 2004. The electric power substation inspections were performed at the required maintenance interval. No exceptions were noted.

   2. Reviewed substation inspection reports for Vermont / Santa Monica Station dated January – June 2004. The electric power substation inspections were performed at the required maintenance interval. No exceptions were noted.

F. Measuring and Test Equipment Calibration
   1. The Wayside Department sends equipment to Burlington Safety Laboratory of California, Inc. for calibration. The Traction Power Manager maintains an equipment

status list which identifies the equipment, serial number, location, test date and expiration date / date due for calibration.

2. Selected two maintenance vehicles home based at Location 66 generally dispatched to the Metro Redline for maintenance. Reviewed on-board equipment with the following results:
    a. 40 kV Insulated Glove, s/n 3550133
        1. Glove was tested on May 12, 2004. Gloves have an expiration date of 6-months from stamp date from Burlington Safety Laboratory. Wayside Department recalls gloves prior to expiration date and replaces it with a new pair.

    b. 40 kV Insulated Glove, s/n 3550217
        1. Glove was tested on April 6, 2004. Gloves have an expiration date of 6-months from stamp date from Burlington Safety Laboratory. Wayside Department recalls gloves prior to expiration date and replaces it with a new pair.

    c. 4" Hot Stick, s/n 3550242
        1. 4" hot stick was tested on September 2003. Next scheduled 2-year test is September 2005.

    d. 4" Hot Stick, s/n 3460103
        1. 4" hot stick was tested on March 2004. Next scheduled 2-year test is March 2006.

    No exceptions were noted.

G. The Wayside System / Traction Power Department has established a maintenance schedule spreadsheet that identifies the inspection frequency type (ie.3-month, 6-month, 12-month, 24-month) due for each substation component. The LACMTA's process to alert management when required inspections are not performed or repairs are not closed out in a timely manner is a monthly schedule shown at the bottom of the spreadsheet identifies what maintenance interval is scheduled and if task is complete. The spreadsheet is available on the mainframe and can be accessed by Supervisors or Inspectors to check on the status of inspections at any time.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**19**	Persons Contacted
Date of Audit	**6/10/04**	Tom Eng – LACMTA Corporate Safety
Auditors	**Brian Yu**	
Department	**Corporate Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 5.3.1, Safety Certification Program.
2. LACMTA Safety Certification Program Plan, Dated January 30, 2004.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SAFETY CERTIFICATION OF PASADENA GOLD LINE

Review Corporate Safety Department file for operations safety certification records for the Pasadena Gold Line project to determine if:

1. A safety certification procedure or plan was established and implemented for the project.
2. A comprehensive list of safety critical operation elements had been identified.
3. A list of safety requirements were identified and verified.
4. A safety certification committee(s) or designated task force with representatives from all affected LACMTA departments was actively and regularly involved in the safety certification process including reviewing and commenting on the project safety critical decision making activities.
5. Operation Safety Certification Verification Report was issued and signed by MTA management.
6. Operator training specific to this project has been completed.
7. Rules and procedures have been developed with specific requirements for this project.

RESULTS/COMMENTS

I interviewed Mr. Tom Eng of LACMTA Corporate Safety to verify the above mentioned audit subjects. Tom Eng answered the questions and presented relevant documentations for me to review. I have verified the audit subjects against the presented documents – especially Safety Certification Plan and Safety Certification Verification Report.

Findings:

1. A safety certification procedure or plan was established and implemented for the project.

- LACMTA was only responsible for developing and certifying “operational” elements of the system.
- Pasadena Blue Line Construction Authority completed construction safety certification.
- LACMTA has filed “operational” safety certification of the Metro Gold Line with the Commission before the beginning of the revenue operation.

2. A comprehensive list of safety critical operation elements had been identified.

- List of Certifiable Elements were developed and included in the Safety Certification Plan.
- The following major elements were listed in the plan: Operating Rule and Procedures, Maintenance Plan, Staff Training and Certification, Contract Deliverables (including Vendor Training), and Approved Workarounds.

3. *A list of safety requirements were identified and verified.*
   - Safety Certification Verification Report identified and verified safety elements.
   - Each safety elements were verified and signed by Department Heads.
   - LACMTA CEO signed final Report.
4. *A safety certification committee(s) or designated task force with representatives from all affected LACMTA departments was actively and regularly involved in the safety certification process including reviewing and commenting on the project safety critical decision making activities.*
   - Operational Readiness Meeting started 4/30/03 and met 5 times as needed basis.
   - Weekly Gold Line Update Meetings were held, including Maintenance, Security, Safety, Operations, and Communication Departments, until the opening of the line.
   - Bi-weekly Engineering/Operations Management Issues Meetings were held until the opening of the line. Included departments were: LACMTA QA, Construction, Operations, and Safety.
   - Fire/Life Safety Committee Meetings were held periodically.
5. *Operation Safety Certification Verification Report was issued and signed by MTA management.*
   - Safety Certification Verification Report was submitted to the Commission for approval.
   - I verified the signed page bearing Department Heads and LACMTA CEO signatures.
6. *Operator training specific to this project has been completed.*
   - Documentation verifying the Operator Training for Metro Gold Line was included in the Safety Verification Report.
7. *Rules and procedures have been developed with specific requirements for this project.*
   - Rules and Procedures for the Metro Gold Line were included in the Safety Verification Report.

No exceptions were noted for this checklist.

<u>Recommendations:</u>

None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**20**	Persons Contacted
Date of Audit	**June 9, 2004**	Audrey Chiu – Operations & Maintenance System Safety Manager
Auditors	**Hani Moussa**	
Department	**Corporate Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 5.4.
2. Commission Resolution ST-54, Dated November 7, 2002.
3. CPUC General Order 164-C, Dated February 27, 2003, Section 4, Internal Safety Audit Requirements.
4. LACMTA Internal Rail System Safety Audit (IRSSA) Reports for the last 3 years.
5. LACMTA Corporate Safety IRSSA Status Reports on Corrective Action Plans.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

INTERNAL SAFETY AUDIT PROGRAM

Verify if the LACMTA internal rail system safety audit (IRSSA) is providing the most comprehensive method of measuring effectiveness of the SSPP in achieving its objectives. By interviewing corporate safety staff and reviewing records, determine if:

1. LACMTA has planned, scheduled, and performed annual internal safety audits for the last three years to evaluate compliance and measure the effectiveness of its system safety program plan.
2. LACMTA included and covered all the organizational elements described in the Internal Safety Audit Process section of the APTA Guidelines in the audit scope within a 3-year period and the 3-year period thereafter.
3. LACMTA documented IRSSA findings and recommendations in an annual report that covered the audits performed during each calendar year. The results have been distributed to the LACMTA Chief Executive Officer and department managers covered by the audit. LACMTA has submitted the annual report to the Commission staff prior to the 15th of February each year.
4. The Corporate Safety Department has tracked the corrective action plans and all the responsible departments implemented their respective approved recommendations and action plans starting July 2002.

RESULTS/COMMENTS

Findings:

1. The Deputy Chief Executive Officer, John B. Catoe, Jr. submitted LACMTA's most recent annual IRSSA report to the Commission on February 13, 2004. The annual report identified four APTA elements that were planned, scheduled, and performed in IRSSA – Year 2003.
2. LACMTA's IRSSA – Years 2000 – 2002 annual reports have been planned, scheduled, and performed.
3. The IRSSA - Year 2003 annual report contains a program master schedule that shows the APTA Elements (Nos. 10-24) identified, year (1997 – 2003) IRSSA elements performed, and IRSSA

elements scheduled for year 2004 and 2005. Procurement and Security were added to the IRSSA 2003-2005 cycle.

4. The IRSSA program master schedule shows that LACMTA completed the first IRSSA cycle of APTA elements in Year 1999 and the second cycle in Year 2002. The third IRSSA cycle of APTA elements began in Year 2003.
5. The annual IRSSA reports contain the checklists used by LACMTA to conduct their audit, a summary of the items that were scheduled for audit, and the status of each internal report. The individual checklists identify the department audited, contact person(s) interviewed, results of audit, findings if any, and recommendations.
6. The Commission's designated representative to LACMTA witnessed the performance of some IRSSA – Year 2003 checklists.
7. LACMTA's IRSSA – Year 2003 Findings and Recommendations were reported to the Commission on February 13, 2004.
8. The Operations & Maintenance System Safety Manager tracks the closure or full implementation of all recommendations identified within the IRSSA's and reports that information in writing directly to the Commission's designated representative.
9. Thirteen recommendations were identified for IRSSA – Year 2003. Eight have been closed. The status of the five open items has been tracked by quarterly progress reports generated by the Operations & Maintenance System Safety Manager and submitted to Commission staff.

<u>Recommendation:</u>

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**21**	Persons Contacted
Date of Audit	**6/14/04**	Vijay Khawani, Director Rail Operations Safety Abdul Zohbi, Manager, Rail Operations Safety F.G. Wyman Jones, Supervisor, Rail Operations Safety Edward Boghossian, Manager, Rail Operations Safety
Auditors	**Robert Strauss**	
Department	**Rail Operations Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.3, Accident and Incident Investigation.
2. Commission Resolution ST-54, Dated November 7, 2002.
3. CPUC General Order 164-C, Dated February 27, 2003, Sections 5 and 6.
4. LACMTA Rail Accident Investigation Procedures, Rev 2, Dated November 12, 2001.
5. Code of Federal Regulations CFR 49 Part 659.41 Investigations And Part 659.43 Corrective Actions.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

ACCIDENT/INCIDENT REPORTING & INVESTIGATION

Randomly select 3 accidents that involved injuries or fatalities reported to the CPUC during the past 12 months. Review the accident investigation procedures, reports, and corrective action plans and schedules utilized by LACMTA for the selected accidents to determine:

1. LACMTA reported the selected accidents to the CPUC by telephone or FAX within 4-hours, and by written report within 30-days from the last day of the month during which the accidents occurred.
2. LACMTA investigated the accidents according to its AIP and an accident investigation report was prepared, within 60 days of the occurrence of the accident, that identifies:
   a) Each item investigated
   b) The investigation findings
   c) The most probable cause
   d) Underlying contributing causes
   e) Sufficient narrative and evidentiary support exists to justify findings of (c) and (d)
3. The accompanying corrective action plan properly addresses the identified causes and can be expected to minimize the accident from recurring.
4. The corrective action plan implementation schedule has been completed or is up-to-date.
5. LACMTA has conducted any Multi-Departmental Investigation

Determine if ST-54 recommendation No. 26 has been satisfied and is currently being implemented.

RESULTS/COMMENTS

Findings:

General Order (GO) 164-C, Rules 5.3 and 5.4 require the filing of monthly reports and standard reports on specified incidents. LACMTA has not always been timely in filing these reports and staff has noticed errors in the filed reports.

A review of the October 8, 2003 Vermont Station Incident revealed:

- There was a communication breakdown that resulted in inaccurate information within LACMTA on the severity of the victim's injuries and the hospital where the victim was taken.
- LACMTA did not notify the PUC within the required 4 hour period,
- There was an error by LACMTA that resulted in the CCTVs not recording the incident,
- The report did not include recommendations concerning the three failures noted above.
- The reports identification of some items as "facts" and some as "findings" appeared inconsistent.
- Safety did not track and verify the implementation of the recommendation contained in the report.
- The victim was not interviewed concerning the incident.
- The report concluded the primary and contributing cause of the accident was the victim's actions.

A review of the December 9, 2003 Stockwell Incident revealed:

- There was confusion between the LA sheriff's Department and the Highway Patrol over which agency had jurisdiction for the accident.
- The reports identification of some items as "facts" and some as "findings" appeared inconsistent.
- The report identifies the last days off of the operator, but the stated dates do not match the days of the week.
- The report includes a recommendation to continue the current public education program, recommendations should be for a change from current practice.
- The auditees stated the supervisor and Sheriff's department interviewed the operator, but no mention of this interview is contained in the report.
- The auditees stated LACMTA is planning on upgrading the involved crossing to four quadrant gates although it is not mentioned in the report.
- The report concluded the primary cause of the accident was the victim's actions, with no contributing factors stated.

A review of the May 8, 2004 Imperial incident revealed:

- The investigation is not complete, although a preliminary draft of the investigation report was supplied to the auditor. The report is due to the PUC on July 8, 2004.
- The auditees stated no analysis had been performed on point of impact and point of rest to determine possible train speed.
- The report concluded the primary cause of the accident was the victim's actions, with no contributing factors stated.
- Similar incidents have occurred at this location, but there is not mention of the other incidents in the report.
- The reports identification of some items as "facts" and some as "findings" appeared inconsistent.

In the reports there were instances where the unsupported assertions of a participant in the incident

were portrayed as a fact, even when conflicting evidence was presented. There does not appear to be consistent criteria for classifying evidence as fact or as a finding. This makes the reports appear biased.

The conclusions and recommendations in the reports do not address LACMTA failures related to the incidents. This failure to address issues raised in the reports makes the reports appear biased.

During the interview with Rail Operations Safety staff it was determined that:

- LACMTA is using information derived from incidents to develop and implement safety enhancements.
- There have been no multi-departmental Investigations
- PUC staff is free to examine all documents and review any video or audio tapes relating to an investigation, but must do it on site at LACMTA and can not take notes or make copies.
- Rail Operations Safety does not track recommendations.
- Rail Operations Safety does not track whether operators receive the required check-ride after an incident.
- Rail Operations Safety investigation of many accidents consists of a review of the reports generated by response personnel (e.g. police, operations supervisors).

<u>Recommendations:</u>

1. LACMTA should develop, adopt, and use a standard practice and/or procedure for writing investigative reports that clearly identifies how to classify information, how to present evidence, how to make and present conclusions based on the strengths and weaknesses of the available information, and when recommendations are warranted..

2. LACMTA should develop and implement a process that identifies recommendations made as a result of an incident investigation, tracks recommendations through the approval process, and track implementation of the recommendation to completion.

3. LACMTA should give CPUC staff full access to information relevant to accident investigations. This includes the ability to take notes when reviewing information and the ability to make copies of all relevant information (documents and tapes).

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**22**	Persons Contacted
Date of Audit	**6/14/04**	Paul Lennon – LACMTA Transit Police Dan Cowden – LACMTA Security Andrea Burnside – LCAMTA Corp. Safety & Ops Training Carol Holben – LACMTA HR John Davis – LACMTA Security Michael Herek – LA County Sheriff's Dept. Leo M. Norton – LA County Sheriff's Dept. Eric Jaime – LA County Sheriff's Dept. Ban Nuygen – LA County Sheriff's Dept.
Auditors	**Brian Yu**	
Department	**Security**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.17, Security.
2. LACMTA System Security Program Plan, Dated May 2003.
3. CPUC General Order 164-C, Dated February 27, 2003, Section 3, Requirements for System Safety Program Plans.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SECURITY

Through interviews and record reviews, for the past one year, determine:

1. Transit Anti Terrorism Program -
    a. LACMTA has implemented transit protective measures recommended by the Federal Transportation Administration (FTA) during heightened alerts. Page 95
    b. LACMTA has performed threat and vulnerability identification, assessments and implemented resolutions. Page 50
    c. LACMTA established contingency plans for identified scenarios.
    d. LACMTA train operators and RTOSs are trained for terrorism awareness and taking measures.
2. All new hires for transit security are screened based on the requirements outlined in Applications Screening for New Hires for Transit Security. Page 53-58.
3. Security Committees hold their scheduled meetings and follow the requirements outlined in Security Committees. Page 46
4. During last year, has LACMTA modified the System Security Plan based on requirements outlined in Modification of the System Security Plan. Page 60
5. Transit Community Policing Program gas generated Crime Reports, Productivity Reports, and Service Quality Reports and these reports are distributed to LACMTA management. Page 66

RESULTS/COMMENTS

Findings:

1. a. FTA Threat Warning System
    - Through various intelligence sources (from Federal Government and colleague transit polices), LACMTA Security shares and compares information with the local law enforcement agencies.
    - Letting the LACMTA employees know about the threats and giving alerts/assurances to the

employees.

- Public Outreach Program generated Brochures, Posters, and Videos for public awareness of the threats.
- Homeland Security Training (in house) will be provided to every employee; trainers for this training are ready, however, the funding for this program (from FTA) has not been received.
- Until recently, LACMTA has been following the national threat level designated by the Homeland Security Department.
- Currently, LACMTA Security and Los Angeles County Sheriff's Department (LACSD) compares the intelligence report from various resources and adjust the threat level locally (internally) to reflect the local circumstances.
- When the national threat level change occurs, immediate staff meeting will be held to implement the FTA recommended measures.
- According to Paul Lennon, the measures and guidelines are restricted (limiting the views), thus, LACMTA and LACSD uses the guidelines as decision making tools but the tactics used to counter the identified threats come from their know-how.

1. b. Threat and Vulnerability Identification, Assessment and Resolution
   - During Oct/Nov 2001, LACSD and Los Angeles Police Department (LAPD) did a comprehensive assessment on the system.
   - During Feb 2002, FTA and Booz Allen performed an assessment on the system.
   - The FTA/Booz Allen assessment findings were provided to LACMTA in 2003.
   - FTA returned in Jan 2004 to check on the progress of the areas identified in the assessment report.
   - FTA reviewed 20 areas of the system and 8 areas were noted for improvements and/or enhancements: 2 main items of 8 noted areas were Intrusion Detection System and CCTV System which are in the procurement process.
1. c. Contingency Plans
   - LACMTA Security and LACSD feels confident that the existing procedures and plans are adequate enough to deal with any terrorism.
1. d. Terrorism Awareness Training for the Employees
   - Threat awareness video has been provided to the division managers.
   - Pamphlet has been handed out to every employee.
   - Homeland Security Training (funded by FTA) for every employee will be scheduled in a near future since the budget from FTA just came through.
   - Trainers and the Training Materials are already in place (by LACSD); however, the details of how, when, and to whom first, the training would be conducted, has not been finalized yet.
2. Application Screening for New Hires for Transit Security. To be permanently hired, all new employees must satisfactorily pass:
   - Background checks conducted by the LACSD.
   - Drug History checks conducted by the designated medical facilities.
   - Polygraph tests, medical/psychological tests.
   - A 1-year satisfactory probation period completion is required to be hired.
3. Security Committee meeting
   - Rail Operations Law Enforcement Committee (ROLE) was created in 2001 and its meetings are held on monthly basis.
   - The meeting is an open forum between: Law Enforcement Agencies, Security Department, Operations Control, Safety Department, and occasionally, Fire Departments.
   - The committee meeting is purposely less structured for free flowing ideas.
4. Modification of the System Security Plan
   - The current version of the System Security Plan was revised in May 2003.
   - Policing of the Metro Red Line transitioned from LAPD to LACSD in 2003.
   - Any changes to the System Security Plan would be done by staff at the Security Department (Mr. Dan Cowden is in charge) and the upper management reviews the product and approves it.

5. Transit Community Policing Reports

- Monthly Crime Reports and Statistics are being issued for management review.
- I have reviewed Jan ~ May 2004 reports.
- The Productivity Reports and Service Quality Reports specified in the System Security Plan are combined into the monthly Crime Reports and Statistics.
- Customer Satisfaction Surveys are conducted annually by the Planning Department.

Comments:

LACMTA should finalize the Homeland Security Training schedule and notify the Commission staff.

Recommendations:

None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**23**	Persons Contacted
Date of Audit	**6/17/04**	Dianne Curzon, Configuration Document Control Manager Abdul Zohbi, Rail Operations Safety Manager
Auditors	**Susan Feyl**	
Department	**Operations / Transportation Support**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Sections 4.8 and 4.11.
2. LACMTA Policy ENG01, Engineering Design, Review, and Acceptance, Dated February 18, 2003.
3. LACMTA Policy CF15, Rail Operations Configuration Change Control, Dated December 13, 2002.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SYSTEM MODIFICATION REVIEW AND CONTROL AND CONFIGURATION MANAGEMENT

Select capital projects and three non-capital projects completed or substantially completed during the past two years and examine the applicable documentation to determine if:

1. LACMTA has evaluated these projects for their potential to create additional hazards or to reduce the effectiveness of existing hazard controls per the reference criteria.
2. Document Control Department completed all the functions stated in reference SSPP, Section 4.11.

RESULTS/COMMENTS

Findings:

I audited 2 capital projects, Gas Monitoring Retrofit for Red Line Segment 1 and Blue Line Yard Expansion, and 3 non-capital projects, Blue Line Street Realignment West of tracks at 12th/Flower, Pasadena Gold Line Replace Pedestrian Gates with Swing Gates, and add Bots Dots to the Red, Gold, and Green yards.

1. LACMTA performed hazard analysis on the Red Line Segment 1 Gas Monitoring Retrofit because of its criticality.
2. I audited 2 capital projects and 3 non-capital projects for compliance respectively with ENG01 and CF-15 as required by the SSPP. CF-15 required a Configuration Change Request document along with input from the Safety Department. ENG01 required a Design Team and Design Reviewers Checklist, Design Development Plan Checklist, Design Package Acceptance or Release, and Design Process Validation Checklist. All required documentation was available for all projects. The Engineering Department director's signature was missing from the Blue Line Yard Expansion Acceptance for Release document.

Comments:

LACMTA should ensure that all the required signatures are obtained for project documentation and approval.

Recommendations:

None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**24**	Persons Contacted
Date of Audit	**June 21, 2004**	Thomas Eng, Manager, Safety Certification Manager Collins Kalu, Senior Industrial Hygienist
Auditors	**Hani Moussa**	
Department	**Corporate Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.13, Hazardous Material Program.
2. LACMTA Occupational, Environmental, Health and Safety (OEHS) Plans and Programs.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HAZARDOUS MATERIAL PROGRAMS

Interview Corporate Safety Department Manager and review OEHS Plans and Programs to determine if:

1. The programs are up to date.
2. The program complies with federal, state, and local regulatory requirements.
3. Hazard Communication Program is up to date. Verify if it helps to maintain a healthy work environment by increasing employee awareness of workplace chemicals and their potential health effects, safe work practices and procedures.
4. The program affects all departments that buy, store, handle and/or use hazardous substances.

All employees who work with chemicals attended a training class appropriate for the chemicals they will be handling / exposed to, which is conducted by Industrial Hygiene and Environmental Safety Section for the last two years.

RESULTS/COMMENTS

Findings:

1. The Hazardous Communication Program (HCP) dated March 2003 and OEHS Programs dated October 2001 are current and up to date.
2. The HCP and OEHS Programs comply with CAL EPA and local fire department requirements.
3. The Senior Industrial Hygienist reported that the HCP is up to date and provided a copy of the program dated March 2003. Corporate Safety Department is responsible to maintain, evaluate, and update the program annually.
4. LACMTA developed the HCP to ensure that information about health, safety and physical hazards of chemicals are available to all employees who may handle or potentially be exposed to those chemicals. LACMTA determines which employees should receive training about the HCP based upon their job description. LACMTA's Corporate Safety Department is responsible to train supervisors and new employees about the HCP. Also, posters, safety bulletins, and a monthly safety committee meeting help increase employee awareness of workplace chemicals and their potential health effects.
5. The HCP complies with the Code of Federal Regulations, Title 29 (Z), Section 1910.1200 and the State of California General Industry Safety Orders, Title 8, Article 110, Section 5194.
6. The Senior Industrial Hygienist is required to train supervisors and new employees about the HCP when the department managers request training for their employees. LACMTA's HCP training program consists of: Current Written HCP in place; Labeling of Containers and Other Forms of Warning; Material Safety Data Sheets (MSDS); Employee Information and Training; and Personal Protective Equipment (PPE). LACMTA's Corporate Safety Department maintains the training file for each employee who completed the training.
7. The MSDSs are electronically stored and updated regularly. LACMTA's Corporate Safety Department maintains a paper back-up on file. Paper MSDSs are also on file with locations where there is no access to computers. All affected employees have the ability to retrieve and access the stored data.
8. The affected employees of Rail Feet Services and Wayside Systems Departments are required to undergo HCP training. The Transportation Department is not required to undergo the HCP training.
9. A review of the records for the LACMTA Departments subject to HCP training requirements for calendar year 2003 to present showed that the Senior Industrial Hygienist performed the training for the affected employees of the Rail Fleet Services Department on 8/18/03 and 2/26/04. Wayside Systems Department affected employees, not including Rail Facilities, did not receive HCP training for calendar year 2003 to present because there were already trained prior to calendar year 2003. Rail Facilities affected employees have not received the required HCP training.
10. Copies of each individual employee confirmation of attendance at the session and exam are on file with the Corporate Safety Department.
11. HCP employee refresher training is not required by law or the SSPP; however, the current version of the HCP, dated March 2003, Section 5.2 (B), identifies the need for annual refresher training to be conducted for all affected employees. LACMTA's Senior Industrial Hygienist stated that the above mentioned section will be eliminated or rewritten when the revised HCP is issued for use.

Recommendations:

LACMTA should take the steps necessary to ensure that all affected employees receive Hazardous Communications Program training.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**25**	Persons Contacted
Date of Audit	**June 9, 2004**	Vijay Khawani – Director, Rail Operations Safety Abdul Zohbi – Manager of System Safety Audrey Chiu – Operations & Maintenance System Safety Manager
Auditors	**Hani Moussa**	
Department	**Corporate and Rail Operations Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.9, Safety Data Acquisition / Analysis.
2. LACMTA Safety Data Analysis/Acquisition Procedure, Rev 1, dated February 24, 2004.
3. LACMTA Incident Report, Issued Quarterly.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SAFETY DATA ACQUISITION/ANALYSIS

Interview Corporate Safety and Rail Operations Safety Department managers and review procedures and documentation for the past three years for all rail lines to determine if:

1. Corporate Safety Department reports identifying incidents to NTD on all rail lines.
2. Corporate Safety Department produced quarterly reports of accident statistics for the Metro Blue Line and if this report summarized the contributing factors, direction of travel of the train, and the location where every accident occurred.
3. Rail Operations Safety Department reviewed the accident statistics and determined types of mitigating measures in general and performed a trend analysis to identify causes of accidents that occurred on MBL south bound at near site stations and determined types of mitigating measures.
4. Rail Operations Safety Department identified accident trends and reported recommendations to LACMTA rail operations management.

RESULTS/COMMENTS

Findings:

1. The National Transit Database (NTD) is the vehicle to fulfill the requirements of 49 CFR Part 630, the Uniform System of Accounts and Records and Reporting System.
2. Corporate Safety Department is responsible to coordinate the submittal of all LACMTA rail related safety data via the internet to the NTD website.
3. The Operations & Maintenance System Safety Manager stated that on January 1, 2002, LACMTA's Corporate Safety Department began reporting monthly/quarterly transit safety and security data via the internet to the FTA in accordance with the new NTD reporting requirements.
4. Corporate Safety, from January 2002 to present, has been reporting incidents to the NTD via on-line monthly computer forms. The NTD identifies two thresholds, (1) Major Incident or (2)

Non-Major Incident, for reporting incidents.

5. The Operations & Maintenance System Safety Manager provided a copy of a document titled, "Summary of Metro Blue Line Train/Vehicle and Train/Pedestrian Accidents (July 1990 – March 2004)", dated April 22, 2004. The report summarized contributing factors, direction of train travel, and the location of every accident that occurred from July 1990 – March 2004.
6. Corporate Safety is responsible for gathering, database entry, maintenance and distribution of the summary report. Contained within the summary report is the statistical data graphed to identify patterns and trends. The accident data is gathered from the following sources: Supervisory Employees' Accident/Incident Investigation Form; Rail Accident/Incident Report; and the Controller's Unusual Occurrence Reports.
7. The Rail Operations Safety Department reviews the accident statistics and determines the types of mitigating measures, if any, to be implemented on an on-going basis. Types of mitigating measures that have been implemented include photo enforcement, fiber optic train signs along Flower Street and Washington Blvd., four-quadrant gates, LED train signs in the City of Long Beach, swing gates at pedestrian crossings, and additional fencing erected at stations. In addition, a rail safety education program is currently on-going with the development of an interactive CD game featuring the LACMTA safety kids.
8. The Rail Operations Safety Department monitors and analyzes the trends and patterns of the summary report to identify rail safety recommendations. LACMTA's rail operation management receives recommendations from the Rail Operations Safety Department through Board Reports and Memoranda's.

<u>Recommendations:</u>
None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**26**	Persons Contacted
Date of Audit	**June 21, 2004**	Pamela Engelka, Manager, Corporate Safety Edward Boghossian, System Safety Manager
Auditors	**Hani Moussa**	
Department	**Corporate Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 4.12, Employee Safety Program.
2. LACMTA Occupational, Environmental, Health and Safety (OEHS) Plans and Programs, Dated October 2001.
3. LACMTA Injury and Illness Prevention Program, Dated February 1997.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

EMPLOYEE SAFETY PROGRAM

Interview Corporate Safety Department Manager and review the employee safety program records to determine if:

1. The employee safety programs are up to date.
2. The programs comply with federal, state, and local regulatory requirements
3. LACMTA implements all seven components listed in SSPP Section 4.12, Injury and Illness Prevention Program.
4. LACMTA implements all ten formal programs that make up Occupational, Environmental, Health, and Safety (OEHS) Programs

RESULTS/COMMENTS

Findings:

1. The OEHS Programs dated October 2001 which consist of: (1) Injury and Illness Prevention Program; (2) Asbestos; (3) Bloodborne Pathogens; (4) Compressed Natural Gas; (5) Confined Spaces; (6) Emergency Action Plan; (7) Ergonomics; (8) Hazard Communication; (9) Hearing Conservation; (10) Lead Abatement; (11) Personal Protective Equipment; and (12) Respiratory, are current and up to date.
2. The OEHS Programs comply with CAL EPA and local fire department requirements.
3. LACMTA complies with the Injury and Illness Prevention Program (IIPP), Title 8, CCR, Chapter 4, Subchapter 7, Section 3202, which 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.
4. The Corporate Safety Manager reported that the IIPP is up to date and provided a copy of the program dated February 1997. Corporate Safety Department is responsible to maintain, evaluate, and update the program as needed.

5. The IIPP consists of seven components which are: (1) Identification of persons responsible for implementing the program; (2) A system for identifying and evaluating workplace hazards; (3) Procedures for investigating occupational injuries and illnesses and for correcting unsafe or unhealthy conditions in a timely manner; (4) Occupational health and safety training for employees; (5) Communication methods including safety meetings, posting written notices, suggestion programs, and labor/management safety and health committees; (6) Systems for ensuring employee compliance with safety and health practices including recognition and discipline; and (7) Maintenance of records to verify compliance with program training and inspection requirements.
6. LACMTA's Corporate Safety Department conducted a Safety & Health Assessment Review Program (SHARP) audit during FY 03, which consisted of on-site evaluations of the OSHA mandated IIPP. The Corporate Safety Department manager provided a copy of the 2003 report. The SHARP audit evaluated LACMTA's compliance and effectiveness with the seven components of the IIPP.
7. The auditor reviewed the Safety Audit and Safety & Health Assessment Review Program (SHARP) report along with other records provided by the Corporate Safety Department manager and determined that the seven components identified by the IIPP are being implemented by LACMTA.
8. The auditor reviewed the SHARP audit report, Hazards Defined Programs sections, along with other records provided by the Corporate Safety Department manager and determined that the ten formal programs are being implemented by LACMTA.

<u>Recommendations:</u>
None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**27**	Persons Contacted
Date of Audit	**June 24, 2004**	Vijay Khawani – Director, Rail Operations Safety Abdul Zohbi – Manager of System Safety Edward Boghossian, System Safety Manager Wyman Jones, Supervising Engineer
Auditors	**Hani Moussa**	
Department	**Rail Operations Safety**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.10, Interdepartmental / Interagency Coordination.
2. APTA Manual for the Development of Rail Transit System Safety program Plans, Section IIB No. 17.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

INTERDEPARTMENTAL / INTERAGENCY COORDINATION

Interview the LACMTA Rail Operations Safety Director and review records for the last two years to determine if Rail Operations Safety Department:

1. Reviewed safety concerns raised by operators about vehicles and communicated these safety concerns to fleet services.
2. Reviewed Lack of Flagging safety concerns raised by operators and communicated these concerns to wayside systems.
3. Reviewed United Transportation Union raised safety concerns and communicated to the appropriate departments to resolve these concerns.
4. Reviewed or prepared rules and procedures.
5. Participated in Committee Discussions.
6. Mitigated any safety issues.
7. Audited any department safety program.
8. Reviewed safety curriculum.
9. Made sure that all safety related activities are reported and shared at one or more of the committees established.

RESULTS/COMMENTS

Findings:

1. The Rail Operations Safety (ROS) department is the focal point of all LACMTA rail safety-related activities. ROS employees coordinate the efforts when safety related matters involve two or more LACMTA departments.
2. Safety concerns raised by operators about vehicles are documented by filing out a Safe-7 form (Report of Unsafe Condition or Hazard) that is submitted to their Supervisor/Manager for resolution. If the Supervisor/Manager can resolve the safety concern, the form is filled out with response and then forwarded to ROS employees. If the Supervisor/Manager can't resolve the safety concern, the concern is then brought up at the local safety committee meeting, which ROS employees attend, for resolution. ROS employees track all safety concerns brought to the attention of the local safety committee. ROS employees have reviewed and documented safety concerns raised by operators about vehicles and

communicated those concerns to the appropriate fleet services manager.

3. Safety concerns raised by operators concerning the lack of flagging were also reviewed and documented via the Safe-7 form and ROS employees conveyed those concerns to the wayside systems management.
4. UTU safety concerns raised during calendar year 2003 weren't being brought to the attention of ROS employees in a timely manner. However, UTU safety concerns for calendar year 2004 have been and the appropriate department has been notified via e-mail about the safety concern.
5. ROS employees are currently involved in the development of Section 2-1, Safety, of the new rulebook being proposed. ROS employees are also participating as members of a committee to review and revise the new rulebook. ROS employees will also be involved with the proposed revisions to the Standard Operating Procedures later this year.
6. ROS employees participate in the Rail Local Safety Committees for the Blue, Gold, Red, Green Lines and Wayside Systems. ROS employees help facilitate communication between the different agencies involved while solving safety related problems. Meeting notes are generated and shared with the committee members to track progress.
7. ROS employees reviewed and analyzed the Summary Report of Metro Blue Line Train/Vehicle and Train/Pedestrian Accidents (July 1990 - March 2004), dated April 22, 2004, prepared and issued by the Corporate Safety Department, to determine where the safety concerns exist. After identifying the locations of the safety concerns, ROS employees prepared the necessary paperwork to move forward with the listed mitigation measures, such as fencing, four-quad gates, photo enforcement, and pedestrian swing gates.
8. ROS employees have participated along side the Corporate Safety department employees during the Internal Safety Audit and Safety & Health Assessment Review Program (SHARP) audit conducted in calendar year 2003.
9. ROS employees have reviewed safety curriculum for the following: Rail Operations System Safety Training; Emergency Preparedness Sub-Committee; Hazmat 1st Responder Training; Highway Grade Crossing Accident Investigation; and Rail Highway Grade Crossing Investigation designated for the police.

<u>Recommendations:</u>
None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**28**	Persons Contacted
Date of Audit	**6/16/04**	Dan Lindstrom – LACMTA Wayside Systems/Communication Eddie Boghossian – LACMTA Safety
Auditors	**Brian Yu**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Sections 3.4.5 and 4.4.
2. LACMTA Rail Operations Wayside Systems, Maintenance Plan, Dated January 2004, Communication Systems and Facilities Maintenance.
3. National Fire Protection Association (NFPA 130), Dated 2003.
4. Regulation 4 Test Document (LAFD City Code), Undated.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY AND LIGHT RAIL COMMUNICATIONS INSPECTIONS

Interview department manager, review procedures and records to determine if formal procedures for preventive maintenance, inspection and testing programs have been properly developed and implemented and are current for the items listed below. Review Inspection Reports for the following applicable items for 7th St./Metro Center Station, 1 Green Line station, Pasadena Gold Line Memorial Park Station, and 1 Metro Red Line station prepared since January 2004:

- Service and maintenance of radio communication systems
- Undercar Deluge System
- Emergency Management Panel and Telephones
- Standpipes and associated pumps
- Gas Analyzer Units
- Station Fire Alarms and Sprinkler System

Determine if:

1. The items were inspected and tested at the specified frequency as required by the reference criteria.
2. The required inspections and tests were properly documented. Noted defects were corrected in a timely manner.
3. Failed systems were communicated to the Facilities Maintenance Department for repair and retest.
4. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.

RESULTS/COMMENTS

Findings:

LACMTA has combined their Wayside Maintenance Plans for each rail line into one in January 2004. Also, until 2002, the Facilities Maintenance department and the Wayside Systems/Communication department were under one manager. Currently, the Facilities Maintenance department maintains Standpipes and pumps, and Sprinkler Systems. The Wayside Systems/Communication department only checks the sprinkler valves during their scheduled

inspections.

1. Radio Communication System
   - The entire radio communication system is subjected to annual inspection.
   - There is no training program for radio communication inspectors. LACMTA stated that since they only hire experienced "journeyman level" staff as lead inspectors a special training program is not needed.
   - I reviewed the inspection records and no exceptions were noted.
   - The Wayside Maintenance/Communication Department completed this year's inspection.
2. Under Car Deluge System, Fire Alarm, and Sprinkler System
   - These items fall under the Los Angeles City Fire Department (LAFD)'s "Reg 4" Inspection criteria. "Reg 4" Inspection follows requirements of the National Fire Protection Association (NFPA) Code 72. Reg 4 Inspection Report is submitted to the LAFD annually. Wayside System/Communication Department inspectors perform the "Reg 4" inspections.
   - I reviewed the 2004 PM Inspection Schedule.
   - I reviewed 2004 Reg 4 Inspection records for the subject stations and no exceptions were noted.
3. EMP, Telephone, and Gas Analyzer
   - I reviewed 2004 PM Inspection Schedule.
   - Wayside System/Communication Department inspectors perform the inspections.
   - I reviewed Inspection reports for the subject stations and no exceptions were noted.
4. Notification to Facilities Maintenance Department
   - Open Reg 4 items are put in a matrix as part of a weekly report, which is sent to LAFD, Metro General Manager, and all of the Rail departments until the issues are closed.
   - Wayside Monthly PM Report is generated and sent to the management for review. I could not find any item, which needed the Facilities Maintenance Department's special attention; however, Mr. Lindstrom explained that the weekly report, sent to all rail department managers, should be sufficient to communicate any outstanding maintenance issues that have overlapping responsibilities.
5. Timely Closure of Open Issues
   - The Reg 4 inspection is the most comprehensive inspection of all.
   - The Wayside System / Communication Department also performs the following annual PM inspections: Communication Systems, Radio Systems, Communication Batteries, Gas Calibration, and Stations Inspections.
   - A weekly Reg 4 Open Issues Matrix is sent out to LAFD and all Rail Department heads.
   - A weekly Report on the Scheduled PM Inspection is generated for manager's approval.
   - Wayside Monthly PM Report is sent to LACMTA upper management.

<u>Recommendations:</u>

None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**29**	Persons Contacted
Date of Audit	**6/16/04**	Christopher Limon, LACMTA Facilities Abdul Zohbi, LACMTA Rail Operations Safety Manager Marco Sanchez, LACMTA Facilities Steve Yakemonis, LACMTA Facilities Louis Campos, LACMTA Facilities
Auditors	**Susan Feyl**	
Department	**Wayside Systems**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Sections 3.4.4 and 4.4.
2. LACMTA Rail Operations Wayside Systems, Maintenance Plan, Dated January 2004, Facilities Maintenance.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY AND LIGHT RAIL FACILITIES INSPECTIONS

Interview the department manger and representatives, review procedures and records to determine if formal procedures for preventive maintenance, inspection and testing programs have been properly developed and implemented and are current for the items listed below. Review Inspection Reports for the following applicable items for Metro Blue Line 7th St./Metro Center Station tunnel, Pasadena Gold Line Memorial Park Station, including the Colorado Box, and Metro Red Line tunnel section from Union Station to Pershing Square prepared since January 2004:

- Tunnel Inspection
- Emergency Hatches

Determine if:

1. The items were inspected and tested at the specified frequency as required by the reference criteria.
2. The required inspections and tests were properly documented. Noted defects were corrected in a timely manner, including failed systems identified by communications department.
3. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.

RESULTS/COMMENTS

Findings:

The emergency hatches are being retrofitted with pneumatic devices. This started at Union Station and then went to the end of the Red Line and was retrofitted back toward Union. As of the date of the audit, the Red Line to the Hollywood/Vine Station retrofit has been completed. As they are retrofitted, the emergency hatches are tested. The record of inspection and testing, after installation of emergency hatch, is on file for the Hollywood/Vine Station

I checked the operation of a set of 2 emergency hatches at Union Station. They both opened easily.

The SSPP requires quarterly inspections for the tunnel and biannual for the emergency hatches. The Wayside Systems Maintenance Plan requires annual inspections for the tunnel and quarterly inspections of the emergency hatches. Since the Wayside Systems Maintenance Plan has been in effect since January, most of the data reviewed fell under the guidelines of the SSPP. According to LACMTA personnel, the frequency of inspection was changed, because it proved more beneficial. LACMTA was unable to provide the auditor with documentation showing a safety analysis had been performed supporting the change in inspection schedules.

The Pasadena Gold Line is constructed by Pasadena Blue Line Construction Authority (PBLCA) and operated by LACMTA. Before Pasadena Gold Line revenue operation, PBLCA inspected the tunnels as documented in the PGL Safety Certification Verification Report.

1 -2. The emergency hatches are being inspected as retrofitted. SSPP requires a biannual inspection, which so far has been met by the retrofit schedule. In the past, they have been inspected more frequently than required, monthly in some cases. Emergency Hatches Preventative Maintenance Program results are on file. The tunnel is being inspected quarterly. Metro Red Line – Quarterly Tunnel Inspection Reports are on file. A database keeps track of necessary repairs.

2. Auditors specifically examined failures reported by the Communications Department. Any failed systems identified by the Communications Department were corrected, as evidenced by the Koopman memos regarding trouble tickets 04030207 - 04030210 dated 3/26/04.

3. A database provides management with the current status of problems; i.e., if fixed, by whom, what remains to be repaired. If a problem is entered, but there is no (repair work) ticket number entered, it implies that the repair work remains to be completed. The database also generates a Close Trouble Ticket report which indicates details about work completed for management. I found one trouble ticket missing for 4/04 at the 7th/Metro Station concerning emergency hatch 11B alarm limits not working which has since been corrected. Its ticket number, 03040138, had not been entered into the database. The database also generates a Close Trouble Tickets Report, for example Close Trouble Ticket Report dated 6/18/04, identifies corrected problems for management.

Recommendations:

LACMTA should inspect the tunnels according to the SSPP tunnel inspection frequencies until it can show the change of inspection frequency will not impair safety. Accordingly the SSPP and the Wayside Systems Maintenance Plan should be brought into agreement..

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**30**	Persons Contacted
Date of Audit	**6/15/04**	Dave Kubicek – LACMTA RFS Angela Pina – LACMTA RFS Brian Rydel – LACMTA Gold Line Manager Tom Lingenfield – LACMTA Red Line Manager Manuel Precie – LACMTA Red Line Asst. Mgr. James Poe – LACMTA Gold Line Asst. Mgr. Abdul Zohbi – LACMTA Safety
Auditors	**Brian Yu**	
Department	**Fleet Services**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.3, Rail Equipment Maintenance.
2. LACMTA Siemens 2000 Preventive Maintenance Inspections, Dated February 19, 2004.
3. CPUC General Order 143-B, Dated January 20, 2000, Section 14.04, Light Rail Vehicle Maintenance Practices and Records.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

LIGHT RAIL TRANSIT VEHICLES PREVENTIVE MAINTENANCE PROGRAM AND DOCUMENTATION AND CALIBRATION OF MEASURING & TEST EQUIPMENT

At Metro Gold Line Midway Yard vehicle maintenance shop, determine if maintenance procedures are up-to-date.
Review three completed preventive maintenance inspection (PMI) records for P2000 vehicle, since February 2004, to determine if:

1. The required PMI's were performed during the required mileage limits.
2. The inspection and maintenance activities were properly documented.
3. Maintenance defects that were treated as UNSCHEDULED REPAIRS have been properly documented and closed out in a timely manner.
4. Supervisors randomly check inspected and maintained vehicles and document their activities.
5. The vehicle preventive maintenance program includes a warning system to the LACMTA management if the vehicle inspections are delayed and managers took appropriate actions to correct the vehicle maintenance issues.

Obtain a copy of the measuring and test equipment subject to calibration control in each vehicle maintenance shop. For each shop, randomly select two micrometers, dial calipers, torque wrenches, and multimeters. Review procedures and records and visually inspect to determine if:

1. The selected items are properly inventoried, controlled, calibrated against certified standards traceable to the National Bureau of Standards at prescribed intervals, and marked, tagged or otherwise identified to show their current calibration status.
2. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Since LACMTA currently utilizes Spears M^3 Data Management software to keep the records of the PMI, I was able to conduct the audit of the Gold Line PMI records at the Division 20 (Red Line Yard) rather than at the Midway Yard.

Findings:

1. On time PMI performance
- PMI records for the cars 232, 239, and 247 were reviewed.
- Car 232 had 4 PMI's that were all performed within the required mileage limit.
- Car 239 had 5 PMI's which were: 1 late, 1 early, and 3 on time. No exceptions noted.
- Car 247 had 4 PMI's that were all performed within the required mileage limit.
- LACMTA performs the vehicle PMI at every 5K miles. LACMTA has procedures for 5K, 10K, 20K, and 60K miles PMI intervals. LACMTA has 12 step (legs) PMI cycle: 5K, 10K, 5K, 20K, 5K, 10K, 5K, 20K, 5K, 10K, 5K, 60K, 5K…."

2. PMI records
- All of the Car's detailed PMI Work Order activities were readily available on screen by calling up the equipment number and work order number.
- Assigned employee and supervisor were displayed on the work order.

3. Unscheduled Repairs records (Corrective Work Orders)
- 23 Corrective Work Orders for Car 232 were reviewed; 7 were open; 6 out of 7 remained open for over one month.
- 43 Corrective Work Orders for Car 239 were reviewed; 10 were open; 4 out of 10 remained open for over one month.
- According to LACMTA personnel, the work orders open for over one month for minor issues, would not affect the normal operation of the vehicles. The auditor agrees with LACMTA personnel.
- According to LACMTA personnel, some of the work order issues open for over one month have been addressed independently during scheduled PMI. That is, they ran the trains with "minor" open corrective work orders and when the train was brought in for the PMI, the problem was corrected and the data base for the Corrective Work Order was not updated.

4. Supervisors Random Checks on PMI Work Orders
- According to LACMTA, the supervisors randomly check 2 to 3 cars per month for PMI compliance.
- The random check order comes from the division assistant manager.
- I reviewed the file containing Rail Equipment Maintenance Supervisor's Post Inspection Form and found no exceptions.

5. Warning System for Overdue PMI
- The Division Manager and supervisors review the vehicle mileage daily on the "View Mileage" screen of the Spears program.
- No automatic warning is currently available.
- According to LACMTA personnel, automatic "Flagging" of the overdue PMI will be incorporated into the Spears software in the future.
- No exceptions noted.

6. Tools Calibration and Inventory Records
- 1 Multimeter (they had only one); 2 Torque Wrenches; 2 Digital Micrometers; and 2 Digital Calipers were checked. No exceptions were noted.
- According to the division policy, all tools that are subjected to calibrations are calibrated annually.
- The Certificate of Calibration, by a certified calibration service who had performed the calibration, for each tool was on file.

7. Calibration Schedule Label on Tools
- All tools had Calibration Seals, Serial Numbers, and Next Calibration Date labeled.

- No exceptions were noted.

Comments:

1. Automatic “Flagging” of the overdue PMI should be implemented (Fleet Systems personnel informed that they have scheduled “flagging” for implementation).
2. LACMTA should ensure that all corrective work orders are closed within 30 days since even minor issues may have some safety implications.

Recommendations:

LACMTA should ensure that its rail fleet database for Corrective Work Order (CWO) is updated as the CWOs are corrected and closed.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**31**	Persons Contacted
Date of Audit	**6/15/04**	Dave Kubicek – LACMTA RFS Angela Pina – LACMTA RFS Brian Rydel – LACMTA Gold Line Manager Tom Lingenfield – LACMTA Red Line Manager Manuel Precie – LACMTA Red Line Asst. Mgr. James Poe – LACMTA Gold Line Asst. Mgr. Timothy Porter – LACMTA Red Line Rail Equip. Maintenance Abdul Zohbi – LACMTA Safety
Auditors	**Brian Yu**	
Department	**Fleet Services**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 3.3, Rail Equipment Maintenance.
2. LACMTA Breda 650 Base & Option Car Preventive Maintenance Inspections, Dated November 25, 2003.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

<u>HEAVY RAIL TRANSIT VEHICLES PREVENTIVE MAINTENANCE PROGRAM AND DOCUMENTATION AND CALIBRATION OF MEASURING & TEST EQUIPMENT</u>

At the Metro Red Line vehicle maintenance shop, determine if vehicle preventive maintenance procedures are up-to-date.
Review two completed preventive maintenance inspection (PMI) records for each vehicle type, base and option since November 2003, to determine if:

1. The required PMI's were performed during the required mileage limits.
2. The inspection and maintenance activities were properly documented.
3. Maintenance defects that were treated as UNSCHEDULED REPAIRS have been properly documented and closed out in a timely manner.
4. Supervisors randomly check inspected and maintained vehicles and document their activities.
5. The vehicle preventive maintenance program includes a warning system to the LACMTA management if the vehicle inspections are delayed and if managers took appropriate actions to correct the vehicle maintenance issues.

Obtain a copy of the measuring and test equipment subject to calibration control in each vehicle maintenance shop. For each shop, randomly select two micrometers, dial calipers, torque wrenches, and multimeters. Review procedures and records and visually inspect to determine if:

1. The selected items are properly inventoried, controlled, calibrated against certified standards traceable to the National Bureau of Standards at prescribed intervals, and marked, tagged or otherwise identified to show their current calibration status.
2. The next scheduled testing/calibration is shown on the item.

RESULTS/COMMENTS

Findings:

1. On time PMI performance
   - PMI records for the Cars 517/518, 541/542, and 583/584 were reviewed.
   - Car 517/518 had propulsion problem and has been pulled out of service before January 2004. Thus, I reviewed Car 585/586 PMI records instead.
   - Car 541/542 had 5 PMI's, which 3 were late and 2 were on time. No exceptions noted. The last two PMI's were on time.
   - Car 583/584 had 6 PMI's, which 3 were on time, and 3 were late, and the last three PMI's were on time.
2. PMI records
   - All of the Car's detailed PMI Work Order activities were readily available on screen by calling up the equipment number and/or work order number.
   - Assigned employee and supervisor were displayed on the work order.
3. Unscheduled Repairs records (Corrective Work Orders)
   - 11 Corrective Work Orders for Car 583/584 were reviewed; 6 remained open for over one month.
   - According to LACMTA personnel, the work orders open for over one month for minor issues, would not affect the normal operation of the vehicles. The auditor agrees with LACMTA personnel.
   - According to LACMTA personnel, some of the work order issues open for over one month have been addressed independently during scheduled PMI. That is, they ran the trains with "minor" open corrective work orders and when the train was brought in for the PMI, the problem was corrected and the data base for the Corrective Work Order was not updated. LACMTA performs the vehicle PMI at every 5K miles. LACMTA has procedures for 5K, 10K, 20K, and 60K miles PMI intervals. LACMTA has 12 step (legs) PMI cycle: 5K, 10K, 5K, 20K, 5K, 10K, 5K, 20K, 5K, 10K, 5K, 60K, 5K…."
   - According to LACMTA personnel, Corrective Work Orders status for other cars would be similar since the LACMTA has been allocating resources to implement the PMI portion of the Spears software first.
4. Supervisors Random Checks on PMI Work Orders
   - I reviewed the file containing Rail Equipment Maintenance Supervisor's Post Inspection Form and found no exceptions.
5. Warning System for Overdue PMI
   - The Division Manager and supervisors review the vehicle mileage daily on the "View Mileage" screen of the Spears program.
   - No automatic warning is currently available.
   - According to LACMTA personnel, automatic "Flagging" of the overdue PMI will be incorporated into the Spears software in the future.
   - No exceptions noted.
6. Tools Calibration and Inventory Records
   - 2 Digital Multimeters, 2 Micrometers, 2 Calipers, and 2 Torque Wrenches were checked. No

exceptions were noted.

- According to the division policy, all tools that are subjected to calibration are calibrated annually.
- 2 Digital Multimeters were reviewed and they were calibrated on time.
- LACMTA explained that all micrometer and calipers were currently off-site being calibrated (Simco Electronics). They further stated that these tools were not critical to current work needs
- I verified by reviewing the copy of the Simco Work Order.
- I also reviewed previous calibration certificates for the Micrometers and Calipers.
- 1 Torque Wrench was reviewed and it was calibrated on time.
- The other Torque Wrench that I had requested could not be located at the storage room albeit it was shown "in stock" on the tools inventory list; however, the certificate of calibration for this item showed that it was calibrated on time.
- I found one of the torque wrenches was not calibrated in 2002. LACMTA personnel explained that it was not being used nor is scheduled to be used.

7. Calibration Schedule Label on Tools

   On the tools and equipment's that were available at the time of the audit, all had Calibration Seals, Serial Numbers, and Next Calibration Date labeled.

Comments:

1. Automatic "Flagging" of the overdue PMI should be implemented (Fleet Systems personnel informed that they have scheduled "flagging" for implementation).
2. LACMTA should ensure that all corrective work orders are closed within 30 days since even minor issues may have some safety implications.

Recommendations:

1. LACMTA Rail Fleet Department should develop a systematic method to keep track and control the tools that are being checked out to ensure that properly calibrated tools are available when needed.
2. LACMTA Rail Fleet Department should annually calibrate seldom-used tools since no one can predict when the tool might be used.
3. LACMTA should ensure that its rail fleet database for Corrective Work Order (CWO) is updated as the CWOs are corrected and closed.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**32**	Persons Contacted
Date of Audit	**6/18/04**	Duane Martin, Metro Gold Line Division Manager Michael Moore, Metro Red Line Division Assistant Manager Eugene Adams, Metro Red Line Division Manager Douglas Jackson, Assistant Manager Byron England, Instruction Manager Abdul Zohbi, Rail Operations Safety Manager Hector Guerrero, Metro Blue Line Division Manager
Auditors	**Susan Feyl**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.7, Emergency Response Planning, Coordination & Training.
2. LACMTA Interoffice Memorandum to Vijay Khawani from Jess Diaz. Dated July 26, 2002.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

EMERGENCY RESPONSE AGENCY FAMILIARIZATION PROGRAM

Interview the Rail Operations Department Manager and review available records and documentation for the past 2 years, where applicable, to determine if:

1. LACMTA, alongside Pasadena Blue Line Construction Authority (PBLCA), planned and held emergency drills that included other emergency response agencies prior to revenue operation.
2. LACMTA regularly scheduled meetings and emergency drills for Blue, Green, Red Lines with other emergency response agencies, such as police and fire departments, in the 14 jurisdictions that LACMTA operates through and conducted the drills according to the established schedule.
3. LACMTA's emergency response planning addresses both accidental emergency events and security related emergency events.
4. Emergency drill exercises were critiqued and evaluated by participants and any corrective actions, that entailed LACMTA, were recorded, scheduled, and tracked to completion in timely manner and

RESULTS/COMMENTS

Findings:

1. LACMTA held a number of drills on the Gold Line prior to revenue service. These included: a Train vs. Auto Drill on February 23, 2003, Debris Intrusion into the train along the 210 Freeway on March 23, 2003, Fire in the Midway Shop Drill on March 28, 2003, a Train vs. Hi-railer on the Chinatown Aerial Guideway on April 12, 2003, a Train vs. Pedestrian Drill on February 11, 2003 which was an accident with a live pedestrian under train at a grade crossing, Fire in a Traction Power Substation on March 12, 2003, and others. These drills included other emergency response agencies including LASD, LAPD, LAFD, PFD, PPD, PBLCA, and SPFD. These emergency response agencies cover all jurisdictions for the Gold line

2. LACMTA regularly scheduled emergency drills for the Blue, Red, and Green lines in accordance with the Khawani memo dated 7/26/02. For example in 2002, on March 14, a Hostage Drill was held for the Red Line, on June 14, a Train vs. Pedestrian Drill was held for the Green Line, on

September 20 a Bomb Threat Drill was held for the Red Line, and on November 22 a Hostage Drill was conducted for the Blue Line. Many jurisdictions were involved in the submitted drills including LASD, LAPD, LAFD, CHP, SPFD, PPD, LA County FD, Hawthorne PD, El Segundo PD, Redondo Beach PD, and PFD. Any emergency response agency that gets to the scene, can be the first responder. LACMTA holds regular system familiarization meetings with all normal first emergency responders (Fire / Police) in all jurisdictions.

3. The emergency drills included both accidental events including a train versus hi-rail collision, hazmat on a train, and fire aboard a train; and security related events such as a suspicious package, and a multi-agency terrorism drill. Specifically, in 2004, the Blue Line had a Hostage Drill on January 30, and a Train vs. Train Collision Drill in April, the Red Line had a Train Fire in the Tunnel Drill in May and has scheduled a Bomb Threat on Train in October, the Green Line has an Evacuation of Train on Aerial Structure scheduled for August, and the Gold Line has a Train Collision with Fuel Tanker intrusion on Freeway scheduled for November.

4. In all of the examples cited above, emergency drills were evaluated by the participants as shown in the drill matrix documentation and recommendations made as a result of drills are tracked to closure.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**33**	Persons Contacted
Date of Audit	**6/21/04**	James Brown, Contracts Manger Abdul Zohbi, Rail Operations Safety Manager
Auditors	**Susan Feyl**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan (SSPP), Rev 3, Dated January 1, 2003, Section 4.15, Contractor Safety Coordination
2. LACMTA Track Allocation / Work Permit Process, Dated February 2004.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

CONTRACTOR SAFETY COORDINATION

Interview the representative in charge of the Contractors Safety Program and review records for the last two years to determine if:

1. LACMTA procedures and practices clearly identify, for the contractors and LACMTA managers, that LACMTA is in charge and that its contractors and their employees must comply with all established safety rules and procedures.
2. All Contractors, performing work on or near all the rail lines, provided safety training to their employees or the employees attended safety-training class conducted by Rail Operations.
3. Rail Operations Control (ROC) approved the contractors work, on or near all the rail lines.
4. ROC held Track Allocation Meetings to determine if the contractor work necessitated any restrictions, flagging, or reduced train speed.
5. All contractors followed the requirements of the Track Allocation / Work Permit process.
6. The Rail Operations Department reported any contractors, who work unsafe along the right of way, to the Construction Safety Department.

RESULTS/COMMENTS

Findings:

1. LACMTA procedures Part 4 – Contractor Responsibility of the Worksite Safety Requirements, Section 01545, states that the worksite belongs to LACMTA and that MTA can remove any contractor or representative who fails to meet worksite safety requirements.

2. All contractors are provided safety training. Even before a contract is awarded, a pre-bid sheet outlines safety training required for the job, as shown in Presentation Script for Contract C0713 Pre-bid Meeting. All contractors must attend safety training classes. There is a 10 hour and a 30 hour Construction Hazards training class and specialized classes such as hi-rail which are offered contractors, who after successful completion of training are given a badge to wear authorizing work activity on the rail line. A spot check of contractor work badges is made daily by MTA and those not

wearing a badge are removed.

3 - 4. ROC approves the contractor work via the Track Allocation/Work Permit Process. ROC approves the Track Allocation Request form completed by contractors requesting work along a rail line and issues a weekly track allocation schedule for each rail line. It identifies locations, crew numbers, times, type of work and restrictions required (like flagging, power down, single tracking) for work along each rail line as shown in Metro Gold Line Track Allocation Schedule for June 20 –26, 2004.

5 - 6. Contractors must follow the track allocation process. The monthly Construction Safety Activity Report, written by LACMTA safety representative, identifies contractor deficiencies and corrects them. The LACMTA project manager and resident engineer sign off on the report and the safety representative can enforce it. The LACMTA Construction Safety Manager can stop the work. The contract provides financial penalties for failure to comply with safety regulations, as shown in SP-24 Assessments for Special Circumstances, LD Schedule - Safety section 24.3.1. No fine has been assessed on the rail lines. The rules are written in LACMTA procedures Section 1545 entitled Worksite Safety Requirements and in the contracts.

Recommendations:

None.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**34**	Persons Contacted
Date of Audit		Denice C. Findlay, Jessica P. Gil, Carol A. Holben, Kathi S. Harper, Human Resources Department
Auditors	**Dennis Reed**	
Department	**Human Resources**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.14, Drug and Alcohol Abuse Programs.
2. LACMTA Alcohol and Drug Abuse Policy.
3. CPUC General Order 143-B, Dated January 20, 2000, Section 12.03, Use of Alcohol, Narcotics, or Drugs Forbidden.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

DRUG AND ALCOHOL TESTING PROGRAM

Review the LACMTA Alcohol and Drug Abuse Policy and determine if it is in compliance with State and Federal Rules and if LACMTA is carrying its program.

Review the LACMTA safety sensitive rail employees records for the past three years on the following drug and alcohol testing types: Pre-Employment & Transfer, Reasonable Suspicion, Post-Accident, Random, Return From Extended Medical Leave, Return-to-Duty, Follow-Up Testing, and Refusal to Test.

Choose the employment records of an employee from each testing type that failed in the drug and alcohol test. Review these records to confirm that Human Resource Department followed the LACMTA's Alcohol and Drug-Free Work Environment Policy (HR 4-2), Consequences of Positive Drug and/or Alcohol Tests section. Review the records of those employees, who were allowed to return to work in safety sensitive positions, to confirm that they have successfully passed the required Follow-up Testing as specified in the reference criteria.

RESULTS/COMMENTS

Activities:

1. Discussed the Drug and Alcohol Policy with the Human Resources management team. This included the following testing:
   a. Pre-Employment or transferring into new safety sensitive position.
   b. Employee who has been out for 90 consecutive days.
   c. Reasonable suspicion.
   d. Vehicle accident.

2. Reviewed documentation for compliance. This included the following:
   a. Human Resources Alcohol and Drug-Free Work Environment (HR4-2)

b. Drug And Alcohol Program Bulletin – March 8, 2004
c. Drug and Alcohol Program Bulletin – July 20, 2003
d. Standard Operating procedure Drug & Alcohol Program
e. EAP/SAP Referral List
f. Consent for Management Referral to the EAP/SAP and Return-to-Duty agreement.
g. Management Orientation Program Schedule of Classes

3. Reviewed employee records:
   a. Pre-Employment or transferring into new safety sensitive position.
   b. Employees who have been out for 90 consecutive days/Follow-up.
   c. Reasonable suspicion.
   d. Vehicle accident.

Findings:

1. The current training is in compliance with FTA guidelines, and all employees and supervisors are being trained and tested to these guidelines.
2. Reviewed documentation for alcohol and Drug Tests from 01/01/2001 through 05/31/2004 and determined the following:
   a. Pre-Employment/Transfers - 112 Drug tests and 72 alcohol tests were conducted with no positives. The total Pre-Employment tests were 184.
   b. Employees who have been out for 90 consecutive days/ Follow-up – 57 Drug and 54 alcohol tests were conducted with no positives. The total Follow-up tests were 111.
   c. Post Accident – 104 Drug and 107 alcohol tests were conducted with no positives. The total post accident tests were 211.
   d. Random – 1139 Drug and 255 alcohol tests were conducted with 10 positives. The total random tests were 1394.
   e. Return To Duty –4 with no positives

   A total of 1398 tests were taken with 10 positives. The total number of rail employees is 807.
3. The 10 employees who tested positive, the personnel documentation was reviewed with the following results:
   a. One was reinstated at 2nd level after completing return to duty/follow-up (RTDF) follow-up.
   b. One mandatory substance abuse professional (SAP) completed and is on follow-up.
   c. Two have been reinstated and are on RTDF Follow-up.
   d. Two retired in lieu of termination.
   e. One quit in lieu of termination.
   f. Three terminated pending arbitration.
4. Reasonable suspicion -- none
5. Safety Sensitive positions were last updated in March of 2004.

Recommendations:

None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**35**	Persons Contacted
Date of Audit		Managers of all departments responsible for maintaining "pay package" records for employees. This included the following: 1. Train Operators 2. Rail Operations Supervisors 3. Wayside Systems 4. Rail Fleet Services
Auditors	**Dennis Reed**	
Department	**Operation / Transportation, Wayside Systems, and Fleet Services Rail Fleet Services, Operations / Transportation, and Wayside Systems**	

REFERENCE CRITERIA

1. CPUC General Order 143-B, Dated January 20, 2000, Section 12.04, Hours of Service – Safety Sensitive Employees.
2. LACMTA Rail Operation General Policy No. 03-01 Rail Operations Safety Sensitive Employees, Dated February 4, 2003.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HOURS OF SERVICE – SAFETY SENSITIVE EMPLOYEES

Select names from a list of names for safety sensitive job classifications listed below. Review, random periods to cover 1 month, the "pay package" records prepared during the past 18 months for the selected employees to determine if they complied with the hours of service requirements in the reference criteria. That is, employees in safety sensitive positions may not remain on duty for more than 12 consecutive hours, or for more than 12 hours spread over a period of 16 hours. Note that initial on duty status may only begin after 8 consecutive hours off duty.

- Train Operators (2 names).
- Rail Transit Operations Supervisors, includes ROC Controllers & Yard Controllers (2 names of each).
- Wayside Systems – Signal Maintenance personnel (2 names).
- Rail Fleet Services Personnel (2 names).

RESULTS/COMMENTS

Activities:

1. Met with management from all LACMTA Lines to discuss Hours of Service and reviewed employee "pay package" records of randomly selected employees from the safety sensitive job classifications for one month within the past eighteen months to determine if employees are working within the Hours of Service guidelines established by 143-B.
2. Randomly selected employees from the following safety sensitive categories to be audited
   a. Train Operators
   b. Rail Transit Yard Controllers
   c. Rail Transit ROC Controllers.

d. Wayside Systems
e. Rail Fleet Services Personnel

Findings:

1. *Train Operators – All Train Operators audited are in compliance with 143-B*.
   a. Red Line:
   Two operators were audited from the Red Line for July of 03 and March 04. The total number of Red Line Operators is 55.
   b. Blue Line:
   Two operators were audited from the Blue Line for December 03 and April 04. The number of Blue Line Operators is 56.
2. *Rail Transit Operations Supervisors – All Train Operations Supervisors audited are in Compliance with 143-B.*
   a. Field Supervisors -- Two ROC field supervisors were audited for the months of March and April 04. The number of supervisors is 21.
   b. Transit Controllers – Two ROC Controllers audited for the months of November 03 and January 04. The number of Controllers is 40.
   c. Yard Controllers – Two Yard Controllers were audited for the months of July 03 and May 04. The number Yard Controllers is 6.
3. *Wayside Systems – All Train Operations Supervisors are in Compliance with 143-B.*
   a. Three Wayside Inspectors were audited for the months of March 03, September 03 and March 04. The number of Signal Inspectors is 39.
4. *Rail Fleet Services Personnel – All Rail Fleet Services Personnel were in Compliance with 143-B.*
   a. Red Line (Division 20) – Two Maintenance Specialists were audited for the months of November 03 and March 04. The number of Specialist is 23.
   b. Blue Line – Two Preventative Maintenance Specialists were audited for the months of February and March 04. In addition, one other Maintenance Specialist was audited for the month of October 03. The number of Specialists is 57.
   c. Green Line (Division 22) – Three Maintenance Specialist were audited for the months of October 03 and November 03. The number of Specialists is 40.
   d. Gold Line -- Two Maintenance Specialists were audited for the months of April 04. The number of Maintenance Specialists and attendants is 36.

Recommendations:
None

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**36**	Persons Contacted
Date of Audit		Thomas Eng, Safety Certification Manager Collins Kalu, Manager, Hazardous Materials James Jimenez, Hazardous Materials Wyman Jones, Rail Operations Safety Michael Stange, Hazardous Materials
Auditors	**Dennis Reed**	
Department	**Quality Assurance**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.13,Hazardous Materials Program.
2. LACMTA Occupational, Environmental, Health and Safety (OEHS) Plans and Programs.
3. LACMTA System-Wide Hazardous Material Emergency Response Plan, Dated October 2003.
4. LACMTA Hazard Communications Program, Dated March 2003.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HAZARDOUS MATERIAL PROGRAMS

Interview Quality Assurance Department Manager and review records to determine if Quality Assurance Department:

1. Monitored and recorded the collection and disposal of waste oils, waste fuel, and clarified waste water sludge to minimize employee exposure to hazardous materials for the last two years
2. Tested cleaning chemicals for strength, chemical composition and application properties to ensure safety and healthful usage and recorded the results for the last two years.
3. Advised all applicable departments of all mandated environmental and safety rules and regulations as they pertain to operations and recorded the communications for the last two years.

RESULTS/COMMENTS

Activities:

1. Discussed the Hazardous Material Programs with the System Safety Department and Quality Assurance management, including the Senior Industrial Hygienist.
2. Reviewed procedures, policies and discussed them with Safety and Quality Assurance management to determine how hazardous materials are handled and tracked by the LACMTA. These policies and procedures included a review of the following:
   a. Policy and Procedure for Qualification of New Chemical Commodities for Inventory Stock
   b. System-Wide Hazardous Materials Emergency Response Plan
   c. Corporate Safety Hazard Communication Program.
3. Tracked the Material Safety Data Sheets (MSDS) process.
4. Reviewed the 2002 and 2003 Liquid Waste documentation to determine the volume and frequency of liquids disposed of by LACMTA.

Findings:

1. A comprehensive Program is in place to ensure that materials and services obtained by the LACMTA do not degrade the safety of the transit system.
2. The introduction of new chemicals and commodities like cleaners, paints, solvents lubricants, etc. receive the review and concurrence of Operations Safety, Quality Assurance, user department/project managers and Material Department, as appropriate, for occupational and environmental safety requirements.
3. A standardization committee comprised of representatives from Inventory management, user departments/project managers, Operations Safety and Quality Assurance review all qualified products to ensure that products have an established specification, or explicit ordering description and that there are no duplications of an existing product or commodity numbers.
4. During 2002, 1,610,673 gallons and 2003, 1,095,492 were disposed. Generally the frequency of pick-ups is twice per month.
5. Corporate Safety reviews and approves all MSDS approval forms for all replacement and new products. In addition, they maintain a hard copy and an electronic copy of the MSDS sheets. These are easily accessible by all departments.
6. The corporate Safety Department develops and implements the Occupational Environmental Health and Safety (OEHS) plans.
7. Quality Assurance role in environmental compliance and hazmat response includes:
    a. Monitor and collection and disposal of waste oils.
    b. Testing cleaning chemicals to ensure safety and healthful usage.
    c. Provide for contracted hazardous material clean-up, transportation and disposal.
    d. Train new employees on waste disposal, hazardous materials containment and emergency response.
    e. Advise all departments on a need to know basis of all mandated environmental and safety issues.
8. The system-wide hazardous Materials Emergency Response Plan is updated annually. The last update was October 2003. This document is prepared by the Sr. Industrial Hygienist and reviewed by the Safety Certification Manager.
    a. The Corporate Safety Hazard Communication Program (HCP) is reviewed and updated on an annual basis. The last update was March 2003. This program affects all departments that buy, store, handle, and/or use hazardous substances.
    b. The Corporate Safety Department is responsible for this document.
9. The Hazard Communications Program, Section 5.2, Part B, Annual Hazard Communication Refresher Training, states:

Due to the fact that new chemicals are added to the existing inventory annually and employees may transfer from other locations, annual hazard communication refresher classes shall be conducted for all employees affected by this program by trained supervisors. All training shall be documented by written or electronic record.

10. SSPP Section 4.13, Hazardous Materials Programs does not clearly show that all employees who work with chemicals are provided refresher classes on an annual basis.
11. The Hazard Communications Program was last updated in March 2003. This program will be updated soon.

Recommendations:

LACMTA should review the Hazard Communications Program to identify if any refresher training requirements apply to employees who work with chemicals according to CALOSHA regulations.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**37**	Persons Contacted
Date of Audit		Davide Puglisi, Manager, Instruction Department Vijay Khawani, Director, Rail Operations Safety Melvin Clark, Rail Operations Manager
Auditors	**Dennis Reed**	
Department	**Operations / Transportation**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Sections 4.1 and 4.5.
2. CPUC General Order 143-B, Dated January 20, 2000, Section 13.02, Operating Rules Shall be Submitted.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

HEAVY AND LIGHT RAIL OPERATING RULES AND PROCEDURES

Select and review three rule and procedure modifications from each Light Rail Operations Rule Book, Heavy Rail Operations Rule Book, Heavy Rail and Light Rail Train Operations Standard Operating Procedures, Rail Controllers Standard Operating Procedures, Bulletins, special notices, and procedure notices from the last two years to determine if:

1. The rule / procedure modifications have been reviewed by the Rules and Standard Operating Procedures Committee (RASOPC).
2. RASOPC recommended any appropriate operating rules and procedures corrections/modifications.
3. RASOPC Informed affected departments and committees of rules and procedures changes.
4. RASOPC eliminated any rules or procedural inefficiencies and/or inadequacies in a timely manner.
5. LACMTA filed the reviewed rule and modification changes with CPUC staff per GO 143-B requirement.
6. RASOPC reviewed and approved the Pasadena Gold Line Operation Rules and Procedures before revenue operation date.
7. RASOPC has a procedure that it follows.

RESULTS/COMMENTS

Activities:

Discussed the Rules and Standard Operating Procedures Committee (RASOPC) process with Rail Transportation Instruction Administration (RTIA) management staff.

Findings:

1. LACMTA's internal safety audit of the RASOPC (11/18/03) determined that there has been no consistency as to what goes through the RASOPC. As a result, a recommendation was made to revise the process.
2. A new process has been developed to replace the RASOPC that is believed to be more responsive to employees, and management proposed changes and its incorporation into the

system. This new process, Metro Rail Standard Operating Procedure, was tested for several months and signed by the DEO on 6/20/04.

3. This process allows a change proposal to come from an employee, the Local Safety Committee that becomes a forum for discussion, a transportation manager or the DEO. RTIA then drafts an initial proposal that is forwarded for to management and the affected departments for review and approval. RTIA then reviews again and submits a copy to the Safety Department and DEO for final review and signing. When the DEO signs the rule or procedure it is distributed and signed by all departments. The Metro Rail Standard Operating Procedure followed this new process.
4. Subsequent to the audit, LACMTA submitted the draft proposed SOP to CPUC for review.

Comments:
Since this process is new it should be re-evaluated through the internal safety audit process.

Recommendations:

LACMTA should update Section 4.5 of the SSPP regarding Rules/Procedures Review.

2004 CPUC SYSTEM SAFETY AUDIT CHECKLIST FOR THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY

Checklist No.	**38**	Persons Contacted
Date of Audit		Ted Montoya, Dieter Hemsing, James Jimenez, Paul Lewicki, Procurement Department
Auditors	**Dennis Reed**	
Department	**Procurement**	

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev 3, Dated January 1, 2003, Section 4.16, Procurement
2. LACMTA Hazard Communication Program, Dated March 2003, Section 4.0, Procurement and Section 5.3, Material Safety Data Sheets.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

PROCUREMENT

Interview the LACMTA representative in charge of procurement and review LACMTA Material Safety Data Sheet Program, procedures and records for the last two years to determine if:

1. LACMTA has comprehensive and clearly defined procedures in place for procurement control.
2. Procurement control is monitored and enforced.
3. Procurement control includes hazardous materials and maintenance and repair parts and materials that could affect safety of the system, employees, passengers, the general public, equipment and the environment.
4. Deviations from procurement control are brought to the attention of the general management.

RESULTS/COMMENTS

Activities:

1. Discussed the procurement process with procurement management staff.
2. Reviewed Qualification of New Chemical Commodities for Inventory Stock, System-Wide Hazardous Materials Emergency Response Plan, the Corporate Safety Hazard Communication Program, and Material Safety data Sheet (MSDS) process.

Findings:

1. A comprehensive Program is in place to ensure that materials and services obtained by the LACMTA do not degrade the safety of the transit system. This program complies with established procedures for the evaluation of materials and products used by the LACMTA.
2. The introduction of new chemicals and commodities like cleaners, paints, solvents lubricants, etc. receive the review and concurrence of Operations Safety, Quality Assurance, user department/project managers and Material Department, as appropriate, for occupational and environmental safety requirements.
3. A standardization committee comprised of representatives from Inventory management, user departments/project managers, Operations Safety and Quality Assurance review all qualified products to ensure that products have an established specification, or explicit ordering

description and that there are no duplications of an existing product or commodity numbers.

4. The Procurement Department is responsible for:
   a. Requiring contractors to provide Corporate Safety with information related to the hazardous materials brought into or on any LACMTA site.
   b. Assuring that vendors submit the correct MSDS information for the evaluation of new products.
   c. Participating in the Chemical committee and process.
   d. Submitting the MSDS LACMTA product approval form to Corporate Safety for review and approval.
5. Corporate Safety reviews and approves all MSDS approval forms for all replacement and new products.

Recommendations:

None