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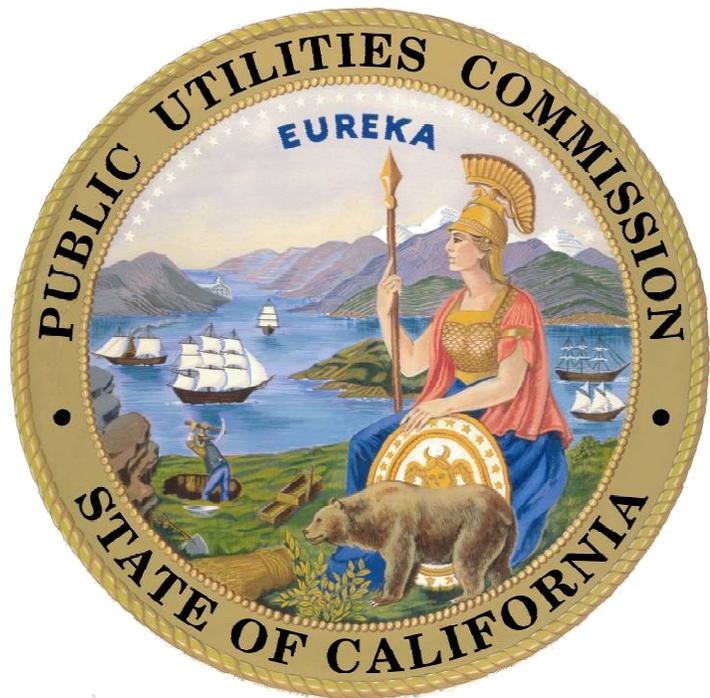
**2007**  
**TRIENNIAL ON-SITE**  
**SAFETY AND SECURITY REVIEW OF**  
**LOS ANGELES COUNTY METROPOLITAN**  
**TRANSPORTATION AUTHORITY (LACMTA)**

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RAIL TRANSIT SAFETY SECTION  
RAIL TRANSIT AND CROSSINGS BRANCH  
CONSUMER PROTECTION AND SAFETY DIVISION  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
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October 31, 2007

Final Report



Richard W. Clark, Director  
Consumer Protection and Safety Division

2007 TRIENNIAL ON-SITE SAFETY AND SECURITY REVIEW OF  
LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY  
(LACMTA)

ACKNOWLEDGEMENT

The California Public Utilities Commission's Rail Transit Safety Section staff, with the assistance of the Commission's Railroad Operations Safety Branch and Utilities Safety Branch staff, conducted this system safety and security programs review. Staff members directly responsible for conducting safety and security review and inspection activities include:

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## TABLE OF CONTENTS

	Page
1. EXECUTIVE SUMMARY .....	1
2. INTRODUCTION .....	2
3. BACKGROUND .....	3
LACMTA Rail System Description .....	3
2004 On-Site Safety Review Result.....	5
4. REVIEW PROCEDURE .....	6
5. FINDINGS AND RECOMMENDATIONS.....	7

### APPENDICES

A.TSA Executive Summary of LACMTA System Security Review .....	17
B. LACMTA 2007 Triennial Safety Review Checklist Index.....	19
C. LACMTA 2007 Triennial Safety Review Recommendations List .....	23
D. LACMTA 2007 Triennial Safety Review Checklists .....	24

## 1. EXECUTIVE SUMMARY

The California Public Utilities Commission's (Commission) Consumer Protection and Safety Division (CPSD), Rail Transit Safety Section staff (staff), with assistance from the Railroad Operations Safety Branch and Utilities Safety Branch staff (staff), conducted an on-site safety review of Los Angeles County Metropolitan Transportation Authority's (LACMTA) system safety program in May and June 2007.

Transportation Security Administration (TSA) representatives conducted the review of LACMTA's system security program during the week of May 14, 2007.

The on-site review was preceded by a pre-review conference with LACMTA personnel on June 25, 2007. Staff conducted the 2007 LACMTA on-site safety review in two phases. The first phase consisted of facilities and equipment inspections in May and June of 2007. During phase two, staff conducted the on-site safety review from June 25 to June 29, 2007. The review focused on verifying the effective implementation of the system safety and security program plans.

Staff held a post-review conference with LACMTA personnel following the on-site safety review on July 6, 2007. Staff provided LACMTA personnel with a synopsis of the preliminary review findings and possible recommendations for corrective actions. TSA representatives held a similar post-review conference with LACMTA security personnel after their review of LACMTA's system security program on May 18, 2007. TSA representatives utilized the Surface Transportation Action Review Checklist to review LACMTA system security internal processes, procedures, and policies. Appendix A provides the TSA Executive Summary.

The review results indicate that LACMTA has a comprehensive System Safety Program Plan (SSPP) and has effectively carried out that plan. However, staff noted exceptions during the review. These exceptions are described in the Findings and Recommendations section of each checklist. Of the 32 checklists, staff made 16 recommendations for corrective action. Recommendations for corrective action are directed in the areas of maintenance activities, documentation of maintenance activities, documentation of emergency drills, transit vehicle maintenance, and operations safety compliance.

The Introduction for this report is presented in Section 2. The Background, in Section 3, contains a description of LACMTA rail system and the 2004 on-site safety review results. Section 4 describes the review procedure. The review findings and recommendations are depicted in Section 5. The 2007 LACMTA Triennial Safety Review Checklist Index and the Recommendations List are included, respectively, in Appendices B and C. The Review Checklists are presented in Appendix D.

## 2. INTRODUCTION

The Commission's General Order (GO) 164-C<sup>1</sup>, *Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems*, and the Federal Transit Administration's (FTA) Rule, Title 49 Code of Federal Regulations (CFR) Part 659, *Rail Fixed Guideway Systems: State Safety Oversight*, require the designated State Safety Oversight Agencies to perform a review of each rail transit agency's system safety program at a minimum of once every three years. The purpose of the triennial review is to verify compliance and evaluate the effectiveness of each rail transit agency's System Safety Program Plan (SSPP) and to assess the level of compliance with GO 164-C as well as other Commission safety requirements. The previous on-site safety review of LACMTA was conducted by staff in June 2004.

On April 23, 2007, staff mailed a letter to LACMTA Chief Executive Officer (CEO), advising that the triennial review would be scheduled for the week of May 14, 2007. In a letter dated May 9, 2007, staff notified the LACMTA CEO that the review would be postponed<sup>2</sup> to the week of June 25, 2007. The letter included 32 checklists that served as the basis for the review. Four of the 32 checklists outlined inspection of track, signals, electric power systems, and vehicles. The remaining 28 checklists focused on the verification of the effective implementation of the safety and security program plans.

On May 2, 29, 31, and June 1, 2, 5, 7, 2007 staff from the Commission's Railroad Operations Safety Branch and Utilities Safety Branch conducted inspections of LACMTA's track, signals, electric power systems, and vehicles. On June 25, 2007, staff conducted a pre-review conference with LACMTA executives and department managers.

TSA representatives conducted a review of LACMTA's system security program on May 14, 15 and 16, 2007. TSA representatives utilized the Baseline Assessment and Security Enhancement (BASE) checklist to review the internal processes, procedures, and policies of LACMTA system security program.

Staff conducted the on-site safety review and records review from June 25, 2007 to June 29, 2007. At the conclusion of each review activity, staff provided LACMTA personnel a summary of the preliminary findings and discussed any preliminary recommendations for corrective actions.

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<sup>1</sup> The FTA's latest revision of 49 CFR Part 659 became effective in May 2006. Subsequently, the Commission revised and adopted General Order 164-D which supersedes 164-C on May 3, 2007. Until the Commission's adoption of GO 164-D, staff requested LACMTA to revise their SSPP according to the FTA's latest revision of 49 CFR Part 659 which would be, in essence, the requirements of GO 164-D. Since this audit covered the time period that GO 164-D requirements weren't applicable, the reviewers referred to GO 164-C for a large portion of the review. However, the reviewers referred to GO 164-D where applicable.

<sup>2</sup> The FTA audited CPUC in March 2007. The FTA issued recommendations for CPUC (Rail Transit Safety Section) to implement. FTA required that corrective action plans for their recommendations be developed and submitted to them by June 8, 2007. This redirection of staff resources required a postponement to the review schedule.

On July 6, 2007, staff conducted a post-review exit meeting with LACMTA's executives and department managers. Staff provided the attendees a synopsis of the findings from the 32 checklists and discussed the need for corrective actions where applicable.

### 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. The Metro Gold Line Eastside Extension and Mid-city Exposition Light Rail Line Phase One are under construction and two other extensions are proposed. LACMTA operates over 74 miles with 65 stations. The average ridership of the system is approximately 260,000 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 and serves 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 7<sup>th</sup>/Metro Station in downtown Los Angeles. Currently, LACMTA operates two-car and three-car trains on the line depending on the time of the day. The average weekday boarding is 75,000 and the 2006 total yearly boarding was 25 million.

#### Metro Red Line<sup>3</sup>

The Metro Red Line (MRL), a heavy rail subway, runs between Los Angeles Union Station and North Hollywood with 16 stations over its 17.4-mile route. The Metro Red Line connects to the Metro Blue Line at 7<sup>th</sup>/Metro Station in downtown Los Angeles and connects to the Amtrak and Metrolink commuter rail, as well as the Gold Line, at Union Station. LACMTA operates four-car and six-car trains on the line, depending on the time of the day. The average weekday boarding is approximately 132,000 and the 2006 total yearly boarding was 41 million.

#### Metro Green Line

The Metro Green Line (MGL) is a light rail line that runs east-west along the median of Glenn Anderson (a.k.a. Century) Freeway (I-105) through Los Angeles County between City of Norwalk and City of Redondo Beach. It has 14 stations over its 20-mile route. It connects to the Metro Blue Line at Imperial/Wilmington (Rosa Parks) Station in Compton. LACMTA operates two-car configuration on the line with the exception of one-car trains used during the

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<sup>3</sup> In August 2006, LACMTA Board decided to name Metro Red Line branch running from Union Station to Wilshire/Western Station in Koreatown the Metro Purple Line. This branch line was originally envisioned to extend to City of Santa Monica through west Los Angeles and Beverly Hills. LACMTA is currently in Draft Environmental Impact Study of the extension project. Until further decision is made, LACMTA will combine the Metro Purple Line's statistics (i.e. ridership, train miles, accident reporting, etc.) with the Metro Red Line.

evenings and weekend mornings. The average weekday boarding is 35,000 and the 2006 total yearly boarding was approximately 10.8 million.

#### Metro Gold Line (a.k.a. Pasadena Gold Line)

The Metro Gold 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-mile route. It connects to the Metro Red Line at Union Station. LACMTA operates two-car trains on the line with the exception of one-car trains used during the evenings and weekend mornings. The average weekday boarding averages about 18,000 and the 2006 total yearly boarding was approximately 6 million.

#### Metro Gold Line Eastside Extension Project

The 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 Metro Gold Line and Metro Red Line, traveling east through East Los Angeles to Pomona and Atlantic Boulevards. The opening of the line is projected to occur in 2008.

#### Mid-City/Exposition Light Rail Transit Project – Phase One (a.k.a. Expo Line)

The Mid-City/Exposition Light Rail Transit Project – Phase One is under construction. Current plans call for a 9.6-mile light rail line extending on 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 modifications to two existing stations, providing a total of nine stations for the initial segment to Culver City. The alignment will primarily be at-grade. The opening of the line is projected in 2010.

#### 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.

#### Expo Line – Phase Two

Current plans call for an extension of the Expo Line from Culver City to City of Santa Monica. The Expo Line Phase Two project will add 6.5 miles and 6 to 7 stations to Expo Line's Phase One route. The project is in environmental impact study phase.

## **2004 On-Site Safety Review Result**

Staff performed the triennial on-site safety review of LACMTA System Safety Program in June 2004. The 38 checklists resulted in 28 recommendations. The majority of the recommendations focused on preventive maintenance inspections and training/certification programs.

LACMTA developed corrective action plans to implement the recommendations. Of the 28 recommendations, 27 are closed and one recommendation, No. 14, still remains open. Recommendation No. 14 states, "LACMTA should correct the head span design on the Metro Blue Line per GO 95 Rule 74.4F requirement." LACMTA has been implementing corrective actions; however, LACMTA has not finished the task.

#### 4. REVIEW PROCEDURE

Staff conducted the review in accordance with the Rail Transit Safety Section Procedure RTSS-4, *Procedure for Performing Triennial Safety Audits of Rail Transit Systems*.

Staff developed thirty-two (32) checklists to cover various aspects of system safety responsibilities, based on Commission and FTA requirements, American Public Transportation Association system safety program guidelines, LACMTA SSPP, safety related LACMTA documents, and the staff's knowledge of the transit system. The 32 checklists are included in Appendix D.

Each checklist identifies safety-related elements and characteristics that staff reviewed or inspected. Each of the checklists also references Commission, LACMTA, and other documents that establish the safety program requirements. The completed checklists include review findings, and recommendations if the review findings indicate deficiencies. The completed checklists may include comments and suggestions to improve LACMTA's system safety program. The methods used to perform the review include:

- 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 review checklists concentrated on requirements that affect the safety of rail operations and are known or believed to be important in reducing safety hazards and preventing accidents.

## 5. FINDINGS AND RECOMMENDATIONS

The reviewers and inspectors concluded that the LACMTA rail system has a comprehensive SSPP and has effectively implemented that plan.

Review findings identify areas where changes should be made to further improve LACMTA system safety program. The review results are derived from activities observed, documents reviewed, issues discussed with management, and inspections. Overall, the review result confirms that LACMTA is in compliance with its SSPP. The review identifies 16 recommendations from the 32 checklists outlined below:

### 1. Signal Inspection

Staff did not find any deficiencies.

### 2. Track Inspection

Staff did not find any deficiencies.

### 3. Traction Power Inspection

**Staff found the following deficiencies:**

- Several Down Guys attached to Overhead Contact System (OCS) Poles had exposed guy tail wires. (GO 95 Rule 31.1)
- A Down Guy Guard was missing (GO 95 Rule 56.9)
- At several locations, a single point failure at an OCS support would cause the energized conductor to be within 10 feet from the ground level. (GO 95 Rule 74.4F(1))<sup>4</sup>

**Recommendations:**

1. LACMTA should survey its entire light rail system and address the general maintenance exceptions identified in the findings section of Checklist 3 in regards to GO 95 Rules 31.1 and 56.9.

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<sup>4</sup> Staff has found the same deficiency on the Metro Blue Line during 2001 on-site safety review of LACMTA and recommended: "LACMTA should extend the insulators closer to the feeder pole, away from the dynamic weight system, as required by General Order 95, Rule 74.4-F." Subsequently, staff made similar recommendations to other transit agencies in California to comply with GO 95 Rule 74.4F. The transit agencies, collectively, challenged the recommendation stating that the GO 95 Rule 74.4F shouldn't be applied to the Dynamic Weight Tensioning design of the modern OCS construction. The Commission opened an Order Instituting Investigation (OII) in 2004 and requested the California rail transit agencies to submit proposed changes to the GO 95 Rule 74.4F. The rail transit agencies failed to submit proposal. Consequently, the Commission's Administrative Law Judge assigned to the OII dismissed the case. Following the OII dismissal, the rail transit agencies, beginning with Santa Clara Valley Transportation Authority, started implementing corrective actions to comply with GO 95 Rule 74.4F.

2. LACMTA should survey its entire light rail system and address the issue identified in the findings section of Checklist 3 in regards to GO 95 Rules 74.4F (1) exception.<sup>5</sup>

#### **4. Vehicle Inspection**

Staff found the following deficiencies:

- Some of the Metro heavy and light rail vehicles had air cut-out valve locking lever springs covered with thick dust, thus, preventing the locking lever from properly locking the valves in position.

#### **Recommendation:**

3. LACMTA should require periodic maintenance of all air cut out valves including operation and lubrication of locking handle and spring.

***Note:** Subsequent to the inspection, within days, LACMTA has included lubricating the air cut out valve handle locking lever springs and checking proper “locking” operation as an item in their maintenance checklist.*

#### **5. Heavy Rail Operations Training & Certification**

Staff found the following deficiencies:

- LACMTA purged some heavy rail train operator’s training records prior to 2005. LACMTA SSPP requires maintenance of a permanent training record.
- The purpose and objectives of heavy rail operations training programs are stated in most but not all of the operations training lesson plans.
- The heavy rail training elements to be addressed and presentation sequence are specified in all training lesson plans. Instruction element topics in the various training lesson plans topics range from very general to moderately specific. As a result, the scope of information presented could vary considerably among individual instructors. Training department representatives were already aware of the problem and were in process of resolving this issue.
- The minimum number of hours for heavy rail training programs, including each element segment, is not included in all training lesson plans and the detail of times varies considerably among the lesson plans that include that information. Training department representatives were already aware of the need to consistently provide minimum times to address training topics and were in process of developing revisions.
- There is no program requirement for periodic or for cause heavy rail training program review and update to ensure lesson plans and information is current. Training department representatives were already aware of the need to update the training lesson plan and were in process of drafting revisions.

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<sup>5</sup> During the 2004 on-site safety review of LACMTA, the OII mentioned in the Footnote 4 was still on-going. Staff did not make any recommendations to the same exceptions found because the outcome of OII was unknown at that time.

- LACMTA SSPP states Metro Rail personnel or positions directly connected with the operation of trains or who work on the right of way are required to undergo certification and recertification in operating rules and procedures but does not specify which employees or positions or where that information can be found.
- LACMTA SSPP states Metro Rail employees or specific positions, outside of rail operations, require specific safety training but do not specify which employees or positions or where that information can be found.
- LACMTA SSPP states that relevant SSPP and safety programs elements are included in each Metro Department's training of employees but does not specify which relevant SSPP and safety programs elements or where that information can be found.
- LACMTA SSPP states that each of the Metro Departments displays safety information, bulletins, notices, rule changes, posters, etc. in a manner that effectively communicates the information to employees. The SSPP, however, does not specify the scope of that information and how the activities are properly carried out or specify where the scope of information and procedures for performing the activities can be found.

**Recommendation:**

4. LACMTA should permanently maintain all heavy rail train operators' training and certification files as required by LACMTA System Safety Program Plan (SSPP).
5. LACMTA should complete the appropriate actions already underway to:
  - a. Adopt formal purposes and objectives for each Metro Rail Operations training lesson plan which does not currently have those guides;
  - b. Establish sufficient detail in Metro Rail Operations training lesson plan elements to ensure that instructors carry out training programs consistently;
  - c. Include appropriate minimum times for instruction of each element in all Metro Rail Operations training programs to ensure consistent minimum levels of instruction, and;
  - d. Adopt procedures for a minimum periodic and/or for cause review and update of Metro Rail Operations training programs.
6. LACMTA should update the training section of its System Safety Program Plan to:
  - a. Identify the specific Metro Rail personnel or positions connected with the operation of trains or who work on the right of way and are required to undergo certification and recertification in operations rules and procedures or reference or establish where that information can be found;
  - b. Identify the employees or specific positions, outside of rail operations, who require specific safety training or establish where that information can be found;
  - c. Identify the relevant LACMTA System Safety Program Plan (SSPP) elements and other safety programs elements that are included in each Metro Department's training of employees or establish where that information can be found;

- d. Describe the scope of safety information, bulletins, notices, rule changes, posters, etc. displayed by each Metro Department, in a manner that effectively communicates the information to employees and specify the procedures to carry out how those activities.

## **6. Light Rail Operations Training & Certification**

Staff found the following deficiencies:

- The purpose and objectives of operations training programs are stated in most but not all of the operations training lesson plans.
- The training elements to be addressed and presentation sequence are specified in all training lesson plans. Instruction element topics in the various training lesson plans topics range from very general to moderately specific. As a result, the scope of information presented could vary considerably among individual instructors. Training department representatives were aware of the problem and were in process of resolving the issue.
- The minimum number of hours for training programs, including each element segment, is not included in all training lesson plans and the detail of times varies considerably among the lesson plans that include that information. Training department representatives were aware of the need to consistently provide minimum times to address training topics and were in process of developing revisions.
- There is no program requirement for periodic or for cause training program review and update to ensure lesson plans and information is current. The ROC training lesson plan, provided as reference for the review, was last revised in 1998. Training department representatives were aware of the need to update the training lesson plan and were in process of drafting revisions.

### **Recommendation:**

- 5.<sup>6</sup> LACMTA should complete the appropriate actions to:
  - a. Adopt formal purposes and objectives for each Metro Rail Operations training program which does not currently have those guides;
  - b. Establish sufficient detail in Metro Rail Operations training lesson plan elements to ensure that instructors carry out training programs consistently;
  - c. Include appropriate minimum times for instruction of each element in all Metro Rail Operations training programs to ensure consistent minimum levels of instruction, and;
  - d. Adopt procedures for a minimum periodic and/or for cause review and update of Metro Rail Operations training programs.

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<sup>6</sup> This is the same recommendation from Checklist No. 5. Initially, the reviewer made recommendations differentiating heavy rail and light rail operations (as it is shown in the Checklists No. 5 and 6 in Appendix D). However, the training program for both heavy and light rail operations is administered by the same department. Thus, the recommendations were combined.

## **7. Rail Operator Efficiency Testing Program**

Staff did not find any deficiencies.

## **8. Heavy Rail Train Operator Performance**

Staff found the following deficiencies:

- One heavy rail train operator did not notify Rail Operations Control (ROC) as required when an observer was in the cab during train operation;
- The same train operator did not have the required safety vest available;

### **Recommendation:**

7. LACMTA should ensure that all Metro train operators are knowledgeable about and comply with operating rules and procedures.

## **9. Light Rail Train Operator Performance**

Staff found the following deficiencies:

- Metro Green Line train operators were generally competent and complied with operating rules and procedures with the exception of failing to notify ROC that they had an observer riding in the cab

### **Recommendation:**

7. LACMTA should ensure that all Metro train operators are knowledgeable about and comply with operating rules and procedures.

## **10. Heavy and Light Rail Signal Maintenance & Inspection**

Staff did not find any deficiencies.

## **11. Track Maintenance & Inspection**

Staff did not find any deficiencies.

## **12. Traction Power Inspection (records review)**

Staff found the following deficiencies:

- Inconsistencies exist in the documentation of required inspections between those in the M3 system and inspections manually generated by the maintenance crew during actual inspections as documented on the inspection checklists.

- Inconsistencies also exist in the documentation of noted defects.

***Note:** Implementation of the M3 system is a work-in-progress and documentation inconsistencies will be corrected as training on the proper use of the M3 system of all department supervisors and lead persons is ongoing.*

**Recommendation:**

8. LACMTA should ensure consistency between Traction Power Preventive Maintenance data entry and manual record keeping activities through the use of the newly implemented M3 system.

**13. Safety Certification of Metro Gold Line East LA Extension**

Staff did not find any deficiencies.

**14. Internal Safety Audit Program**

Staff did not find any deficiencies.

**15. Accident Reporting and Investigation**

Staff did not find any deficiencies.

**16. Security**

Staff found the following deficiencies:

- LACMTA is not holding Rail Operations Law Enforcement (ROLE) Committee meetings.
- LACMTA did not have any meeting minutes from the previous ROLE Committee meetings.

**Recommendation:**

9. LACMTA should hold monthly Rail Operations Law Enforcement (ROLE) Committee meetings according to LACMTA System Security Plan (SSP) and document the meeting minutes.

**17. System Modification Review/Approval Process & Configuration Management**

Staff did not find any deficiencies.

**18. Hazardous Material Programs**

Staff did not find any deficiencies.

**19. Safety Data Analysis/Acquisition**

Staff did not find any deficiencies.

**20. Employee Safety Program**

Staff did not find any deficiencies.

**21. Emergency Response Planning & Coordination**

Staff did not find any deficiencies.

**22. Rail Communications Facilities Inspection**

Staff did not find any deficiencies.

**23. Facilities Maintenance Inspection**

Staff found the following deficiencies:

- Some monthly inspections forms were missing, particularly in 2005. See Checklist 23, Finding 6 Table for a list of months that are missing monthly inspections forms.
- On the Metro Gold Line, many of the inspector's findings, such as problems with station drainage and defective topping slab, were not immediately resolved due to Pasadena Blue Line Construction Authority warranty claims.
- The inspection frequency specified in SSPP was inconsistent with the frequency specified in the current Facilities Maintenance Plan. For example, Wayside Maintenance Plan Section 4.11 required the Standpipes to be inspected annually while the SSPP Section 4.3 required standpipes to be inspected monthly.

**Recommendations:**

10. LACMTA should properly document and maintain Monthly Station Maintenance Inspection Forms.
11. LACMTA should properly keep track of Metro Gold Line Facilities Inspection findings and implement corrective action in a timely manner.
12. LACMTA should revise the Facilities Maintenance Plan to correspond to the inspection frequencies specified in the LACMTA System Safety Program Plan (SSPP).

## **24. Concrete Inspection**

Staff found the following deficiencies:

- The department managers stated that a National Bridge Inspection Standards (NBIS) rating of 5 or 4 would require a corrective action but no formal documentation was presented to show that such items are analyzed to distinguish between structural defects and maintenance related items and defects corrected in a timely manner.

### **Recommendation:**

13. LACMTA should develop a process to distinguish between structural and maintenance defects appearing on the Inspection Defects Reports for all its lines and follow up on those items with an appropriate Correction Action Plan and Implementation Schedule.

## **25. Vehicle PM Program Documentation**

Staff did not find any deficiencies.

## **26. Emergency Response Training Drills**

Staff found the following deficiencies:

- LACMTA should have performed a total of 16 drills during the past two years. However, the LACMTA representatives did not have a list available for the reviewers to review and assess whether this requirement was met.
- There were only limited records showing that recommendations are made as a result of drills and are tracked to closure.

### **Recommendations:**

14. LACMTA should document the post-drill findings and recommendations.

15. LACMTA should develop a matrix of the Emergency Drills conducted by each rail lines that can be used to track the status of corrective action implementation.

## **27. Contractor Safety Coordination**

Staff did not find any deficiencies.

## **28. Drug and Alcohol Testing Program**

Staff did not find any deficiencies.

## **29. Hours of Service**

Staff did not find any deficiencies.

### **30. Hazardous Material Programs**

Staff found the following deficiency: LACMTA SSPP Section 4.13 outlines the responsibility of Corporate Safety Department and Quality Assurance Department. However, the SSPP does not include the responsibility of Facilities Maintenance – Environmental Compliance Department which does have the roles and responsibilities in Hazardous Materials Program and is not under the Quality Assurance Department.

#### **Recommendation:**

16. LACMTA should revise LACMTA System Safety Program Plan (SSPP) Section 4.13 to differentiate responsibilities of the Facilities Maintenance – Environmental Compliance Department from the Quality Assurance Department and outline the roles and responsibilities accordingly.

### **31. Rail Operating Rules and Procedures**

Staff did not find any deficiencies.

### **32. Procurement**

Staff did not find any deficiencies.

## **APPENDICES**

**Appendix A.** TSA Executive Summary of LACMTA System Security Review

**Appendix B.** LACMTA 2007 Triennial Safety Review Checklist Index

**Appendix C.** LACMTA 2007 Triennial Safety Review Recommendations List

**Appendix D.** LACMTA 2007 Triennial Safety Review Checklists

**APPENDIX A**  
**TSA EXECUTIVE SUMMARY**

May 18, 2007

U.S. Department of  
Homeland Security



Transportation  
Security  
Administration

## EXECUTIVE SUMMARY

State of California Public Utilities Commission CPUC,  
Consumer Safety and Protection Division, Rail Operations and Safety Branch  
320 w. 4<sup>th</sup> Street, Room 500  
Los Angeles, CA 90013

Transportation Security Administration  
Surface Transportation Security Inspections Program (STSIP)  
Southwest Region – LAX Field Office  
5757 W. Century Blvd, Suite 865, Los Angeles, CA 90021

Re: State of California Public Utilities Commission (CPUC) Tri-ennial Safety  
and Security Audit of the Los Angeles County Metropolitan Transportation  
Authority (LACMTA) System

Ms. Gregory,

On behalf of the Surface Transportation Security Inspection Program (STSIP), the following reflects the results of our involvement with your organization and the LACMTA system safety/security personnel during the week of 14 May, 2006 in Los Angeles, CA, as part of CPUC's Tri-ennial Safety and Security Audit process. Acting as your "security agent" in this process, we utilized the Baseline Assessment and Security Enhancement (BASE) Review checklist to document and baseline the internal processes, procedures and policies inherent to the LACMTA system in light of the most recent CFR 49 Part 659 (49-659) requirements (of 2006) and TSA's security directives (SD-RAILPAX-04-01 of 2004).

The information collected was reflective of various document sources to include: the System Security Plan (SSP), System Safety Program Plan (SSPP), Emergency Response Plan (s) and Agency Emergency Management Plan. Personnel interviews were also conducted with the Chief Operating Officer, Deputy Executive Officer for Safety and Security, Security Manager (MTA), Rail Operation Center (ROC) Controller, Assistant Director – ROC, Blue Line Manager, Commander – LASD/TSB, Special Projects Manager (MTA), Safety Manager, Training Coordinators (MTA/LASD), Transit Education Manager (MTA), Director – Organizational Development and Training (OD&T), MTA/LASD Security and Police Officers, Rail Instructional Manager, Human Resources Manager, Records Management, Security

Assistants and Contract Security personnel; along with system observations made by inspectors at various points in the system.

The overall security portion (inclusive of 300 security line items) was comprised of the TSA's and Federal Transportation Administration's revised list of seventeen recommended security practices, divided categorically; the results of which will not be made public or part of the final report to the commission. The final and complete comprehensive checklist and its associated supplemental addendums regarding "items of consideration," will only reside with LACMTA and TSA at this time. This Executive Summary provides a summation of these items regarding 49-659 requirements, with the results being made a part of your final report to the commission and includes the following:

- 659.19 (k) SSPP contains or references a document(s) describing the process used to develop and approved, coordinated schedule of all emergency management program activities, local/regional EM planning, participation in exercises and drills...SSPP or SSP describe or reference how EM planning responsibilities and requirements regarding drills and exercises (items 8.101 thru 8.106 – Evidenced in the ERP or Agency Emergency Management Plan, section 4.6, addressing annual drills system wide w/semi-annual drills for rail operations; ERP and Agency EMP not yet endorsed by agency)
- 659.23 (c) and 659.19 (p) Annual refresher training regarding "security orientation/awareness" and "emergency response" to Senior Management Staff [CEO down to Senior Managers] (items 5.102 and 5.107 – recently conducted "hazardous substance" response training for the majority of employees; no policy regarding refresher training to Senior Management; OD&T comment toward required training...validity)
- 659.23 (d) and 659.27 (b) (2) TA has "a program" to regularly review and update security awareness and emergency response training materials (item 5.127 – no formal program was identified; materials are being created)
- 659.25 (a) TA to conduct an annual review of its security program (item 1.112 - no written requirement was found in the SSP; statement of "living document" with no process delineated)
- 659.25 (c) TA has received documentation from the SSO confirming its review and approval of current SSP (item 1.117 - must make available new draft, modifications and/or changes; no documentation substantiating this; SSO General Order 164D approved)
- 659.27 (a,b,c,e,f,g,h) and 659.23 (d,e) TA to develop and document a process for the performance of on-going internal security audits (items 17.101 thru 17.111 - includes 30-day notification to SSO and annually submitting a report documenting reviews, (c) and (f) respectively for 659.27; develop a plan for SSP revision/implementation/communications with SSO; identify the periodicity for conducting internal audits)

**Additional Security Items to be considered:**

1. SSP and central ranking Agency Emergency Management Plan (main policy pieces along with the SSPP) should reference the other various ERP(s) to make the appropriate ties to system policy regarding security (includes the SSP [annex] outlining the adoption of other security-related documents used by the agency).
2. The SSP should contain or reference other documents that establish protocols to address threats from IED's and WMD's (CBR).
3. SSP should outline the "security review committee" (SRC) in place; group reviews security incident reports, trends and findings (TVA,), vetting of future public awareness products, security initiatives, identification/integration of new technologies (made up of personnel from ops, training, safety and engineering, LE and security...).
4. More attention given to "follow-on" and refresher training (vice initial orientation and awareness training) for field/front-line employees.
5. Metrics to assess performance during drills and exercises/measuring improvement is currently de-centralized among divisions (event coordinator in each division conducts a debrief). The element of lessons learned and incorporating after-action findings should occur system wide for the system to reap the overall security benefit (throughout all bus and/or rail divisions); presented at SRC meetings and corrections made to training/education programs via the instructional department as appropriate; CPUC kept aware of these improvements (a 49-659 item).
6. With a large focus on the TSA's "transit security fundamental" for protecting high risk/high consequence underground (or assets identified through a TVA) assets, LACMTA to produce an action plan (when in receipt of the latest TVA results from SAIC) as part of the next SRC agenda; identify TVA results and vulnerabilities, strategy for mitigation, plan for various security enhancements/ongoing security-related projects and implementation; identify process and procedure changes within MTA security and LASD as a result.
7. Reporting Protocol to be established in regard to reporting significant security incidents/concerns to the Transportation Security Operations Center (TSOC), the Federal Security Director-LAX Command Center and the CPUC ("significant" to be defined in future TSA rule). Appropriate POC's have been provided to LACMTA (as of My 18, 2007) and for the short term, "any incident causing disruption to revenue service" should be reported.
8. In relation to LACMTA's "General Services Records Management Policy-GEN 8," the system may want to adopt the "SSI – Sensitive Security Information (49 CFR Part 15/1520)" standard, which provides statutory authority to protect information and maintain FOIA-exempt status regarding SSI type information.

### **System Observations and Effective Practices:**

- Multiple interviews of contract security @ stations, maintenance workers and security assistants during the audit revealed detailed knowledge of suspicious activity and the reporting process by all employees – good security knowledge base exhibited by all that were interviewed.
- ROC camera system and configuration appeared to be user-friendly; lines were kept separate and distinct with employees dedicated to single line screens within the system.
- Agency Emergency Management Plan was well written and will serve an effective ranking document for all other Emergency Response Plan – LACMTA utilized the TSA’s BASE checklist as an outline.
- Two full-time LA-Fire Department personnel detailed to LACMTA – one being on a standards committee.
- A “High-Rail vehicle conceptualization for recovery operations” is currently being looked at for future grant funding and will serve as an emergency platform to perform the necessary ER functions during an incident on the Red Line – identified as an effective/best practice.

Overall and in light of our checklist criteria, cumulative review of documents, interviews and system observations, the LACMTA system has a progressive and effective security program in place. A re-evaluation and follow-up by CPUC and the TSA regarding the above security items on or before September 14, 2007 is suggested and will be scheduled as appropriate.

Based on our interaction during this effort, the TSA believes that the STSI Program can continue to be a valuable part of your audit process, while continuing to increase our security awareness of the transportation sector, identify effective security practices and facilitate an understanding to correctly identify ways for dealing with root security issues/concerns that affect transit systems nationally.

Again, thank you for your time and professionalism. We look forward to continuing this Homeland Security partnership well into the future.

Sincerely,

Bill Woodward

TSA, Surface Transportation Security Inspector Program  
Assistant Federal Security Director-Surface, Southwest Region

## APPENDIX B

### 2007 LACMTA TRIENNIAL SAFETY REVIEW CHECKLIST INDEX

Checklist No.	Department	Element/Characteristics
1	Wayside Systems	Signal Inspection
2	Track Maintenance	Track Inspection
3	Wayside Systems	Traction Power Inspection
4	Fleet Services	Vehicle Inspection
5	Rail Transportation	Heavy Rail Operations Training and Certification
6	Rail Transportation	Light Rail Operations Training and Certification
7	Rail Transportation – Instruction	Rail Operator Efficiency Testing Program
8	Rail Transportation	Heavy Rail Train Operator Performance
9	Rail Transportation	Light Rail Train Operator Performance
10	Wayside Systems	Heavy and Light Rail Signal Maintenance and Inspection
11	Track Maintenance	Track Maintenance and Inspection
12	Wayside Systems	Traction Power Inspection
13	Corporate Safety	Safety Certification of Metro Gold Line East Los Angeles Extension
14	Corporate Safety	Internal Safety Audit Program
15	Corporate Safety	Accident Reporting and Investigation
16	Security	Security
17	Engineering	System Modification Review/Approval Process and Configuration Management
18	Corporate Safety	Hazardous Material Programs
19	Corporate Safety	Safety Data Analysis/Acquisition
20	Corporate Safety	Employee Safety Program
21	Corporate Safety	Emergency Response Planning and Coordination
22	Rail Communications	Rail Communications Facilities Inspection
23	Facilities Maintenance	Facilities Maintenance Inspection
24	Engineering	Concrete Inspection
25	Fleet Services	Rail Transit Vehicles Preventive Maintenance Program Documentation
26	Rail Transportation	Emergency Response Training Drills
27	Rail Transportation	Contractor Safety Coordination
28	Human Resources	Drug and Alcohol Testing Program
29	Rail Transportation Fleet Services Wayside Systems	Hours of Service – Safety Sensitive Employees
30	Facilities Maintenance – Environmental Compliance	Hazardous Material Programs
31	Rail Transportation – Instructions	Rail Operating Rules and Procedures
32	Procurement	Procurement

## APPENDIX C

### 2007 LACMTA TRIENNIAL SAFETY REVIEW RECOMMENDATIONS LIST

No.	Recommendation	Checklist No.
1	LACMTA should survey its entire light rail system and address the general maintenance exceptions identified in the findings section of Checklist 3 in regards to GO 95 Rules 31.1 and 56.9.	3
2	LACMTA should survey its entire light rail system and address the issue identified in the findings section of Checklist 3 in regards to GO 95 Rules 74.4F (1) exception.	3
3	LACMTA should require periodic maintenance of all air cut out valves including operation and lubrication of locking handle and spring. <i>Note: Subsequent to the inspection, LACMTA has included lubricating the air cut out valve handle locking lever springs and checking proper "locking" operation as an item in their maintenance checklist.</i>	4
4	LACMTA should permanently maintain all heavy rail train operators' training and certification files as required by LACMTA System Safety Program Plan (SSPP).	5
5	LACMTA should complete the appropriate actions to: <ul style="list-style-type: none"> <li>a. Adopt formal purposes and objectives for each Metro Rail Operations training lesson plan which does not currently have those guides;</li> <li>b. Establish sufficient detail in Metro Rail Operations training lesson plan elements to ensure that instructors carry out training programs consistently;</li> <li>c. Include appropriate minimum times for instruction of each element in all Metro Rail Operations training programs to ensure consistent minimum levels of instruction, and;</li> <li>d. Adopt procedures for a minimum periodic and/or for cause review and update of Metro Rail Operations training programs.</li> </ul>	5 & 6
6	LACMTA should update the training section of its System Safety Program Plan to: <ul style="list-style-type: none"> <li>a. Identify the specific Metro Rail personnel or positions connected with the operation of trains or who work on the right of way and are required to undergo certification and recertification in operations rules and procedures or reference or establish where that information can be found;</li> <li>b. Identify the employees or specific positions, outside of rail operations, who require specific safety training or establish where that information can be found;</li> <li>c. Identify the relevant System Safety Program Plan (SSPP) elements and other safety programs elements that are included in each Metro Department's training of employees or establish where that information can be found;</li> </ul>	5

	d. Describe the scope of safety information, bulletins, notices, rule changes, posters, etc. displayed by each Metro Department, in a manner that effectively communicates the information to employees and specify the procedures to carry out how those activities.	
7	LACMTA should ensure that all Metro train operators are knowledgeable about and comply with operating rules and procedures.	8 & 9
8	LACMTA should ensure consistency between Traction Power Preventive Maintenance data entry and manual record keeping activities through the use of the newly implemented M3 system.	12
9	LACMTA should hold monthly Rail Operations Law Enforcement (ROLE) Committee meetings according to LACMTA System Security Plan (SSP) and document the meeting minutes.	16
10	LACMTA should properly document and maintain Monthly Station Maintenance Inspection Forms.	23
11	LACMTA should properly keep track of Metro Gold Line Facilities Inspection findings and implement corrective action in a timely manner.	23
12	LACMTA should revise the Facilities Maintenance Plan to correspond to the inspection frequencies specified in the LACMTA System Safety Program Plan (SSPP).	23
13	LACMTA should develop a process to distinguish between structural and maintenance defects appearing on the Inspection Defects Reports for all its lines and follow up on those items with an appropriate Correction Action Plan and Implementation Schedule.	24
14	LACMTA should document the post-drill findings and recommendations.	26
15	LACMTA should develop a matrix of the Emergency Drills conducted by each rail lines that can be used to track the status of corrective action implementation.	26
16	LACMTA should revise LACMTA System Safety Program Plan (SSPP) Section 4.13 to differentiate responsibilities of the Facilities Maintenance – Environmental Compliance Department from the Quality Assurance Department and outline the roles and responsibilities accordingly.	30

## **APPENDIX D**

### **2007 LACMTA TRIENNIAL REVIEW CHECKLISTS**

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>1</b>	Persons Contacted
Date of Inspection	<b>5/29/2007 6/1/2007 6/2/2007</b>	Kevin Smith – Rail Signal Supervisor, Wayside Ricardo Moran – Rail Signal Supervisor, Wayside Dennis Messer – Signal Inspector, Wayside
Inspectors	<b>Gerald Muffley Heidi Estrada</b>	Russ Becraft – Signal Inspector, Wayside Eddie Boghossian – Safety Manager, Corporate Safety
Department	<b>Wayside Systems</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.4.3, Rail Signal Maintenance.
2. Code of Federal Regulations CFR 49, Part 234, Grade Crossing Signal System Safety, Latest Edition.
3. Code of Federal Regulations CFR 49, Part 236, Rules, Standards & Instructions Governing the Installation, Inspection, maintenance, and Repair of Signal and Train Control Systems Devices and Appliances, Latest Edition.
4. LACMTA Wayside Systems Department Maintenance Plan, Effective January 2004, Signal Systems – All Lines.

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**SIGNAL INSPECTION**

CPUC/FRA qualified inspector from the Commission’s Railroad Operations Safety Branch will 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:

- 4 grade crossings and 4 interlocking/crossovers on the Metro Blue Line.
- 2 grade crossings and 2 interlocking/crossovers on the Metro Gold Line.
- 3 interlocking/crossovers on the Metro Green Line.
- 3 interlocking/crossovers on the Metro Red Line.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

On May 29, 2007 staff inspected six (6) switches on the Metro Green Line: two at Norwalk, two at Imperial/Wilmington, and two at Redondo Beach. All switches were in good adjustment and working condition. On the Metro Blue Line staff inspected two switches at Imperial and warning devices at two crossings: 55th street and 48th street. Both switches were in good adjustment and working condition. The crossing warning devices were in good adjustment and working condition with 26 to 31 second warning times.

On June 1, 2007 staff inspected six (6) switches on the Metro Red Line: two at Wilshire/Western, two at Wilshire/Vermont, and two at Westlake/MacArthur Park. All switches were in good adjustment and working condition.

On June 2, 2007 staff inspected six (6) switches on the Metro Gold Line: two at Sierra Madre Villa, two at Del Mar, and two at Highland Park. All switches were in good adjustment and working condition. Staff also inspected warning devices at 4 crossings: Del Mar Blvd., Glenarm Street, Mission Street, and Arroyo Verde. The crossing warning devices were in good adjustment and working condition with 28 to 42 second warning times.

Staff did not find any exceptions.

Comment:

All signal equipment inspected on the LACMTA was maintained in very good condition and in working order. LACMTA Signal Department personnel that accompanied staff were knowledgeable and well trained.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>2</b>	Persons Contacted
Date of Inspection	<b>6/5/2007 6/7/2007</b>	Paul Squires – Ass. Mgr., Wayside (Track) Jeff Root – Wayside Systems Manager (Track)
Inspector	<b>Lance Hawks</b>	Bobby Vandiver – Rail Track Supervisor, Wayside (Track)
Department	<b>Wayside Systems</b>	Abdul Zohbi – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.4.1, Track Maintenance.
2. Code of Federal Regulations CFR 49, Part 213, Track Safety Standards, 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**

CPUC/FRA qualified inspector from the Commission’s Railroad Operations Safety Branch will 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 1 section of curved track for Metro Blue Line.
- 3 mainline turnouts, 1 section of tangent track, and 1 section of curved track for Metro Gold Line.
- 3 mainline turnouts, 1 section of tangent track, and 1 section of curved track for Metro Green Line.
- 3 mainline turnouts, 1 section of tangent track, and 1 section of curved track for Metro Red Line.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Commission’s Railroad Operations Safety Branch (ROSB) staff inspected three (3) turnouts, one (1) section of tangent track, and a curve on the Metro Blue, Gold, Green, and Red Line of LACMTA. The tracks were very well maintained; only two defects found. Both defects were loose transit clip bolts.

Staff raised a couple of issues that may be beneficial for Metro to address. One issue is their Continuously Welded Rail (CWR) procedures. Metro isn't addressing the CWR Regulations set by the CFR 213.119(a-g). For example, rail cut-in and cut-out marks (which keep track of rail being

added or subtracted during rail repairs, welding, etc.), speed restriction requirements after maintenance, monitoring curves for inward shifts of alignment, inspection procedures during hot temperatures, etc.

**Note:** *Subsequent to the inspection, LACMTA has provided Track Maintenance Procedure which included a section for CWR maintenance/repair procedure. ROSB staff reviewed the procedure and found the procedure to be satisfactory.*

Next, LACMTA doesn't have a system to document their designated qualified personnel for track inspections or track restorations/renewals under traffic conditions. Metro does have a training program, however we recommend that Metro's Management team would accompany their Foreman and Inspectors periodically, to monitor their abilities to: know and understand the CFR 213, detect deviations of the CFR 213, apply the proper remedial actions of the CFR 213. Afterwards, create a list of qualified personnel to comply with CFR 213.7.

**Note:** *the CFR 213 that staff refers to does not have a jurisdiction over LACMTA's rail system. Therefore, staff decided to make a "suggestion" rather than a "recommendation."*

Comment:

Metro is doing an excellent job of keeping the tracks well maintained.

Suggestion:

LACMTA should consider adopting 49 CFR Part 213 to:

1. Self certify its own track personnel;
2. Monitor the track personnel's ability;
3. Create and maintain a list of qualified track personnel.

Recommendation:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>3</b>	Persons Contacted
Date of Inspection	<b>5/2/2007</b>	Ken Arvidson, Manager, Wayside Systems (Traction Power) Leroy Bonifay, Asst. Manager, (Traction Power)
Inspector	<b>Steve Intably</b>	
Department	<b>Wayside Systems</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, 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, Traction Power – All Lines.

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**TRACTION POWER INSPECTION**

CPUC GO 95 inspector will inspect the Metro Blue Line, Green Line, and Gold Line Overhead Contact System (OCS) to determine if the selected items are in-compliance with LACMTA's traction power system maintenance plan and GO 95. At minimum, the following area should be inspected:

- 2 segments of Metro Blue Line OCS from Pico Station to Washington Station
- 3 segments of Metro Blue Line OCS from Washington Station to Willow Station
- 3 segments of Metro Gold Line OCS.
- 3 segments of Metro Green Line OCS.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Commission's Utilities Safety Branch staff conducted inspection on randomly selected sections of LACMTA's Metro Blue, Green and Gold Lines.

1. Inspections were mainly visual inspections on the configuration of OCS and its components.

Staff noted exceptions:

- a. The following poles had a single point failure at an OCS support would cause the energized conductor to be within 10 feet from the ground level:

**Pole #5065, #5068, #5069, #2474, #2473, #2348, #2098, #2099**

(Ref. General Order 95, Rule 74.4F(1) At Points of Failure for Overhead Trolley Conductors)

2. Staff measured OCS heights at several locations during the inspection.

Staff did not find any exception.

3. Staff inspected General maintenance of OCS support structures, such as Guys, Poles, Arms, Foundations for Poles, and Pole Grounding.

Staff noted exceptions:

- a. Down Guys attached to the following OCS Poles had exposed guy tail wire:  
**Pole # 2476, # 2471, # 2470, # 2348, and # 2347**  
(Ref. General Order 95, Rule 31.1 Design, Construction and Maintenance)
- b. Down Guy Guard was missing on the down guy attached to the **Pole # 5067**.  
(Ref. General Order 95, Rule 56.9 Guy Marker (Guy Guard))

Recommendations:

1. LACMTA should survey its entire light rail system and address the general maintenance exceptions identified in the findings section of Checklist 3 in regards to GO 95 Rules 31.1 and 56.9.
2. LACMTA should survey its entire light rail system and address the issue identified in the findings section of Checklist 3 in regards to GO 95 Rules 74.4F (1) exception.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>4</b>	Persons Contacted
Date of Inspection	<b>5/31/2007 6/1/2007</b>	Brian Rydell – Manager, Rail Fleet Services Larry Roelho – Maintenance Specialist
Inspector	<b>Gary Gerlach</b>	Dave Schlesinger – Supervisor, Rail Fleet Services
Department	<b>Fleet Services</b>	Damon Cannon – Asst. Manager, Rail Fleet Services Audrey Chiu – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, 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**

CPUC/FRA qualified inspector from the Commission’s Railroad Operations Safety Branch will inspect the Metro Blue, Green, Gold, and Red Line fleet to determine if the selected vehicles are in-compliance with CPUC and LACMTA’s vehicle maintenance plan requirements:

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

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff conducted equipment inspections on May 31, 2007 at Division 22 (Metro Green Line) and Division 11 (Metro Blue Line) and on June 1, 2007 at Division 20 (Metro Red Line) and Division 21 (Metro Gold Line).

**Metro Green Line**

Staff inspected random samples of mechanical records that included Daily Inspections and Mileage Mandated Inspections. Metro Green Line personnel well maintained the records and, when staff requested a record, it was presented promptly. Staff examined Records of Safety processes and employee training and found them to be compliant.

Staff conducted inspections on the following Light Rail Vehicles:

- Car # 212 - No Defects
- Car # 222 - No Defects
- Car # 210 - No Defects

### **Metro Blue Line**

Staff inspected random samples of mechanical records that included Daily Inspections and Mileage Mandated Inspections. Metro Blue Line personnel well maintained the records and, when staff requested a record, it was presented promptly. Staff reviewed the Records electronically and asked specific questions concerning the processes performed and who had performed them. Staff also discussed about the system for follow-up and spot checks and determined the Metro Blue Line's process to be in compliance.

Staff conducted inspections on the following Light Rail Vehicles:

- Car # 132 - ASC cut out valve handle not properly locking.
- Car # 149 - No Defects
- Car # 152 - No Defects
- Car # 113 - No Defects

### **Metro Red Line**

Staff inspected random samples of mechanical records that included Daily Inspections and Mileage Mandated Inspections. Metro Red Line personnel well maintained the records and, when staff requested a record, it was presented promptly. Staff reviewed the Records electronically and asked specific questions concerning the processes performed and who had performed them. Staff also discussed about the system for follow-up and spot checks and determined the Metro Red Line's process to be in compliance.

Staff conducted inspections on the following Red Line Rail Vehicles:

- Car # 559 - Various cut out valve handles not properly locking.
- Car # 560 - No Defects
- Car # 599 - Various cut out valve handles not properly locking.
- Car # 600 - Various cut out valve handles not properly locking.
- Car # 593 - Parking brake cut out valve handle not properly locking.
- Car # 594 - Coupler and trainline cut out valve not properly locking.

### **Metro Gold Line**

Staff inspected random samples of mechanical records that included Daily Inspections and Mileage Mandated Inspections. Metro Gold Line personnel well maintained the records and, when staff requested a record, it was presented promptly. Staff reviewed the Records electronically and

asked specific questions concerning the processes performed and who had performed them. Staff also discussed about the system for follow-up and spot checks and determined the Metro Gold Line's process to be in compliance.

Staff conducted inspections on the following Light Rail Vehicles:

- Car # 233 - Various cut out valve handles not locking.
- Car # 301 - Various cut out valve handles not locking.
- Car # 274 - Records inspection only - No Defects

Deficiencies noted for Metro Gold, Blue and Red Line vehicles:

- Some of the Metro heavy and light rail vehicles had air cut-out valve locking lever springs covered with thick dust, thus, preventing the locking lever to properly lock the valve in position.

Recommendations:

1. LACMTA should require periodic maintenance of all air cut out valves including operation and lubrication of handle and spring.

**Note:** *Subsequent to the inspection, LACMTA included lubricating the air cut out valve handle locking lever springs and checking proper "locking" operation as an item in their maintenance checklist.*

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>5</b>	Persons Contacted
Date of Review	<b>6/27/2007</b>	Linda Leone – Rail Integration and Instruction Manager
Reviewers	<b>Gary Rosenthal</b>	Vijay Khawani – Director, Corporate Safety
Department	<b>Rail Transportation</b>	Audrey Chiu – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.9
2. LACMTA Rail Rule Book
3. LACMTA Rail Standard Operating Procedures
4. LACMTA Metro Red Line Train Operator’s Manual
5. LACMTA Rail Operations Center (ROC) Manual
6. LACMTA Field Supervisor’s Manual
7. 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**

Select a random samples of employees from each of the following classifications:

- Train Operators
  - Rail Transit Operations Supervisors (Includes ROC Controllers & Yard Controllers),
1. From the overall employee list, select the records of 3 train operators, 3 ROC controllers, and 3 yard controllers. Review their training, certification, and re-certification records to determine if they are complete, current, and in compliance with the reference criteria and programs.
  2. 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.
  3. Verify if LACMTA developed a training plan and trained its employees in accordance with the Heavy Rail Standard Operating Procedure.
  4. Verify if there is a tracking mechanism in place for the required training and certifications for each employee classification.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff interviewed LACMTA personnel and reviewed the records provided and found that:

1. The four arbitrarily selected heavy rail train operators had current licenses, medical certifications, and operations certifications as required during the period reviewed.
2. Some heavy rail train operator’s records were purged prior to 2005. The LACMTA System Safety Program Plan requires maintenance of a permanent training record.
3. The four arbitrarily selected ROC heavy rail controllers had current licenses, medical certifications, and controller certifications as required during the period reviewed.

4. The heavy rail post-accident follow-up ride checks are being performed.
5. LACMTA training department develops heavy rail training plans and trains designated employees to address heavy rail rules and standard operating procedures.
6. The purpose and objectives of heavy rail operations training programs are stated in most but not all of the operations training lesson plans.
7. The heavy rail training elements to be addressed and presentation sequence are specified in all training lesson plans. Instruction element topics in the various training lesson plans range from very general to moderately specific. As a result, the scope of information presented could vary considerably among individual instructors. Training department representatives were already aware of the problem and were already in process of resolving the issue.
8. The minimum number of hours for heavy rail training programs, including each element segment, is not included in all training lesson plans and the detail of times varies considerably among the lesson plans that include that information. Training department representatives were already aware of the need to consistently provide minimum times to address training topics and were in process of developing revisions.
9. There is an electronic tracking mechanism in place for the required training and certification of heavy rail train operators, controllers, and other designated employees that appears to be effective. It is the responsibility of the respective operating entities to schedule employees for training.
10. The various maintenance of way and mechanical employees who require heavy rail operations training and certification have records maintained at their respective departments and those records were not reviewed during the review.
11. There is no program requirement for periodic or for cause heavy rail training program review and update to ensure lesson plans and information is current. The ROC training lesson plan, provided as reference for the review, was last revised in 1998. Training department representatives were already aware of the need to update the training lesson plan and were in process of drafting revisions.
12. Examinations to assess heavy rail employee knowledge about rules and procedures as well as those that assess ability to perform required tasks according to rules and procedures are specified in training lesson plans. Examinations are revised and updated periodically to ensure evaluation of knowledge and performance is current and valid.
13. The LACMTA System Safety Program Plan states Metro Rail personnel or positions directly connected with the operation of trains or who work on the right of way are required to undergo certification and recertification in operating rules and procedures but does not specify which employees or positions or where that information can be found.
14. The LACMTA System Safety Program Plan states Metro Rail employees or specific positions, outside of rail operations, require specific safety training but does not specify which employees or positions or where that information can be found.
15. The LACMTA System Safety Program Plan states that relevant SSPP and safety programs elements are included in each Metro Department's training of employees but does not specify which relevant SSPP and safety programs elements or where that information can be found.
16. The LACMTA SSPP states that each of the Metro Departments displays safety information, bulletins, notices, rule changes, posters, etc. in a manner that effectively communicates the information to employees. The SSPP, however, does not specify the scope of that information

and how the activities are properly carried out or specify where the scope of information and procedures for performing the activities can be found.

Comment:

Operations Training Department representatives displayed competence and a commitment to providing effective and efficient operations training programs, consistent with available resources. They also demonstrate a proactive attitude to identify program weaknesses and initiating actions to implement improvements.

Recommendation:

1. LACMTA should permanently maintain all heavy rail train operators' training and certification files as required by LACMTA System Safety Program Plan (SSPP).
2. LACMTA should complete the appropriate actions already underway to:
  - a. Adopt formal purposes and objectives for each Metro Rail Operations training lesson plan which does not currently have those guides;
  - b. Establish sufficient detail in Metro Rail Operations training lesson plan elements to ensure that instructors carry out training programs consistently;
  - c. Include appropriate minimum times for instruction of each element in all Metro Rail Operations training programs to ensure consistent minimum levels of instruction, and;
  - d. Adopt procedures for a minimum periodic and/or for cause review and update of Metro Rail Operations training programs.
3. LACMTA should update the training section of its System Safety Program Plan (SSPP) to:
  - a. Identify the specific Metro Rail personnel or positions connected with the operation of trains or who work on the right of way and are required to undergo certification and recertification in operations rules and procedures or reference or establish where that information can be found;
  - b. Identify the employees or specific positions, outside of rail operations, who require specific safety training or establish where that information can be found;
  - c. Identify the relevant System Safety Program Plan (SSPP) elements and other safety programs elements that are included in each Metro Department's training of employees or establish where that information can be found;
  - d. Describe the scope of safety information, bulletins, notices, rule changes, posters, etc. displayed by each Metro Department, in a manner that effectively communicates the information to employees and specify the procedures to carry out how those activities.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>6</b>	Persons Contacted
Date of Review	<b>6/27/2007 6/28/2007</b>	Linda Leone – Rail Integration and Instruction Manager Vijay Khawani – Director, Corporate Safety Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Gary Rosenthal</b>	
Department	<b>Rail Transportation</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.9
2. LACMTA Rail Rule Book
3. LACMTA Rail Standard Operating Procedures
4. LACMTA Metro Green, Blue, and Gold Line Train Operator’s Manual
5. LACMTA Rail Operations Center (ROC) Manual
6. LACMTA Field Supervisor’s Manual
7. 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**

Select a random samples of employees from each of the following classifications:

- Train Operators
  - Rail Transit Operations Supervisors (Includes ROC Controllers & Yard Controllers),
1. From the overall employee list, select the records of 3 train operators, 3 ROC controllers, and 3 yard controllers. Review their training, certification, and re-certification records to determine if they are complete, current, and in compliance with the reference criteria and programs.
  2. 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.
  3. Verify if LACMTA developed a training plan and trained its employees in accordance with the Heavy Rail Standard Operating Procedure.
  4. Verify if there is a tracking mechanism in place for the required training and certifications for each employee classification.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff interviewed the LACMTA personnel and reviewed the provided records and found that:

1. The four arbitrarily selected light rail train operators from the Metro Gold Line had current licenses, medical certifications, and operations certifications as required during the period reviewed.

2. The four arbitrarily selected light rail train operators from the Metro Blue Line had current licenses, medical certifications, and operations certifications as required during the period reviewed.
3. The four arbitrarily selected light rail train operators from the Metro Green Line had current licenses, medical certifications, and operations certifications as required during the period reviewed.
4. The four arbitrarily selected ROC light rail controllers had current licenses, medical certifications, and controller certifications as required during the period reviewed.
5. The post-accident follow-up ride checks are being performed.
6. LACMTA training department develops training plans and trains designated employees to address light rail rules and standard operating procedures.
7. The purpose and objectives of operations training programs are stated in most but not all of the operations training lesson plans.
8. The training elements to be addressed and presentation sequence are specified in all training lesson plans. Instruction element topics in the various training lesson plans topics range from very general to moderately specific. As a result, the scope of information presented could vary considerably among individual instructors. Training department representatives were aware of the problem and were in process of resolving the issue.
9. The minimum number of hours for training programs, including each element segment, is not included in all training lesson plans and the detail of times varies considerably among the lesson plans that include that information. Training department representatives were aware of the need to consistently provide minimum times to address training topics and were in process of developing revisions.
10. There is an electronic tracking mechanism in place for the required training and certification of heavy rail train operators, controllers, and other designated employees that appears to be effective. It is the responsibility of the respective operating entities to schedule employees for training.
11. The various maintenance of way and mechanical employees who require operations training and certification have records maintained at their respective departments and those records were not reviewed during the review.
12. There is no program requirement for periodic or for cause training program review and update to ensure lesson plans and information is current. The ROC training lesson plan, provided as reference for the review, was last revised in 1998. Training department representatives were aware of the need to update the training lesson plan and were in process of drafting revisions.
13. Training lesson plans specify the examinations to assess employee knowledge about rules and procedures as well as those that assess ability to perform required tasks according to rules and procedures. LACMTA revised and updated examinations periodically to ensure evaluation of knowledge and performance is current and valid.

Comment:

Operations Training Department representatives displayed competence and a commitment to providing effective and efficient operations training programs, consistent with available resources. The representatives also demonstrate a proactive attitude toward identify program weaknesses and initiating actions to implement improvements.

Recommendation:

1. LACMTA should complete the appropriate actions to:
  - a. Adopt formal purposes and objectives for each Metro Rail Operations training lesson plan which does not currently have those guides;
  - b. Establish sufficient detail in Metro Rail Operations training lesson plan elements to ensure that instructors carry out training programs consistently;
  - c. Include appropriate minimum times for instruction of each element in all Metro Rail Operations training programs to ensure consistent minimum levels of instruction, and;
  - d. Adopt procedures for a minimum periodic and/or for cause review and update of Metro Rail Operations training programs.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>7</b>	Persons Contacted
Date of Review	<b>6/26/2007</b>	Linda Leone– Rail Integration and Instruction Manager Barbara Harris – Assistant Manager, Transportation Audrey Chiu – Manager, Corporate Safety
Reviewers	<b>Noel Takahara Mahendra Patel</b>	
Department	<b>Rail Transportation Instruction</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.8
2. Metro Rail Rule Book
3. Metro Rail Standard Operating Procedures
4. CPUC General Order 143-B, Dated January 20, 2000, Section 13.04

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**RAIL OPERATOR EFFICIENCY TESTING PROGRAM**

Review supporting documentation and records to determine:

1. If the efficiency testing is being performed in accordance with the requirements and procedures of Efficiency Testing Program,
2. If the results of the efficiency testing were documented,
3. What actions were taken for the operators who failed the testing.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Efficiency Testing is currently applied only to Train Operators (TOs).
2. Future efficiency testing will also include all employees who work on the right-of-way.
3. TOs are randomly selected by Division managers/supervisors to take one of several practical examinations.
4. Each Division/Line (Gold, Red, Blue, and Green) is required to conduct a minimum of 2 different tests a month, and each division must evaluate a total of 20 operators per month.
5. LACMTA internal safety audit revealed that efficiency testing was not being administered and completed on time, and that the method to track which operators were being tested was insufficient.
6. In response, the Rail Transportation Department began using computer registration/tracking as of May 2007. At the end of the month, Rail Transportation emails the results detailing whether or not each division complied with the efficiency testing requirements to involved parties and the Deputy Executive Officer.

7. By utilizing a computer tracking system in response to the deficiencies exposed by the internal safety audit, it is evident that Rail Transportation is adequately ensuring compliance and proper administration of LACMTA's Efficiency Testing Program.
8. Results of LACMTA efficiency testing as of May 2007 are stored in the computer tracking system which will allow for the tracking of detailed information such as individual testing results.
9. When operators fail testing, they must re-take tests. Repeated failure of testing results in a formal filing that is added to the operator's records.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>8</b>	Persons Contacted
Date of Review	<b>6/26/2007</b>	Michael Moore – Rail Div. Transportation Manager Vijay Khawani – Director, Corporate Safety
Reviewers	<b>Gary Rosenthal</b>	
Department	<b>Rail Transportation</b>	

**REFERENCE CRITERIA**

1. LACMTA Rail Rule Book
2. LACMTA Rail Standard Operating Procedures
3. CPUC General Order 143-B, Dated January 20, 2000, Section 13.04 and 14.03

**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
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.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

On train observations and interviews with heavy rail train operators indicated that:

1. One heavy rail train operator did not notify ROC as required when an observer was in the cab during train operation;
2. The same train operator did not have the required safety vest available;
3. The three heavy rail train operators interviewed were reasonably familiar with rules and procedures, and;
4. As LACMTA Management has determined that the heavy rail horns are excessively loud, heavy rail operators no longer sound an audible warning to passengers on the platforms when trains are entering the stations.

**Comment:**

Staff suggests that LACMTA consider installing a quieter horn or whistle on heavy rail trains (possibly similar to BART) to warn passengers on the platforms when trains are entering stations.

**Recommendation:**

1. LACMTA should ensure that all Metro train operators are knowledgeable about and comply with operating rules and procedures.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>9</b>	Persons Contacted
Date of Review	<b>6/26/2007</b>	Michael Moore – Rail Div. Transportation Manager Vijay Khawani – Director, Corporate Safety
Reviewers	<b>Gary Rosenthal</b>	
Department	<b>Rail Transportation</b>	

**REFERENCE CRITERIA**

1. LACMTA Rail Rulebook
2. LACMTA Rail Standard Operating Procedures
3. CPUC General Order 143-B, Dated January 20, 2000, Section 13.04 and 14.03

**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
2. Each operator possesses the required on-board safety equipment, rule books, radios, etc.

Observe, at Blue Line Grade Crossings on CAB Signal Territory (at least 2 locations), the operations of trains to determine if:

1. Each train operator performs in compliance with the governing orders, rules and procedures.

Interview at least one operator from each line to evaluate their knowledge and understanding of LACMTA's rules and procedures related to mainline and yard operations.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

On train observations and interviews with light rail train operators indicated that:

1. Metro Gold Line train operators, including those who encountered work zones and operated through abnormal right of way conditions, operated trains confidently, competently and in compliance with operating rules and procedures;
2. Metro Gold Line train operators possessed all required equipment;
3. Metro Gold Line train operators were knowledgeable and consistent in their understanding of operating rules and procedures;
4. Metro Blue Line train operators were confident, competent and operated trains in compliance with operating rules and procedures
5. Metro Blue Line train operators possessed all required equipment;
6. Metro Blue Line train operators were knowledgeable and consistent in their understanding of operating rules and procedures;

7. Metro Green Line train operators were generally competent and complied with operating rules and procedures with the exception of failing to notify ROC that they had an observer riding in the cab;
8. Metro Green Line train operators possessed all required equipment;
9. Metro Green Line train operators were generally knowledgeable in their understanding of operating rules and procedures;

Recommendation:

1. LACMTA should ensure that all Metro train operators are knowledgeable about and comply with operating rules and procedures.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>10</b>	Persons Contacted
Date of Review	<b>6/25/2007</b>	Remi Omotayo – Wayside Systems Manager (Signal) Abdul Zohbi – Safety Manager, Corporate Safety
Reviewers	<b>Joey Bigornia Arun Mehta</b>	
Department	<b>Wayside Systems</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.4.3
2. LACMTA Rail Operations Wayside Systems Maintenance Plan – Signal Section

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**HEAVY AND LIGHT RAIL SIGNAL MAINTENANCE AND INSPECTION**

Randomly select two samples from each line (Red, Blue, Green and Gold) and review the maintenance and inspection records for the following:

1. Mainline switches (Since January 2006)
2. Interlocking (past 12 months)
3. Vital Relays (past 12 months)

And determine if:

1. the equipments were inspected/tested/calibrated as required by the reference criteria,
2. the inspection/test/calibrations were properly documented,
3. noted defects were corrected in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

**A. Metro Blue Line**

1. Staff reviewed mainline switch inspection records for Florence and Imperial dated January 2006 - June 2007. LACMTA performed monthly inspections at the required maintenance interval. Staff did not find any exception.
2. Staff reviewed interlocking test records for Artesia dated April 15, 16, & 18, 2003 and Willow dated January 14-16, 20, 23, & 27, 2003. LACMTA performed inspections at the required maintenance interval and the next scheduled inspection is Year 2007. Staff did not find any exception.
3. Staff reviewed vane relay test records for Washington performed in May 2006 and 7<sup>th</sup> & Flower also performed in May 2006. LACMTA performed inspections at the required maintenance interval and the next scheduled vane relay tests are scheduled for 2008. Staff did not find any exception.

**B. Metro Green Line**

1. Staff reviewed mainline switch inspection records for Crenshaw and Wilmington East dated January 2006 – June 2007. LACMTA performed monthly switch inspections at the required maintenance interval. Staff did not find any exception.
2. Staff reviewed interlocking tests records for El Segundo performed on January 1-6, 2004 and Marine performed on November 19, 21, 22 & 25, 2003. LACMTA performed inspections at the required maintenance interval and the next scheduled interlocking inspection for El Segundo is Year 2008 and Marine in Fall 2007. Staff did not find any exception.
3. Staff reviewed vital relay tests for Wilmington East performed in May 2003 & 2007 and Avalon also performed in May 2003 & 2007. LACMTA performed inspections at the required maintenance interval and the next scheduled vital relay tests are scheduled for 2011. Staff did not find any exception.

#### C. Metro Gold Line

1. Staff reviewed mainline switch inspection records for Sierra Madre and Indiana dated January – June 2004. LACMTA performed monthly switch inspections at the required maintenance interval. Staff did not find any exception.
2. LACMTA scheduled Interlocking tests for the Metro Gold Line by fall of 2007. LACMTA did not perform any testing to date; this is going to be the first 4-year inspection since revenue service began in Year 2003.
3. Staff reviewed vital relay test records for Union Station performed on October 26, 2005 and Baker Interlocking (House #1 and #2) performed on October 26, 2005. LACMTA performed inspections at the required maintenance interval and the next scheduled interlocking inspection is Year 2009. Staff did not find any exception.

#### D. Metro Red Line

1. Staff reviewed mainline switch inspection records for Union Station dated April 8, 13, 14 & May 5, 2007 and Wilshire/Vermont dated May 12, 13, 19, & 20, 2007. LACMTA performed monthly inspections at the required maintenance interval. Staff did not find any exception.
2. Staff reviewed interlocking inspection records for Union Station dated April 8, 13, 14 & May 5, 2007 and Wilshire/Vermont dated May 12, 13, 19, & 20, 2007. LACMTA performed inspections were performed at the required maintenance interval and the next scheduled inspection is Year 2011. Staff did not find any exception.
3. Staff reviewed vital relay test records for Vermont/ Sunset performed on March 10, 12, & 13, 2006 and Hollywood/Highland performed on March 24, 25, 27 and April 5, 2005. LACMTA performed inspections at the required maintenance interval and the next scheduled vital relay inspections are due in Year 2009 and 2010. Staff did not find any exception.

#### Recommendation:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>11</b>	Persons Contacted
Date of Review	<b>6/25/2007</b>	Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Joey Bigornia</b>	Jeff Root – Wayside Systems Manager (Track)
Department	<b>Track Maintenance</b>	Paul Squires – Ass. Mgr. Wayside Systems (Track)

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.4.1
2. LACMTA Rail Operations Wayside Systems Maintenance Plan – Track Section
3. Code of Federal Regulations (CFR) 49, Part 213
4. CPUC General Order 143-B, dated January 20, 2000, Section 14.05

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**TRACK MAINTENANCE AND INSPECTION**

Review a random sample of LACMTA reports of the following inspection/tasks since January 2006 for all rail lines:

*Mainline Inspections*

- Track Inspections: Visual/Riding/Walking
- Switch Inspection
- Ultrasonic Rail Testing

*Yard Inspections*

- Visual/Walking
- Switch Inspection
- Ultrasonic Rail Testing

And determine if:

1. Inspections were performed according to specified frequency as required by the reference criteria
2. The required inspections were properly documented
3. All noted defects were corrected in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

**A. Mainline and Yard Track Inspections**

**1. Metro Blue Line**

- a. Staff reviewed Metro Blue Line weekly mainline and yard track inspections dated January 2006 – June 2007. LACMTA performed track inspections once/week by walking and once/week by hi-rail at the required maintenance interval. Completed forms bear Supervisor signature. Staff did not find any exception.

**2. Metro Green Line**

- a. Staff reviewed Metro Green Line weekly mainline and yard track inspections dated January 2006 – June 2007. LACMTA performed track inspections once/week by walking and once/week by hi-rail at the required maintenance interval. Completed forms bear Supervisor signature. Staff did not find any exception.

### 3. Metro Gold Line

- a. Staff reviewed all Metro Gold Line weekly mainline and yard track inspections dated January 2006 – June 2007. LACMTA performed track inspections once/week by walking and once/week by hi-rail at the required maintenance interval. Completed forms bear Supervisor signature. Staff did not find any exception.

### 4. Metro Red Line

- a. Staff reviewed all Metro Red Line weekly mainline and yard track inspection reports dated January 2006 – June 2007. LACMTA performed track inspections once/week by walking and once/week by hi-rail at the required maintenance interval. Completed forms bear Supervisor signature. Staff did not find any exception.

## B. Mainline and Yard Switch Inspections and Maintenance

### 1. Metro Blue Line

- a. Staff reviewed Metro Blue Line monthly mainline switch inspection reports for Florence and Interlocks and Artesia Interlocks and quarterly yard switch inspection reports dated January 2006 – June 2007. LACMTA inspected mainline and yard switches at the required maintenance intervals. Completed forms bear Supervisor signature. Staff did not find any exception.

### 2. Metro Green Line

- a. Staff reviewed Metro Green Line monthly mainline switch inspection reports for Lynwood Crossovers and Marine Double-Crossover & Diamond and quarterly yard switch inspection reports dated January 2006 – June 2007. LACMTA inspected the mainline and yard switches at the required maintenance intervals. Completed forms bear Supervisor signature. Staff did not find any exception.

### 3. Metro Gold Line

- a. Staff reviewed Metro Gold Line monthly mainline switch inspection reports for Sierra Villa Madre Crossovers and Indiana Siding Crossovers and quarterly yard switch inspection reports dated January 2006 – June 2007. The mainline and yard switches were inspected at the required maintenance intervals. Supervisor signature was shown on completed forms. Staff did not find any exception.

### 4. Metro Red Line

- a. Staff reviewed Metro Red Line monthly mainline switch inspection reports for Westlake Pocket Track and Vermont / Santa Monica Double Crossovers & Diamond and quarterly yard switch inspection reports dated January 2006 – June 2007. LACMTA inspected the mainline and yard switches at the required maintenance intervals. Supervisor signature was shown on completed forms. Staff did not find any exception.

## C. Ultrasonic Testing of Track

### 1. Metro Blue Line

- a. Staff reviewed ultrasonic test reports of the Metro Blue Line prepared by Herzog Services, Inc. dated April 13, 2006. LACMTA tested the mainline at the required maintenance interval and the next scheduled ultrasonic test is in late Summer 2007. Staff did not find any exception.
2. Metro Green Line
  - a. Staff reviewed ultrasonic test reports of the Metro Green Line prepared by Herzog Services, Inc. dated April 18, 2006. LACMTA tested the mainline at the required maintenance interval and the next scheduled ultrasonic test is in late Summer 2007. Staff did not find any exception.
3. Metro Gold Line
  - a. Staff reviewed ultrasonic test reports of the Metro Gold Line prepared by Herzog Services, Inc. dated April 14, 2006. The mainline was tested at the required maintenance interval and the next scheduled ultrasonic test is in late Summer 2007. Staff did not find any exception.
4. Metro Red Line
  - a. Staff reviewed ultrasonic test reports of the Metro Red Line prepared by Herzog Services, Inc. dated April 16, 2006. LACMTA tested the mainline was tested at the required maintenance interval and the next scheduled ultrasonic test is in late Summer 2007. Staff did not find any exception.

Recommendation:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>12</b>	Persons Contacted
Date of Review	<b>6/26/2007 &amp; 6/29/2007</b>	Ken Arvidson, Manager, Wayside Systems (Traction Power) Leroy Bonifay, Asst. Manager, (Traction Power)
Reviewers	<b>Raed Dwairi</b>	Edward Boghossian, Manager, Corporate Safety
Department	<b>Wayside Systems</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.4.2
2. LACMTA Rail Operations Wayside Systems Maintenance Plan – Traction Power Section
3. CPUC General Order 143-B, dated January 20, 2000, Section 14.06

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**TRACTION POWER INSPECTION**

Review a randomly selected sample of completed traction power inspection, maintenance, and test records, since January 2006, for the following:

- Overhead Catenary System (OCS) – Blue, Green, and Gold Lines
- Auxiliary power equipment – All Lines
- Uninterruptible Power Supply (UPS) – All Lines
- Emergency vent fans – Blue, Gold, and Red Lines
- Emergency trip station (ETS) – All Lines
- Electric power substations – All Lines

And determine if:

4. Inspections were performed according to specified frequency as required by the reference criteria
5. The required inspections were properly documented
6. All noted defects were corrected in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Traction Power Dept. has taken the initiative to automate its corrective & preventive maintenance activities through the use of the M3 system starting since 9/1/06. Prior to this date, the department utilized a manual system with no standardization of data entry.
2. LACMTA scheduled the inspections in the M3 Maintenance System according to the required frequencies for the following randomly selected traction power equipment:
  - MBL-YARD-ARTES OCS T2 INSP (OCS segment on the Blue Line)
  - MGL-PMONT-LBBLV OCS T2 INSP (OCS segment on the Gold Line)

- PGL-SWMUS-INDIANA OCS T2 INSP (OCS segment on the Gold Line)
- MBL-AHEIM UPS N (UPS Blue Line)
- MRL-CC-EF-042 (Emergency Vent Fan on the Red Line)
- MGL-MAIN LINE ETS INSP (Emergency Trip Station on the Gold Line)
- MBL-COMP SUBSTATION 03 (Electric Power Substation on the Blue Line)

3. Inconsistencies exist in the documentation of required inspections between those in the M3 system and inspections manually generated by the maintenance crew during actual inspections as documented on the inspection checklists. For example, Work Order #520184 in the M3 system specifies that the Emergency Vent Fan (MRL-CC-EF-042) needed several repairs which were not documented on the inspection checklist by the maintenance crew.
4. Inconsistencies also exist in the documentation of noted defects. For example, Work Order #495250 for MGL-MAIN LINE ETS INSP which is associated with the inspection performed on 7/20/06 contained no documentation as to what defects were repaired as a result of the inspection.
5. Implementation of the M3 system is a work-in-progress and documentation inconsistencies will be corrected as training on the proper use of the M3 system of all department supervisors and lead persons is ongoing.

Recommendations:

1. LACMTA should ensure consistency between Traction Power Preventive Maintenance data entry and manual record keeping activities through the use of the newly implemented M3 system.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>13</b>	Persons Contacted
Date of Review	<b>06/29/2007</b>	Vijay Khawani – Director, Corporate Safety
Reviewers	<b>Mahendra Patel</b>	Thomas Eng – Safety Manager, Corporate Safety
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 5.3
2. LACMTA Safety Certification Program Plan for East LA Extension

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**SAFETY CERTIFICATION OF METRO GOLD LINE EAST LOS ANGELES EXTENSION**

Review Corporate Safety Department file for safety certification records for the Metro Gold Line East Los Angeles Extension 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 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. Rules and procedures have been developed with specific requirements for this project.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff interviewed LACMTA personnel and reviewed Corporate Safety Department file for safety certification records for the Metro Gold Line East Los Angeles Extension Project.

1. Since the preliminary engineering phase of this project started in early 2002 – before the effective date of February 23, 2003 for General Order 164-C – the formal safety certification is not required for this project. However, LACMTA has established and is implementing the Metro Gold Line Eastside Extension Safety and Security Certification Plan (SSCP) dated March, 2005.
2. Section 2.1 of the SSCP identifies Safety and Security Program Certifiable Elements. The section identifies Major Safety critical elements, such as, Facilities, Tunnel, Communications, Traction Power and Distribution, Ventilation, Testing, Operational Requirements, etc.
3. The conformance checklists identify and verify Safety requirements. LACMTA have completed Design Criteria conformance checklists for certifiable elements. Construction is in progress. Eastside Light Rail Constructors (ELRTC) will prepare specification conformance checklists for certifiable elements for LACMTA approval. LACMTA will review, audit and approve these specification conformance checklists.

4. LACMTA is holding monthly Fire Life Safety and Security committee meetings and CPUC representative is invited to attend this meeting. LACMTA Corporate Safety Department generates and maintains the Meeting minutes and sends a copy to CPUC representative.
5. Rail Activation Group meeting chaired by LACMTA has started this week. All affected LACMTA departments and ELRTC attends this meeting. The frequency of this meeting will be determined shortly. CPUC representative will be invited to attend this meeting. LACMTA will send a copy of the meeting minutes to CPUC representative.
6. Rules and Procedures for conducting Test Operations will be developed about six (6) months prior to revenue operation and will be included in the Safety Certification Verification Report (SCVR). LACMTA will send two copies of this document to CPUC in accordance with the requirements of Section 13.02 of General Order 143-B.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>14</b>	Persons Contacted
Date of Review	<b>June 28, 2007</b>	Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Claudia Lam Dain Pankratz</b>	
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 5.4
2. LACMTA Internal Rail System Safety Audit (IRSSA) Reports for the last 3 years.
3. LACMTA Corporate Safety IRSSA Status Reports on Corrective Action Plans.
4. CPUC General Order 164-C, Dated February 27, 2003, Section 4, Internal Safety Audit Requirements.
5. Code of Federal Regulations (CFR) 49, Part 659

**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.

And 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 since 2004.
5. The Corporate Safety Department has developed Internal Safety Audit Plan and Schedule, for the next 3 years, in accordance with CFR 49, Part 659 requirements.

## FINDINGS AND RECOMMENDATIONS

### Findings:

1. The Chief Executive Officer, Roger Snoble, submitted LACMTA's most recent annual IRSSA report to the Commission on January 19, 2007 showing the elements that were planned, scheduled, and performed in 2006. In addition, LACMTA have planned, scheduled, and performed the IRSSA for 2004-2005.
2. The IRSSA program master schedule shows that LACMTA completed the last IRSSA cycle of APTA elements in Year 2005. The 2006-2008 is the first cycle to comply with G.O. 164-D.
3. LACMTA reported the IRSSA for 2004, 2005, 2006 Findings and Recommendations with cover letter to Commission staff prior to the 15<sup>th</sup> of February each year. The cover letter showed a list of LACMTA Chief Executive Officer and department managers as the carbon copy recipients.
4. The Corporate Safety Department tracks the full implementation of all recommendations identified within the IRSSA reports and submits the status report to CPUC designated representative.
5. The IRSSA program master schedule for the years 2006-2008 complies with G.O. 164-D which is in accordance with the latest CFR 49, Part 659 requirements.

### Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>15</b>	Persons Contacted
Date of Review	<b>06/29/07</b>	Vijay Khawani – Director, Corporate Safety
Reviewers	<b>Mahendra Patel</b>	Abdul K. Zohbi – Safety Manager, Corporate Safety
Department	<b>Corporate Safety</b>	Eddie Boghossian – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.5
2. LACMTA Rail Accident Investigation Procedures (AIP)
3. CPUC General Order 164-C, Dated February 27, 2003, Section 5 and 6
4. Code of Federal Regulations (CFR) 49, Part 659

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**ACCIDENT REPORTING AND 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 if:

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

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff randomly selected one Red Line, one Gold Line and two Blue Line accidents that involved injuries or fatalities reported to the CPUC during the past 12 months. Staff reviewed the Accident Investigation Procedure (AIP), accident investigation reports, and corrective action plan and schedules utilized by LACMTA for these selected accidents. There were no accidents on the Metro Green Line during the past 12 months.

(I) Red Line – Hollywood Highland Station:

1. This train versus pedestrian accident occurred on May 6, 2006 at approximately 22:56 involving a fatality. LACMTA reported it to the CPUC at 23:06 on May 6, 2006. This accident was also reported on monthly Forms T & V as required.
2. LACMTA investigated the accident according to its AIP and prepared and submitted the accident investigation report on July 6, 2006.
  - a) The report identified each item investigated, such as, injuries & damage, responsive measures taken, operator's action, operator's on-duty records, post accident drug and alcohol testing, operator's certification, etc.
  - b) The investigation findings were listed in the Findings section
  - c) Trespassing was identified as a Primary Cause in Conclusions section.
  - d) Contributory Factors were listed as none in the Conclusions section.
  - e) The report contained sufficient narrative and evidentiary support to justify Primary Cause and Contributory Factors.
3. There were no Recommendations and no corrective action plan.
4. There was no need for corrective action plan schedule.
5. Part 3 – Roles and Responsibilities section of the AIP describes roles and responsibilities of responding personnel representing the various departments within LACMTA organization. The Corporate Safety Department ensures that the appropriate departments comply with the accident investigation procedures and reviews findings prepared by those departments.

(II) Gold Line – Arroyo Seco Bridge:

1. This train versus pedestrian accident occurred on December 23, 2006 at approximately 18:17 involving a fatality. LACMTA reported it to the CPUC at 21:10 on December 23, 2006. This accident was also reported on monthly Forms T & V as required.
2. LACMTA investigated the accident according to its AIP and prepared and submitted the accident investigation report on February 21, 2007.
  - a) The report identified each item investigated, such as, injuries & damage, responsive measures taken, operator's action, operator's on-duty records, post accident drug and alcohol testing, operator's certification, etc.
  - b) The investigation findings were listed in the Findings section
  - c) Suicide was identified as a Primary Cause in Conclusions section.
  - d) The decedent's chemical imbalance was identified as a Contributory Factor in the Conclusions section.
  - e) The report contained sufficient narrative and evidentiary support to justify Primary Cause and Contributory Factors.
3. There were no Recommendations and no corrective action plan.
4. There was no need for corrective action plan schedule.
5. Part 3 – Roles and Responsibilities section of the AIP describes roles and responsibilities of responding personnel representing the various departments within LACMTA organization.

The Corporate Safety Department ensures that the appropriate departments comply with the accident investigation procedures and reviews findings prepared by those departments.

(III) Blue Line – Maple Avenue Grade Crossing:

1. This train versus automobile accident occurred on August 20, 2006 at approximately 09:00 involving one serious injury and two fatalities. LACMTA reported it to the CPUC at 09:30 on August 20, 2006. This accident was also reported on monthly Forms T & V as required.
2. LACMTA investigated the accident according to its AIP and prepared and submitted the accident investigation report on October 16, 2007.
  - a) The report identified each item investigated, such as, injuries & damage, responsive measures taken, operator's action, operator's on-duty records, post accident drug and alcohol testing, operator's certification, etc.
  - b) The investigation findings were listed in the Findings section
  - c) The vehicle driver making an illegal left turn against a red left turn arrow was identified as a Primary Cause in Conclusions section.
  - d) Contributory Factors were listed as none in the Conclusions section.
  - e) The report contained sufficient narrative and evidentiary support to justify Primary Cause and Contributory Factors.
3. Continue LACMTA's rail public education outreach program in all communities around the light rail right-of-way was identified as a recommendation and a corrective action plan.
4. The corrective action plan is on-going.
5. Part 3 – Roles and Responsibilities section of the AIP describes roles and responsibilities of responding personnel representing the various departments within LACMTA organization. The Corporate Safety Department ensures that the appropriate departments comply with the accident investigation procedures and reviews findings prepared by those departments.

(IV) Blue Line – San Pedro Pedestrian Crosswalk:

1. This train versus pedestrian accident occurred on April 14, 2007 at approximately 12:27 involving a fatality. LACMTA reported it to the CPUC at 15:00 on April 14, 2007. This accident was also reported on monthly Forms T & V as required.
2. LACMTA investigated the accident according to its AIP and prepared and submitted the accident investigation report on June 14, 2007.
  - a) The report identified each item investigated, such as, injuries & damage, responsive measures taken, operator's action, operator's on-duty records, post accident drug and alcohol testing, operator's certification, etc.
  - b) The investigation findings were listed in the Findings section
  - c) The pedestrian's failure to yield the right-of-way to vehicles already in the crosswalk, California Vehicle Code: 21456 was identified as a Primary Cause in Conclusions section.
  - d) Contributory Factors were listed as none in the Conclusions section.
  - e) The report contained sufficient narrative and evidentiary support to justify Primary Cause and Contributory Factors.

3. Continue LACMTA's rail public education outreach program in all communities around the light rail right-of-way was identified as a recommendation and a corrective action plan.
4. The corrective action plan is on-going.
5. Part 3 – Roles and Responsibilities section of the AIP describes roles and responsibilities of responding personnel representing the various departments within LACMTA organization. The Corporate Safety Department ensures that the appropriate departments comply with the accident investigation procedures and reviews findings prepared by those departments.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>16</b>	Persons Contacted
Date of Review	<b>June 25, 2007</b>	Dan Cowden – Director, Security
Reviewers	<b>Anton Garabetian</b>	Keith Bowlin – Transit Security Lieutenant
Department	<b>Security</b>	John Davis – Transit Security Sergeant Duane Martin – Rail Div. Transportation Manager

**REFERENCE CRITERIA**

1. LACMTA System Security Plan, Revised September 2005
2. CPUC General Order 164-C, Dated February 27, 2003, Section 3

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**SECURITY**

Interview Transit Security personnel and review the relevant documentation prepared during the past 12-months to determine if:

1. Security Committee meetings were held on a regular basis to identify security breach causes, propose and recommend additions or changes to policies and procedures in order to prevent or minimize further security breaches of similar nature
2. Threat assessments have been performed and recommendations implemented
3. Periodic training is provided to the employees on identifying and reporting suspicious behavior (anti-terrorism)
4. Contingency plans for the identified scenarios, such as, violent criminal activities, bomb threats, etc. have been established
5. Security measures have been implemented when requested by the Federal Transportation Administration in response to the declared security alerts
6. Security Plan modification process was followed as a result of changes to security needs and conditions of the transit agency

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff interviewed LACMTA Transit Security personnel and reviewed relevant documentation prepared during the past 12-months.

1. The existing LACMTA System Security Plan (SSP) states that MTA has two security committees: Rail Operations Law Enforcement Committee (ROLE) and Threat Management Committee.
2. Initially, LACMTA held ROLE meetings on a monthly basis between the Divisions and Los Angeles Sheriff Department (LASD). Later, LACMTA held the meetings on a quarterly basis.
3. Presently LACMTA is not holding any ROLE meetings.
4. LACMTA did not have any meeting minutes from the ROLE meetings.

5. The Threat Management Committee meets on a recurring basis to identify threats to personnel within LACMTA. The Threat Management Committee meets primarily during LACMTA personnel lay off periods. Its main purpose is to prevent LACMTA personnel from the threat of laid off employees. LACMTA showed documentation regarding these committee meetings.
6. LACMTA performed threat assessments and implemented recommendations. LACMTA documented the threat assessments in "LACMTA Vulnerability Workbook" dated May 21, 2005 and June 21, 2006. Also detail threat vulnerability assessment was performed by Booz Allen Co. under Federal Transit Administration (FTA) participation in September 2005.
7. LACMTA anti-terrorism training is provided by LASD. LACMTA implements Frontline Response Training, including identifying and reporting suspicious behavior (anti-terrorism) to employees, such as operators, who can be at an incident site. All officers have received anti terrorism training. LASD trained all LACMTA employees to be the "eye and ears" against terrorism.
8. LACMTA has a generic contingency plan for scenarios, such as violent criminal activities, bomb threats, etc., which it modifies according to the type of incident. Staff reviewed Operations Plan and Emergency Response Plan. LASD responds to bomb threats and any other major incidents on the LACMTA property.
9. LACMTA implements security measures when requested by the Federal Transportation Administration in response to the declared security alerts.
10. LACMTA Security modifies the SSP as a result of changes to security needs and conditions of the transit agency. Currently, LACMTA Security is revising the SSP according to CPUC General Order 164-D.

Recommendations:

1. LACMTA should hold monthly Rail Operations Law Enforcement (ROLE) Committee meetings according to LACMTA System Security Plan (SSP) and document the meeting minutes.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>17</b>	Persons Contacted
Date of Review	<b>6/26/07</b>	Diane Curzon – Manager, Document Control Program Mgmt. Abdul Zohbi – Safety Manager, Corporate Safety
Reviewers	<b>Raed Dwairi</b>	
Department	<b>Engineering</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.10 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/APPROVAL PROCESS AND CONFIGURATION MANAGEMENT**

Select two capital projects and three non-capital projects, by randomly selecting Configuration Change Request Forms that were submitted and approved during the past three years, and examine the applicable documentation to determine if:

1. System Modification/Configuration Changes were reviewed and approved in accordance with the reference criteria,
2. There exists a coordination process that ensures all organizational entities have an opportunity to review preliminary design and acceptance of final design,
3. Any hazards identified with system expansions or modifications of any kind are resolved.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Staff found that the Engineering Department reviews and approves LACMTA's configuration change requests for all the non-capital projects selected (adding warning signs at all red line station platform end-gates, implementing safety improvements at the Mission/ Meridian grade crossing to mitigate potential safety hazards, and implementing automatic control disable on all rail line SCADA systems) in accordance with LACMTA Policy CF15.
2. Staff determined that LACMTA followed design, review, and acceptance process described in LACMTA Policy #ENG01 for the following capital projects selected:
  - Intrusion Detection System Enhancement (IDS) Design/Build Procurement, June 2004
  - Additional Traction Power Substations on the Gold Line with as-built shop drawings.
3. Staff found that: LACMTA Rail Operations Configuration Change Request Forms were submitted by the person or department requesting the change to the System Modification review Committee (SMRC) as required and the process was followed for the handling of such requests by the SMRC.

4. For the capital projects selected, staff found that LACMTA processed, as required, the Design Review Comments and Resolution Forms and the Design Review Response Forms. This was an indication that there exists a process that ensures all organizational entities had an opportunity to review preliminary design and acceptance of final design.
5. Corporate Safety personnel attend the Safety Committees charged with the identification of potential hazards associated with system expansion or modifications. LACMTA provided staff meeting minutes of Metro Blue Line Safety Committee of the June 18, 2007 with matrices showing the nature and status of hazards identified.
6. Staff did not find any exception.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>18</b>	Persons Contacted
Date of Review	<b>6/27/2007</b>	Collins U. Kalu – Principal Ind. Hygienist, Corporate Safety
Reviewers	<b>Ni Liu Mahendra Patel</b>	
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.13
2. LACMTA Hazard Communication Program, December 2005
3. LACMTA System-wide Hazardous Materials Emergency Response Plan

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**HAZARDOUS MATERIAL PROGRAMS**

Interview Metro Corporate Safety Staff to determine if:

1. The Material Safety Data Sheet (MSDS) for each hazardous material is on file with the Corporate Safety Department,
2. Procedures for response to hazardous materials spill incidents exist,
3. Cleanup and disposal procedures exist,
4. Personnel who handle hazardous materials have received specific training regarding reporting requirements, inventory control and storage, product release or spill, and the response and cleanup of spill incidents.
5. Hazardous materials discharge/spill reports for incidents that occurred during the past three years have been prepared and are on file.
6. All Material Safety Data Sheets are available to all personnel who work with hazardous materials.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Staff reviewed the MSDS for a selected material and found that although the required nine sections of the MSDS were arranged differently, they were all accounted for.
2. Staff found the procedure for response to hazardous materials spill incidents in the LACMTA System-wide Hazardous Materials Emergency Response Plan, 4. Response Procedure for Transit Operations.
3. The LACMTA System-wide Hazardous Materials Emergency Response Plan outlines the procedure for cleanup and disposal of hazardous materials. The LACMTA Hazard Communication Program section 5.5 documents the responsibility of the Quality Assurance department in regards to the clean up of a chemical spill. In addition to the two documents, staff reviewed the Hazardous Material Business Plan for Division 11 – Blue Line. The Hazardous

Material Business Plan provides a detailed cleanup and disposal procedure for the specific division.

4. Staff reviewed the material for the First Responder Awareness Level Training – Hazardous Materials and the list of Completed First Responder Awareness Level Training – Hazardous Materials. The Corporate Safety provides the First Responder Awareness training to first responder including train operators.
5. Another training the Corporate Safety provides is the Hazard Communication. This training is provided toward anyone that handles hazardous materials with mandatory 4-hour training for management.
6. Facilities Maintenance provides training for personnel that handle cleanup and disposal of hazardous material in the Hazardous Material Operations Response.
7. Staff reviewed the LACMTA Incident Report dated June 21, 2007. The LACMTA Incident Reports are stored electronically in the M3 database. Currently, Rail Operation Control (ROC) and Facilities Maintenance have access to this database with Corporate Safety in the process of obtaining access to the database.
8. Staff observed the MSDS electronic database that is accessible at all LACMTA locations. The Corporate Safety Department immediately scans the approved MSDS onto the database and maintains copies on file.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>19</b>	Persons Contacted
Date of Review	<b>6/28/07</b>	Abdul Zohbi – Safety Manager, Corporate Safety Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Dain Pankratz Anton Garabetian</b>	
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.6
2. LACMTA Summary of Metro Blue Line Accident Report, Issued Quarterly

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**SAFETY DATA ANALYSIS/ACQUISITION**

Interview Corporate Safety Department personnel and review supporting documentation for the past three years for all rail lines to determine if:

1. Corporate Safety Department reports identifying incidents to National Transportation Database (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. Corporate 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. Corporate Safety Department identified accident trends and reported recommendations to LACMTA rail operations management.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Corporate Safety reports to National Transit Database (NTD) at least on a monthly basis to help assure data is submitted within the NTD 30-day time period. Corporate safety reports to the NTD database via online monthly computer forms. Corporate safety also archives hardcopies of the NTD forms.
2. Corporate Safety is responsible for retrieving data from the Metro transit safe database and categorizing incidents into either a Major incident or Minor incident for NTD reporting.
3. Corporate Safety provided a copy of a document titled, "SUMMARY OF METRO BLUE LINE TRAIN / VEHICLE AND TRAIN / PEDESTRIAN ACCIDENTS (July 1990 – March 2007)", dated April 17, 2007. The report summarized contributing factors, direction of train travel, and the location of every accident that occurred from July 1990 – March 2007.

4. Corporate safety analyzed the accident data to find trends and locations of high incident rates. Corporate safety shared reports with Staff demonstrating quarterly data is reviewed and summarized for LACMTA management.
5. Corporate safety was very proactive in recommending and implementing improvements that may help prevent accidents. Improving measures includes; pedestrian swing gates at 3-stations, public awareness programs, automotive citation cameras at six crossings and four-quadrant gates in the city of Compton (to be implemented in FY08).

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>20</b>	Persons Contacted
Date of Review	<b>June 28, 2007</b>	Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Claudia Lam Dain Pankratz</b>	
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.12

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**EMPLOYEE SAFETY PROGRAM**

Interview Metro Corporate Safety Staff to determine if:

1. An appropriate form has been developed and employees are aware how to report safety hazards in the work place.
2. Procedures exist for investigating occupational injuries and illnesses and for correcting unsafe or unhealthy conditions in a timely manner.
3. The program includes occupational health and safety training for employees.
4. Corporate Safety ensures that the Injury and Illness Prevention Program is being implemented.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. LACMTA's Injury and Illness Prevention Program (IIPP) contains a monthly inspection check form that is designed to identify hazards in the work place. Employees can submit the form to supervisor or drop it in the locked box. LACMTA audited annually its employees to ensure its employees are aware of how to use the form to report safety hazards in the work place.
2. IIPP element 6 includes the procedures for investigating occupational injuries and illnesses. In addition, LACMTA's Key Performance Indicator (KPI) shows the status of accident investigation.
3. IIPP element 5 includes the procedures for correcting unsafe or unhealthy conditions in a timely manner.
4. IIPP element 7 includes employee training and instruction. All safety and health training will follow the Health and Safety Training Matrix identifying the topics of safety training, responsible party, and regulation scope of training and training requirements of all different safety programs.
5. Corporate safety conducts annual Safety & Health Assessment review Program (SHARP) which evaluates the level of compliance of IIPP. Corporate safety staff also interviews the employees annually to ensure employees are aware of IIPP.

**Recommendations:**

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>21</b>	Persons Contacted
Date of Review	<b>6/26/2007</b>	Vijay Khawani – Director, Corporate Safety
Reviewers	<b>Noel Takahara Anton Garabetian</b>	Thomas Eng – Safety Manager, Corporate Safety
Department	<b>Corporate Safety</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.7

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**EMERGENCY RESPONSE PLANNING AND COORDINATION**

Interview the LACMTA Corporate Safety Staff and review records for the last two years to determine if:

1. Emergency Response Procedures are being periodically reviewed and revised,
2. LACMTA’s emergency response planning addressed both safety and security related emergency events.

Also, determine:

3. What Emergency Response Procedures are.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. LACMTA practices the Emergency Response Procedures during staged emergency drills.
2. During the post-drill debriefing, Corporate Safety will collect any recommendations or requests for procedural changes and forward them to the local division manager who in turn will share them with the Local Safety Committee.
3. If the Local Safety Committee determines the request has a merit, they will send the request to the Rail Transportation Instruction Department (RTID) to revise the procedures.
4. The RTID will also send out a notice to all relevant employees and distribute the revised portion of the rulebooks.
5. Staff asked if LACMTA has made procedural revisions in light of the Pershing Square Station Mercury Spill Incident. LACMTA responded that rather than necessitate any revision, LACMTA will pursue better training.
6. LACMTA’s emergency response planning addresses both safety and security related emergency events. An example of a safety related events include drills that simulate injured employees requiring first aid. Examples of security related events include unknown powder or bomb threat drills and a large scale security drill that simulated the “Lockdown” of Union Station.
7. The following is part of a list of the emergency response procedures that LACMTA has in place:

- Collision between train and other vehicle, train, or person;
- Earthquake;
- Fire or Smoke,
- Emergency Evacuation;
- Derailment;
- Accidental Train Uncoupling,
- Flooded Track,
- Emergency Removal of Traction Power,
- Criminal Incidents,
- Hazardous Material Spill or Exposure,
- Unknown Powder Substance,
- Bomb Threat or Suspicious Package,
- Person or Animal on Right-of-Way.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>22</b>	Persons Contacted
Date of Review	<b>6/18/2007</b>	Audrey Chiu – Safety Manager, Corporate Safety Claire Reyes – Ass. Mgr. Wayside Systems (Rail Comm.)
Reviewers	<b>Joey Bigornia Dain Pankratz Noel Takahara</b>	
Department	<b>Rail Communications</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.3
2. LACMTA Rail Communication Maintenance Plan
3. CPUC General Order 143-B, Section 11.01

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**RAIL COMMUNICATIONS FACILITIES INSPECTION**

Select Inspection reports of the following equipment for 7th St/Metro Center Station, 2 Gold Line stations, 2 Green Line stations and 3 Red Line stations prepared during the past 3 years:

- Service and maintenance of radio communication systems
- Undercar Deluge System
- Emergency Management Panel and Telephones
- Gas Monitoring System
- Fire Control Panels

And 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.
3. Noted defects were corrected in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

The following table summarizes the inspections associated with each transit line:

<b>Inspection Task</b>	<b>Interval</b>	<b>Blue</b>	<b>Gold</b>	<b>Green</b>	<b>Red</b>
Service & Maintenance of Radio Communication Systems	Annual	X	X	X	X
Under-car Deluge System	Annual	X	X		X
Emergency Management Panel & Telephones	Annual	X	X	X	X
Gas Monitoring System	Quarterly				X
Fire Control Panels	Annual	X	X	X	X

1. Metro Blue Line:

- A. Staff selected the 7<sup>th</sup> St / Metro Center Station and reviewed the facilities inspection reports dated August 5, 2005 to August 18, 2007.
- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
  - 2) The Annual Inspection for Year 2007 is scheduled for August 2007.
  - 3) Staff did not find any exceptions.

2. Metro Gold Line:

- A. Staff selected the Chinatown Station facilities inspection records dated January 20, 2005 – January 12, 2007.
- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
  - 2) Staff did not find any exceptions.
- B. Staff selected the Union Station Facilities Inspection records dated January 27, 2005 – February 26, 2007.
- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
  - 2) Staff did not find any exceptions.

3. Metro Green Line

- A. Staff selected the Long Beach Facilities Inspection records dated March 7, 2005 – March 23, 2007.
- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
  - 2) Staff did not find any exceptions.
- B. Staff selected the Paramount Station Facilities Inspection records dated April 4, 2005 – April 10, 2007.
- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
  - 2) Staff did not find any exceptions.

#### 4. Metro Red Line

A. Staff selected the Wilshire/Vermont Station Facilities Inspection records dated April 4, 2005 – March 28, 2007.

- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
- 2) Staff did not find any exceptions.

B. Staff selected the Westlake Station Facilities Inspection records dated March 14, 2005 – March 15, 2007

- 1) LACMTA performed all of the required Preventive Maintenance Inspections during the required inspection interval limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.
- 2) Staff did not find any exceptions.

#### Recommendation:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>23</b>	Persons Contacted
Date of Review	<b>6/25/2007</b>	Randolph Gordy – Manager, Wayside Systems (Fac. Maint.)
Reviewers	<b>Dain Pankratz Mahendra Patel</b>	Louis Campos – Supervisor, Facilities Maintenance Marco Sanchez – Supervisor, Facilities Maintenance
Department	<b>Facilities Maintenance</b>	Eddie Boghossian – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.3
2. National Fire Protection Association (NFPA) 130
3. LACMTA Facilities Maintenance Plan
4. CPUC General Order 143-B, Section 11.01

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**FACILITIES MAINTENANCE INSPECTION**

Select Inspection reports of the following equipment for 7th St/Metro Center Station, 2 Gold Line stations, 2 Green Line stations and 3 Red Line stations prepared during the past 3 years:

- Station Maintenance
- Fire Extinguishers
- Tunnel Inspections
- Emergency hatches
- Standpipes and associated pumps
- Fire Sprinkler System

And 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.
3. Noted defects were corrected in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Currently, the Facilities Maintenance department maintains the stations including Standpipes/pumps, and Sprinkler Systems.
2. The Facilities Maintenance Plan specifies monthly inspections for Station Maintenance, Fire extinguishers, Standpipes / pumps and fire sprinklers and quarterly inspections for the tunnel and emergency hatch. Additionally, Facilities Maintenance performs Title 19 tests every 5-years on the standpipes/pumps and fire sprinklers.

3. The Los Angeles City Fire Department (LAFD) also has a “Reg 4” Inspection that follows the requirements of the National Fire Protection Association (NFPA) Code 72.
4. LACMTA submits Reg 4 Inspection Report to LAFD annually.
5. Wayside System/Communication Department inspectors perform the “Reg 4” inspections for items such as the sprinkler system.
6. The following matrix details the stations reviewed for the triennial period.

		2007	2006	2005
Red Line	7th / Metro	*	*	Jan., March, July, Oct.
	Union Station	*	*	Jan., Feb., May
	Pershing Square	*	*	Jan.
	Westlake / MacArthur Park	*	*	Jan., Aug.
Gold Line	Fillmore	*	*	Feb., March, April
	Sierra Madre	*	Jan	Jan., March, June, July
Green Line	Imperial / Wilmington	*	Jan, Apr	*
	Lakewood	*	May	April
* ALL Monthly Inspection Forms are in place Missing Monthly Inspection Forms are identified as Months				

7. Staff reviewed the wayside inspection forms and found them to be complete and thorough.
8. Staff reviewed the records of the “Reg 4” inspection and found them comprehensive.
9. Staff found LACMTA immediately handled and properly generated work orders for in-house maintenance repairs.
10. Staff noted that some monthly inspections forms were missing, particularly in 2005. LACMTA was unable to produce record of the items inspected for the missing months.
11. On the Metro Gold Line, staff found that LACMTA did not immediately resolve many of the inspector’s findings due to Pasadena Blue Line Construction Authority warranty claims. For example, problems with station drainage and defective topping slabs have been identified but left open since the opening of the line.
12. The inspection report was unclear which Metro Gold Line Station needs warranty repair. For example: location for inspector findings – defective topping slabs or nonexistent drainage is referenced as “various stations”.
13. The inspection frequency specified in SSPP was inconsistent with the frequency specified in the current Facilities Maintenance Plan. Wayside Maintenance Plan sect 4.11 required the Standpipes to be inspected annually while the SSPP sect. 4.3 required standpipes to be inspected monthly.

Recommendations:

1. LACMTA should properly document and maintain Monthly Station Maintenance Inspection Forms.
2. LACMTA should properly keep track of Metro Gold Line Facilities Inspection findings and implement corrective action in a timely manner.
3. LACMTA should revise the Facilities Maintenance Plan to correspond to the inspection frequencies specified in the LACMTA System Safety Program Plan (SSPP).

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>24</b>	Persons Contacted
Date of Review	<b>6/27/2007 &amp; 6/28/2007</b>	Aspet Davidian – Director, Project Eng. Facilities Construction Project Management
Reviewers	<b>Raed Dwairi</b>	Mana Katkaphan – Sr. Engineer, Construction.
Department	<b>Engineering</b>	Edward Boghossian – Manager, Corporate Safety

REFERENCE CRITERIA

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

CONCRETE INSPECTION

Review randomly selected samples of LACMTA's Concrete Inspection Reports prepared during the past three years for six separate concreted structures (two structures from each Blue, Green, Red and Gold Lines) to determine if:

1. The required inspections were performed,
2. The required inspections were properly documented.
3. Noted defects were corrected in a timely manner

FINDINGS AND RECOMMENDATIONS

Findings:

1. An outside contractor (Anil Verma Association, Inc.) performed the required structural inspections. The contractor started inspecting LACMTA transit structures (Caltrans is responsible for inspecting certain segments) in late 2002 and continued on late 2003 (Contract MQ055 for Professional Services for Structural Inspections). The contractor documented all hazards, structural or otherwise, and submitted the inspection reports in early 2004.
2. LACMTA properly documented the inspection results of each line in binders with photographs showing defects and summary defect reports describing the defect and recommending a corrective action. Staff reviewed the binders for the Blue Line (2 binders), Green Line (3 binders), and Red Line (4 binders). For the Gold Line, which is operating since 2003, LACMTA Operations Maintenance & Engineering Department observed one structure: Chinatown Bridge.
3. LACMTA uses National Bridge Inspection Standards (NBIS) rating system (0-9) in the evaluation of aerial structures with a rating of 9 being in an Excellent Condition, 5 of Fair Condition with all primary structural elements sound but may have minor section loss, cracking, spalling or scour, 4 of Poor Condition showing advanced section loss, deterioration, spalling or scour, and 0 of Failed Condition-out of service-beyond corrective action.
4. The department managers stated that a rating of 5 or 4 would require a corrective action (LACMTA has no defects rated below 4) but they could not present any formal documentation to show that such items are analyzed to distinguish between structural defects and maintenance related items and defects corrected in a timely manner.

5. Inspection Defect Reports have a summary table indicating defect descriptions and recommendations. Defects are categorized as a maintenance item (Maintenance Department attention is required) or as a structural item (concrete cracks). Periodic inspection and follow up on all defects is required and, if conditions warrant, repairs should be made.
6. LACMTA found a structural defect on the Metro Gold Line pertaining to a cracked Shear Key responsible for handling horizontal seismic forces. The department is in the process of developing a corrective action plan and implementation schedule to address this defect.

Recommendations:

1. LACMTA should develop a process to distinguish between structural and maintenance defects appearing on the Inspection Defects Reports for all its lines and follow up on those items with an appropriate Correction Action Plan and Implementation Schedule.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>25</b>	Persons Contacted
Date of Review	<b>6-18-07</b>	Audrey Chiu – Safety Manager, Corporate Safety
Reviewers	<b>Joey Bigornia Dain Pankratz</b>	Russell Homan – Sr. Equipment Maintenance Instructor Brian Rydell – Rail Fleet Services Manager
Department	<b>Fleet Services</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 3.3
2. Rail Fleet Services Light & Heavy Rail Preventative Maintenance Inspections
3. LACMTA Siemens 2000 Preventive Maintenance Inspections
4. LACMTA Breda 650 Base and Option Car Preventive Maintenance Inspections
5. CPUC General Order 143-B, Section 14.04

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**RAIL TRANSIT VEHICLES PREVENTIVE MAINTENANCE PROGRAM DOCUMENTATION**

Select two vehicles for each type of vehicle at the Red Line, Blue Line, Green Line and Gold Line shops.

- Metro Red Line                      Breda 650 Base  
    Breda 650 Option
- Metro Blue Line                      Nippon Sharyo 865  
    Nippon Sharyo 2020
- Metro Green Line                      Siemens 2000
- Metro Gold Line                      Siemens 2000 GE/ATP

For each car selected, review the completed Preventive Maintenance Inspection (PMI) reports, for the past 2 years, to determine if:

1. The required PMI's were performed during the required time or mileage limits
2. The inspection and maintenance activities were properly documented by the responsible maintenance workers
3. Maintenance defects that were treated as UNSCHEDULED REPAIRS have been properly documented and closed out in a timely manner

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

Staff reviewed the Preventive Maintenance Inspection (PMI) reports of the following vehicles assigned to each of the rail yards:

1. **Metro Red Line:**

- A. Staff selected two Breda Model "base buy" married-pair vehicles (car nos. 501-502 & 505-506) and reviewed the vehicle inspection reports dated June 18, 2005 to June 18, 2007.

- 1) LACMTA performed all of the required Preventive Maintenance Inspections during

the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

B. Staff selected two Breda Model "option" married -pair vehicles (car nos. 589-590 & 603-604) and reviewed the vehicle inspection reports dated June 18, 2005 to June 18, 2007.

1) LACMTA performed all of the required Preventive Maintenance Inspections during the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

2. Blue Line:

A. Staff selected two Nippon-Sharyo Model 865 vehicles (car nos. 100 & 104) and reviewed the inspection records dated June 18, 2005 – June 18, 2007.

1) LACMTA performed all of the required Preventive Maintenance Inspections during the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

B. Staff selected two Nippon-Sharyo Model 2020 vehicles (car nos. 154 & 163) and reviewed the inspection records dated June 18, 2005 – June 18, 2007.

1) LACMTA performed all of the required Preventive Maintenance Inspections during the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

3. Green Line

A. Staff selected two Siemens Model 2000 vehicles (car nos. 205 & 225) and reviewed the inspection records dated June 18, 2005 – June 18, 2007.

1) LACMTA performed all of the required Preventive Maintenance Inspections during the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

4. Gold Line

A. Staff selected two Siemens Model 2000 GE/ATP vehicles (car nos. 250 & 301) and reviewed the inspection records dated June 18, 2005 – June 18, 2007.

1) LACMTA performed all of the required Preventive Maintenance Inspections during the required mileage limits. LACMTA properly documented the inspections in reports and closed out maintenance defects in a timely manner.

2) Staff did not find any exceptions.

Recommendation:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>26</b>	Persons Contacted
Date of Review	<b>6/26/2007</b>	Duane Martin – Transportation Manager, Blue Line
Reviewers	<b>Arun Mehta</b>	Douglas Jackson – Transportation Manager, Red Line
Department	<b>Rail Transportation</b>	Thomas Eng – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.7
2. LACMTA Rail Standard Operating Procedures

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**EMERGENCY RESPONSE TRAINING DRILLS**

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

1. LACMTA regularly schedules meetings and emergency drills with emergency response agencies such as police and fire departments,
2. Emergency drill exercises were critiqued and evaluated by participants and any corrective actions, that entailed LACMTA, were recorded, scheduled, tracked to completion in a timely manner.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Most of the emergency drills involve external agencies such as the Los Angeles Fire, Sheriff's Department and various local police departments. The role of the LACMTA Corporate Safety Department is to coordinate such drills with these external agencies. Each of the four rail line managers are expected to and have the ultimate responsibility to plan and execute these emergency drills for their own lines. LACMTA was expected to perform at least two emergency drills per line for each of their four lines (Green, Blue, Red and Gold) per their SSPP dated 6/1/06. A total of 16 drills were supposed to be performed during the past two years. However, the LACMTA representatives did not have a list available for the reviewers to review and assess whether this requirement was met.
  - a. The Blue Line Transportation Manager and the Red Line Manager, each, had a good knowledge of what was done in 2006 but did not remember or bring any records of the 2005 drills. LACMTA Rail Line managers were adequately informed by the Corporate Safety Department of the information requested by CPUC for the review, but came to the review meeting unprepared.
  - b. Blue Line Manager described two emergency drills for 2006:
    - i. Evacuation of the Rail Control Center. Since this drill impacted all the four lines, it was considered to have fulfilled the requirement of fulfilling one of the two drills required per line per year for all the four lines.

- ii. 12/20/06: Traction Power Substation Explosion Exercise: It did not involve any outside agencies.
  - c. Red Line emergency drills:
    - i. Evacuation of the Rail Control Center. Since this drill impacted all the four lines, it was considered to have fulfilled the requirement of fulfilling one of the two drills required per line per year for all the four lines.
    - ii. 12/13/06: Bomb Threat Exercise: This drill simulated discovery of a bomb at the end of the line's run during the routine safety and cleaning sweep of the train. The drill met all the elements required of an emergency drill including the following
      - 1) Pre-test drill meetings
      - 2) Post drill meeting
      - 3) Report with corrective actions
      - 4) Status report of the 8 corrective actions with two completed items did not have the date of the status report.
    - iii. 6/28/07 Drill planned on Hazmat (possible anthrax package found on the operator sweep at the end of the line.)
      - 1) Pretest drill on 6/15/07
      - 2) Actual drill was to and did take place two days after the date of the review and was attended by one of the CPUC staff.
  - d. Partnered with the LA County Health Department Table Top exercise involving public health and safety aspects.
  - e. Since the incident commander in one of the drills did a poor job; the Red Line Manager ordered a special training of his staff on the roles and duties of an Incident Commander with the help of Wyman Jones of LACMTA.
2. In most of the examples cited above, emergency drills seem to have been evaluated by the participants (as shown in the documentation for one of the Red Line Bomb Threat Exercise); however, there were only limited records showing that recommendations made as a result of drills and are tracked to closure.

Recommendations:

1. LACMTA should document the post-drill findings and recommendations.
2. LACMTA should develop a matrix of the Emergency Drills conducted by each rail lines that can be used to track the status of corrective action implementation.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>27</b>	Persons Contacted
Date of Review	<b>6/29/2007</b>	Hector Guerrero – Assistant Manager, Transportation
Reviewers	<b>Arun Mehta</b>	Bob Baker – Assistant Manager, Transportation
Department	<b>Rail Transportation</b>	Linda Leone – Rail Integration and Instruction Manager Barbara Harris – Assistant Manager, Transportation Audrey Chiu – Safety Manager, Corporate Safety

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.12

**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.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. LACMTA Rules & Procedures clearly and strictly emphasize safety in workplace for the contractors and its employees. Any worker not in compliance can and have been removed from the workplace immediately until compliance is met. This not only applies to the contractors directly working for the LACMTA, but also to third party contractors / sub-contractors.
2. It also applies to any other external agency that has their contractors working within 10 ft. envelope of the MTA property: LACMTA has standing agreements in place with other fellow agencies such as electric, water and telephone utilities, as well as city and county municipalities.
3. LACMTA requires all potential contractors to attend a safety presentation in a Pre-Bid meeting and review a safety sheet outlining training required for the job. All contractors once selected and awarded a contract, must attend safety training classes lasting 2 or 4 hours, and pass a graded test. Staff reviewed a copy of a Heavy Rail Safety Quiz for a Contractor Employee.
  - a. After successful completion of training, LACMTA issues badges to the contractor employees to wear when working at the LACMTA work site. LACMTA conducts spot

check of contractor work badges and those persons found not wearing a badge are cited and removed from the work site.

- b. The contractor safety training is valid for two years for each specific employee. There is no blanket license/training certification for the contractor's company as a whole.
4. ROC approves the contractor work via the Track Allocation / Work Permit Process. Staff reviewed a copy of the process manual dated 05/04/05. 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 (i.e. flagging, power down, single tracking, etc.) for work along each rail line. Staff reviewed samples of the Request forms.
5. Contractors must follow the track allocation process and all of the LACMTA safety requirements.
6. Both the LACMTA (ROC) staff and the contractor must sign off on the work allocation request form and each contractor employee must carry a copy during the work. Staff reviewed a copy of such work permit (No. W-001) for the Gold Line for work starting 6/24/07 and ending 6/29/07.
7. A monthly Construction Safety Activity Report, written by LACMTA staff identifies contractor deficiencies and advises corrective actions. The LACMTA staff can cite any violations and stop the work depending upon the severity of the violations.

Comments:

The reviewers found the ROC and Safety Training staff to be very competent and thorough in their work.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>28</b>	Persons Contacted
Date of Review	<b>6/28/2007</b>	Carol Holben – Medical Standards & Compliance Admin.
Reviewers	<b>Anton Garabetian</b>	Kathi Harper – Human Resources Manager
Department	<b>Human Resources</b>	Jessica Gil – Medical Standards & Compliance Admin.

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Section 4.14
2. LACMTA Alcohol and Drug Abuse Policy
3. CPUC General Order 143-B, Section 12.03

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**DRUG AND ALCOHOL TESTING 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,

Choose employment record of an employee from each testing type that failed in the drug and alcohol test.

1. Review these records to confirm that they were subsequently prohibited from performing safety sensitive duties unless and until they successfully completed the Employee Assistance Program and passed the required Return-to-Duty testing.
2. 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.

**FINDINGS AND RECOMMENDATIONS**

Findings:

Staff interviewed the LACMTA Drug and Alcohol Abuse Programs management (Management) and reviewed the LACMTA safety sensitive rail employees' records for the past three years on the following drug and alcohol testing types and did not find any discrepancies:

- Pre-Employment & Transfer,
- Reasonable Suspicion,

- Post-Accident,
- Random,
- Return From Extended Medical Leave,
- Return-to-Duty
- Follow-Up Testing

1. Staff chose employment record of an employee from each testing type that failed in the drug and alcohol test and reviewed these records to confirm that they were subsequently terminated or prohibited from performing safety sensitive duties unless and until they successfully completed the Employee Assistance Program and passed the required Return-to-Duty testing.
2. Staff reviewed 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.
3. Staff interviewed Management regarding their awareness of the LACMTA System Safety Program Plan (SSPP). The Management could not recall the existence of SSPP.
4. LACMTA updates LACMTA policy titled Drug and Alcohol Free Work Environment periodically. When LACMTA issues a new drug and alcohol policy, the Management distributes it to all LACMTA employees and obtains their signature.
5. LACMTA distributes the Drug and Alcohol Free Work Environment policy to all new employees.
6. LACMTA conducts eight to ten times a year Drug and Alcohol Free Work Environment training sessions to train the supervisors.

#### Suggestion

Staff suggests that LACMTA Corporate Safety to conduct annual refresher trainings to Department Managers about the requirements of SSPP.

#### Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>29</b>	Persons Contacted
Date of Review	<b>6/25/2007 6/27/ 2007</b>	Wilson W. Chu – Fleet Management and Support Services, Departmental System Analyst Bob Holland – Manpower System and Support, System Project Manager Audrey Chiu – Manager, Corporate Safety
Reviewers	<b>Claudia Lam Noel Takahara</b>	
Department	<b>Rail Transportation / Fleet Services / Wayside Systems</b>	

**REFERENCE CRITERIA**

1. LACMTA Rail Operation General Policy No. 03-01 Rail Operations Safety Sensitive Employees, Dated February 4, 2003.
2. CPUC General Order 143-B, Section 12.04

**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.

- 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).
1. 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).

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

**1. Train Operators:**

Staff randomly selected two train operators from Blue Line (out of 77 Operators) to review their hours of service record from December 1, 2006 to December 31, 2006. Staff found that the two train operators were in compliance with G.O. 143-B requirements.

**2. Rail Transit Operations Supervisors:**

Staff randomly selected two persons from each of the following category to review their hours of service record from December 1, 2006 to December 31, 2006:

- a) Field Supervisors

- Field Supervisors (Badge # 000001087 and Badge # 000060041) were in compliance with G.O. 143-B, section 12.04.

b) Transit Controllers

- Transit Controllers (Badge # 000012971 and 000016202) were in compliance with G.O. 143-B, section 12.04.

c) Yard Controllers

- Yard Controllers (Badge # 000060224 and 000007642) were in compliance with G.O. 143-B, section 12.04.

3. Wayside Systems:

LACMTA's Fleet Management and Support Service-M3 Support Team were able to program the database to generate the report that list all signal inspectors who worked over 12 hours per day, for the period of November 1, 2006 to November 30, 2006. The report showed that there were no violations of G.O. 143-B, section 12.04.

4. Rail Fleet Services Personnel:

LACMTA Fleet Management and Support Service-M3 Support Team were able to program the database to generate the report that lists all Maintenance Specialists at Facility #11 who worked over 12 hours per day, for the period of November 1, 2006 to November 30, 2006. The reports showed two maintenance specialists (out of 100) violated the requirement of G.O. 143-B, section 12.04.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>30</b>	Persons Contacted
Date of Review	<b>6/27/2007</b>	David Daniels – Senior Environmental Specialist James Jimenez – Environmental Specialist III Kevin L. Sechler – Facilities Maintenance Manager
Reviewers	<b>Ni Liu Anton Garabetian</b>	
Department	<b>Facilities Maintenance – Environmental Compliance</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Sect 4.13
2. LACMTA System-wide Hazardous Material Emergency Response Plan
3. LACMTA Hazard Communications Program, dated March 2003

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

HAZARDOUS MATERIAL PROGRAMS

Interview Facilities Maintenance – Environmental Compliance 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.

**FINDINGS AND RECOMMENDATIONS**

Findings:

1. Staff reviewed the following records for the years 2005, 2006, and 2007:
  - a. Waste Antifreeze Summary.
  - b. Waste Oil Summary.
  - c. Liquid Waste Summary.
  - d. Pacific Resource Recovery – solid waste contractor.
2. The function of testing cleaning chemicals is the responsibility of the Quality Assurance Department, not of the Facilities Maintenance – Environmental Compliance Department, as stated in 4.13 of the System Safety Program Plan (SSPP).

3. LACMTA SSPP Section 4.13 outlines the responsibility of Corporate Safety Department and Quality Assurance Department. However, the SSPP does not include the responsibility of Facilities Maintenance – Environmental Compliance Department which does have the roles and responsibility in Hazardous Materials Program and is not under the Quality Assurance Department.
4. Staff reviewed interoffice memorandums informing applicable departments of rules and regulations changes. Facilities Maintenance – Environmental Compliance provide new employees with Hazardous Material Awareness Training as well as Hazardous Material Operation Response Training to Hazardous Material Coordinators, Managers, and Supervisors. Facilities Maintenance – Environmental Compliance also perform monthly environmental compliance review with the Hazardous Material Coordinator at each facility.

Recommendations:

1. LACMTA should revise LACMTA System Safety Program Plan (SSPP) Section 4.13 to differentiate responsibilities of the Facilities Maintenance – Environmental Compliance Department from the Quality Assurance Department and outline the roles and responsibilities accordingly.

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>31</b>	Persons Contacted
Date of Review	<b>June 26, 2007</b>	Linda Leone – Rail Integration & Instruction Manager
Reviewers	<b>Claudia Lam Mahendra Patel Noel Takahara</b>	Byron J. England – Director of Rail Operations Control, Rail Transportation Audrey Chiu – Manager, Corporate Safety
Department	<b>Rail Transportation Instruction</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Sect 4.8
2. LACMTA Rail Rulebook
3. LACMTA Rail Standard Operating Procedures
4. CPUC General Order 143-B, Section 13.02

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**RAIL OPERATING RULES AND PROCEDURES**

Interview the Rail Transportation Instructions Department Manager to find out rules and procedures modifications made to the following documents during the last two years:

- Metro Rail Book of Operating Rules and Procedures
- Rail Controllers Standard Operating Procedures
- Heavy Rail Standard Operating Procedure
- Light Rail Standard Operating Procedure
- Bulletins
- Notices

Select at least two modifications (if any) from each documents and review the modification process record to determine if:

1. The Rule/Procedure modification have been reviewed by applicable departments,
2. There exists a formal process for reviewing the modifications,
3. There exists a formal process for a Metro employee to suggest changes to Rules and Procedures,
4. LACMTA submitted the modified rules and procedures to CPUC Staff.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. Staff found that 2007 Book of Operating Rules and Procedures replaced Heavy Rail Standard Operating Procedure and Light Rail Standard Operating Procedure.

2. LACMTA has Rules and Standard Operating Procedures (RASOP) Committee to review the recommendation before the modification is approved. In addition, RASOP also tracks all the changes including date, reference documents, pages, recommendation submitted with approval of entire committee to revise, delete, or insert new text into specified documents.
3. There were two documents that explain the process for revision procedure. The two documents are Metro Rail Field Supervisor Manual (Section FWI#01-Revision and Update), and Metro Red Line Train Operations Manuals (Section RWI#01-Revision and update).
4. The two documents also describe how a Metro employee can suggest changes to Rules and Procedure.
5. LACMTA has submitted the 2007 Book of Operating Rules and Procedures to CPUC designated representative.

Recommendations:

None

**2007 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR  
THE LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY**

Checklist No.	<b>32</b>	Persons Contacted
Date of Review	<b>6/27/07</b>	Ted Montoya – Deputy Executive Office, Procurement & Material Management Dieter Hemsing – Director, Material Management, Logistics
Reviewers	<b>Raed Dwairi</b>	
Department	<b>Procurement</b>	

**REFERENCE CRITERIA**

1. LACMTA System Safety Program Plan, Rev. 4, effective June 1, 2006, Sect 4.15
2. LACMTA Hazard Communication Program, dated March 2003, Section 4.0

**ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION**

**PROCUREMENT**

Through interviews and review of procedures and records for the last two years, determine if:

1. The Procurement Department has in place procedures that are monitored and enforced to preclude the introduction into the transit environment of unauthorized hazardous materials and supplies, as well as defective or deficient equipment,
2. The Procurement Department ensure that contractors meet requirements related to safety,
3. Deviations from procurement control are brought to the attention of the general management and to the Corporate Safety department.

**FINDINGS AND RECOMMENDATIONS**

**Findings:**

1. LACMTA Corporate Safety provided additional documentation via e-mail on July 2, 2007 substantiating that the transit agency has adequate procedures to preclude the introduction into the transit environment of unauthorized hazardous materials and defective equipment. The additional documents pertain to requirements in Design-Build contracts (Special Provisions Design/Build Con Form 093-D/B Revision Date 06/05/03) and Construction Safety Manual Revision 2 of 06/10/02.
2. The Program Manager is primarily responsible for ensuring that contractors meet requirements related to Safety. The Procurement Department includes clauses in contracts that must be met in the contract award process or when a supplier to LACMTA is approved.
3. Staff discussed issues of deviations from procurement control in order to identify, for example, alternate suppliers, with Rail Engineering and Corporate Safety personnel.
4. LACMTA develops specifications, requests samples, when applicable, before they approve a new supplier or product.
5. LACMTA issues a Quality Assurance hold when a product is deemed defective.
6. Staff did not find any exceptions

**Recommendations:**

None