2010
SAFETY REVIEW OF LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (LACMTA)

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CONSUMER PROTECTION AND SAFETY DIVISION
CALIFORNIA PUBLIC UTILITIES COMMISSION
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Final Report

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2010 TRIENNIAL ON-SITE SAFETY REVIEW OF LOS ANGELES COUNTY METROPOLITAN TRANSPORTATION AUTHORITY (LACMTA)

ACKNOWLEDGEMENT

The California Public Utilities Commission's Rail Transit Safety Section staff conducted this system safety programs review. Staff members directly responsible for conducting safety review and inspection activities include:

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1. EXECUTIVE SUMMARY

The California Public Utilities Commission's (Commission) Consumer Protection and Safety Division (CPSD), Rail Transit Safety Section staff (staff) conducted an on-site safety review of Los Angeles County Metropolitan Transportation Authority's (LACMTA) system safety program in September 2010.

The on-site review was preceded by an opening conference with LACMTA personnel on September 13, 2010. Staff conducted the 2010 LACMTA on-site safety review from September 8 through September 28, 2010. The review focused on verifying the LACMTA's effective implementation of its System Safety Program Plan (SSPP).

Staff held a post-review conference with LACMTA personnel on October 13, 2010. Staff provided LACMTA a synopsis of the preliminary review findings and recommendations for corrective actions.

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 which are described in the Findings and Recommendations section of each checklist. Staff made 9 recommendations for corrective action from the 31 checklists.

The Introduction and Background Sections of this report are presented in Sections 2 and 3 respectively. The Background Section contains a description of LACMTA rail system. Section 4 describes the review procedure, and Section 5 provides the review findings and recommendations. The 2010 LACMTA Triennial Safety Review Acronyms List is found in Appendix A, Checklist Index in Appendix B, Recommendations List in Appendix C and review Checklists in Appendix D.

2. INTRODUCTION

The Commission's General Order (GO) 164-D, *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-D as well as other Commission and regulatory safety requirements. The previous on-site safety review of LACMTA was conducted by staff in June 2007.

On August 11, 2010, staff mailed a letter to LACMTA Chief Executive Officer (CEO), advising that the Commission's safety review had been scheduled for September, 2010. The letter included 31 checklists that served as the basis for the review. Three of the 31 checklists outlined inspection of track, signal, and vehicles. The remaining 28 checklists focused on the verification and the effective implementation of the LACMTA SSPP.

Staff conducted the on-site safety inspections and records review during September 8, 2010 – September 28, 2010. At the conclusion of each review activity, staff provided LACMTA personnel a verbal summary of the preliminary findings and discussed preliminary recommendations for corrective actions.

On October 13, 2010, staff conducted a post-review exit meeting with LACMTA management and personnel. Staff provided the attendees a synopsis of the non-compliant findings from the 31 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 was opened on November 2009. The Mid-city Exposition Light Rail Line Phase One is under construction. LACMTA operates over 80 miles with 73 stations. The average ridership of the system is approximately 250,000 per day in 2009 (Fiscal year).

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 7th/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.

Metro Red Line[1]

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 7th/Metro Station in downtown Los Angeles and connects to the Amtrak and Metrolink commuter rail, as well as the Gold Line, at Union Station. LACMTA operates four-car and six-car trains on the line, depending on the time of the day.

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

[1] 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. 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.

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 evenings and weekend mornings.

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.

Metro Gold Line Eastside Extension Project

The Metro Gold Line East Side Extension project opened on November 2009. 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.

4. SAFETY 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-one (31) checklists to cover various aspects of system safety responsibilities, based on Commission requirements, LACMTA SSPP, safety related LACMTA documents, and the staff's knowledge of the transit system. The 31 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 non-compliances. 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 been effectively implementing the 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 9 recommendations from the 31 checklists outlined below:

1. Signal Inspection

Staff did not find any non-compliances.

2. Track Inspection

Staff found the following non-compliances:

- Switch #42 at Blue Line track has loose fasteners, defective ties and ballasts seeping thru ties near the abutment of a bridge near Switch #42.
- Loose heel blocks on Switch #3, Switch #7, Switch #1A, Switch #5 at Green line track.
- Crack on point of frog and loose switch rods on Redline track switch AR 1047.22.54, loose switch rods on switches AL 1047.22.54, AR 1044.81.82, AL 1044.81.82, AL 761.45.86.

Recommendation:

1. LAMCTA should inspect its tracks to ensure all track components are maintained according to the requirements of its track maintenance standards.

3. Vehicle Inspection

Staff did not find any non-compliances.

4. Heavy Rail Operations Training and Certification

Staff did not find any non-compliances.

5. **Light Rail Operations Training and Certification**

Staff found the following non-compliances:

- LACMTA tracks the required training and certification of its operators by using a training matrix that alerts management 30, 60, & 90 days prior to an operator's training lapse. However, the current tracking mechanism does not include supervisors

Recommendation:

2. LACMTA should develop the controls necessary to alert Blue Line management of any lapses in the required annual supervisor training and certifications.

6. **Rail Operator Efficiency Testing Program**

Staff did not find any non-compliances.

7. **Heavy Rail Train Operator Performance**

Staff did not find any non-compliances.

8. **Light Rail Train Operator Performance**

Staff found the following non-compliances:

- One Green Line train operator did not call ROC to inform or get clearance for staff to ride in the cab with him.
- One Blue Line train operator did not have his Operating Rules and Procedure book with him.

Recommendation:

3. LACMTA should ensure that Metro train operators are knowledgeable of and comply with its operating rules and procedures per Metro Rail Systems Book of Operating Rules and Procedures.

9. **Heavy and Light Rail Signal Maintenance and Inspection Records**

Staff did not find any non-compliances.

10. Track Maintenance & Inspection Records

Staff found the following non-compliances:

- A review of LACMTA mainline track inspection reports showed that no defects were noted since January 2008, however, some exceptions were noted on the Track Maintenance Log. This indicates that LACMTA did not properly document the inspection records as required by 213.241 (b) since inspection records do not properly reflect the condition of the inspected track.

Recommendation:

4. LACMTA should develop the controls necessary to ensure that track preventive maintenance records are properly documented as required by the track maintenance standards of the FRA Section 213.241.

11. SCADA Maintenance Response and Planning

Staff did not find any non-compliances.

12. Concrete Inspection Records

Staff did not find any non-compliances.

13. Traction Power Inspection Records

Staff found the following non-compliances:

- The LACMTA personnel could not easily retrieve the checklists hard copies when staff asked for them. Review suggests LACMTA needs to devise a plan to easily retrieve the inspection checklists.

Recommendation:

5. LACMTA should update Wayside Systems Maintenance Plan – Traction Power to reflect the applicable traction power equipment inspection frequency.

   Subsequent to the triennial review, LACMTA submitted the updated Wayside Systems Maintenance Plan - Traction Power Systems, dated September 27, 2010, reflecting the current equipment inspection frequencies.

14. Accident Reporting and Investigation

Staff did not find any non-compliances.

15. System Modification Review/Approval Process and Configuration Management

Staff did not find any non-compliances.

16. Internal Safety Audit Program

Staff did not find any non-compliances.

17. Hazardous Material Programs

Staff did not find any non-compliances.

18. Calibration of Test Equipment

Staff did not find any non-compliances.

19. Safety Data Analysis/Acquisition

Staff did not find any non-compliances.

20. Employee Safety Program

Staff did not find any non-compliances.

21. Emergency Response Planning and Coordination

Staff found the following non-compliances:

- The corrective actions that were documented for the safety and security drills for the past three years were vague and unclear. The corrective action response noted for a number of non-compliance items was the same. The division manager is not effectively able to track emergency response drill corrective actions for his/her department due to poor and/or vague tracking procedures.

Recommendations:

6. LACMTA should adhere to the frequency established in their System Safety Program Plan, Section 4.7, Emergency Management Program, regarding the conduct of emergency response drills.
7. LACMTA should develop the controls necessary to track the timely implementation of corrective action plans pertaining to emergency response drills conducted on each rail line of its system.

22. Rail Communications Facilities Inspection

Staff found the following non-compliances:

- LACMTA inspectors did not annually test Undercar Deluge System for the following stations for years 2007 and 2009: Civic Center, Union, and Wilshire/Vermont.
- LACMTA discarded records of Radio Communications Systems service and tests for years 2008 and 2009 after the work tasks had been entered as complete in M3 by LACMTA.

Recommendations:

8. LACMTA should keep hard copies of test records for at least three calendar years per LACMTA Wayside Systems Preventive Maintenance Plan for Rail Communications Systems, Revision 3, Section 2.1, Preventive Maintenance Documentation.
9. LACMTA should annually inspect/test the Undercar Deluge System as specified in LACMTA's SSPP, Section 4.3.

23. Facilities Maintenance Inspection

Staff did not find any non-compliances.

24. Rail Transit Vehicles Preventative Maintenance Program Documentation

Staff did not find any non-compliances.

25. Emergency Response Training Drills

Staff did not find any non-compliances.

26. Contractor Safety Coordination

Staff did not find any non-compliances.

27. Drug and Alcohol Testing Program

Staff did not find any non-compliances.

28. Hours of Service – Safety Sensitive Employees

Staff did not find any non-compliances.

29. Hazardous Material Handling

Staff did not find any non-compliances.

30. Rail Operating Rules and Procedures

Staff did not find any non-compliances.

31. Procurement

Staff did not find any non-compliances.

APPENDICES

A. Acronym List
B. LACMTA 2010 Triennial Safety Review Checklist Index
C. LACMTA 2010 Triennial Safety Review Recommendations List
D. LACMTA 2010 Triennial Safety Review Checklists

APPENDIX A

Acronym List

Acronym	Definition	Acronym	Definition
APTA	American Public Transportation Association	MUTCD	Manual on Uniform Traffic Control Devices
BCB	Between Car Barriers	NBIS	NBIS National Bridge Inspection Standards
CAP	Corrective Action Plan	NFPA	National Fire Protection Association
CCR	California Code of Regulations	NTD	National Transportation Database
CFR	Code of Federal Regulations	O&M	Operator & Maintenance
Commission/ CPUC	California Public Utilities Commission	OCS	Overhead Catenary System
CTC	Centralized Traffic Control	OD&T	Organizational Development and Training Department
DTSC	Department of Toxic Substances Control	PGL	Metro Gold Line
EPA	Environmental Protection Agency	PMI	Preventive Maintenance Inspection
ETS	Emergency Trip Station	P.O.	Purchase Order
FRA	Federal Railroad Administration	RFS	Rail Fleet Services
FTA	Federal Transit Administration	ROC	Rail Operations Center
GO	General Order	ROW	Right of Way
IIPP	Injury and Illness Prevention Program	SCADA	Supervisory Control and Data Acquisition
IRSSA	Internal Rail System Safety Audit	SHARP	Safety and Health Assessment Review Program
ISA	Internal Safety Audit	SMRC	System Modification Review Committee
LACMTA	Los Angeles County Metropolitan Transit Authority	SOP	Standard Operating Procedure
MBL	Metro Blue Line	SSPP	System Safety Program Plan
MGL	Metro Green Line	Staff	Consumer Protection and Safety Division personnel
MOU	Memorandum of Understanding	TSDF	Treatment, Storage, or Disposal Facility
MRL	Metro Red Line	TSE/SCADA	Transit Systems Engineering/Supervisory Control and Data Acquisition
MSDS	Material Safety Data Sheet	UPS	Uninterruptible Power Supply

APPENDIX B
2010 LACMTA TRIENNIAL SAFETY REVIEW CHECKLIST INDEX

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

APPENDIX C
2010 LACMTA TRIENNIAL SAFETY REVIEW RECOMMENDATIONS LIST

No.	Recommendation	Checklist No.
1	LAMCTA should inspect its tracks to ensure all track components are maintained according to the requirements of its track maintenance standards.	2
2	LACMTA should develop the controls necessary to alert Blue Line management of any lapses in the required annual supervisor training and certifications.	5
3	LACMTA should ensure that Metro train operators are knowledgeable of and comply with its operating rules and procedures per Metro Rail Systems Book of Operating Rules and Procedures.	8
4	LACMTA should develop the controls necessary to ensure that track preventive maintenance records are properly documented as required by the track maintenance standards of the FRA Section 213.241.	10
5	LACMTA should update Wayside Systems Maintenance Plan – Traction Power to reflect the applicable traction power equipment inspection frequency. Subsequent to the triennial review, LACMTA submitted the updated Wayside Systems Maintenance Plan - Traction Power Systems, dated September 27, 2010, reflecting the current equipment inspection frequencies.	13
6	LACMTA should adhere to the frequency established in their System Safety Program Plan, Section 4.7, Emergency Management Program, regarding the conduct of emergency response drills.	21
7	LACMTA should develop the controls necessary to track the timely implementation of corrective action plans pertaining to emergency response drills conducted on each rail line of its system.	21
8	LACMTA should keep hard copies of test records for at least three calendar years per LACMTA Wayside Systems Preventive Maintenance Plan for Rail Communications Systems, Revision 3, Section 2.1, Preventive	22

	Maintenance Documentation.	
9	LACMTA should annually inspect/test the Undercar Deluge System as specified in LACMTA's SSPP, Section 4.3.	22

APPENDIX D

2010 LACMTA TRIENNIAL REVIEW CHECKLISTS

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**1**	**Signal Inspection**	
Date of Review	**September 15 & 28, 2010**	Department	**Wayside Systems**
Reviewers	**Thomas Govea**	Persons Contacted	**Remi Omotayo, Alan Clark, Alfred Weeks, Eddy Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Section 3.4.3, Rail Signal Maintenance.
2. Code of Federal Regulations CFR 49, Part 234, Grade Crossing Signal System Safety, 2009 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, 2009 Edition.
4. LACMTA Wayside Systems Department Maintenance Plan, Effective January 2008, Signal Systems – All Lines.

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Signal Inspection

CPUC/FRA qualified inspector from the Commission's Rail Transit Safety Section's Transportation Operations team 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 Pasadena Gold Line.
- 2 grade crossings and 2 interlocking/crossovers on the Metro Eastside Extension.
- 3 interlocking/crossovers on the Metro Green Line.
- 3 interlocking/crossovers on the Metro Red Line.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

CPUC qualified inspector (staff) from the Commission's Rail Transit Safety Section's Transportation Operations team selected, inspected and took measurements to verify if the selected grade crossings and interlocking/crossovers are in compliance with LACMTA's Signal System Maintenance Plan:

- Metro Blue Line 5 grade crossings and 2 interlocking/crossovers, 4 switch test.
- Metro Green Line 2 interlocking/crossovers, 10 switch test.
- Metro Red Line 6 interlocking/crossovers, 6 switch test.

Blue Line Inspection

Staff selected the following Blue Line grade crossings for inspection:

1. Wilmington Ave – CPUC 84L-9.30
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 75-D requirements.
    - Staff did not find any non-compliances.
2. 103rd Street – CPUC 84L-8.40
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 75-D requirements.
    - Staff did not find any non-compliances.
3. Century – CPUC 84L-8.20
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 75-D requirements.
    - Staff did not find any non-compliances.
4. Spring Street – CPUC 84L-18.10
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 75-D requirements.
    - Staff did not find any non-compliances.
5. Wardlow Street – CPUC 84L-17.50
    - Staff found the gate arm, at Gate AA, did not meet CPUC's General Order 75-D, Section 4, and MUTCD 8 C-1, minimum height requirement of three feet six inches. Staff measured the gate arm to be three feet four inches in height.
    - LACMTA Signal Personnel repaired and adjusted the gate arm while staff was on site.

Staff selected the following Blue Line interlockers and switches for obstruction tests and inspection:

1. Florence Interlocker A90 – Switch 21A, 21B, and Switch 12A, 12B
    - Staff found the Florence Interlocker A090 Switch (GRS F5) switch 12B showed movement during throw under power. The switch machine was not secured to switch ties properly per LACMTA Operation and Maintenance Manual.
    - The signal department has the switch on the list to be repaired.
2. Willow Interlocker A170
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.

Green Line Inspection

Staff selected the following Green Line switches and interlockers for obstruction tests and inspection:

1. Wilmington East (US&S M-3) – Switch 1A, 1B, and Switch 3A, 3B
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.
2. Wilmington East (US&S M-3) – Switch 1A, 1B, Switch 3, Switch 5, and Switch 7A, 7B
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.

Red Line Inspection

Staff selected the following Red Line switches and interlockers for obstruction tests and inspection:

1. North Hollywood – Interlocker inspected and obstruction tested Switch 1A and Switch 3B
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.
2. Universal – Interlocker inspected
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.

- Staff did not find any non-compliances.

3. Vermont/Santa Monica – Interlocker inspected and obstruction tested Switch 1B and Switch 3B
    - Staff did not perform obstruction test on Switch 1A, but staff observe that Switch 1A was not properly secured per 49 CFR 236.3.
    - LACMTA Signal Department properly secured the switch while staff was on site.
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.
4. Wilshire/Vermont – Interlocker inspected
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.
5. Wilshire/Western – Interlocker inspected and obstruction tested Switch 1B and Switch 3A
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.
6. Union Station – Interlocker inspected
    - LACMTA Signal Department complied with LACMTA's Signal System Maintenance Plan and CPUC's General Order 127 requirements.
    - Staff did not find any non-compliances.

Recommendations:

None

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**2**	**Track Inspection**	
Date of Review	**September 15 & 28, 2010**	Department	**Wayside Systems**
Reviewers	**John Madriaga**	Persons Contacted	**Jeff Root, Paul Squires, Edward Boghossian, Michael Kirchanski**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 June 2008, Track Systems – All Lines.

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Track Inspection

CPUC/FRA qualified inspector from Commission's Rail Transit Safety Section's Transportation Operations team 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 1section of curved track for Metro Blue Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Gold Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Green Line.
- 3 mainline turnouts, 1 section of tangent track, and 1section of curved track for Metro Red Line.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff randomly selected a sample of track sections for each line and found the track sections in compliance with CFR 49, Part 213 standards.

Blue Line Track Inspections

Staff inspected mainline tracks between Willow to Florence Station using a Hi-Rail vehicle and also by walking the alignment.

- Staff inspected turnouts #21B, #21A, Switch #42, #12A, #12B; tangent from Sta. 875+00 to Sta. 764+42; curves #300 and #400.
- Staff found at Switch #42 loose fasteners, defective ties and ballasts seeping thru ties near the abutment of a bridge near Switch #42.

Green Line Track Inspections

Staff inspected mainline tracks from Avalon to the Long Beach Stations.

- Staff inspected turnouts Switch#3, Switch#7 on Track #1; Switch #1A, Switch #5 on Track # 2; tangents from Sta. 641.93.54 to Sta.658.37.62 on Track #1 and Track #2,; curves #18-5 and #18-5.
- Staff found loose heel blocks on Switch #3, Switch #7, Switch #1A, Switch #5.

Red Line Track Inspections

Staff inspected mainline tracks, AR and AL, from Union Station to North Hollywood by Hi-Rail vehicle and walking.

- Staff inspected turnouts AR 1047.22.54, AR 1044.81.82, AL 1047.22.54, AL 1044.81.82; curves #2850 and #1840; tangents from Sta.1000.55.24 to Sta. 979.74.38.
- Staff found a crack on point of frog and loose switch rods on switch AR 1047.22.54, loose switch rods on switches AL 1047.22.54, AR 1044.81.82, AL 1044.81.82, AL 761.45.86.

Recommendations:

LAMCTA should inspect its tracks to ensure all track components are maintained according to the requirements of its track maintenance standards.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**3**	**Vehicle Inspection**	
Date of Review	**September 14 & 23, 2010**	Department	**Fleet Services**
Reviewers	**Michael Borer**	Persons Contacted	**George Kennedy, Brian Rydell, Anthony Precie, Fred Kan, Ken Arvidson, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 Rail Transit Safety Section's Transportation Operations team 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 for each type of Gold Line vehicle: P2000 and P2550.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff conducted equipment inspections on September 14, 2010 at Division 20 (Metro Red Line) and Division 21 (Metro Gold Line) and on September 23, 2010 at Division 22 (Metro Green Line) and Division 11 (Metro Blue Line).

Metro Red Line

Staff inspected random sample of mechanical records that included Daily Inspections and Mileage Mandated Inspections. LACMTA personnel were able to provide maintenance records promptly when staff requested them. The records are well maintained and easily accessible.

Staff conducted inspections on the following light rail vehicles:
Car # 511 - Staff found no defects
Car # 512 - Staff found no defects
Car # 555 - Staff found no defects
Car # 556 - Staff found no defects

Metro Gold Line

Staff inspected random sample of mechanical records that included Daily Inspections and Mileage Mandated Inspections. LACMTA personnel were able to provide maintenance records promptly when staff requested them. The records are well maintained and easily accessible.

Staff conducted inspections on the following light rail vehicles:
Car # 723 - Staff found no defects
Car # 241 - Staff found no defects

Metro Green Line

Staff inspected random sample of mechanical records that included Daily Inspections and Mileage Mandated Inspections. LACMTA personnel were able to provide maintenance records promptly when staff requested them. The records are well maintained and easily accessible.

Staff conducted inspections on the following light rail vehicles:
Car # 212 - Staff found no defects
Car # 209 - Staff found no defects
Car # 222 - Staff found no defects

Metro Blue Line
Staff inspected random sample of mechanical records that included Daily Inspections and Mileage Mandated Inspections. Staff found no defects

Staff conducted inspections on the following light rail vehicles:
Car # 163 - Staff found no defects
Car # 141 - Staff found no defects
Car # 115 - Staff found no defects

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**4**	**Heavy Rail Operations Training and Certification**	
Date of Review	**September 16, 2010**	Department	**Rail Transportation**
Reviewers	**Claudia Lam**	Persons Contacted	**Linda Leone, Thomas Jasmin, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 and 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, 3 Inspectors 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Staff randomly selected employee records from LACMTA's Red Line: three train operators, three Rail Operations Control (ROC) controllers, and three yard controllers. Staff found the selected train operators, ROC controllers, and yard controllers are current in training, certification, and re-certification.
2. Staff randomly selected 3 incident records from the Red Line train operators who were involved in an accident. LACMTA records show that post-accident follow-up ride checks were performed within the specified timelines of LACMTA's SOPs.
3. Staff reviewed LACMTA's lesson plans and presentation materials for its employees. Staff found LACMTA's training elements were in accordance with the Heavy Rail Standard Operating Procedure.
4. LACMTA tracks the required training and certification of its operators by using a training matrix that alerts management 30, 60, & 90 days prior to an operator's training lapse.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**5**	**Light Rail Operations Training and Certification**	
Date of Review	**September 16, 2010**	Department	**Rail Transportation**
Reviewers	**Claudia Lam**	Persons Contacted	**Linda Leone, Thomas Jasmin, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 and 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 Light Rail Standard Operating Procedure.

4. Verify if there is a tracking mechanism in place for the required training and certifications for each employee classification.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Staff randomly selected employee records from LACMTA's Gold and Blue Lines: three train operators, three Rail Operations Center (ROC) controllers, and three yard controllers. Staff found that the three train operators, three ROC controllers, and two yard controllers were current in their training, certifications, and re-certifications with the exception of a Blue Line yard controller. The Blue Line yard controller's training recertification expired and he did not alert the Blue Line management. LACMTA did not perform the necessary credential checks for this employee.
2. Staff randomly selected 3 incident records for Blueline and Goldline. LACMTA records show that post-accident follow-up ride checks were performed within the specified timelines of LACMTA's SOPs.
3. Staff reviewed the LACMTA's lesson plans and presentation materials for its employees. Staff found LACMTA's training elements were in accordance with the Light Rail Standard Operating Procedure.
4. LACMTA tracks the required training and certification of its operators by using a training matrix that alerts management 30, 60, & 90 days prior to an operator's training lapse. However, the current tracking mechanism does not include supervisors.

Recommendations:

LACMTA should develop the controls necessary to alert Blue Line management of any lapses in the required annual supervisor training and certifications.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**6**	**Rail Operator Efficiency Testing Program**	
Date of Review	**September 16, 2010**	Department	**Rail Transportation Instruction**
Reviewers	**Donald Filippi**	Persons Contacted	**Linda Leone,** **Thomas Jasmin,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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

Interview the Rail Transportation Instruction Department representatives in charge of the subject program and review supporting documentation and records to determine if the Rail Transportation Instruction (RTI) staff has issued 2 compliance tests, based on the rulebook, and has randomly selected and tested a minimum of 20 operators per line per month for:

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

Review the program records for the last 2 years for each line 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. Corrective actions were taken for the operators who failed the tests.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff reviewed all efficiency testing records from 2008 through and including 2010 and found the following:

1. LACMTA has conducted two compliance tests, based on the rulebook, and has randomly selected and tested a minimum of 20 operators per line, per month, for both Heavy rail and Light rail train operators,
2. LACMTA performed efficiency testing in accordance with LACMTA policies and procedures.
3. LACMTA properly documented all their efficiency testing for 2008 through 2010.
4. Non-compliances found during LACMTA's efficiency testing were noted and Corrective Actions documented for each event.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**7**	**Heavy Rail Train Operator Performance**	
Date of Review	**September 17, 2010**	Department	**Rail Transportation**
Reviewers	**Howard Huie**	Persons Contacted	**Thomas Jasmin,** **Barbara Harris,** **Edward Boghossian**

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.
3. Each operator does not possess any personal electronic equipment in the cab such as cellular phones, mp3 players, pagers, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff observed train operators' adherence to operating rules from the 7th and Metro Station to Union Station, at 10:25 a.m. on car 564, and from Union Station to 7th and Metro, at 11:55 a.m. on train 63. Staff did not ride in the cab with the train operator coming into Union Station but rode in the cab on the return ride. The train operator, on train 63, asked for staff's ID and contact information, and called the Rail Operations Control (ROC) to notify CPUC staff was riding in the

operator's cab before he allowed the train to leave Union Station.

1. Train operators, 23049 and 18013, operated the train within the governing orders, rules, and procedures of Metro's guidelines.
2. Train operators, 23049 and 18013, were carrying in their train bag a safety vest, flashlight, Metro's two way radio, and Metro's operating rules book.
3. Train operators, 23049 and 18013, did not have any electronic devices in their possession and were familiar with Metro's personal electronic device policy while operating trains.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	8	**Light Rail Train Operator Performance**	
Date of Review	**September 17, 2010**	Department	**Rail Transportation**
Reviewers	**Howard Huie**	Persons Contacted	**Thomas Jasmin,** **Robert Castanon,** **Patricia Alexander,** **Michael Moore,** **Edward Boghossian**

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.
3. Each operator does not possess any personal electronic equipment in the cab such as cellular phones, mp3 players, pagers, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff observed the following on-duty light rail trains:

Blue Line – PCH Station to 7th and Metro Station. 7th and Metro Station to Imperial Station.

Gold Line – Union Station to Sierra Madre Station and return to Union Station.

Green Line – Imperial Station to the Norwalk Station and return to Imperial Station.

Staff interviewed two separate train operators from each line.

The results for the observation and interviews were as follows:

1. A Green Line train operator, operating train #34, did not call Rail Operations Control (ROC) to inform or get clearance for staff to ride with him in the operator's cab. Staff observed five other train operators who notified ROC before allowing staff to ride in the operator's cab. Staff interviewed six train operators and found that they were familiar with the material and content in Metro's Operating Rules and Procedures book.
2. A Blue Line train operator, operating train #5, did not have his Operating Rules and Procedure book with him. Staff observed five other train operators who were carrying in their train bag a safety vest, flash light, two way radios, and Metro's Operation Rules and Procedures book.
3. Staff interviewed a total of six train operators from Metro's Green, Gold and Blue LRV lines and found that they were aware of Metro's personal electronic device policy and did not have any personal electronic devices in their possession.
4. Staff observed two Blue Line train operators, train # 5 and #6, and found that they were familiar with the operating rules and procedures within the CAB Signal Territory. Both train operators operated the train through the CAB Signal Territory within the guidelines of Metro's Operating Rules and Procedures manual.
5. Blue Line train operator, operating train #5, showed good defensive operating skills when he sounded the horn and brought his train to a safe speed as the train approached the 103rd Street Station in the southbound direction. The train operator was vigilant to patrons crossing under the gate from the east across the north running track to enter the center platform of the station.

Recommendation:

LACMTA should ensure that Metro train operators are knowledgeable of and comply with its operating rules and procedures per Metro Rail Systems Book of Operating Rules and Procedures.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**9**	**Heavy and Light Rail Signal Maintenance and Inspection Records**	
Date of Review	**September 8, 2010**	Department	**Wayside Systems**
Reviewers	**Thomas Govea**	Persons Contacted	**Remi Omotayo, Ricardo Moran, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 Records

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

1. Mainline switches (Since January 2008)
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 with a supervisor signature showing confirmation of completion.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Staff inspected records for switches at the following locations:

Red Line - Wilshire & Western, four switches at location.

A. Staff did not find any non-compliances.

Green Line – Wilmington East, four switches at this location.

A. Staff did not find any non-compliances.

Green Line – Aviation, eight switches at this location.

A. Staff did not find any non-compliances.

Blue Line – Washington, four switches at this location.

A. Staff did not find any non-compliances.

Gold Line – Southwest Museum, four switches at this location.

A. Staff did not find any non-compliances.

2. Staff inspected records for interlocks at the following locations:

Green Line – Marine, 7/17/2007, Aviation, 9/28/2007 and Wilmington West, 11/28/2007.

A. Staff did not find any non-compliances.

Red Line – US, 4/07/07, WM, 5/31/08 and Macarthur Park 10/09/07.

A. Staff did not find any non-compliances.

3. Staff inspected records for vital relays at the following locations:

Blue Line – A-160 Warlow, A-170 Willow and A-220 1st Street.

A. Staff did not find any non-compliances.

4. Staff inspected records for crossings at the following locations:

Gold Line – Orange Grove.

A. Staff did not find any non-compliances.

Gold Line - Hope Street.

A. Staff did not find any non-compliances.

Blue Line – Spring Street, Century Blvd., and 119th Street.

A. Staff did not find any non-compliances.

5. Staff selected the Cable Insulation Resistance Test Records for all of Blue Line.

A. Staff did not find any non-compliances.

6. Wayside Maintenance corrected noted defects in a timely manner. A Wayside Supervisor's signature showed confirmation of completion with his/her signature on an associated work order.

Comments:

Staff suggests that all cables that are found to be less then 500k ohms while performing insulation resistance test, requiring annual testing, to be recorded on a color test form to allow for visual tracking.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**10**	**Track Maintenance and Inspection Records**	
Date of Review	**September 8, 2010**	Department	**Track Maintenance Records**
Reviewers	**John Madriaga**	Persons Contacted	**Jeff Root,** **Paul Squires,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 Records

Review a random sample of LACMTA reports of the following inspection/tasks since January 2008 for all rail lines:

Mainline Inspections

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

Yard Inspections

- Visual/Walking
- Switch Inspection
- Ultrasonic Rail Testing
- Track Tamping

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 with supervisor signature showing confirmation of completion.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff reviewed a random sample of LACMTA reports for mainline and yard inspections for all lines since January 2008 and found the following:

Mainline Inspections

- Track: LACMTA performed semi weekly track inspections for all lines as required by the reference criteria.
- Switches: LACMTA performed monthly switch and crossovers inspections for all lines as required by the reference criteria.
- Ultrasonic Rail Testing: LACMTA performed annual ultrasonic rail testing for all lines as required by the reference criteria.
- Track Tamping: LACMTA performed track tamping for all lines as needed.

A review of LACMTA mainline track inspection reports showed that no defects were noted since January 2008, however, some exceptions were noted on the Track Maintenance Log. This indicates that LACMTA did not properly document the inspection records as required by 213.241 (b) since inspection records do not properly reflect the condition of the inspected track. LACMTA corrected all the noted defects in a timely manner with supervisor confirmation of completion on the Maintenance Log Sheet.

Yard Inspections (Red and Blue Line Yards)

- Visual/Walking: LACMTA performed weekly yard maintenance as required by the reference criteria.
- Switch Inspection: LACMTA performed monthly switch and crossovers inspections as required by the reference criteria.
- Ultrasonic Rail Testing: LACMTA performed annual ultrasonic rail testing as required by the reference criteria.
- Track Tamping: LACMTA performed track tamping as needed

LACMTA performed the inspections/testing as specified by the reference criteria, documented the required inspections, and corrected all noted non-compliance items in a timely manner with supervisor confirmation of completion on the Maintenance Log Sheet.

Recommendations:

LACMTA should develop the controls necessary to ensure that track preventive maintenance records are properly documented as required by the track maintenance standards of the FRA Section 213.241.

2010 CPUC SYSTEM SECURITY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	11	SCADA Maintenance, Response and Planning	
Date of Audit	**September 9, 2010**	Department	**Transit Systems Engineering**
Reviewers	**Howard Huie**	Persons Contacted	**Chuck Weissman, Jerry Whelan, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Section 3.4.5, Communications and SCADA
2. SCADA System Engineering Preventative Maintenance Plan v. 5.1
3. CPUC General Order 164-D, Section 4.0
4. 49 CFR Part 659, Section 659.23

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

SCADA Maintenance, Response and Planning

Interview the LACMTA representative responsible for cyber security, response and planning, review the SCADA Maintenance Plan and activities records to determine if:

1. LACMTA has implemented a SCADA Maintenance Plan;
2. LACMTA's SCADA Maintenance Plan has been certified by the head the of Wayside Department;
3. LACMTA has an existing process for revising and updating the SCADA Maintenance Plan;
4. LACMTA has a process to track all Corrective Action Plan(s) incorporated, or to be incorporated in the SCADA Maintenance Plan from beginning to end;
5. LACMTA has a current MOU or support/maintenance contract with hardware and software vendors for hardware and software support/maintenance;
6. LACMTA has performed, hardware and software inspections against intrusions on its CTC and/or SCADA system to ensure uptime;
7. LACMTA's CTC and/or SCADA system is inspected/monitored for hardware failures to ensure uptime;
8. LACMTA's CTC and/or SCADA system is updated to the appropriate software and hardware patches based on the manufacturer's recommendation;

9. LACMTA's CTC and/or SCADA system has "Back up and Restore" procedures and is certified by the Department Head.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LACMTA Transit Systems Engineering department, on 8/30/10, has implemented Revision 5.1 of the Supervisory Control and Data Acquisition (SCADA) System Engineering Preventative Maintenance Plan (Maintenance Plan).
2. The Senior Engineer of Transit Systems Engineering the Interim Executive Officer has signed and approved the Maintenance.
3. Transit Systems Engineering team has been following the procedures described in Appendix E, which describes the revising and updating process of the Maintenance Plan. Also in Appendix E is a template Preventative Maintenance Plan Change Request Form which is filled and submitted to management for review before updates to the SCADA and Centralized Traffic Control (CTC) system are implemented.
4. Transit System Engineering personnel fill out the Transit Systems Engineering/Supervisory Control and Data Acquisition (TSE/SCADA) Change Request Forms and are given to the Senior Engineer and placed into master folder. The Senior Engineer tracks and updates the Maintenance Plan or item to be corrected. Once the correction is complete, the Senior Engineer or management confirms and the form is either discarded or filed away depending on the significance of the corrective action.
5. LACMTA has three SCADA systems built by ARINC to control train traffic for the Red, Blue, and Gold Lines. LACMTA currently has a Purchase Order Number (P.O.) which is tied to a Scope of Work Statement which ARINC uses to support the SCADA systems. SCADA for Green Line is used for remote control various field equipment. The Green Line's train traffic is controlled by a CTC system built by Ansaldo, a rail switch manufacturer, once Union Switch and Signal. The Green Line CTC system is no longer supported by the manufacturer. However, LACMTA's Transit Systems Engineering team has in-house software (code expertise) and hardware expertise to support both the Ansaldo CTC and ARINC SCADA systems.
6. The Transit Systems Engineering does not check the servers for outside Intrusion Detection/remote calls. However, the SCADA and CTC systems are located behind three private subnets. Each subnet has its own firewall including the subnet to the SCADA and CTC subnet. ITS, Metro's IT Team, monitor the firewall logs for outside intrusions on a regular basis.
7. The Transit Systems Engineering team is broken up into two shifts teams, AM and PM. The AM and PM shifts perform the Daily Checklist, which includes checking the front panel of

drive arrays, servers, and other hardware for hardware failure. The PM shifts perform the Weekly Checklists, which include archiving alarm and back up data, and check event logs for errors. Maintenance Plan Section 4 provides the Monthly Maintenance Schedule. Section 1.4 of the Maintenance Plan references the Procedures Manual which details the Daily/Weekly Checklists.

8. The Transit Systems Engineering team does not actively patch the SCADA or CTC systems. Once the SCADA and CTC systems are online and working without errors, the system is not updated unless specified by a software or hardware vendor. This procedure ensures that no new "bugs" are introduced into the system without the knowledge of the software or hardware manufacturer.
9. The Transit System Engineering team backs up the SCADA and/or CTC Alarm Events at least once a week to media. The Transit System Engineering team will backup each SCADA and CTC system on an as needed basis as the system only changes when a patch is updated and/or the configuration has been changed. A backup copy is kept at Division 60, the ROC, and another copy is kept at Division 20, Red Line Maintenance of Way, in a fireproof safe. The backup and restore procedures are located in the System Procedure Manual. One Manual exists for every system within Metro. The backup and restore procedures are certified by the Senior Engineer Transit Systems Engineering.

Comments:

Staff suggests a CAP Matrix be incorporated as part of the SCADA System Engineering Preventative Maintenance Plan to track CAP(s) status.

Recommendations:

None.

2010 CPUC SYSTEM SECURITY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**12**	**Concrete Inspection Records**	
Date of Audit	**September 20, 2010**	Department	**Engineering**
Reviewers	**Joey Bigornia**	Persons Contacted	**Aspet Davidian, Christopher Limon, Marco A. Sanchez, Vijay Khawani, Edward Boghossian**

REFERENCE CRITERIA

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Concrete Inspection Records

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

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LACMTA jointly inspects concrete structures with contractor Anil Verma Association, Inc. LACMTA's Structural Engineer is responsible for reviewing the concrete inspection report findings according to National Bridge Inspection Standards (NBIS), and reviewing the condition of findings.
2. Staff selected and reviewed the following inspection reports:
    a. Blue Line
        1. Aerial Structure Rosecrans Overpass (B-035) dated January 16-31, 2008.
        2. Aerial Structure San Fernando Road Bridge (GD-004) - Lower Portion dated

February 12, 2008.

b. Gold Line
   1. Chinatown Bridge (GD-001) dated July 21-23, 2008; November 17, 2008.

c. Green Line
   1. Aerial Structure (G-059) dated May 5, 2008 – May 27, 2008.
   2. Douglas Station (G-060) dated May 6, 2008 – June 9, 2008.

d. Red Line
   1. AL Tunnel from Westlake MacArthur to Wilshire Vermont (R-068) dated June 3, 2008 – July 15, 2008.
   2. Tunnel Structure Crossover East Union Station (R-079) dated June 3, 2008 – July 15, 2008.

The inspection reports documented visual findings and defects by photographs on LACMTA structures. Structures under the jurisdiction of Caltrans such as the Harbor Station Interstate 110/105 interchange where a cracked embankment was found due to a drainage issue were repaired by Caltrans accordingly. Typical findings on LACMTA's structures noted are minor such as spalling, cracks, water leaks (tunnel), etc.

The inspection reports provide a summary NBIS (0-9) rating 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.

3. The Concrete Inspection Defect Reports provide a summary table identifying defect descriptions, photographs, and recommendations. LACMTA's Structural Engineer reviews all inspection reports. Staff did not find any exceptions.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**13**	**Traction Power Inspection Records**	
Date of Review	**September 21, 2010**	Department	**Wayside Systems**
Reviewers	**Anton Garabetian**	Persons Contacted	**Leroy Bonifay,** **Winston Dixon,** **Michael Harris-Gifford,** **Vijay Khawani,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 Records

Review a randomly selected sample of completed traction power inspection, maintenance, and test records, since January 2008, 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:

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

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff randomly selected a sample of completed traction power inspection, maintenance, and test records.

LACMTA has done a commendable job integrating the traction power inspection preventive maintenance data entry to the M3 system. Any maintenance record staff asked for, LACMTA personnel were able to retrieve it from the M3 system.

Checklists are available for the inspectors to fill them out during equipment inspections, and maintenance. LACMTA personnel could not easily retrieve the checklists hard copies when staff asked for them. Staff suggests LACMTA to devise a plan to easily retrieve the inspection checklists.

Overhead Catenary System (OCS) – Blue, Green, and Gold Lines

Staff randomly selected and reviewed the M3 annual inspection and maintenance records since January 2009, for the following:

- Metro Blue Line
  - Yard to Artesia T2 Section – No defects.
  - Imperial to Florence T2 Section – No defects.

- Metro Green Line
  - Long Beach Boulevard to Wilmington T2 Section- No defects.
  - Crenshaw to Aviation T2 Section – LACMTA properly documented the required inspections and corrected all noted defects in a timely manner.

- Metro Gold Line
  - DTMN to P/ALI T2 Section - No defects.
  - Delmar to Allen T2 Section – LACMTA properly documented the required inspections, but did not indicate how it was closed out.

Auxiliary power equipment and electric power substations

LACMTA inspects the auxiliary power equipment and electric power substations concurrently. Staff reviewed the M3 annual inspection and maintenance records since January 2009, for the following:

- MBL- 103rd Uninterrupted Power Supply (UPS)

- MBL Artesia substation
- MGreenLine Aviation UPS battery
- Lakewood substation
- PGL Substation maintenance
- PGL Union Station substation
- MRL UC SEF 102 smoke exhaust fan maintenance.
- MRL UC substation

LACMTA performed the inspections according to the specified frequency as required by the reference criteria, documented the required inspections, and corrected all noted defects in a timely manner.

Uninterruptible Power Supply (UPS)

Staff randomly selected and reviewed the M3 inspection and maintenance records since January 2009, for the following:

- MBL Slauson
- MGL Marine
- PGL Memorial Park
- MRL SM

LACMTA performed the inspections according to the specified frequency as required by the reference criteria, documented the required inspections, and corrected all noted defects in a timely manner.

Emergency vent fans

Staff randomly selected and reviewed the M3 semi-annual inspection and maintenance records since January 2009, for the following:

- MRL North Hollywood
- PGL- LACMTA has not inspected the fans yet because of late handling of contractor.

LACMTA performed the inspections according to the specified frequency as required by the reference criteria, documented the required inspections, and corrected all noted defects in a timely manner

Emergency trip station (ETS)

Staff reviewed the M3 annual inspection and maintenance records since January 2009, for the following:

- MBL main line
- MGL main line
- MRL main line
- PGL main line

LACMTA has revised the inspection of some traction power equipment, including batteries, to less frequent cycle than stated on the current Wayside System Maintenance Plan.

Recommendations:

LACMTA should update Wayside Systems Maintenance Plan – Traction Power to reflect the applicable traction power equipment inspection frequency.

Subsequent to the triennial review, LACMTA submitted the updated Wayside Systems Maintenance Plan - Traction Power Systems, dated September 27, 2010, reflecting the current equipment inspection frequencies.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**14**	**Accident Reporting and Investigation**	
Date of Review	**September 20, 2010**	Department	**Corporate Safety**
Reviewers	**Noel Takahara**	Persons Contacted	**Vijay Khawani,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Section 4.5
2. LACMTA Rail Accident Investigation Procedures (AIP)
3. CPUC General Order 164-D, Dated May 3, 2007, 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 2-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

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Records indicate that LACMTA reported accidents to CPUC staff and filed accident reports as required by regulation (GO 164D and 49 CFR Part 659) and according to LACMTA's System Safety Program Plan (SSPP).
2. Records indicate that LACMTA filed reports to CPUC staff within 60 days of the occurrence of the accident. Depending on the type of accident, LACMTA would submit either a 60 day report or a 60 day EZ report. Thresholds determining which report type would be submitted to CPUC were developed during a ROAR committee meeting. Although the 60 day report is more detailed, both the 60 day report and the 60 day EZ report identify the required elements including findings, causes, contributing factors, and any recommendations.
3. Staff reviewed the accident report dated January 20, 2010 submitted to CPUC for the November 20, 2009 accident on the Blue Line at Wilmington and Willowbrook. LACMTA Corporate Safety developed a corrective action plan and schedule to implement the recommendation to review "Defensive Driving" rules with all appropriate operators as part of the ongoing retraining and certification process.
4. Records indicate that the LACMTA corrective plan implementation schedule is up-to-date.
5. See answer number 1.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**15**	**System Modification Review/Approval Process and Configuration Management**	
Date of Review	**September 13, 2010**	Department	**Engineering**
Reviewers	**Howard Huie, Stephen Artus**	Persons Contacted	**Diane Curzon, Vijay Khawani, Edward Boghossian, Michael Kirchanski**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. The Engineering Department reviews and approves LACMTA's configuration requests for capital and non-capital projects in accordance with LACMTA Policy #ENG01 and LACMTA Policy CF15, respectively.

Capital Projects

7th and Metro Center Station – Stairs Widening. Contract: C0937, Design Stage: 85%, Engineering Project Leader: G. Roy, Project: 211011, Task: 01.001, Date Review Package Issued: 11/19/08, Date Response Due: 12/1/08.

Crenshaw/LAX Transit Corridor Review of Documents – June 21 Deliverable. 6/28/2010 – CD Distribution, 6/29/2010 Kickoff and Review meeting, 7/16/2010 Deadline for Submission of Comments to Document Control, care of Dianne Curzon. Project Manager: Roderick Diaz.

Non Capital Projects

100 – Trial Installation of In-Road Warning Lights (IRWLs) for Left Turns. Date of request 10/08/09. Priority (routine). Requestor Abdul Zohbi, Safety Manager Corporate Safety. Ram Krishna, Director of Project Engineering Systems LACMTA, commented "make sure that the IRWLs are in synch with No Left Turn (Red)." Approved 10/27/09.

#95 – Reduce the Gold Line Signal Height to the MBL Signal Height. Date requested 5/21/08. Priority (high). Requestor Aderemi Omotayo, Wayside Systems Manager – Signal Wayside Systems. The P2550 Train Operators are having problems seeing the wayside signal, because of the roof design of the P2550 and the placement of the TWC antenna. By reducing the height of the PGL wayside signal to the MBL wayside signal height we can solve the problem. Concerns with Engineering and Safety were to ensure that it would meet PUC GO 143-B, Section 9.06 (c)2. New location of signal lights met CPUC criteria. Approved 5/27/08.

#98 – Platform based Between Car Barriers (BCB). Date requested 8/13/08. Priority (high). Requestor Davide Puglisi, Rail Division Transportation Manager. Replace car-borne Between Car Barriers (BCB). Provide better deterrence and guidance to sight impaired passengers. Improve flexibility in changing consist sizes on the mainline in response to dynamic passenger demand. Mitigate employee injury and maintenance costs associated with car borne BCBs. Approved 9/4/08.

2. LACMTA's Document Control department emails and/or sends in a hard copy format a review package for the System Modification Review Committee (SMRC) and all other pertinent departments within LACMTA and consultants, if applicable, to review. The Document Control department sends courtesy follow up reminders to reviewers a few days prior to the commenting period deadline. The Document Control department has followed the review procedures for Capital and Non-Capital Projects, outlined in LACMTA Policy #ENG01 and CF15, respectively.
3. All hazards identified with system expansions or modifications must be resolved and agreed upon, by SMRC and any other reviewing parties, before the Configuration Change Request could be closed.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	16	Internal Safety Audit Program	
Date of Review	**September 20, 2010**	Department	**Corporate Safety**
Reviewers	**Joey Bigornia**	Persons Contacted	**Vijay Khawani, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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-D, Dated May 3, 2007, Section 4, Internal Safety Audit Requirements.
5. Code of Federal Regulations (CFR) 49, Part 659.27

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Internal Safety Audit Program

Verify if the LACMTA internal rail system safety audit (IRSSA) is providing a 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 2007.
5. The Corporate Safety Department has developed Internal Safety Audit Plan and Schedule, for the next 3 years, in accordance with CFR 49, Part 659.27 requirements.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Staff reviewed copies of LACMTA's Annual Internal Safety Audit (ISA) Reports for Years 2007-2009. The reports identify recommendation(s) necessary for LACMTA to be in-compliance with their SSPP. Staff did not find any exceptions.
2. All ISA Reports identify the required 21-elements for review and shows which particular element is scheduled for review in a given year within the audit cycle. LACMTA began a new 21-element in Year 2009, it concludes at end of Year 2011, and the next 21-element cycle begins in Year 2012. Staff did not find any exceptions.
3. LACMTA's Chief Executive Officer formally submitted the Annual Reports to Commission staff prior to the 15th of February each year as required by GO164-D. Annual Report copies were also sent by Corporate Safety to LACMTA Department managers who were audited. Staff did not find any exceptions.
4. The Corporate Safety Department is responsible for performing the ISA audits and tracks any corrective actions/recommendations found during an ISA audit. The Annual Reports include the checklists, findings, recommendations, responsible department, and identify the status of recommendation (open/closed). Staff did not find any exceptions.
5. See (2) above.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**17**	**Hazardous Materials Program**	
Date of Review	**September 20, 2010**	Department	**Corporate Safety**
Reviewers	**Joey Bigornia**	Persons Contacted	**David Daniels, Collins Kalu, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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 Materials Program

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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Corporate Safety maintains all Material Safety Data Sheet (MSDS) for each hazardous material in use at all bus and rail facilities on the Metro computer database system. The MSDS database can be accessed at any maintenance facility for specific product inquiry. Each MSDS file contains a Product Approval Request Form signed by the Principal Industrial Hygienist which shows the product was reviewed in accordance with LACMTA's Program prior to introduction of new product for usage.
2. The Response to Hazardous Materials Spill Incidents is identified in Corporate Safety's System-wide Hazardous Materials Emergency Response Plan dated December 2009.
3. All LACMTA Maintenance Facilities have a computer for employee usage to access the MSDS database. Employees may look up a product and print out information on usage, handling, disposal, etc.
4. Corporate Safety's System-wide Hazardous Materials Emergency Response Plan dated December 2009 identifies the cleanup and disposal procedures. LACMTA contracts with Pacific Resource Recovery and their subcontractor United Pumping Services for hazardous cleanup and disposal.
5. Staff reviewed the Hazardous Waste Operation & Emergency Response records and determined Pacific Resource Recovery provided the 8-hour annual training to LACMTA employees in May 2010. Staff did not find any exceptions.
6. LACMTA had the following materials discharge/spill reports for Year 2007-2010:
    - Material Spill – Blue Line Yard Division 20, 1-5-2008
    - Trauma Scene, Metro Red Line, 6-7-2008
    - Trauma Scene, Pasadena Gold Line, 4-6-2009
    - Trauma Scene, Metro Blue Line, 7-26-2009
    - Trauma Scene, Metro Blue Line, 4-1-2010

    All reports were on-file in the database server by incident number, description of incident, injuries, assessment, quantity/disposition of recovered material from incident, preliminary causes and mutual agencies responding for compliance with CCR Title 22 Section 66264.56(j) requirements. Staff did not find any exceptions.
7. Same as (1) above.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**18**	**Calibration of Test Equipment**	
Date of Review	**September 14, 2010**	Department	**Rail Fleet Services**
Reviewers	**Joey Bigornia**	Persons Contacted	**John Scott,** **Fred Kan,** **George Kennedy,** **Lorenzo Lopez,** **Dennis Gibo,** **Jeffrey Lynch,** **Cop V.Tran,** **Anthony Precie,** **Elsa Edejer,** **Manuel Precie,** **Glenn Siaumu,** **Ken Arvidson,** **Vijay Khawani,** **Michael Kirchanski**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Section 3.31
2. LACMTA Calibration SOP – Rail Vehicle Maintenance Plans for Divisions 11, 20, and 22

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Calibration of Test Equipment

Interview LACMTA representatives and review calibration records for the last three years, examine equipment storage facilities, and perform inspections of not less than eight pieces of measuring or testing equipment to determine whether or not:

1. The selected gauges, micrometers, calipers, torque wrenches, multi-meters, etc. are properly inventoried, stored, distributed for use, calibrated at prescribed intervals, and marked, tagged or otherwise identified to show current calibration status.
2. The next schedule testing/calibration due date is shown on each piece of equipment
3. Tools and instruments requiring calibration are listed in department procedures

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LACMTA's equipment is calibrated by Micro Quality Calibration – Western Commercial Laboratories, Chatsworth , CA on an annual basis.
2. Staff selected the following equipment identified by model and serial number from LACMTA's Master List as follows:

Metro Blue Line

a. Torque Wrenches
   1. Snap-On (400 ft/lbs) – s/n 3985. Calibrated 4/12/2010, Next Calibration 4/12/2011
   2. Proto (250 ft/lbs) – s/n DCE09936, Calibrated 5/10/2010, Next Calibration 5/10/2011
   3. Snap-On (400 ft/lbs) – s/n 3787, Calibrated 5/12/2010, Next Calibration 5/12/2011

b. Pressure Gages
   1. Wika (0-160 psi) – s/n 1591582, Calibrated 8/6/2010, Next Calibration 8/6/2011
   2. Wika (0-160 psi) – s/n 1577942, Calibrated 8/6/2010, Next Calibration 8/6/2011
   3. Wika (0-160 psi) – s/n 2004056, Calibrated 6/7/2010, Next Calibration 6/7/2011

c. Megohmeter
   1. AVO International – s/n LAC-25334, Calibrated 8/13/2010, Next Calibration 8/13/2011
   2. Starret (0-12") – s/n 1251373, Calibrated 4/12/2010, Next Calibration 4/12/2011

d. Digital Multi-meters
   1. Fluke – s/n 1492071, Calibrated 4/12/2010, Next Calibration 4/12/2011
   2. Fluke – s/n 1492053, Calibrated 4/12/2010, Next Calibration 4/12/2011
   3. Fluke – s/n 1492061, Calibrated 4/12/2010, Next Calibration 4/12/2011

e. Oscilloscope
   1. Tektronic Digital– 100Mhz, Calibrated 11/18/2009, Next Calibration 11/18/2010

f. Amp Meter Clamp On

1. Hioki – s/n 807709, Calibrated 11/18/2009, Next Calibration 11/18/2010
2. Hioki – s/n 89091774, Calibrated 11/3/2009, Next Calibration 11/3/2010

g. Digital Calipers
   1. Mitutoyo – s/n 09022143, Calibrated 8/12/2010, Next Calibration 8/12/2011
   2. Mitutoyo- s/n LAC-05238, Calibrated 8/26/2010, Next Calibration 8/26/2011

Metro Gold Line

a. Torque Wrenches
   1. Precision Instruments (0-200 in-lbs) – s/n 2214, Calibrated 1/20/2010, Next Calibration 1/20/2011
   2. Proto (15-150 ft/lbs) – s/n DJG65435, Calibrated 1/20/2010, Next Calibration 1/20/2011
   3. Snap-On (100-600 ft/lbs) – s/n 1041100017, Calibrated 6/8/2010, Next Calibration 6/8/2011
   4. Snap-On (1-50in-lbs) – s/n 0103307052, Calibrated 6/22/2010, Next Calibration 6/22/2011

b. Pressure Gages
   1. Beacon (0-200 psi) – s/n L4932, Calibrated 11/11/2009, Next Calibration 11/11/2011
   2. US Gauge (0-200 psi) – s/n 163365, Calibrated 8/3/2010, Next Calibration 8/3/2011

c. Megometer
   1. AVO (1kvDC,999 MOhms) – s/n 6311-055/030603/4578, Calibrated 7/20/2010, Next Calibration 7/20/2011

d. Digital Multimeter
   1. Snap-On – s/n 163342, Calibrated 9/2/2010, Next Calibration 9/2/2011

e. Digital Micrometer
   1. Snap-On – s/n 163343, Calibrated 6/24/2010, Next Calibration 6/24/2011

f. Electronic Caliper
   1. Fowler (0-6") – s/n SH9J2872785, Calibrated 9/9/2010, Next Calibration 9/9/2011

g. Digital Caliper
   1. Chicago Brand (0-6") – s/n G3121752, Calibrated 8/26/2010, Next Calibration 8/26/2011
   2. Mitutoy (0-12") – s/n 4032262, Calibrated 4/12/2010, Next Calibration 4/12/2011
   3. Mitutoy (0-12") – s/n 4032262, Calibrated 4/12/2010, Next Calibration 4/12/2011

h. Digital Multimeter
   1. Snap-On – s/n 163342, Calibrated 9/2/2010, Next Calibration 9/2/2011

Metro Red Line

a. Torque Wrenches
   1. Snap-On (50-250 ft/lbs) – s/n 505600331, Calibrated 8/30/2010, Next Calibration 8/30/2011
   2. Snap-On (20-100 ft/lbs) – s/n 9037, Calibrated 4/12/2010, Next Calibration 4/12/2011
   3. Snap-On (200-600 ft/lbs) – s/n 47640, Calibrated 8/5/2010, Next Calibration 8/5/2011
   4. Proto (0-250 ft/lbs) – s/n MRL-M071, Calibrated 4/12/2010, Next Calibration 4/12/2011

b. Pressure Gages
   1. Royal (0-200 psi) – s/n MRL-M079, Calibrated 10/19/2010, Next Calibration 10/19/2011
   2. Royal (0-200 psi) – s/n MRL-M081, Calibrated 7/29/2010, Next Calibration 7/29/2011
   3. MC (0-200 psi) – s/n MRL-M117, Calibrated 5/11/2010, Next Calibration 5/11/2011

c. Megometer
   1. Megger BM25 – s/n MRL-E004, Calibrated 8/28/2009, Next Calibration 8/23/2011

d. Digital Multimeter
   1. Fluke – s/n 5415029, Calibrated 8/23/2010, Next Calibration 8/23/2011
   2. Fluke – s/n 5415057, Calibrated 8/23/2010, Next Calibration 8/23/2011

3. Fluke – s/n 5420010, Calibrated 6/28/2010, Next Calibration 6/28/2011
4. Digital Mulimeter Agilient – s/n US36012974, Calibrated 8/9/2010, Next Calibration 8/9/2011

e. Oscilloscope
1. Tektronix – s/n MRL-E025, Calibrated 8/23/2010, Next Calibration 8/23/2011

Metro Green Line

a. Torque Wrenches
1. Proto (50-250 ft/lbs) – s/n 74041, Calibrated 8/25/2010, Next Calibration 8/25/2011
2. Proto (50-250 ft/lbs) – s/n 34001, Calibrated 10/2/2009, Next Calibration 10/2/2010
3. Proto (10-200 in/lbs) – s/n MGLM-060, Calibrated 8/25/2010, Next Calibration 8/25/2011

b. Pressure Gauges
1. STAUFF (0-300 psi) – s/n MGLM-014, Calibrated 3/5/2010, Next Calibration 3/5/2010
2. STAUFF (0-300 psi) – s/n MGLM-M015, Calibrated 3/5/2010, Next Calibration 3/5/2011

c. Megometer
1. AEMC – s/n 58150, Calibrated 2/12/2010, Next Calibration 2/12/2011

d. Digital Multimeter
1. Fluke – s/n MGLE-062, Calibrated 9/8/2010, Next Calibration 9/8/2011
2. TENMA - s/n 1030284, Calibrated 8/25/2010, Next Calibration 8/25/2011

e. Dial Indicator
1. Starrett (0-1") – s/n L4962, Calibrated 4/24/2010, Next Calibration 4/29/2011
2. Starrett (0-1") – s/n L4964, Calibrated 6/7/2010, Next Calibration 6/7/2011

f. Sweep Generator
1. BK Precision – s/n 0108-0346, Calibrated 8/24/2010, Next Calibration 8/24/2011

g. DC Power Supply

1. Hewlett Packard – s/n MGLE-49, Calibrated 12/1/2009, Next Calibration 12/1/2010
2. BK Precision – s/n n96136263, Calibrated 8/25/2010, Next Calibration 8/25/2011

h. Oscilloscope
   1. Hewlett Packard – s/n MGLE-043, Calibrated 12/1/2009, Next Calibration 12/1/2010

3. Each piece of equipment listed above had a sticker affixed identifying last calibration date and the next scheduled calibration date. Staff did not find any exceptions.
4. Staff reviewed copies of Calibration Data Sheets and Certificates for each piece of equipment listed above to confirm the independent laboratories calibrated the equipment. Staff did not find any exceptions.
5. All equipment was calibrated by various independent laboratories within the required frequency interval. Staff did not find any exceptions.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	19	Safety Data Analysis/Acquisition	
Date of Review	**September 20, 2010**	Department	**Corporate Safety**
Reviewers	**Noel Takahara**	Persons Contacted	**Abdul Zohbi, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LACMTA Corporate Safety Department reports incidents to the National Transportation Database (NTD) according to federal regulations. Corporate Safety handles rail safety related

incidents. The Los Angeles Sheriff's department reports security related incidents to the NTD. NTD thresholds for incident reporting are more inclusive compared to GO-164D and 49 CFR Part 659 thresholds. Corporate Safety reports slips and falls and other minor incidents to the NTD after receiving notification from the Rail Operations Center (ROC) or other departments.

2. Since a majority of incidents occur on the Metro Blue Line, LACMTA Corporate Safety Department compiles quarterly reports of accident statistics on the Metro Blue line. Staff reviewed subject reports for the 4th quarter of FY2010. The Blue Line quarterly accident reports are updated by Corporate Safety quarterly and include data for the latest 10-year period. The type of statistics compiled in the report include: Accidents per 100,000 miles; total number of accidents; train/vehicle accidents by route segment; train/pedestrian accidents by route segment; date, time, type of accident; contributing factors; direction of travel; fatalities, mirror incidents, and suicides. The information is also broken down to allow anyone reviewing the report to understand locations and/or crossings where accidents occur at higher rates. Also several charts and tables are included in the report. The "Blue Line Train / Pedestrian Accidents by Route Segment" chart indicates that pedestrian incidents in general occur on the cab signal route segment and not on the street running route segments.
3. Since a majority of incidents occur on the Metro Blue Line, Corporate Safety has focused on improving the line. Using accident data Metro has effectively improved the safety record of the Blue Line. Vehicular accidents in the last 5 year period have been reduced by 50% compared to the 5 year period from 1991-1995. Mitigating measures to improve safety include: installation of active "Train Coming" signs, photo enforcement at 13 crossings, project to improve safety for pedestrians at approx 15 crossings, pilot program at Washington / Los Angeles St. for in roadway flashing lights. Although vehicular incidents have been reduced significantly, pedestrian incidents are on a slightly upward trend. Metro is addressing pedestrian safety on the Blue Line by working on a project to install swing gates and pedestrian gates at approximately 15 locations. This project is in the preliminary design phase.
4. Metro Corporate Safety accident data reports have identified trends; and various projects that have been implemented demonstrate that Metro management is involved and has approved recommendations to improve overall safety.

Recommendations:

None

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**20**	**Employee Safety Program**	
Date of Review	**September 20, 2010**	Department	**Corporate Safety**
Reviewers	**Noel Takahara**	Persons Contacted	**Edward Boghossian**

REFERENCE CRITERIA

5. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LACMTA employees can report safety hazards using the "Safe 7" form. The Safe 7 form allows for LACMTA employees to formally submit unsafe conditions or practices in writing to management. Corporate Safety receives a copy of the form and will prioritize and track the follow ups. Near misses are reported on Safe 7 forms. Staff reviewed the Safe 7 form that was filed by a Green Line Operator that reported that he was experiencing excessive truck hunting while operating his LRV. Truck hunting is the term used to describe the lateral oscillation of a truck from one rail to the other as it seeks a consistent rolling radius on all wheels. The operator filed and submitted a Safe 7 form to the Green Line Rail Fleet Services (RFS) manager. The Green Line RFS Manager immediately investigated the issue on the following day, and closed the file the following week after making repairs. In

addition to the Safe 7 form, LACMTA Corporate Safety administers a monthly Rail Fleet Service Facility Inspection Checklist as part of the Injury and Illness Prevention Program (IIPP). This checklist is made up of approximately 150 line items including fire protection, electrical safety items, first aid supplies, sanitation, and the use of personal protective equipment.

2. Occupational injuries and illnesses are documented and investigated using the LACMTA Safe-5 Form. This form documents whether the injury or illness resulted from unsafe acts or conditions. This form also includes simple analysis and corrective actions to take.
3. Occupational health and safety training is part of the LACMTA IIPP. Employee safety training is provided for: Asbestos, Bloodborne Pathogens, Compressed Natural Gas, Confined Space Safety, Ergonomics, Hazard Communication, Hearing Conservation, Lead Management, Personal Protective Equipment, Respiratory Protection, Electrical Safety High Voltage, Fall Protection, etc. The LACMTA Organizational Development and Training Department (OD&T) is responsible for tracking the occurrence of employee training for each individual employee.
4. LACMTA Corporate Safety conducts an annual Safety and Health Assessment Review Program (SHARP) that evaluates the level of compliance to the IIPP.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**21**	**Emergency Response Planning And Coordination**	
Date of Review	**September 22, 2010**	Department	**Rail Transportation Instruction**
Reviewers	**Donald Filippi**	Persons Contacted	**Thomas Jasmin, Linda Leone, Vijay Khawani, Edward Boghossian**

REFERENCE CRITERIA

6. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.
4. If LACMTA is conducting 2 emergency drills per year per line.
5. If the conducted drills call for Corrective Action Plans (CAPs) and if the CAPs are tracked to completion.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

LACMTA did not periodically conduct the Emergency Response Drills for 2008. Records did show that LACMTA met the requirements of Emergency Response Drills for 2009 and 2010.

1. LACMTA did address both Safety and Security issues in their Emergency Response Planning.
2. Staff reviewed LACMTA's Emergency Response Drill program documented in their System Safety Program Plan 4.7 and located in their Rail Transportation SOP manual.

3. LACMTA did not conduct two drills per line in 2008; however, they did conduct two drills per line in 2009 and 2010.
4. LACMTA's Emergency Response Plan does call for Corrective Actions. Some of the drills documented by LACMTA personnel did not have CAPs listed and staff found LACMTA used the same CAP for a number of different issues. These CAPs were used as a general response to most of the concerns indentified in the drills that were related to budget. Staff also noted that most of the CAPs related to budget issues were not being followed very closely, these CAPs had long periods of time that had elapsed and there was still an open Corrective Action item. The CAPs were lacking definition and detail; it was hard to determine what LACMTA was identifying as a Corrective Action.

Recommendations:

1. LACMTA should adhere to the frequency established in their System Safety Program Plan, Section 4.7, Emergency Management Program, regarding the conduct of emergency response drills.

2. LACMTA should develop the controls necessary to track the timely implementation of corrective action plans pertaining to emergency response drills conducted on each rail line of its system.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**22**	**Rail Communications Facilities Inspection**	
Date of Review	**September 22, 2010**	Department	**Rail Communications**
Reviewers	**Howard Huie**	Persons Contacted	**Daniel Lindstrom, Claire Reyes, Vijay Khawani**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 6, 2009, Section 4.3
2. LACMTA Rail Communication Maintenance Plan, Rev. 3, effective March 20, 2007
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
4. Failed systems were communicated to the Facilities Maintenance Department for repair and retest.
5. LACMTA developed a process to alert management when required inspections are not performed or repairs are not closed out in a timely manner.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

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

Inspection Task	Interval	Blue	Gold	Green	Red
Service & Maintenance of Radio Communication Systems	Annual	X	X	X	X
Undercar Deluge System	Annual	X	X		X
Emergency Management Panel & Telephones	Annual	X	X	X	X
Gas Monitoring System	Quarterly	X			X
Fire Control Panels	Annual	X	X	X	X

1. Metro Blue Line:

A. Staff selected the 7th St / Metro Center Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

   1) LACMTA performed the annual inspections for the Radio Communications Systems, Emergency Management Panels, Telephones, and Fire Control Panels and all the quarterly Gas Monitoring Systems tests.

   2) LACMTA failed to perform the annual Undercar Deluge System test for 2007 and 2009 but did perform test for 2008.

2. Metro Gold Line:

A. Staff selected Union Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

   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 Memorial Park Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

   1) LACMTA performed the annual inspections for the Radio Communications Systems,

Emergency Management Panels, Telephones, and Fire Control Panels and all the quarterly Gas Monitoring Systems tests.

2) LACMTA failed to perform the annual Undercar Deluge System test for 2007 and 2009 but did perform tests for 2008.

3. Metro Green Line

A. Staff selected the Long Beach Facilities Inspection records for years 2007, 2008, and 2009 for review.

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 Norwalk Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

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 Union Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

1) LACMTA performed the annual inspections for the Radio Communications Systems, Emergency Management Panels, Telephones, and Fire Control Panels and all the quarterly Gas Monitoring Systems tests.

2) LACMTA failed to perform the annual Under-car Deluge System test for 2007 and 2009 but did perform tests for 2008.

B. Staff selected the Wilshire/Vermont Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

1) LACMTA performed the annual inspections for the Radio Communications Systems, Emergency Management Panels, Telephones, and Fire Control Panels and all the

quarterly Gas Monitoring Systems tests.

2) LACMTA failed to perform the annual Undercar Deluge System test for 2007 and 2009 but did perform tests for 2008.

C. Staff selected the Civic Center Station Facilities Inspection records for years 2007, 2008, and 2009 for review.

1) LACMTA performed the annual inspections for the Emergency Management Panels, Telephones, and Fire Control Panels. The Civic Center Station does not have a Radio Communications System.

2) LACMTA failed to perform the annual Undercar Deluge System test for 2007 and 2009 but did perform tests for 2008.

3) LACMTA failed to perform the quarterly Gas Monitoring Systems test for the first quarter of 2007. However, LACMTA has completed all of the required quarterly Gas Monitoring Systems tests from the second quarter of 2007 through the last quarter of 2009.

5. LACMTA Rail Facilities corrected/repaired defects, retested, and closed out in a timely manner.

6. All future Annual and Quarterly Inspections automatically scheduled in M3 database. Managers and personnel are notified through M3 when tasks are not completed as scheduled.

7. LACMTA Facilities Communication's managers discarded the hard copy Radio Communications Systems service and tests records for years 2008 and 2009 after the work tasked has been entered as complete (closed) in M3.

8. LACMTA did not consistently perform Undercar Deluge Systems testing during 2007, 2008 and 2009 due to lack of certified inspectors. However LACMTA notified and worked with the LAFD on this problem and has since changed the requirements for all existing inspectors as well as newly hired inspectors to be certified for Undercar Deluge inspection.

Recommendations:

1. LACMTA should keep hard copies of test records for at least three calendar years per LACMTA Wayside Systems Preventive Maintenance Plan for Rail Communications Systems, Revision 3, Section 2.1, Preventive Maintenance Documentation.

2. LACMTA should annually inspect/test the Undercar Deluge System as specified in LACMTA's SSPP, Section 4.3.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**23**	**Facilities Maintenance Inspection**	
Date of Review	**September 22, 2010**	Department	**Facilities Maintenance**
Reviewers	**Anton Garabetian**	Persons Contacted	**Christopher Limon, Marco Sanchez, Louis Campos, Vijay Khawani, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff selected inspection reports for Metro Blue Line (MBL) 7th St/Metro Center, 2 Gold Line (PGL), 2 Green Line (MGL), and 3 Red Line stations (MRL) prepared during the past 3 years. LACMTA Facilities Maintenance Department does a commendable job in keeping the inspection records in order.

Station Maintenance

Staff randomly selected and reviewed the monthly inspection and maintenance records since January 2008, for the following:

- MBL 7th and Metro Station (2008, 09, 10)
- MRL Westlake Station (2008), Vermont Sunset Station (2008 and 2009), Hollywood Vine Station (2009), Hollywood Western Station (2009), Wilshire Vermont Station (2010), Wilshire Vermont Station ((2010), Wilshire Normandy (2010), Wilshire Western (2010)
- PGL Fillmore (2008), Delmar ((2008), Memorial Park (2008), Union Station (2009), Chinatown (2009), Lincoln (2009), Fillmore (2010), Delmar (2010), Memorial Park (2010)
- MGL Harbor (2008), Crenshaw (2008), Harbor (2009), Vermont (2009), Harbor (2010), Vermont (2010).

LACMTA performed the inspections monthly, exceeding the quarterly inspection requirement stated in Wayside Maintenance Plan – Facilities Maintenance, documented the required inspections, and corrected all noted non-compliances in a timely manner.

Fire Extinguishers

LACMTA inspected the fire extinguishers located in the applicable MRL and MGL stations. LACMTA performed the inspections monthly as specified by the reference criteria, documented the required inspections, and corrected all noted non-compliances in a timely manner.

Tunnel Inspections –

Staff reviewed the quarterly tunnel inspection and maintenance records since January 2008, for the following:

- Metro Blue Line (MBL) 7th St/Metro (2008, 09, 10)
- MRL (2008, 09, 10)
- PGL Figueroa, Colorado, and Morengo boxes

LACMTA performed the inspections quarterly, exceeding the annual inspection requirement stated in Wayside Maintenance Plan – Facilities Maintenance, documented the required inspections, and

corrected all noted non-compliances in a timely manner

Emergency Hatches

Staff randomly selected and reviewed the quarterly inspection and maintenance records since January 2008, for the following:

MRL Union Station, Civic Center, Perishing Square, 7th and Metro (2008); Pershing Square, Civic Center (2009), Union Station, Civic Center, Pershing Square (2010).

PGL Mariachi and Soto (2010)

LACMTA performed the inspections quarterly as specified by the reference criteria, documented the required inspections, and corrected all noted defects in a timely manner.

Standpipes and Associated Pumps

Staff randomly selected and reviewed the inspection and maintenance records for 2009 and 2010. LACMTA performed the inspections according to specified frequency as required by the reference criteria, documented the required inspections, and corrected all noted non-compliances in a timely manner.

Fire Sprinkler System

Staff randomly selected and reviewed the monthly inspection and maintenance records since January 2008, for the following:

- MBL 7th and Metro Station (2008, 09, 10)
- MRL Westlake Station (2008), Vermont Sunset Station (2008 and 2009), Hollywood Vine Station (2009), Hollywood Western Station (2009), Wilshire Vermont Station (2010), Wilshire Vermont Station ((2010), Wilshire Normandy (2010), Wilshire Western (2010)
- PGL Fillmore (2008), Delmar ((2008), Memorial Park (2008), Union Station (2009), Chinatown (2009), Lincoln (2009), Fillmore (2010), Delmar (2010), Memorial Park (2010)
- MGL Harbor (2008), Crenshaw (2008), Harbor (2009), Vermont (2009), Harbor (2010), Vermont (2010).

LACMTA performed the inspections monthly, exceeding the annual inspection requirement, stated in Wayside Maintenance Plan – Facilities Maintenance, documented the required inspections, and corrected all noted non-compliances in a timely manner.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**24**	**Rail Transit Vehicles Preventative Maintenance Program Documentation**	
Date of Review	**September 23, 2010**	Department	**Fleet Services**
Reviewers	**Mike Borer**	Persons Contacted	**George Kennedy, Brian Rydell, Anthony Precie, Fred Kan, Ken Arvidson, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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. LACMTA Nippon Sharyo 865/2020 Preventive Maintenance Inspections
6. LACMTA Breda 2550 Preventive Maintenance Inspections (If available)
7. CPUC General Order 143-B, Section 14.04

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Rail Transit Vehicles Preventative 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; Breda 2550

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

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

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

- Metro Red Line:

  Staff selected two Breda Model vehicles (car nos. 511-512) and reviewed the vehicle inspection reports dated January 01, 2008 to January 01, 2010.

  1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and closed out maintenance defects in a timely manner by the responsible maintenance workers.
  2) Staff did not find any exceptions.

  Staff selected two Breda Model vehicles (car nos. 555-556) and reviewed the vehicle inspection reports dated January 01, 2008 to January 01, 2010.

  1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and close out maintenance defects in a timely manner by the responsible maintenance workers.
  2) Staff did not find any exceptions.

- Metro Blue Line:

  Staff selected two Nippon-Sharyo Model 865 vehicles (car nos. 115 & 104) and reviewed the inspection records dated January 01, 2008 – January 01, 2010.

  1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and close out maintenance defects in a timely manner by the responsible maintenance workers.
  2) Staff did not find any exceptions.

  Staff selected two Nippon-Sharyo Model 2020 vehicles (car nos. 141 & 163) and reviewed the

inspection records dated January 01, 2008 – January 01, 2010.

1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and close out maintenance defects in a timely manner by the responsible maintenance workers.

2) Staff did not find any exceptions.

- Green Line

  Staff selected three Siemens Model 2000 vehicles (car nos. 209, 212 & 222) and reviewed the inspection records dated January 01, 2008 – January 01, 2010.

  1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and close out maintenance defects in a timely manner by the responsible maintenance workers.

  2) Staff did not find any exceptions.

- Gold Line

  Staff selected two Siemens Model 2000 GE/ATP vehicles (car nos. 241 & 723) and reviewed the inspection records dated January 01, 2008 – January 01, 2010.

  1) LACMTA performed all the required PMI during the required mileage limits, documented inspection reports, and close out maintenance defects in a timely manner by the responsible maintenance workers.

  2) Staff did not find any exceptions.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**25**	**Emergency Response Training Drills**	
Date of Review	**September22, 2010**	Department	**Rail Operations**
Reviewers	**Anton Garabetian**	Persons Contacted	**Thomas Jasmin, Barbara Harris, Patricia Alexander, Robert Castanon, Michael Moore, Vijay Khawani, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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, and tracked to completion in a timely manner.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Merged with checklist 21.

Recommendations:

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**26**	**Contractor Safety Coordination**	
Date of Review	**September 24, 2010**	Department	**Rail Transportation**
Reviewers	**Claudia Lam**	Persons Contacted	**Thomas Jasmin, Linda Leone, Karl Williams, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. LAMCTA procedures clearly state any worker(s) in or on LACMTA property, including but not limited to LACMTA employees and contractors, must be in compliance with LACMTA's safety rules and procedures.
2. LACMTA requires all contractors to attend safety training conducted by Rail Operations.

LACMTA issues Rail Safety Certified badges to the class participants upon class completion. Contractors and LACMTA employees are required to have the Rail Safety Certified badges with them whenever they work on LACMTA property.

3. LACMTA contractors submit track allocation requests a week in advance to the Rail Operations Control (ROC) for approval. Allocation meetings are scheduled every Wednesday involving representatives from wayside, contractors, and coordinators. During the meeting, attendees discuss each request and issue the work permit.
4. Staff randomly selected track allocation request forms discussed during various allocation meetings. The forms identified the location, number of crew members, time of allocation requested, type of work, and restrictions such as flagging, power down, single tracking, and/or reduced speed.
5. The LACMTA personnel and the contractor must sign off on the track allocation request form(s) or work permit(s). Each contractor must carry the copy of the signed track allocation request form(s) or work permit(s) during the duration of work. LACMTA personnel conduct spot checks to verify the contractors are carrying signed copies of the work allocation request form(s) or work permit(s) during the duration of their work. LACMTA personnel documented the non-compliances and corrective actions in a monthly Construction Safety Activity Report. LACMTA personnel can cite any violations and stop the work depending on the severity of the violations.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**27**	**Drug And Alcohol Testing Program**	
Date of Review	**September 20, 2010**	Department	**Human Resources**
Reviewers	**Joey Bigornia** **Donald Filippi**	Persons Contacted	**Jessica Gil,** **Carol Holben,** **Vijay Khawani,** **Michael Kirchanski**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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-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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff reviewed LACMTA's drug and alcohol records dated January 1, 2008-August 31, 2010 with the following results:

1. LACMTA as of 8-31-2010 has a total of 805 employees in rail safety sensitive positions which equates to 495 in Maintenance (e.g. rail communications, wayside: track, signal traction power, fleet services, and transit systems engineering) and 310 in Transportation Operations (e.g. transportation control center, instruction, administration, field operations).

2. The combined total number for post accident, reasonable suspicion, follow-up, pre-employment, random, and return to duty subject to DOT/FTA testing was:
   - 2008 – 314
   - 2009 – 351
   - 2010 – 228

3. Staff's review of records identified two employees tested "positive" in Year 2009. One employee was found positive in "pre employment" category on November 23, 2009 and one employee in "random" category on July 15, 2009. One employee retired in lieu of termination and the other was terminated on December 16, 2009.

4. LACMTA's Drug and Alcohol Abuse Policy encourages employees who have developed an addiction and/or dependence upon or problem with alcohol or drugs (illegal or legal) to seek assistance. Records review indicated no employees sought Substance Abuse Professional (SAP) assistance services. LACMTA staff stated their policy does not remove an employee from operating or performing safety sensitive duties. The employee under SAP assistance is subject to additional requirements (eg. testing) while undergoing the program.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**28**	**Hours of Service – Safety Sensitive Employees**	
Date of Review	**September 24, 2010**	Department	**Rail Transportation/Fleet Services/Wayside Systems**
Reviewers	**Claudia Lam**	Persons Contacted	**Robert Holland, William Morris, Edward Boghossian, Vijay Boghossian**

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).

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

Staff randomly selected two names from each of the following job classifications: train operators, ROC controllers, yard controllers, signal maintenance personnel, rail fleet service personnel from the payroll system.

1. Train Operators:

   Staff randomly selected two train operators from Blue Line to review their hours of service record from January 3, 2010 to January 31, 2010. Staff found the two train operators were in compliance with G. O. 143B 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 March 1, 2010 to March 31, 2010 to verify compliance with G.O. 143B requirements :

   a) Field Supervisors. Staff did not find any exceptions.
   b) Yard Controllers. Staff did not find any exceptions.

3. Wayside Systems:

   LACMTA's Fleet Management and Support Service M3 Support Team were able to generate the report from the database a list of all Signal Inspectors schedule for the period of May 1, 2010 to May 31, 2010. The report showed that all signal inspectors schedule were in compliance with G.O.143B requirements.

4. Rail Fleet Service Personnel:

   LACMTA's Fleet Management and Support Service M3 Support Team were able to generate the report from the database a list of all Maintenance Specialists schedule for the period of June 1, 2010 to June 30, 2010. The report showed that all Maintenance Specialists schedule were in compliance with G.O.143B requirements.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**29**	**Hazardous Materials Handling**	
Date of Review	**September 23, 2010**	Department	**Environmental Compliance** **Corporate Safety**
Reviewers	**Noel Takahara**	Persons Contacted	**David Daniels,** **James Jimenez,** **Collins Kalu,** **Michael Kirchanski,** **Vijay Khawani,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Sect 4.13
2. LACMTA System-wide Hazardous Material Emergency Response Plan
3. LACMTA Hazard Communications Program, dated March 2005

ELEMENT, CHARACTERISTICS, AND METHOD OF VERIFICATION

Hazardous Materials Handling

Interview Facilities Maintenance – Environmental Compliance Department Manager and review records to determine if they:

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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. Staff reviewed an excel spreadsheet that the LACMTA Environmental Compliance department uses to track the receipt, transportation, and disposal of all hazardous wastes, as defined by state and federal regulations. State and Federal Environmental Protection Agency (EPA) regulations specify hazardous waste storage procedures on LACMTA property. In addition, CA EPA regulations require that hazardous wastes be transported by State registered haulers to a State-permitted treatment, storage, or disposal facility (TSDF). An approved EPA form must be used to document the transportation and disposal of hazardous wastes, and this process is enforced by the CA Department of Toxic Substances Control (DTSC). The forms can be accessed by hyperlinks from the excel spreadsheet and acts as a tool to track proper completion of the form and the actual proper disposal of the hazardous waste.
2. Staff reviewed and discussed the process at LACMTA for the introduction and qualification of new chemical commodities. After Corporate Safety reviews the Material Safety Data Sheet, the Quality Assurance department will physically test the chemical product. The Inventory Standards Committee meets regularly to finalize approval of alternate or new chemical products.
3. LACMTA Environmental Compliance Department will send out notices by interoffice memorandum to department managers when necessary.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	**30**	**Rail Operating Rules And Procedures**	
Date of Review	**September 24, 2010**	Department	**Rail Transportation Instruction**
Reviewers	**Donald Filippi**	Persons Contacted	**Thomas Jasmin, Linda Leone, Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

RTSS Staff reviewed LACMTA's

- 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

Staff found that LACMTA met the requirements stated in their policies and had documented all of the modifications for the areas listed above.

1. LACMTA had email communication between all departments involved with rule changes as well as letters that documented formally, the rule and procedures that had been modified.
2. LACMTA had a formal procedure that outlined all rule modifications.
3. LACMTA has a policy that all employees have the opportunity to request rule changes at any time. The employee would document the rule and the suggested change for LACMTA management to review. If management deems these changes necessary, they would submit the modification formally and issue a rule change through Bulletins, Notices, or SOP's.
4. Staff reviewed emails and formal letters that displayed a consistent line of communication between LACMTA and CPUC staff in regards to rules and procedural changes.

Recommendations:

None.

2010 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR LOS ANGELES COUNTRY METROPOLITAN TRANSPORTATION AUTHORITY.

Checklist	31	Procurement	
Date of Review	**September 13, 2010**	Department	**Procurement**
Reviewers	**Noel Takahara** **Stephen Artus**	Persons Contacted	**Don Mendoza,** **Kent Fagernes,** **Vijay Khawani,** **Edward Boghossian**

REFERENCE CRITERIA

1. LACMTA System Safety Program Plan, Rev. 6, effective November 5, 2009, Sect 4.15
2. LACMTA Hazard Communication Program, dated March 2005, 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 ensures 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.

ACTIVITIES, FINDINGS, AND RECOMMENDATIONS

Activities and Findings:

1. The Metro Material Management (Procurement) department is divided into 3 sections, Purchasing, Inventory Management, and Logistics. The Inventory Management section follows Standard Operating Procedure number 2 titled "Introducing or Disqualifying Chemical Commodities as Inventory Items." This procedure describes the process that Metro has in place to ensure the safety and practicality of chemical products used by Metro staff. The Inventory Standards Committee is comprised of representatives of Material Management, the user department/project managers, Safety, and Quality Assurance. The Inventory Standards Committee meets regularly to provide oversight for the introduction

and qualification of new chemical commodities. The first step of the process in acceptance of new chemical products is the Corporate Safety Department review of the Material Safety Data Sheet (MSDS). Corporate Safety may or may not approve the MSDS based on its review of the data sheet. If approved by Corporate Safety, Quality Assurance will request a sample from the vendor and test the sample. Quality Assurance may or may not approve the sample based on its test. The final step is for the Inventory Standards Committee to finalize approval of the alternate or new chemical product.

2. Contractors are required by contract to submit all MSDS for all substances delivered that involve possible exposure to hazardous substances. The language is in section SP-01 sub-section C of the Design Build General Conditions contract.
3. Metro personnel explain that deviations in procurement control generally do not occur. However, Corporate Safety representatives will patrol Metro property on occasion to inspect conformance to the Metro Hazardous Communication Program. Examples of deviations from procurement control appropriately dealt with by the Corporate Safety Department and general management would be the use of unauthorized chemical products on Metro property.

Recommendations:

None.