PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Safety and Enforcement Division
Rail Transit Safety Branch

Resolution ST-171
March 17, 2016

R E S O L U T I O N

RESOLUTION ST-171 GRANTING APPROVAL ON FINAL REPORT ON THE 2014 TRIENNIAL ON-SITE SAFETY REVIEW OF SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

SUMMARY

This Resolution grants the Safety and Enforcement Division final report titled, "2014 Triennial On-Site Safety Review of Santa Clara Valley Transportation Authority," dated October 5, 2015. The Santa Clara Valley Transportation Authority is ordered to implement the recommendations contained in the report and to provide monthly progress reports.

BACKGROUND

Commission General Order No. 164-D, "Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems" requires staff to conduct on-site safety reviews of transit agencies operating Rail Fixed Guideway Systems at least once every three years.

The Rail Transit Safety Branch (RTSB) staff conducted an on-site safety review of the Santa Clara Valley Transportation Authority (VTA) beginning October 6, 2014 and concluding October 17, 2014. Staff conducted a post-review exit conference with VTA management on November 21, 2014.

The methods used to conduct the safety review included:

a. Interviews with VTA employees at all levels from rank and file through VTA management;
b. Reviews of design, construction, procurement, testing, training, operation and maintenance programs;

c. Reviews of records and procedures;
d. Observation of operations and maintenance activities; and
e. Inspections of equipment and facilities.

A full description of the safety review, including the scope, results, and recommendations, is contained in the final safety review report identified in this resolution as Attachment A.

The safety review results show VTA is generally in compliance with its System Safety Program Plan; however, some program areas of non-compliance were identified during the review. These non-compliant items along with recommendations for corrective actions are described, where applicable, in the Findings/Comments/Recommendations section of each checklist and in the body of the final report. A summary of recommendations requiring corrective action is contained in Appendix C of the report.

PROTESTS

Staff sent VTA a draft safety review report for a 30-day review and comment period on September 4, 2015. VTA's System Safety and Security Director's concurrence letter dated October 2, 2015, requested minor revisions, confirmed the safety report's factual accuracy, and accepted the remaining recommendations.

DISCUSSION

The final report, "2014 Triennial On-Site Safety Review of Santa Clara Valley Transportation Authority," dated October 5, 2015, includes Attachment A which identifies staff findings and recommendations.

VTA has stated to staff that they have developed and implemented corrective action plans for the areas of non-compliance identified in the report. VTA will provide regular monthly status updates of their corrective actions until completion.

The Commission Safety and Enforcement Division (SED) recommends that the Commission approve the final safety review report titled, "2014 Triennial On-Site

Safety Review of Santa Clara Valley Transportation Authority," dated October 5, 2015. SED also recommends the Commission order VTA to:

- Submit a report to the RTSB, which identifies the corrective action status for safety program areas of non-compliance identified by staff;
- Submit plans and schedules for implementing and completing the recommended corrective actions contained in the report;
- Implement the recommendations in accordance with the plans and schedules submitted; and
- Provide the RTSB with monthly progress reports on the status of the corrective actions until they are completed and implemented.

NOTICE

On February 18, 2016, staff's request for approval of the final safety review report titled, "2014 Triennial On-Site Safety Review of Santa Clara Valley Transportation Authority," dated October 5, 2015, was published on the Commission's Daily Calendar.

COMMENTS

The draft resolution of the SED in this matter was mailed in accordance with Section 311 of the Public Utilities Code and Rule 14.2(c) of the Commission's Rules of Practice and Procedure. No comments were received.

FINDINGS

1. The RTSB staff conducted an on-site safety review of VTA beginning October 6, 2014 and concluding October 17, 2014. Staff conducted a post-review exit conference with VTA management on November 21, 2014.
2. The safety review results show VTA is generally in compliance with its System Safety Program Plan; however, some program areas of non-compliance were identified during the review. These non-compliant items along with recommendations for corrective actions are described, where applicable, in the Findings/Comments/Recommendations section of each checklist and in the body of the final report.
3. VTA has stated to staff they have developed and implemented corrective action plans for the areas of non-compliance identified in the report.

THEREFORE, IT IS ORDERED THAT:

1. The Safety and Enforcement Division's request for approval of the final safety review report titled, "2014 Triennial On-Site Safety Review of Santa Clara Valley Transportation Authority," dated October 5, 2015, is granted.

2. The Santa Clara Valley Transportation Authority shall submit to the Rail Transit Safety Branch plans and schedules for implementing all recommended corrective actions contained in the final safety review report. Those plans and schedules shall be submitted no later than 45 days from the effective date of this resolution.

3. The Santa Clara Valley Transportation Authority shall complete and implement all recommended corrective actions contained in the report, in accordance with the plans and schedules submitted to the Rail Transit Safety Branch.

4. The Santa Clara Valley Transportation Authority shall prepare and provide monthly status reports, beginning on June 1, 2016, to the Rail Transit Safety Branch. The reports shall contain detailed information on the implementation of all remaining recommended corrective actions contained in the final safety review report. Monthly status reports shall be provided until all recommended corrective actions are implemented and completed.

5. This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on March 17, 2016; the following Commissioners voting favorably thereon:

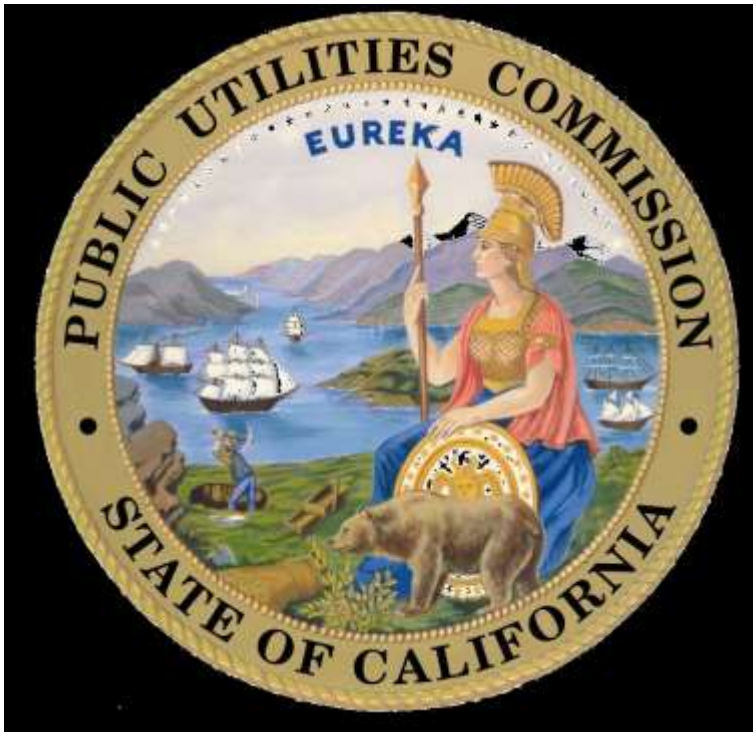
_____

TIMOTHY J. SULLIVAN
Executive Director

ATTACHMENT A

2014
TRIENNIAL ON-SITE
SAFETY REVIEW OF
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY
(VTA)

RAIL TRANSIT SAFETY BRANCH
SAFETY AND ENFORCEMENT DIVISION
CALIFORNIA PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102



October 5, 2015

Final Report

Daren Gilbert, Manager
Rail Transit Safety Branch
Safety and Enforcement Division

2014 TRIENNIAL ON-SITE SAFETY REVIEW
SANTA CLARA VALLEY TRANSPORTATION AUTHORITY

ACKNOWLEDGEMENT

The California Public Utilities Commission's Rail Transit Safety Branch (RTSB) conducted this system safety program review. Staff members directly responsible for conducting safety review and inspection activities are:

Daren Gilbert, Rail Transit Safety Branch Program Manager
Stephen Artus, Rail Transit Safety Branch Program and Project Supervisor
Steven Espinal, Senior Utilities Engineer
Rupa Shitole, CPUC Representative to VTA, Utilities Engineer
Michael Borer, Rail Transit Operations Safety Section Acting Supervisor
Ronnie Cremeans, Signal and Train Control Insp. (Rail Operations Safety Br.)
Debbie Dziadzio, Operating Practices Inspector
John Madriaga, Track Inspector
Kevin McDonald, Track Inspector
Raed Dwairi, , Utilities Engineer
Robert Hansen, Utilities Engineer
Arun Mehta, Utilities Engineer
Colleen Sullivan, Utilities Engineer
Jimmy Xia, Utilities Engineer
Michael Warren, Utilities Engineer
Daniel Kwok, Utilities Engineer
Joey Bigornia, Utilities Engineer
Howard Huie, Utilities Engineer
Claudia Lam, Senior Utilities Engineer Specialist - Risk Assessment
Yan Solopov, Public Utilities Regulatory Analyst
Varoujan Jinbachian, Senior Utilities Engineer Specialist

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The California Public Utilities Commission's (Commission) Safety and Enforcement Division (SED), Rail Transit Safety Branch staff (Staff), conducted an on-site system safety program review of the Santa Clara Valley Transportation Authority (VTA) in October, 2014.

The triennial on-site review was preceded by an opening conference with VTA personnel on October 6, 2014. Staff conducted the 2014 VTA triennial on-site safety review from October 6 through October 17, 2014. The review focused on verifying the effective implementation of the System Safety Program Plan (SSPP) and compliance with Commission General Orders.

Staff held a post-review conference with VTA personnel on November 21, 2014. Staff provided VTA personnel with a synopsis of the preliminary review findings and preliminary recommendations for corrective actions.

The review results indicate that VTA has a comprehensive system safety program and has effectively implemented its SSPP. However, staff noted exceptions during the review. These exceptions are described in the Findings and Recommendations sections of each checklist. Staff made 39 recommendations for corrective actions as described in the 37 checklists. These are distributed to the System Safety & Security, Engineering & Transportation Infrastructure Development, Operations, Training, Light Rail Vehicle Maintenance, and Way Power & Signal Departments.

The Introduction and Background Sections of this report are presented in Section 2 and 3 respectively. The Background Section contains a description of the VTA rail system and a status of the corrective actions resulting from the 2011 on-site safety review recommendations. Section 4 describes the review procedure. The review findings and recommendations are listed in Section 5. The 2014 VTA 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 their implementation of it, and to assess the level of compliance with GO 164-D as well as other Commission safety requirements. Staff conducted the previous on-site safety review of VTA in January 2011.

On September 4, 2014, Staff advised the VTA General Manager by a letter that the Commission's safety review was scheduled for October 6-17, 2014. The letter included 37 checklists that served as the basis for the review. Twenty of the 37 checklists outlined inspection of track, operations, signals, electric power systems, and vehicles. The remaining 17 checklists focused on the verification of the effective implementation of the SSPP.

Staff conducted an opening conference on October 6, 2014 with the VTA General Manager, Executive Management of Transit System Compliance, Superintendents, Supervisors and Protective Services.

Staff conducted the on-site safety inspections and records review for October 6-17, 2014. At the conclusion of each review activity, Staff provided VTA personnel with a verbal summary of the preliminary findings and discussed preliminary recommendations for corrective actions.

On November 21, 2014, Staff conducted a post-review exit meeting with VTA's executive and department managers. Staff provided the attendees a synopsis of the non-compliant findings from the 37 checklists and discussed the need for corrective actions where applicable.

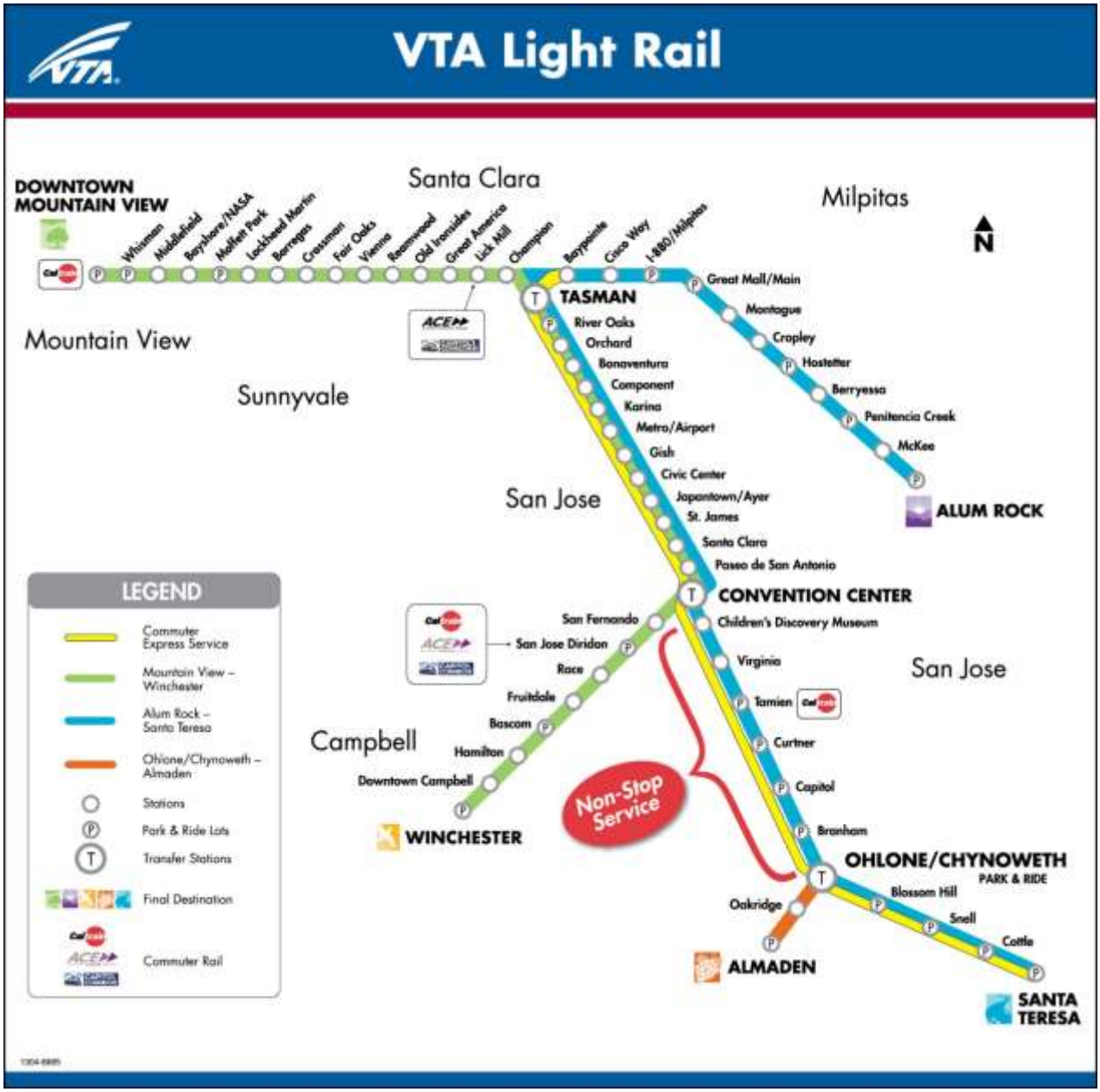
3. BACKGROUND

The Santa Clara Valley Transportation Authority (VTA) is both a transit provider and a multi-modal transportation development organization of Santa Clara County. The governing Board of Directors has 12 voting members and three ex-officio members, non-voting members. The VTA Board of Directors consists of elected governing board officials from cites located within Santa Clara County as well as the County of Santa Clara. Metropolitan Transportation Commissioners who reside in Santa Clara County, and who are not members or alternate members to the Board of Directors, are invited to serve as ex-officio members of the VTA Board. VTA Board members are appointed by the jurisdictions they represent.

VTA currently operates an urban transit service with a fleet of diesel, bio-diesel, gasoline, and hybrid diesel-electric buses and light rail vehicles within Santa Clara County. VTA's service coverage is 346 square miles throughout Santa Clara County which has a population of nearly 2 million. Bus service is provided from Palo Alto to Gilroy, Los Gatos to Milpitas and all cities in between. The Historic trolley service may be provided in the downtown San Jose Transit Mall on a seasonal basis. Below are the lines and segments with the date they opened.

VTA Rail System Description

VTA rail system consists of the Guadalupe, Tasman West, Tasman East, Capitol and Vasona Lines (Below refer to VTA System Map) with two other proposed extensions. The total operating system is about 42.2 miles with 61 Light Rail Stations. The average weekday ridership of the system is approximately 35,012 passengers per day in the Fiscal Year 2014.



VTA LIGHT RAIL SYSTEM MAP

Guadalupe Line

The 21-mile Guadalupe light rail line began service in 1991, which extends from south San Jose, into downtown and continues to employment centers of north San Jose and Santa Clara. The Downtown Transit Mall in San Jose serves as a hub for rail/bus connections. Light rail and Caltrain service connects at the Tamien Station in San Jose. The Guadalupe Line has 28 light rail stations.

Tasman West Line

The 7.6-mile Tasman West light rail line began service in 1999, which travels through four cites: San Jose, Santa Clara, Sunnyvale, and Mountain View serving major employment centers of Silicon Valley. It links with Caltrain in Downtown Mountain View. In August 2014, VTA started providing light rail and bus service to the new Levi's Stadium for large events. Levi's Stadium is located near the Great America Light Rail Station. The Tasman West Line has 15 light rail stations.

Tasman East Line

The Tasman East light rail line is a 4.8-mile extension from North First Street to Hostetter Road which travels through the cities of San Jose and Milpitas. The first phase, a 1.9-mile extension from North First Street to I-880 along the median of Tasman Drive opened for revenue service in May 2001 and marked the beginning of VTA light rail vehicles in the City of Milpitas. The second phase, a 2.9-mile segment from I-880 to Hostetter Road along the Capitol Avenue median opened for revenue service in June 2004. Approximately 7,200 feet of this segment is grade separated over two railroad crossings, Montague Expressway, and other cross streets. The Tasman East Line has 6 light rail stations.

Capitol Line

The Capitol light rail line, a 3.5-mile extension of the Tasman light rail line opened for revenue service in June 2004. It travels along Capitol Avenue from just south of Hostetter Road to Alum Rock Avenue, north of Capitol Expressway and operates in the median of Capitol Avenue, with two vehicle travel lanes and a bike lane in each direction paralleling the track way. The Capitol Line has 4 light rail stations.

Vasona Line Extension Project

The Vasona Light Rail Project is a 5.3-mile light rail extension to the existing VTA Light Rail system and operates primarily on the existing Union Pacific Railroad right-of-way. Revenue service began in 2005. The Vasona Line has 8 light rail stations and links with Caltrain, ACE, and Capitol Corridor at Diridon Station.

Current Extensions in planning/construction

Capitol Expressway Light Rail (CELR) Extension

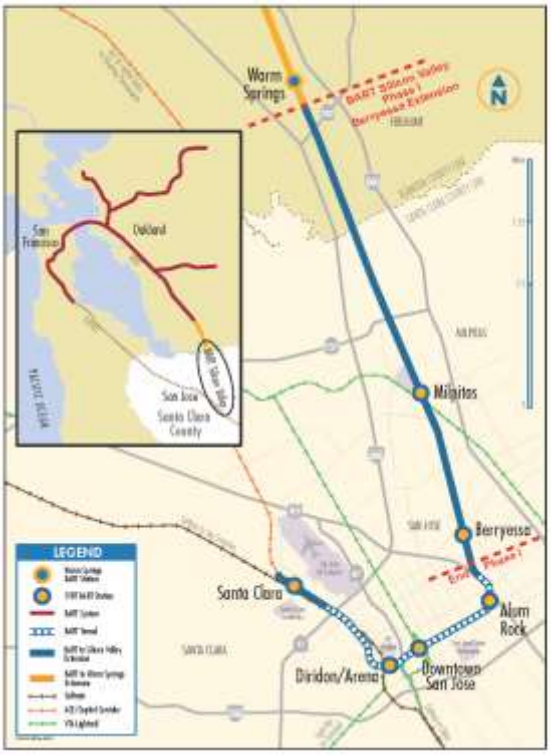
Current plans include a 2.6-mile line extension from the existing Alum Rock Transit Center to Eastridge Transit Center. The alignment will be at grade as well as grade separated. The Capitol Expressway Light Rail Extension is being implemented in phases. Phase I included the installation of sidewalk, landscape and street lighting on Capitol Expressway from Capital Avenue to Tully Road and the reconfiguration of the Eastridge Transit Center and was completed in Spring 2015. This project is still obtaining federal environmental clearance and construction will be based on future funding.

Vasona Junction Light Rail Extension

Current plans include a 1.5-mile line extension from existing Winchester Station into the Town of Los Gatos. A Federal environmental document for the Vasona Light Rail Extension has been completed and approved by the FTA. The schedule for the engineering and construction work will be established when funds become available.

Santa Clara Valley Transportation Authority/Silicon Valley Rapid Transit Project

The Santa Clara Valley Transportation Authority's (VTA's) BART Silicon Valley Extension Project is a 16-mile extension of the BART system to Santa Clara County and is being delivered with a phased approach. The first phase, the Berryessa Extension, is a 10-mile, two-station BART extension. This extension begins in Fremont, south of the future Warm Springs BART Station, and proceeds in the former Union Pacific Railroad right-of-way through Milpitas, the location of the first station, to the Berryessa area of North San Jose, the location of the second station. The Berryessa Extension is under construction with opening planned for late 2017. VTA is completing planning and environmental activities for the second phase of VTA's BART Silicon Valley Extension, which includes a subway tunnel through downtown San Jose. Construction of the second phase will commence when funding is secured with opening targeted for 2025. Staff has reviewed and the Commission has approved the Safety and Security Certification Plan for the first phase project in its Resolution ST-83.



BART SILICON VALLEY EXTENSION PROJECT

Status of the 2011 VTA Triennial Review Recommendations

Staff performed the previous triennial on-site safety review in January 2011. Staff made seven recommendations for corrective actions out of the thirty-two checklists. Results of the Year 2011 review demonstrated that VTA was largely in compliance with its SSPP.

CPUC Commission Resolution ST-132 adopted staff's final report and ordered VTA to develop an appropriate corrective action plan and implementation schedule to respond to the issued recommendations. Resolution ST-132 also ordered VTA to submit monthly status reports tracking the implementation of these corrective actions through full completion.

VTA developed and submitted a corrective action plan and an implementation schedule to fulfill each of the seven recommendations in compliance with Commission Resolution ST- 132. VTA submitted the 2011 CPUC triennial review CAPs final closeout letter dated on June 28, 2013. CPUC verified all CAPs closures and responded by a formal letter dated July 9, 2013.

4. SAFETY REVIEW PROCEDURE

Staff conducted the 2014 safety review in accordance with Rail Transit Safety Branch Procedure RTSB-4, *Procedure for Performing Triennial Safety Audits of Rail Transit Systems*. Staff developed thirty-seven (37) checklists to cover various aspects of system safety responsibilities, based on Commission and FTA requirements, the VTA SSPP, safety-related VTA documents, and the Staff's knowledge of VTA operations. A list of the 37 checklists is contained in Appendix B.

Each checklist identified safety-related elements and characteristics that were either inspected or reviewed by Staff. The completed checklists include Staff findings and recommendations corresponding to non-compliant findings based on VTA's SSPP, its procedures, and/or Commission regulations. The methods used to perform the review included:

- Discussions and interviews with VTA management
- Review of rules, procedures, policies, 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 triennial on-site safety review shows that the VTA rail system has a comprehensive SSPP and that VTA has been effectively implementing that plan. Review findings identify areas where changes should be made to further improve the SSPP. The review results are derived from activities observed, documents reviewed, issues discussed with management, and field inspections. Overall, the review result confirms that VTA is generally in compliance with its SSPP. The review identified thirty nine (39) recommendations from the 37 checklists. Following are the findings and recommendations for each checklist:

1. **VTA Senior Management Involvement and Commitment to Safety**

   No findings of non-compliance; no recommendations.

2. **System Safety Program Plan: Goals and Objectives**

   No findings of non-compliance; no recommendations.

3. **Overview of Senior Management Structure**

   No findings of non-compliance; no recommendations.

4. **System Safety Program Plan: Control and Update Procedure**

   No findings of non-compliance; no recommendations.

5. **System Safety Program Plan: Implementation Activities and Responsibilities**

   No findings of non-compliance; no recommendations.

6. **Hazard Management Process**

   Findings of Non-Compliance:

   1. Staff noticed from the activities that VTA has not yet fully implemented the hazard analysis program for tracking hazards and analysis.

2. VTA Safety Department has not developed a process for Superintendents and or designated staff to use Industry Safe (IS) for entering hazards into the IS database. Also, the Safety Department needs to provide future training class to ensure all Superintendents and or designated staff are knowledgeable with the database entries.

Recommendation:

1. VTA should perform hazard analysis for the identified hazards and fully implement the Hazard Management Process as stated in its SSPP and AS-RM-PR-4160.

7. System Modification

Findings of Non-Compliance:

1. VTA's Engineering & Transportation Infrastructure Development Division does not follow a Configuration Management Program.
2. VTA's Engineering & Transportation Infrastructure Development Division does not perform all duties of Safety & Security Certification for all System Modifications per SSPP Element 15 and Document EC-CO-WI-0006.

Recommendations:

1. VTA should develop an agency-wide Configuration Management Program.
2. VTA Engineering & Transportation Infrastructure Development Division should follow established System Modification procedures per SSPP Element 15 and Document EC-CO-WI-0006.

8. Safety and Security Certification

Findings of Non-Compliance:

1. The VTA procedures provided to Staff, including the SSPP, did not clearly define how new projects would be selected to require submittals of Safety Certification Plans to CPUC.
2. Safety Certification Plans have not been submitted for several projects which VTA explained will require certification but have passed the Preliminary Engineering Phase.

Recommendation:

1. VTA should revise the SSPP and the procedure to define which types of "major projects" VTA intends to submit a Safety Certification Plan to CPUC.

9. Safety Data Collection and Analysis

No findings of non-compliance; no recommendations.

10. Accident/Incident Investigations

No findings of non-compliance; no recommendations.

11. Emergency Management Program

Findings of Non-Compliance:

1. Staff noted that for years 2011 and 2012 VTA did not have any Emergency Table Top Exercises however this was corrected in 2013 and 2014.
2. VTA's Fire Life Safety meetings did not include emergency response agencies from cities and jurisdictions served by the light rail system in the past three years as per VTA's SSPP Element #5, Fire/Life Safety Program. However, VTA's Transit System Safety Officer stated that VTA is in the process of contacting local law enforcement and local fire departments within the area VTA's light rail serves to participate in a quarterly Fire Life Safety meeting. VTA is waiting for responses and commitments from the local agencies.

Recommendation:

1. VTA should include local emergency response agencies in their Fire Life Safety meetings per VTA's SSPP Element #5, Fire/Life Safety Program.

12. Internal Safety Audits/Reviews

Findings of Non-Compliance:

1. FTA's Safety Model elements 1 through 5 were not found in VTA's SSPP list of ISA elements or in VTA's 3 Year-Cycle ISA Calendar and were not being reviewed as part of VTA's Internal Safety Audits.

Recommendation:

1. VTA should include the FTA's Safety Model elements 1 through 5 in the three year ISA cycle and in VTA's SSPP, Element #9, list of ISA elements as required by 49 CFR 659 and GO 164-D, Sections 3 and 5.

13-A. Rules Compliance: Observation and Enforcement

Findings of Non-Compliance:

1. VTA does not have a formal rules compliance observation program for Rail Controllers. Other than SPRAT, VTA Maintenance Department does not have a formal rules compliance observation program. In both areas, there is constant observation and coaching, however, nothing is documented.

2. VTA has established a zero policy and program for PED (OPS-PL-0001). However, while discussing element #4, Staff found an exception in discipline of an operator that was found to be using a PED while operating an LRV. Instead of VTA's mandatory 30 day suspension, the operator in question was given a negotiated 20 day suspension. Staff was advised that this particular policy is currently under arbitration with the union.

Recommendations:

1. VTA should establish a formal rules compliance check program for Rail Controllers and Maintenance Personnel as per 143-B, Section 13.04.
2. VTA should be consistent in their disciplinary process regarding violations of VTA Operating Rules, CPUC General Orders, and Federal Regulations.

13-B. Rules Compliance: Operations Safety Compliance

Findings of Non-Compliance:

1. Currently, there is no formal rules compliance observation program in place for maintenance and controllers. VTA advised that observations occur daily and if necessary, couching and counseling is provided as necessary. Staff advised that the controllers and certain maintenance personnel fall into the category of safety sensitive employees and are subject to the same random rules compliance checks that operators are subject to as per General Order 143-B. (Same as Checklist 13-A)

Recommendation:

1. VTA should institute a formal rules compliance observation program as per General Order 143-B, Section 13.04 (Same as Checklist 13-A)

13-C. Rules Compliance: Operator, Controller, and Maintenance Personnel Hours of Service

No findings of non-compliance; no recommendations.

13-D. Rules Compliance: Contractor Safety Program

Findings of Non-Compliance:

1. There is no formal monitoring program to ensure contractors and their personnel are in compliance to General Orders and VTA Operating Rules.
2. There is no formal enforcement of rules compliance regarding contractors and their employees performed by VTA personnel.
3. Although there are safety plans in place, construction site inspections being performed, there is no program in place to monitor compliance to VTA Operating Rules.

4. Engineering Department does not share construction site inspection findings with other departments.

Recommendations:

1. All VTA employees must be trained in RWP according to General Order 175 and VTA Wayside Procedures. A formal compliance monitoring program should be instituted to ensure VTA is monitoring all contractors and their personnel to ensure compliance to all General Orders and VTA Operating Rules. A formalized checklist or inspection sheet should be instituted to assist inspectors from Engineering, Training, and Operations Departments.
2. VTA should establish a range of activities for monitoring contractors and their employees and enforce compliance to General Orders and VTA Operating Rules through regular unscheduled and unannounced compliance checks as well as by scheduled periodic audits and inspections by Engineering, Training, and Operations Departments.
3. VTA should establish or formalize a program to monitor VTA Operating Rules compliance and circulate findings internally for review and comments by other departments.
4. With a formal monitor system of rules compliance, all findings, both pros and cons, should be properly recorded, distributed to various departments and filed.

13-E. Rules Compliance: Operating Rules and Maintenance Procedures Manual and Operations Bulletin Revisions

Findings of Non-Compliance:

1. VTA does not perform a complete systematic review of their SOPs at set or designated intervals.
2. There is no formal SOP procedure for reviewing and revising the operating rule book.
3. There is no communication between Operations and Safety Departments regarding ride check results. Also, there is no formal monitoring of rules compliance via checks, assessments, and testing for the maintenance department.
4. Hazards may be identified via the ride checks, SPRAT, and efficiency tests; however, findings are currently not relayed to the other departments.

Recommendations:

1. VTA should complete the Maintenance Standard Operating Procedures Manual.
2. VTA should establish a formalized procedure via SOP to outline the review and possible revision of the rule book.
3. VTA should establish a program that will include communications between all departments regarding monitoring Operating rules compliance. They must formalize a process for monitoring rules compliance in Maintenance Department (Sam e as Checklist 13-A).

13-F. Rules Compliance: Operations Central Control & SCADA

Findings of Non-Compliance:

1. There has been no review of the OCC Manual in the past 10 years. VTA personnel advised that review and revisions occurred when necessary, however, Staff was aware of a current policy in OCC and VTA personnel was not.
2. VTA does not have hardware or software documentation for their existing SCADA system. VTA does not have any SOPs, Procedures, or maintenance plans for their SCADA system. Staff reviewed the 2011 VTA Triennial Security Review Report and found that there was a recommendation for VTA to write formal documentation for SCADA Cyber Security and Disaster Recovery. VTA had complied, wrote the documentation for both, and presented it to Staff to close Staff's recommendation. However, during the safety review regarding SCADA maintenance, VTA said that there was no documentation for their SCADA system. VTA did not inform Staff that a new SCADA system was being implemented. VTA did not write a Safety Certification Plan with a list of certifiable elements, details of field and system integration testing, and training criteria for VTA's Controllers for new system.
3. VTA does not have a formal process to close out incidents and trouble calls to hold the responsible department(s) to complete the tasks. VTA's OCC Radio Telephone Logs show numerous incidents that are technically open but no longer monitored and tracked. VTA cannot verify that these incidents have been investigated and the incident closed.

Recommendations:

1. VTA should institute a timeframe to review all manuals (yearly, every two years, every five years, etc.). The manual should include SCADA training.

2. VTA should:
   a. Create a Cyber Security Plan and a Disaster Recovery Plan per recommendation of the Commission approved CPUC 2011 VTA Triennial Security Review and VTA SSPP.
   b. Create formal documentation to the purpose and functionality of the SCADA system per VTA's SSPP.
   c. Create a Safety Certification Plan and/or Project Outline detailing the SCADA system replacement for Staff and VTA's RSSRB to review and approval per GO 164-D, FTA Handbook for Transit Safety and Security Certification, and VTA's SSPP.

3. VTA should create a formal process to track all their SCADA and call in incidents to its completion, per GO 164 and VTA's SSPP.

14-A. Facilities and Equipment Inspections: Non-Revenue Facilities and Wayside

Findings of Non-Compliance:

1. VTA's most recent 5-year Dry Standpipe Testing and Certification was due in December 2013. However, that has not been done as of the date of this checklist review. Since that is past due, VTA's WP&S Superintendent initiated a CAP on 9/30/14. VTA's contractor for completing the testing and certification, STATCOMM INC., has been contacted. VTA is currently in the process of scheduling the inspection of the dry standpipes with the contractor. The contractor will perform the inspection within a couple months of the date of this checklist review. VTA representatives stated that they will research a reminder system for future 5-year dry standpipe

tests (e.g. one that reminds VTA of an upcoming test 4 years and 6 months after the previous test) using Microsoft Outlook or the SAP database.

2. VTA's representatives stated that VTA's New Employee Checklist procedure, MTN-PR-3005, Version #1, dated 11/24/1999, is outdated and not applicable anymore. The position of Facilities Maintenance Supervisor as mentioned in the procedure has been eliminated about 10 years ago.

Recommendations:

1. VTA should take any action necessary to ensure that the 5-year dry standpipe testing and certification is conducted according to the frequency as stated in its 5-Year Dry Standpipe Testing and Certification procedure, MTN-PR-6310.
2. VTA should review the New Employee Checklist procedure, MTN-PR-3005, to determine if it should either update the procedure to reflect the elimination of the Facilities Maintenance Supervisor position and the transfer of the responsibilities for that position to a different responsible party or eliminate this procedure.

14-B. Facilities and Equipment Inspections: Stations and Emergency Equipment

No findings of non-compliance; no recommendations.

14-C. Facilities and Equipment Inspections: Tunnels, Bridges, and Aerial Structures

No findings of non-compliance; no recommendations.

14-D. Facilities and Equipment Inspections: GO 95 Right-of-Way Compliance

No findings of non-compliance; no recommendations.

14-E. Facilities and Equipment Inspections: Signal Communication, Train Control, Grade Crossing

Findings of Non-Compliance:

1. Staff observed more than one color change noted on the circuit drawing plans at South Bascom Crossing as required by FRA CFR 49 rule 234.201.
2. Staff observed more than one color change noted on the circuit drawing plans at Stokes crossing as required by FRA CFR 49 rule 234.201.

Recommendations:

1. VTA should make sure that all circuit plan changes need to be approved by VTA Engineering department and sent back to VTA Signal Supervisor for distribution.

14-F. Facilities and Equipment Inspections: Measurement and Testing Instrumentation

Findings of Non-Compliance:

1. Two multimeters have been found to have differing dates on their calibration stickers than their calibration certificate.
   VTA indicates the contractor used for calibration made an error while printing the certificates and have issued new certificates with the correct date of "8/26/2013", matching the sticker calibration date.

Recommendation:

1. VTA should review the current calibration stickers for their multimeters to ensure they match with the calibration certificate records and correct them if they do not match.

14-G. Facilities and Equipment Inspections: Track and Wayside (ROW)

Findings of Non-Compliance:

1. Cracked window on station platform
2. Fouled guardrail at turnout S-1107

Recommendation:

1. VTA should ensure all facilities are properly maintained, and all track areas are free of fouling materials as per VTA procedures.

15-A. Maintenance Audits and Inspections: Rail Vehicles (Revenue and Non-revenue)

Findings of Non-Compliance:

1. Unit #963
   a) Danger stickers faded or missing.
   b) High voltage stickers faded or missing
2. Unit #973
   a) Pantograph Carbon worn beyond condemning limits.
   b) Cutout cock damaged.
3. Unit #997
   a) Wheel sheet incomplete. (Wheel tool locked in office)
   b) Air compressor work order showing AWP
   c) C-truck work order showing AWP
4. The following details the "LRV Tire Status" Sheet 1-Oct showed three LRV's; Unit #904, 982, and 989 was found to "Down/Tire Profile/Limited use". The "LRV Tire Status" Sheet 20-Aug showed Four LRV's; Unit #904, 982, 917 and 989 was found to "Down/Tire Profile/Limited use". The "LRV Tire Status" Sheet 2-May and 18-June showed one of the LRV's; Unit #989 was found

to "Down/Tire Profile". From 8/20 to 10/1 the following cars had added mileage: #904 396 miles, #982 1,037 miles, and #989 19 miles.

5. During nighttime audit related to this checklist :
   a) Staff observed Daily Inspections and did not see any mechanic go under the cars to do a visual inspection as per procedures. Staff observed two trains with two cars each that were separated inside the shop.
   b) There was a 'cone' at the east end of the shop and none was observed at the west end, where the cars come into the shop.
6. Related to Non-Revenue Vehicles: There was no expiration tag on the fire extinguisher for vehicle 27010.

Recommendations:

1. VTA should perform maintenance as directed by its procedures and manufacturer standards. VTA Light Rail Vehicle (LRV) Preventative Maintenance (PM) Procedure MTN-FR-5139 7.4.1.1 requires carbon contact strips to be REPLACED if any excessive wear, (1/4" min. across entire carbon strip) chips or cracks are present.
2. VTA should provide all requested documentation as per GO 143-B requirements. VTA LRV PM #MTN-PR-5156 requires Removal and Rebuild of A, B, C Trucks outlined in MTN-PR-5143. Request was made for documentation of completion which could not be provided by VTA Personnel.
3. VTA should inspect each item during inspections and repair/replace as outlined in VTA's procedures and LRV Preventative Maintenance Manual. VTA was present during inspection and notified of defects.
4. VTA should perform inspection as outlined in MTN-PR-5154 Light Rail Vehicle Testing Procedure dated October 6, 2011.
5. VTA should ensure that all Hi-rail vehicle fire extinguishers have expiration tags firmly attached.

15-B. Maintenance Audits and Inspections: Traction Power System

Findings of Non-Compliance:

1. Telephones in substations 2, 5, 13, 29, 30 and 32 are not functioning.
2. There were missing high voltage signs on the exterior of the substation 29.

Recommendations:

1. VTA should repair all non-functioning phones in all Substations including 2, 5, 13, 29, 30 and 32.
2. VTA should inspect all substations and attach high voltage signs as needed if faded or missing.

15-C. Maintenance Audits and Inspections: Train Control and Signal Systems Maintenance

No findings of non-compliance; no recommendations.

15-D. Maintenance Audits and Inspections: Tracks and Turnouts

Findings of Non-Compliance:

PM and track inspection records and Records for two turnout inspection areas: S-19 and RP-21 turnouts

1. **2012:** No monthly walking inspections in entire year (MTN PR-6403 4.1.2)
2. **2012:** No monthly turnout inspections in entire year (MTN PR-6403 4.1.3)
3. **2012**: No first quarter "Detailed turnout/mechanism inspection" (MTN PR-6403 4.1.4)
4. **2012**: No first or last quarter "Signaled and electronically controlled track switches" inspections (May and September of 2012 only; MTN PR-6403 4.1.5).
5. **2014:** VTA weekly hi-rail and quarterly walking inspection forms did not consistently indicate locations of deviations or defects according to VTA inspection form policy (*by station or milepost limits*), or did not list "*additional personnel accompanying the inspection trip*" (VTA supervisors indicated that it is VTA policy for inspections to be done in teams).

PM and track inspection records

6. **2014:** Only one inspection record, dated 1-21-14, notes any surface or profile irregularity at Hamilton Platform: "2 inches, non-critical".

Records for two turnout inspection areas: S-19 and RP-21 turnouts

7. **2014:** Mandated track inspections were done, but conditions noted by CPUC track inspectors in "Visual Inspections" section below for S-19 and RP-21 turnouts were not observed by VTA inspectors or noted on inspection forms.

Geometry car inspection reports

8. **2012:** No geometry car inspection documented for 2014.

Visual inspections

9. **Hamilton platform:** At location D641, track surface/profile was string lined and measured to be 2 7/8". At adjacent location 50' farther outbound, track surface/profile was 1 ¾".
10. **Baypointe -** Cracked concrete tie supports at S-19 and RP-21 (CPUC G.O. 143-b section 14.05, CFR 49 213.133 (a) and MTN 6415-4.22.1)
11. **Baypointe -** Cracked windows on station platform (4) (SSPP version 12 February 2014: *Light rail station safety inspections* (page 31), references MTN 6301-2.0 and 2.1)

12. **S-19 -** Fouled guardrail (CPUC G.O. 143-b section 14.05, CFR 49 213.133 (a) and MTN 6415-4.22.1)
13. **S-19** and RP-21 - Fouled ballast (MTN 6406-4.1.3)
14. **Inadequate tension on switch stand handles in the Guadalupe yard - (**CPUC G.O. 143-B section 14.05, CFR 49 213.135 (e) and MTN 6415-4.24.8)
15. **Guadalupe yard Gate 4 curve alignment -** Due to lateral force the gate 4 curve line rail leading into the yard is lifted free of the tie plates and canted to the field side by approximately 5/16" **(**MTN 6409-4.2.2 and 4.2.6).

Recommendations:

1. VTA should ensure all Wayside (e.g. switch, track, alignment, light rail station, geometry car) inspections are performed in accordance with VTA maintenance procedures MTN-PR-6403, MTN-PR-6405, MTN-PR-6415, MTN-PR-6417, MTN-PR-6406, MTN-PR-6409, and MTN-PR-6301 (Refer to checklist for details)

2. VTA should perform all Geometry car inspections as required by MTN-PR-6403 and annual reports should be available for review upon CPUC request as per GO 143-B, Section 14.05 requirements.

3. VTA should provide training in the following areas. Direct and train inspectors to use station or milepost landmarks to describe location of defects or deviations as directed on inspection forms. Also, inspectors should indicate all additional personnel on inspection. Train inspectors to use standard terminology for all potential track defects or deviations. Also train inspectors to document conditions like cracked concrete tie supports, fouled ballast and fouled guardrails and indicate those conditions on inspection forms.

15-E. Maintenance Audits and Inspections: WP&S Quarterly Audit Program

Findings of Non-Compliance:

1. The quarterly audits are not being performed at the required frequency stated in the SOP 6801. During 2 years from March 2012 through March 2014, VTA conducted only 6 quarterly audits instead of the 8 scheduled. Further, VTA conducted only 8 departmental audits instead of the 16 scheduled.
2. Corrective action plans are not being documented and followed-up in an effective manner to meet all the recommendations of the VTA auditor.

Recommendations:

1. VTA should comply with SOP MTN-PR-6801 WPS Quarterly Audit dated 1/20/2012, and conduct the quarterly audits at the prescribed frequency.

2. VTA Auditor and WP&S Superintendent / Supervisors need to meet and agree upon the recommendations provided by the VTA auditor after each audit. WP&S Supervisors need to create a formal corrective action plans document and provide a regular follow-up of status until the plans are fully implemented to completion. Future SOP 6801 revision should clearly define this in Section 4.5.

16-A. Training and Certification Programs: Operators, Controllers, and Foremen

No findings of non-compliance; no recommendations.

16-B. Training and Certification Programs: Maintenance Employees and Contractors

Findings of Non-Compliance:

1. No procedure or standardized form exists for Shop Lock-Out/Tag-Out Inspections and Way Power & Signal Field Inspections, which may result in inconsistent reporting, unenforced rules, and potentially hazardous conditions.

Recommendation:

1. VTA should ensure that procedures and standardized forms exist for all types of rules compliance checks performed throughout VTA.

17. Configuration Management and Control

Findings of Non-Compliance:

1. For the Santa Clara Pocket Track Project, the Light Rail Configuration Management Program (MTN-PR-1001) was not followed.
2. The Engineering & Transportation Infrastructure Development Division does not have a Configuration Management Program.

Recommendation:

1. VTA should develop an agency-wide Configuration Management Program. (Same as Checklist #7)

18. Local, State, and Federal Requirements: Employee Safety Program

No findings of non-compliance; no recommendations.

19. Hazardous Materials Program

No findings of non-compliance; no recommendations.

20. Drug and Alcohol Program

No findings of non-compliance; no recommendations.

21. Procurement Process

Findings of Non-Compliance:

1. Staff has requested a copy of the Warranty SOP from the Safety Department on 11/17/2014, but it was not provided.
2. Staff has requested a copy of the written directive by the CEO stating all procurement items must go through the System Safety & Security Department from the System Safety & Security Department on 11/4/2014, but it was not provided.

Recommendation:

1. VTA should properly document their policies/procedures/directives and provide any documents requested by Staff for reference or verification as per GO 143 requirements.

APPENDICES

A. Abbreviation and Acronym List

B. VTA 2014 Triennial Safety Review Checklist Index

C. VTA 2014 Triennial Safety Review Recommendations List

D. VTA 2014 Triennial Safety Review Checklists

APPENDIX A

ABBREVIATION and ACRONYM LIST

Abbreviation / Acronym	Description
CAP	Corrective Action Plan
CA MUTCD	California Manual on Uniform Traffic Control Devices
CFR	Code of Federal Regulations
Commission	California Public Utilities Commission
SED	Safety and Enforcement Division
CPUC	California Public Utilities Commission
FTA	Federal Transit Administration
GO	General Order
HOS	Hours of Service
IIPP	Injury and Illness Prevention Program
ISSA	Internal Safety and Security Audit
OCC	Operations Control Center
PHA	Preliminary Hazard Analysis
PM	Preventive Maintenance
RTSB	Rail Transit Safety Branch
RTOSS	Rail Transit Operations Safety Section
SCP	Safety Certification Plan

SCVR	Safety Certification Verification Report
SEPP	Security and Emergency Preparedness Program
SSPP	System Safety Program Plan
Staff	Safety and Enforcement Division personnel
VTA	Santa Clara Valley Transportation Authority
TSA	Transportation Security Administration
SCVTA	Santa Clara Valley Transportation Authority

K2

APPENDIX B
2014 VTA TRIENNIAL SAFETY REVIEW CHECKLIST INDEX

Checklist No.	***Element / Characteristic***
1	Policy Statement and Authority for System Safety Program Plan: Management Involvement and Commitment to Safety
2	System Safety Program Plan: Goals and Objectives
3	Overview of Management Structure
4	System Safety Program Plan: Control and Update Procedure
5	System Safety Program Plan: Implementation Activities and Responsibilities
6	Hazard Management Process
7	System Modification
8	Safety and Security Certification
9	Safety Data Collection and Analysis
10	Accident/Incident Investigations

11	Emergency Management Program
12	Internal Safety Audit/Reviews
13-A	Rules Compliance: Observation and Enforcement
13-B	Rules Compliance: Operations Safety Compliance
13-C	Rules Compliance: Operator, Controller, and Maintenance Personnel Hours of Service
13-D	Rules Compliance: Contractor Safety Program
13-E	Rules Compliance: Operating Rules and Maintenance Procedures Manual and Operations Bulletin Revisions
13-F	Rules Compliance: Operations Control Center Rules and Procedures Manual Revisions & SCADA
14-A	Facilities and Equipment Inspections: Non-Revenue Facilities and Wayside
14-B	Facilities and Equipment Inspections: Stations and Emergency Equipment
14-C	Facilities and Equipment Inspections: Tunnels, Bridges, and Aerial Structures
14-D	Facilities and Equipment Inspections: GO 95 Right-of-Way Compliance
14-E	Facilities and Equipment Inspections: Signal Communication, Train Control, Grade Crossing
14-F	Equipment Maintenance Program: Measurement and Testing Instrumentation
14-G	Facilities and Equipment Inspections: Track and Wayside (ROW)
15-A	Maintenance Audits and Inspections: Rail Vehicles (Revenue and Non-revenue)
15-B	Maintenance Audits and Inspections: Traction Power System
15-C	Maintenance Audits and Inspections: Train Control and Signal Systems Maintenance
15-D	Maintenance Audits and Inspections: Tracks and Turnouts

15-E	Maintenance Audits and Inspections: WP&S Quarterly Audit Program
16-A	Training and Certification Programs: Operators, Controllers, and Foremen
16-B	Training and Certification Programs: Maintenance Employees and Contractors
17	Configuration Management and Control
18	Local, State, and Federal Requirements: Employee Safety Program
19	Hazardous Materials Program
20	Drug and Alcohol Program
21	Procurement Process

APPENDIX C

2014 VTA TRIENNIAL SAFETY REVIEW RECOMMENDATIONS LIST

No.	Recommendation	Checklist No.
1	VTA should perform hazard analysis for the identified hazards and fully implement the Hazard Management Process as stated in its SSPP and AS-RM-PR-4160.	6
2	VTA should develop an agency-wide Configuration Management Program.	7
3	VTA Engineering & Transportation Infrastructure Development Division should follow established System Modification procedures per SSPP Element 15 and Document EC-CO-WI-0006.	7
4	VTA should revise the SSPP to define which types of "major projects" VTA intends to submit a Safety Certification Plan to CPUC.	8
5	VTA should include local emergency response agencies in their Fire Life Safety meetings per VTA's SSPP Element #5, Fire/Life Safety Program.	11

No.	Recommendation	Checklist No.
6	VTA should include the FTA's Safety Model elements 1 through 5 in the three year ISA cycle and in VTA's SSPP, Element #9, list of ISA elements as required by 49 CFR 659 and GO 164-D, Sections 3 and 5.	12
7	VTA should establish a formal rules compliance check program for Rail Controllers and Maintenance Personnel as per 143-B, Section 13.04.	13-A
8	VTA should be consistent in their disciplinary process regarding violations of VTA Operating Rules, CPUC General Orders, and Federal Regulations.	13-A
9	VTA should institute a formal rules compliance observation program as per General Order 143-B, Section 13.04 (Same as Checklist 13-A)	13-B
10	All VTA employees must be trained in RWP according to General Order 175 and VTA Wayside Procedures. A formal compliance monitoring program should be instituted to ensure VTA is monitoring all contractors and their personnel to ensure compliance to all General Orders and VTA Operating Rules. A formalized checklist or inspection sheet should be instituted to assist inspectors from Engineering, Training, and Operations Departments.	13-D
11	VTA should establish a range of activities for monitoring contractors and their employees and enforce compliance to General Orders and VTA Operating Rules through regular unscheduled and unannounced compliance checks as well as by scheduled periodic audits and inspections by Engineering, Training, and Operations Departments.	13-D
12	VTA should establish or formalize a program to monitor VTA Operating Rules compliance and circulate findings internally for review and comments by other departments.	13-D
13	With a formal monitor system of rules compliance, all findings, both pros and cons, should be properly recorded, distributed to various departments and filed.	13-D
14	VTA should complete the Maintenance Standard Operating Procedures Manual.	13-E

No.	Recommendation	Checklist No.
15	VTA should establish a formalized procedure via SOP to outline the review and possible revision of the rule book.	13-E
16	VTA should establish a program that will include communications between all departments regarding monitoring Operating rules compliance. They must formalize a process for monitoring rules compliance in Maintenance Department (Sam e as Checklist 13-A).	13-E
17	VTA should institute a timeframe to review all manuals (yearly, every two years, every five years, etc.). The manual should include SCADA training.	13-F
18	VTA should: a. Create a Cyber Security Plan and a Disaster Recovery Plan per recommendation of the Commission approved CPUC 2011 VTA Triennial Security Review and VTA SSPP. b. Create formal documentation to the purpose and functionality of the SCADA system per VTA's SSPP. c. Create a Safety Certification Plan and/or Project Outline detailing the SCADA system replacement for Staff and VTA's RSSRB to review and approval per GO 164-D, FTA Handbook for Transit Safety and Security Certification, and VTA's SSPP.	13-F
19	VTA should create a formal process to track all their SCADA and call in incidents to its completion, per GO 164 and VTA's SSPP.	13-F
20	VTA should take any action necessary to ensure that the 5-year dry standpipe testing and certification is conducted according to the frequency as stated in its 5-Year Dry Standpipe Testing and Certification procedure, MTN-PR-6310.	14-A
21	VTA should review the New Employee Checklist procedure, MTN-PR-3005, to determine if it should either update the procedure to reflect the elimination of the Facilities Maintenance Supervisor position and the transfer of the responsibilities for that position to a different responsible party or eliminate this procedure.	14-A
22	VTA should make sure that all circuit plan changes need to be approved by VTA Engineering department and sent back to VTA Signal Supervisor for distribution.	14-E
23	VTA should review the current calibration stickers for their	14-F

No.	Recommendation	Checklist No.
	multimeters to ensure they match with the calibration certificate records and correct them if they do not match.	
24	VTA should ensure all facilities are properly maintained, and all track areas are free of fouling materials as per VTA procedures.	14-G
25	VTA should perform maintenance as directed by its procedures and manufacturer standards. VTA Light Rail Vehicle (LRV) Preventative Maintenance (PM) Procedure MTN-FR-5139 7.4.1.1 requires carbon contact strips to be REPLACED if any excessive wear, (1/4" min. across entire carbon strip) chips or cracks are present.	15-A
26	VTA should provide all requested documentation as per GO 143-B requirements. VTA LRV PM #MTN-PR-5156 requires Removal and Rebuild of A, B, C Trucks outlined in MTN-PR-5143. Request was made for documentation of completion which could not be provided by VTA Personnel.	15-A
27	VTA should inspect each item during inspections and repair/replace as outlined in VTA's procedures and LRV Preventative Maintenance Manual. VTA was present during inspection and notified of defects.	15-A
28	VTA should perform inspection as outlined in MTN-PR-5154 Light Rail Vehicle Testing Procedure dated October 6, 2011.	15-A
29	VTA should ensure that all Hi-rail vehicle fire extinguishers have expiration tags firmly attached.	15-A
30	VTA should repair all non-functioning phones in all Substations including 2, 5, 13, 29, 30 and 32.	15-B
31	VTA should inspect all substations and attach high voltage signs as needed if faded or missing.	15-B
32	VTA should ensure all Wayside (e.g. switch, track, alignment, light rail station, geometry car) inspections are performed in accordance with VTA maintenance procedures MTN-PR-6403, MTN-PR-6405, MTN-PR-6415, MTN-PR-6417, MTN-PR-6406, MTN-PR-6409, and MTN-PR-6301 (Refer to checklist for details)	15-D

No.	Recommendation	Checklist No.
33	VTA should perform all Geometry car inspections as required by MTN-PR-6403 and annual reports should be available for review upon CPUC request as per GO 143-B, Section 14.05 requirements.	15-D
34	VTA should provide training in the following areas. Direct and train inspectors to use station or milepost landmarks to describe location of defects or deviations as directed on inspection forms. Also, inspectors should indicate all additional personnel on inspection. Train inspectors to use standard terminology for all potential track defects or deviations. Also train inspectors to document conditions like cracked concrete tie supports, fouled ballast and fouled guardrails and indicate those conditions on inspection forms.	15-D
35	VTA should comply with SOP MTN-PR-6801 WPS Quarterly Audit dated 1/20/2012, and conduct the quarterly audits at the prescribed frequency	15-E
36	VTA Auditor and WP&S Superintendent / Supervisors need to meet and agree upon the recommendations provided by the VTA auditor after each audit. WP&S Supervisors need to create a formal corrective action plans document and provide a regular follow-up of status until the plans are fully implemented to completion. Future SOP 6801 revision should clearly define this in Section 4.5.	15-E
37	VTA should ensure that procedures and standardized forms exist for all types of rules compliance checks performed throughout VTA.	16-B
38	VTA should develop an agency-wide Configuration Management Program. (Same as Checklist #7)	17
39	VTA should properly document their policies/procedures/directives and provide documents requested by Staff for reference or verification as per GO 143 requirements.	21

APPENDIX D

2014 VTA TRIENNIAL SAFETY REVIEW CHECKLISTS

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**1**	**Element**	**Policy Statement and Authority for System Safety Program Plan: Management Involvement and Commitment to Safety**
Date of Audit	October 8, 2014 River Oaks Facility	**Department(s)**	VTA Senior Management
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steven Espinal Michael Borer Rupa Shitole Varoujan Jinbachian	**Persons Contacted**	Ms. Nuria Fernandez, General Manager/CEO Michael Hursh, Chief Operating Officer Steven Keller, Director of System Safety & Security Michael Brill, Transit System Safety Officer Bruce Turner, Transit System Safety Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Policy Statement and Authority for System Safety Program Plan:
VTA Senior Management Involvement and Commitment to Safety

Interview VTA's General Manager (GM/CEO) and Chief Operating Officer (COO) to discuss:

1. Source, frequency, and depth of safety information provided to Senior Management, whether safety is included as a regular topic at VTA Senior Management meetings, and how safety information is communicated.
2. Methods and incentives included in the management performance system to facilitate a system safety culture within the organization.
3. Formal meetings held and attended by VTA Senior Management to discuss safety performance, such as ongoing evaluation of goals and targets.
4. The GM's and COO's awareness of high priority safety issues related to operations and capital projects.
5. The GM's and COO's awareness of the status of all corrective actions generated by the System Safety & Security Department through

internal safety and security audits, the hazard management process, accident/incident investigations, or other channels.

6. The System Safety & Security Department's reporting relationship to VTA's executive and senior management, and management's participation in safety activities.
7. Which individuals and departments are involved in making safety decisions and to what degree senior management is involved?
8. Scope of senior management involvement, coordination, and communication in developing SSPP revisions.
9. Is safety included as a regular topic at VTA Board Meetings and whether VTA's GM/COO provides updates and concerns?
10. The process for the periodic review of the resources devoted to safety by VTA GM/CEO and VTA Executive Management Team.
11. The inclusion of safety responsibilities in job evaluations for managers, supervisors, and employees.
12. Does the GM ever visit the Operations Control Center, Maintenance Facility, WP&S Facility and talk to the rank and file employees to discuss their safety concerns?

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff interviewed the VTA General Manager, the Chief Operations Officer, the Director of System Safety and Security, and other Safety Department personnel to determine the VTA executive management involvement, coordination, and communication to improve the VTA system safety program.

2. The General Manager stated that the Director of System Safety & Security now reports directly to her. This is a recent change to raise the emphasis and improve communication on safety issues. Board meetings at VTA now include safety issues.

3. VTA has five major safety boards and committees. These committees often generate safety recommendations. However, the General Manager retains full discretion and authority for safe operation of the light rail system. These committees include:

The Joint VTA/Union (ATU 25) Safety Committee and the VTA/521 Safety Committee

These committees review reported safety hazards and make recommendations

to management for corrective action. In order to accomplish safety reviews and develop recommendations, the committees may conduct periodic inspection of work sites, review and analyze reports of industrial illness or injury, and review safety training reports and safety procedures. The Director of System Safety and Security Department co-chairs both committees. These committees meet monthly.

The Rail System Safety Review Board (RSSRB)

The RSSRB is a high–level management board that provides a forum through which light rail and other VTA management review and take action on various safety issues. The RSSRB is chaired by the Director of System Safety and Security. Board representation includes voting members from all affected VTA Departments. The RSSRB assures that all actions requiring a waiver of (or deviation from) all established VTA safety policies, design standards, system changes, procedures, instructions and rules are documented and approved. Meetings are held on a monthly basis.

The Fire/Life Safety Committee

The Fire/Life Safety Committee is chaired by the Director of System Safety and Security. Committee members include representatives from safety and emergency response agencies within the cities and jurisdictions served by the VTA system. Discussion topics include fire protection, traction power safety, emergency planning, response and training exercises. Meetings are held on a monthly basis.

The Executive Roundtable

This meeting is chaired by the General Manager. Members include all of the VTA directors. Topics include major items/issues of concern. The meetings are held twice a month.

4. Safety presentations are a part of each VTA Board meeting. In addition there is a Safety System Review Board sub-committee. The GM and the Board are notified of incidents at the time of occurrence.

5. VTA also conducts periodic Service Impact Meetings. These consist of construction personnel, contractors, VTA operations, maintenance, and safety. The purpose of these meetings is to discuss potential effects on service from construction activities. The need for any community outreach is also discussed to explain to the local affected community the purpose and plan for the construction, and to gather community feedback.

6. VTA has an intranet site which is accessible to all employees to make safety suggestions or observations. At this site employees can also express their ideas about reducing waste, potential instances of fraud or abuse. These suggestions are tracked and VTA management follows up with the employee to let them know the status and final resolution. VTA also publishes operational metrics each month which show how the system has performed as a whole. These metrics are represented in the form of graphs which are posted on bulletin boards in conspicuous locations throughout VTA facilities.

7. Safety awards are given to those employees who have good operating records. All position descriptions have a safety component and employees are evaluated on safety as part of their performance evaluations. The GM stated that safety is the number one priority at VTA, and it is communicated to each employee that safety is also their responsibility.

Findings:
None

Comments:
None

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**2**	**Element**	**System Safety Program Plan: Goals and Objectives**
Date of Audit	October 8, 2014 River Oaks Facility	**Department(s)**	VTA Senior Management
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steven Espinal Michael Borer Rupa Shitole Varoujan Jinbachian	**Persons Contacted**	Ms. Nuria Fernandez, General Manager/CEO Michael Hursh, Chief Operating Officer Steven Keller, Director of System Safety & Security Michael Brill, Transit System Safety Officer Bruce Turner, Transit System Safety Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Safety Program Plan: Goals and Objectives

Interview VTA Senior Management and review appropriate records to:

1. Determine whether VTA is making significant progress towards the ongoing goals and objectives identified in SSPP.
2. Obtain examples of how goals are evaluated (metrics and measures) and review documentation used to track VTA activities to meet the goals and objectives. For example, if VTA set a goal of reducing incidents by 10%, has this been achieved? How is this metric tracked and reported?
3. Determine how safety performance is reported to the General Manager (GM/CEO) and Chief Operating Officer (COO) or other senior management (i.e., monthly or annual safety reports, quarterly viewgraph presentations, etc.).
4. Make a determination regarding the adequacy of the safety information provided to the GM. Is the GM receiving sufficient information to ensure VTA is meeting its safety goals and objectives? Are rule violations and other key safety metrics being tracked and reported to the COO?
5. Determine whether the stated goals and objectives should be revised.
6. Determine whether management responsibilities are adequately

identified for the goals and objectives.

FINDINGS AND RECOMMENDATIONS

Activities:

1. This checklist is a continuation of Checklist 1 and many of the items were reviewed during that discussion.

2. VTA feels they are making progress in meeting the goals and objectives of their SSPP. VTA will be revising the SSPP to align the various sections of the SSPP with the 21 elements as dictated by the FTA in 49 CFR 659. Moving forward VTA intends to develop metrics to track Corrective Actions Plans from Internal Safety Audits (ISAs), inspections reports, and Triennial Reviews.

3. Also progress on goals and metrics are compiled and published on a monthly basis. Some examples are customer complaints, on time performance, missed pullouts, missed time due to mechanical road calls, and chargeable accidents (unavoidable) per 100,000 miles.

4. Employee discipline is reported to the Chief Operating Officer and to the VTA union ATU. Rule violations and incidents are tracked.

Findings:
None

Comments:
Although VTA is holding the meetings required by the SSPP and others as detailed in checklist 1, CPUC staff is concerned about the information that is communicated from the VTA maintenance department to upper management. Based upon some previous CPUC staff inspections, and the results of another checklist examining configuration management that was conducted subsequent to the interview for checklist 2, CPUC staff urges VTA to examine how important information is conveyed from the maintenance department to upper management. CPUC staff also believes that the maintenance department is understaffed which may be exacerbating this problem.

Recommendations:

None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**3**	**Element**	**Overview of Management Structure**
Date of Audit	October 6, 2014 River Oaks Facility	**Department(s)**	System Safety Department
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steven Espinal Michael Borer	**Persons Contacted**	Steven Keller, Director of System Safety & Security Garry Stanislaw, Safety Projects Manager

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Overview of Senior Management Structure

Interview VTA Senior Management and review appropriate records to:

1. Discuss VTA's process for integrating safety into VTA operations and maintenance activities.
2. Solicit opinions regarding the effectiveness of the organization and request a few examples of how this organization has worked to resolve identified safety issues.
3. Identify any specific deficiencies in the safety program due to limitations in personnel or resources. For example, discuss any difficulties in maintaining schedules for SSPP updates, completing Internal Safety and Security Audits, or performing Accident/Incident Investigations.
4. Review Joint Union/Management Safety Committee Meeting agendas and minutes from the past twelve months to verify that the meetings were held according to the requirements in SSPP Element 5 (Safety Boards and Committees).
5. Does the Safety Department have personnel resources allocated to support interdepartmental coordination on safety issues and concerns?
6. Have VTA's Safety Department's personnel and resources been cut or

increased disproportionately with VTA's overall budget over the last three (3) years?

FINDINGS AND RECOMMENDATIONS

Activities:

1. VTA conducts internal safety audits, training and may discipline if needed to maintain a safe work environment. The internal safety audits review the 21 safety elements mandated by the FTA.
2. VTA has a non-punitive safety violation self-reporting program. There is no punishment for self-reporting a safety violation. Red light violations when reported are reviewed. This response is conducted at the division level. Topics such as work hours (working on days off) and the possibility of fatigue will be examined. Speed and stopping distance will also be reviewed.
3. There have been concerns regarding the Vasona line requiring consultants to review this line. There have been gate issues, signage issues to improve communication. Also additional fencing needs to be installed.
4. Reviewed Joint Union/Management Safety Committee Meeting agendas and minutes for the past twelve months.
5. VTA have 4 Safety Officers who are assigned to attend all safety meetings and support interdepartmental coordination on safety issues and concerns.
6. VTA Safety Department resources have not been cut over the last 3 years but have been increased in the last year or two.

Findings:
None.

Comments:
None.

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**4**	**Element**	**System Safety Program Plan: Control and Update Procedure**
Date of Audit	October 6, 2014 River Oaks Facility	**Department(s)**	System Safety Department
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steven Espinal Michael Borer	**Persons Contacted**	Steven Keller, Director of System Safety & Security Garry Stanislaw, Safety Projects Manager

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Safety Program Plan: Control and Update Procedure

Interview VTA System Safety Department and review appropriate records to:

1. Ensure that Safety Department understands and is implementing the procedure requirements in SSPP Element 6.
2. Verify that the required annual SSPP review process is being implemented according to the approved process specified in the SSPP, Element 6. Review past correspondence and records for the last 3 years.
3. Review responsibility for SSPP reviews and comments, and verify SSPP reviews and changes progress according to internal timeframes, are comprehensive in scope, and are signed-off by the designated staff.

FINDINGS AND RECOMMENDATIONS

Activities:

1. The Safety department has full understanding of the SSPP requirements and its implementation. Also the Safety department is familiar with the revision and approval process of the VTA SSPP by Staff.
2. VTA Management representatives from all the departments including Safety and

Operations contributed to the development and implementation of this SSPP. VTA sent the SSPP certification letter to CPUC Staff prior to February 15 deadline for the following years 2012, 2013 and 2014. Revisions were also conducted during this three year period.

3. All reviews and changes have been conducted within the rules dictated by General Order 164-D.

Findings:
None.

Comments:
None.

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**5**	**Element**	**System Safety Program Plan: Implementation Activities and Responsibilities**
Date of Audit	October 6, 2014 River Oaks Facility	**Department(s)**	System Safety Department
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steven Espinal Michael Borer	**Persons Contacted**	Steven Keller, Director of System Safety & Security Garry Stanislaw, Safety Projects Manager

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Safety Program Plan: Implementation Activities and Responsibilities
Interview VTA System Safety Department and review appropriate records to:

1. Verify each manager, department, and contractor is charged with responsibility and accountability for SSPP implementation, enforcement, and effectiveness.
2. Identify any challenges each manager, department, and contractor has in performing tasks relating to the SSPP or general safety.
3. Verify management accountability for the performance of safety-related activities, and, if serious or potentially serious deficiencies are found, expand the review to include additional and/or related activities.
4. Select, at random, at least 3 activities performed by the safety function and 3 activities performed by other VTA departments, and collect and review documents.

FINDINGS AND RECOMMENDATIONS

Activities:

1. VTA Management and Safety Department are in charge of reviewing and the maintaining the System Safety Program Plan (SSPP). All VTA Contractors are also responsible for abiding by the SSPP polices. VTA Management and contractors are all provided with hard copies of the SSPP.
2. VTA states that a few contractors have been terminated due to noncompliance with the SSPP. If there are rules violations a sit down meeting is conducted. The issues of non-compliance are discussed and corrective actions are generated. Also the root cause of the violation is identified.
3. VTA so far has had no preventable accidents on work sites due to SSPP violations.
4. VTA has Closed Circuit Television Camera's planned for the system at 10 other locations. Recently the Between Car Barriers have been installed. Currently VTA is planning and working on the Light Rail Left Turn and Track intrusion project phase IIA.

Findings:
None.

Comments:
None.

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**6**	**Element**	**Hazard Management Process**
Date of Audit	October 10, 2014 River Oaks Facility	**Department(s)**	System Safety Department Operations Department
Auditors/ Inspectors	Claudia Lam Joey Bigornia	**Persons Contacted**	Michael Brill, Transit System Safety Officer

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
3. AS-RM-PR-4160 version 1 dated 3/12/14 (Hazard Identification and Reporting Risk Assessment, Mitigation and Management)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Hazard Management Process

Interview VTA representatives and review appropriate records to determine whether:

1. VTA is identifying hazards through the sources described in the SSPP and AS-RM-PR-4160. Sources may include, but are not limited to:
   - Reports and complaints from passengers, field or management personnel;
   - Data mining of VTA control center logs and maintenance systems;
   - Monitoring of special orders and speed restrictions;
   - Reports from operators and supervisors;
   - Review of Unusual Occurrence Reports;
   - Safety statistics reports;
   - Annual internal safety audits;
   - Facility inspections;
   - Rules Compliance Program, including results from efficiency testing;
   - Results from CPUC Triennial Reviews;
   - Results from accident investigations and trend analysis.
2. The System Safety Department maintains a mechanism to capture and track identified hazards through analysis and resolution.

3. The Safety Projects Manager/System Safety Officers/Transportation Superintendent is reviewing operational hazards to assess severity, and reporting unacceptable hazards to CPUC as specified by the SSPP and AS-RM-PR-4160.
4. VTA has a specified process for reporting hazard resolution activities to CPUC as required by General Order 164-D, Sections 6e and 6f.
5. Identified hazards are being evaluated according to the methods established in the SSPP and AS-RM-PR-1460.
6. Corrective actions are developed to address identified hazards, and identify the individual or department responsible for implementation and a schedule for completion.
7. The System Safety Department follows up on outstanding corrective actions to mitigate or resolve hazards.
8. Review records related to past 3 years to:
   a. Ensure that the CPUC is being notified of identified hazards as specified in the SSPP.
   b. Verify that the appropriate entities are performing hazard evaluation/categorization activities (Safety Committee meeting, etc.)
   c. Verify that the Safety Department follows-up

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed the System Safety Officer, on October 10, 2014 regarding the Hazard Management Process and reviewed relevant document to determine if VTA is in compliance with Hazard Management Process in its SSPP and AS-RM-PR-4160.

1. VTA identifies hazards through the sources stated in its SSPP and AS-RM-PR-4160. VTA has implemented a new database Industry Safe (IS) Program in 2013 and VTA is still importing data to the new database.
2. VTA's Safety Department plans to use IS for tracking all identified hazards. Staff was provided a hard copy of IS record Hazard Form 1200 dated 10/9/14 and identified 10/10/14; Diridon Ramp from VTA Station to tunnel under CalTrain Tracks. The IS record identified the hazard, location, person who entered the hazard, and responsible party for tracking hazard until closure. Also, Staff reviewed the Draft Hazard Analysis Report: Catering Truck Service Location Guadalupe Division dated 10-2-13. This document followed SSPP Element 7 Hazard Identification/Resolution Process requirements.
3. Though VTA has developed an effective plan and database for hazard management

process, VTA has not yet fully implemented them for tracking hazards and analysis. For example, Staff randomly reviewed ATU/VTA Joint Meeting's Hazard Report Forms which list the hazard, reporting department, and closure date. The hazard forms showed the mitigation and closure date; however, none of the of rail related hazards were entered in IS database or analyzed using methodology as stated in its SSPP and AS-RM-PR-4160 Section 4.3 and Appendix 7.2. As of October 2014, there were only four entries for Hazards which have been entered in Industry Safety to-date.

4. The Rail System Safety Review Board (RSSRB)/Fire Life Safety Committee meet monthly to discuss the hazards, corrective action items and track all corrective actions until closure occurs. Hazards are entered on RSSRB Spreadsheet which tracks person responsible for corrective action(s), corrective action(s) necessary, and status if issue is closed. The Active Right-of-Way Review Committee spreadsheet provides a summary of description of hazards identified, Responsible Staff, Status, and Closed.
5. The Superintendents are responsible for initial hazard's analysis and reporting hazards and only Superintendents have access to Industry Safe database entries. Staff found the Safety Department has been entering the data to IS following implementation of AS-RM-PR-4160 version 1 dated 3/12/14.
6. According to VTA Safety Officer, there are no hazards which have reached the reporting thresholds to the CPUC. The Safety Department is currently developing a process for Superintendents to use for entering hazards into Industry Safe. After development of the process, the Safety Department will schedule a future training class to ensure all Superintendents are knowledgeable with the database entries. Safety Department follows-up on all Hazards by attendance at the RSSRB Monthly Meetings which provides a status update is hazard is open or closed.

Findings:

1. Staff noticed from the above activities that VTA has not yet fully implemented the hazard analysis program for tracking hazards and analysis.
2. VTA Safety Department has not developed a process for Superintendents and or designated staff to use Industry Safe (IS) for entering hazards into the IS database. Also, the Safety Department needs to provide future training class to ensure all Superintendents and or designated staff are knowledgeable with the database entries.

Recommendations:

1. VTA should perform hazard analysis for the identified hazards and fully implement the Hazard Management Process as stated in its SSPP and AS-RM-PR-4160.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**7**	**Element**	**System Modification**
Date of Audit	October 14, 2014 River Oaks Facility	**Department(s)**	Construction Department Maintenance Engineering Department System Safety Department
Auditors/ Inspectors	Michael Warren Colleen Sullivan	**Persons Contacted**	Art Douwes, Operations Manager, Operations Engineering Manjit Khalsa, Sr. Systems Engineer, Operations Engineering Kenneth Ronsse, Deputy Director, Engineering & Transportation Infrastructure Development Adolf Daaboul, Sr. Transportation Engineer, Engineering & Transportation Infrastructure Development

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
3. Light Rail Transit Design Criteria Manual
4. VTA Light Rail Safety Certification Plan
5. MTN-PR-1001 Light Rail Configuration Management Program version 2 dated 1/20/2011
6. EY000913 Guidelines for completing record drawings
7. Safety and Security Certification, Design and Construction, Document No. EC-CO-WI-0006 version 1 dated 1/18/2011
8. Procedure for archiving of Rail System Safety Review Board Documentation

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Modification

Interview VTA representatives and review appropriate records to determine whether:

1. The SSPP and referenced or supporting procedures ensure a process exists for addressing safety issues and concerns in system modifications.

2. The Safety Department is involved in assessing/ensuring safety concerns are addressed in system modifications by identifying their specific activities in the process such as documentation participation in testing and inspections and observations performed at work sites.
3. Select three system modification projects implemented at random,
   a. Verify that this process was consistent with SSPP requirements and included an evaluation of potential hazards the modification could pose to the system.
   b. Verify that these hazards were addressed and included an evaluation of potential hazards arising from the proposed modification. (i.e., emails, meeting minutes, sign-offs, inspection checklists, etc.).
   c. Verify that any changes made as a result of a system modification are now reflected in final as-built drawings for the facility and/or specifications for the vehicle and/or equipment.
   d. Verify that VTA's configuration management process has been followed to address system modification, and no unauthorized modifications were implemented.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed the VTA Maintenance Engineering, Engineering & Transportation Infrastructure Development , and System Safety Department representatives responsible for assessing System Modification and determined the following:

Maintenance Engineering:

1. SSPP Element 15 identifies Configuration Management (CM) for review, approval and implementation of system modifications. Maintenance Engineering Department has an established Configuration Management Program (CMP), MTN-PR-1001, to govern the duties of all those involved with ensuring the safe and appropriate implementation of all system modifications.
2. System Safety & Security Department Director is required to sign the Configuration Change Request Form acknowledging review and/or issuance of comments for the system modification. Safety Department reviews designs and is involved with testing and hazard tracking through Industry Safe.
3. Project: SCB-L035 Auxiliary Power Supply Equipment(APSE) Capacitor Replacement, 6/21/2012
   a. The process followed was consistent with SSPP and CMP requirements. An

evaluation of potential hazards was conducted and documented using the Potential Hazards Checklist which is part of the Configuration Change Request Form presented to Rail System Safety Review Board (RSSRB).

b. There were no proposed hazards from this modification.
c. The modification only consisted of changing the capacitor manufacturer for the APSE on the power trucks. As such, no update to the as-built was required.
d. This system modification followed VTA's CMP and was appropriately authorized.

Engineering & Transportation Infrastructure Development:

1. SSPP Element 15 identifies Safety and Security Certification Program (SSCP) for review, testing and implementation of system modifications. Engineering & Transportation Infrastructure Development Division has an established Safety & Security Certification Design and Construction, EC-CO-WI-0006.
2. System Safety Department reviews/comments on system modification designs, participates in testing and verification of hazard resolution.
3. Project: Tasman Drive Pocket Track
    a. A field diagnostic meeting was held on 9/5/2013, to identify potential hazards. VTA submitted to CPUC Staff two GO-88B's for Patrick Henry Drive/Tasman Drive Crossing and Old Ironsides Drive/Tasman Drive Crossing. VTA has current working as-builts that will be finalized upon completion of the project. VTA has a written Safety Certification Plan (SCP) dated October 2013, that defines design/construction verification, training, maintenance manuals, testing, and hazard management. VTA has completed Safety Certification Design Checklists. VTA is currently performing System Integration (SI) Tests. Since the project is still in its construction phase, some items are not completed, such as: final as-build drawings, construction checklists, Design and Construction Safety Certificates, and RSSRB final document approval.
    b. Potential hazards of this modification have been either eliminated or sufficiently mitigated.
    c. Staff verified project as-built drawings were generated for the new systems of this system modification. Project is still in testing, as-builts may change between now and completion of project.
    d. This modification was a Capital Project by Engineering & Transportation Infrastructure Development Division, who does not follow the CMP. Capital Project Request Forms are endorsed only through the Division Manager. Department Heads will later vote on project priority for the fiscal year.
4. Project: Guadalupe Corridor DC Switchgear Replacement
    a. A Hazard Analysis was performed and documented in a memorandum dated, 1/7/2011. VTA has completed Safety and Security Design/Construction Checklists. The Checklists also serve as a Safety and Security Compliance Certificate, with an

endorsement by the resident engineer ensuring that Field Acceptance Testing and Start-up Testing have been completed. Associated as-built drawings have been updated. Because of the reduced complexity and potential hazards of this project, VTA did not fully comply with EC-CO-WI-0006, and does not have RSSRB sign-off on documents. CPUC Staff also noticed that the Safety Checklists and Safety Compliance Certificate differ from those used to comply with EC-CO-WI-0006.

b. The Hazard Analysis identified no potential hazards.
c. Staff verified project as-built drawings were updated to reflect the system modification.
d. See Response 3, Section d.

Findings:

1. VTA's Engineering & Transportation Infrastructure Development Division does not follow a Configuration Management Program.
2. VTA's Engineering & Transportation Infrastructure Development Division does not perform all duties of Safety & Security Certification for all System Modifications per SSPP Element 15 and Document EC-CO-WI-0006.

Comments:

During the review, CPUC Staff asked Engineering & Transportation Infrastructure Development representative if the Division follows an established program for System Modifications and told that one did not exist. It was after the review that Staff discovered that Engineering & Transportation Infrastructure Development's System Modification program is guided by Document EC-CO-WI-0006. VTA's Engineering & Transportation Infrastructure Development Division was very prompt with providing CPUC Staff with requested documentation to satisfy the requirements of this checklist after the review.

Recommendations:

1. VTA should develop an agency-wide Configuration Management Program.
2. VTA Engineering & Transportation Infrastructure Development Division should follow established System Modification procedures per SSPP Element 15 and Document EC-CO-WI-0006.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**8**	**Element**	**Safety and Security Certification**
Date of Audit	October 8, 2014 River Oaks Office	**Department(s)**	Construction Department VTA SVBX Project Team Maintenance Engineering Department System Safety Department Security Department
Auditors/ Inspectors	Robert Hansen Claudia Lam	**Persons Contacted**	Ramesh Dhingra, Systems Design Manager, Systems Engineering John Donahue, VTA/SVBX Group Manager Art Douwes, Operations Manager, Operations Engineering Mark Mahaffey, Operations Manager, Security Laila Mahroom, SVBX Safety and Security Project Manager Kenneth Ronsse, Deputy Director, Engineering & Transportation Infrastructure Development

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
3. VTA Light Rail Safety Certification Plan
4. Safety and Security Light Rail Design Criteria dated January 2011
5. Safety and Security Certification Plan for BART VTA Silicon Valley Berryessa Extension (SVBX) Project dated 6/30/2011.
6. VTA Safety Certification Plans (SCPs) for all minor/major projects such as but not limited to:
    a. Great America Station Platform
    b. Tasman Pocket Track
    c. New Substation near Levi's Stadium
    d. New Crossing at Levi's Stadium

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Safety and Security Certification

Interview the VTA representative(s) involved in the Safety Certification Program and review the records of all minor/major projects to determine whether:

1. A formal SCP has been submitted by VTA and approved by the Commission.
2. Each submitted SCP was consistent with General Order 164-D, the SSPP, and applicable reference documents.
3. There has been effective communication with CPUC staff throughout the lives of current and planned projects, including the Preliminary Engineering Design Phase.
4. All design and construction changes were properly coordinated and addressed in the Safety Certification process.
5. All identified hazards have been eliminated or controlled as required under the SCPs.
6. All certifiable elements for Safety Certified projects during the past three years were identified for the Safety Certification Verification Report and submitted to CPUC in a timely manner, according to the requirements of General Order 164-D.
7. VTA staff in charge of the SVBX project follows-up with BART and others as required and have a process in place to mitigate any discrepancies and open items and are tracked in a timely manner.
8. Review documentation to determine if New Starts and major projects undertaken by VTA:
    a. Address safety certification management, including organizational authority and responsibilities.
    b. Identify the process used to verify and document conformance with safety and security requirements during design, construction, testing, and operational readiness.
    c. Are overseen and approved by FTA and its Project Management Oversight Consultants (PMOCs).
    d. Is the certification program being administered by the transit agency or a contractor?
    e. Has a certification committee been created?
    f. Has a certifiable items list been created?
    g. Have all designs been reviewed, stamped and sealed by a licensed Professional Engineer?
    h. Are design changes and Non-Conformance Reports (NCRs) analyzed for safety impacts? Have these been thoroughly documented?
    i. Have training programs been updated as necessary and have all employees been trained?
    j. Has a testing program been developed and administered?
    k. Is the GM/CEO required to formally sign and certify the project complete and safe for

operations?

l. Conduct interviews with safety department personnel to determine how the department has been involved in the certification of VTA New Starts and major projects.
m. Conduct interviews with VTA project staff involved in New Starts and major projects to discuss how safety concerns were addressed and the level of interaction with the Safety Department.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff met with VTA Safety personnel and BART/VTA Silicon Valley Berryessa Extension (SVBX) project personnel on October 8, 2014, at 09:00 to assess VTA's Safety Certification programs' adherence to VTA's SSPP and General Order 164-D. The only active VTA construction project for which a Safety Certification Plan has been submitted in the BART/VTA SVBX project, however, VTA asserted that internal hazard analysis and safety certification is performed for all engineering projects.

1. A formal SCP for the SVBX project was submitted and approved by the CPUC. Staff determined this is the only SCP applicable from the past three years. A list of current projects was provided, including the CELR Light Rail to Eastridge, Mountain View Double Track, and Santa Clara Pocket Track as the only Major Transit Projects, 18 Improvement Projects, and 16 Rehabilitation Projects. Staff was informed that VTA plans to submit SCPs for the three Major Transit Projects, but not for the other 34 projects. The SSPP, Element 15, outlines the Safety Certification Program, but does not clearly specify for which projects the program will be used, thus Staff cannot assess fairly which of these 34 projects, if any, will require safety certification.
2. Staff determined the SCP for the SVBX project was compliant with GO 164-D, the SSPP, VTA's Safety and Security Light Rail Design Criteria, and the BART Facility Standards.
3. BART/VTA SVBX personnel verified effective communication has existed between the Project and CPUC Staff throughout the project life, starting with the Preliminary Engineering phase. Communication has been facilitated through CPUC's regular attendance at the project's Safety and Security Review Committee (SSRC) and Fire/Life Safety Committee (FLSC) meetings. The following meeting minutes were reviewed to confirm CPUC's presence:
    a. August 14, 2008: SSRC #1 (during the Preliminary Engineering phase)
    b. February 13, 2013: SSRC #21
    c. April 24, 2013: SSRC #51

d. September 12, 2013: FLSC #47
e. April 14, 2014: SSRC #23

4. SVBX personnel produced three examples of design and construction changes addressed in the Safety Certification Process:
    a. BART has procedures for approving Variances from BART Facilities Standards, which include determination of safety-related changes and requires review and authorization by BART's Chief Safety Officer.
    b. Design Change Requests are reviewed and signed by VTA's System Safety/Security Manager.
    c. Field Change Requests submitted by the construction contractor are reviewed by the Engineer-of-Record to determine whether the change affects safety—safety-related changes are then reviewed by VTA's System Safety personnel.
5. Staff reviewed the Preliminary Hazard Analysis documentation for the SVBX project and determined that all hazards have been satisfactorily mitigated or otherwise addressed. Additionally, SVBX personnel asserted that all parties to the project SSRC are welcome to introduce hazards and other safety items as topics for discussion.
6. No projects for which SCPs were submitted have been completed in the past three years, therefore no Final Safety Certification Verification Reports (SCVR) were available for review. Several projects now in engineering and construction phases are expected to be completed within the next three years, and SCVRs will be submitted.
7. The SVBX project is staffed by both BART and VTA personnel, who interface directly with BART's System Safety Department. In addition to the SSRC, SVBX personnel participate in separate Preliminary Hazard Analysis (PHA) meetings, and review Safety/Security Action Logs.
8. The SVBX project is the only active New Starts project VTA has undertaken.
    a. The Safety and Security Management Plan (SSMP), Section 3, assigns responsibilities to various positions within the project and VTA.
    b. The SSMP, Section 4, establishes the Safety and Security Design Verification process, including requirements for conformance during the design, construction, testing, and operational readiness phases.
    c. The FTA and its PMOC, Atkins Global, oversee the SVBX project through quarterly meetings (Staff reviewed the meeting minutes for February 12, 2014), monthly project reports (written to Atkins Global, Staff reviewed the July, 2014 submittal), and regular onsite presence.
    d. Both BART and VTA are actively engaged in the project through the SSRC meetings.
    e. The SVBX SSRC has met on a monthly basis and as-needed throughout the project life.
    f. Staff reviewed the master checklist for certifiable items.
    g. Staff reviewed samples of designs stamped and signed by Registered Engineers.
    h. Staff reviewed several Non-Conformance Reports and noted a Registered

Engineers had stamped and signed the analyses.

i. The SSMP outlines the training requirements and updates to training programs which will be made as the project approaches completion.
j. Staff reviewed both the Project and the Contractor's testing program plans.
k. Both BART's and VTA's highest-ranking officers will be required to sign the Final Safety Certification Verification Report. Staff reviewed the signature page of the Draft report to verify the requirement.
l. The SSRC includes members from BART's System Safety Department and Police Department. The project hosts workshops with stakeholders to distribute and discuss certification materials.
m. The VTA's Rail System Safety Review Board is the forum for coordination between departments, and hosts regular debriefings regarding staffing, preparation for the Mountain View Station project, and other coordination issues.

Findings:

1. The VTA procedures provided to Staff, including the SSPP, did not clearly define how new projects would be selected to require submittals of Safety Certification Plans to the CPUC.
2. Safety Certification Plans have not been submitted for several projects which VTA explained will require certification but have passed the Preliminary Engineering Phase.

Comments:

The VTA personnel present during the audit activities were unknowledgeable in CPUC's requirements and VTA's own procedures for safety certification. At numerous times, questions could not be answered and Staff was referred to absent individuals. This was attributed to scheduling conflicts with other CPUC review checklists.

Recommendations:

1. VTA should revise the SSPP and the procedure to define which types of "major projects" VTA intends to submit a Safety Certification Plan to CPUC.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**9**	**Element**	**Safety Data Collection and Analysis**
Date of Audit	October 9, 2014 River Oaks Facility	**Department(s)**	Risk Management Department Maintenance Engineering Department Light Rail Technical Training Department
Auditors/ Inspectors	Claudia Lam Jimmy Xia Arun Mehta	**Persons Contacted**	Steven Keller, Director of Safety and Security Peter Lim, Liability Claims Analyst Kris Sabherwal, Systems Engineer- Operations Engineering Dean Palmquist, Technical Training Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Safety Data Collection and Analysis

Interview the VTA representative(s) responsible for safety data acquisition and analysis, and review the safety data acquisition and analysis program requirements to determine whether:

1. The data collected includes, at minimum: information concerning VTA accident and incidents, employee performance failures, equipment failures, and procedural deficiencies.
2. The safety data is supplied by, and collected from, all departments, including Operations, Risk Management, and Maintenance, as appropriate.
3. The safety data collected is analyzed and incorporated into VTA's Hazard Identification and Resolution Process as necessary.
4. The safety data and analyses are made available to VTA departments for use in planning their safety-related activities.
5. Periodic reporting regarding the results of the safety data analysis is provided to the VTA Senior Management as appropriate.
6. Verify that the safety data sources identified in the SSPP are being used, and data analysis and distribution are being implemented as described in the SSPP.
7. Interview VTA Senior Management:

a. Ask the representatives to explain how they receive safety-related information from other departments, including the operations and maintenance departments.
b. Ask the Safety Department representatives to provide examples of how information received from the Operations and Maintenance departments was used to support safety data collection and analysis activities.
c. Ask the VTA Safety Department representatives to explain how they collect information on derailments and rules violations in the VTA's yard.
d. Ask the VTA Safety Department how it ensures the quality and integrity of collected safety data.
e. Ask the VTA Safety Department representatives to explain how VTA reports to FTA's National Transit Database (NTD).

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed Risk Management Department staff and reviewed relevant program documentation. Staff determined the following:

1. VTA collects and tracks safety data using Industry Safe (a new database developed in 2013), union joint safety meetings, complain calls, etc. VTA has a designated staff responsible for data pad. All division has electronic distribution to Personal Record Entry (PRE). Yard, maintenance, wayside personnel share safety data such as derailments and rules violations in the VTA's yard through email and monthly Rail System Safety Review Board (RSSRB)/Firelife Safety Committee meetings.
2. VTA has developed a new database Industry Safe (IS) in 2013 to capture and track safety data. However, VTA has not yet fully implemented IS for tracking hazards and analysis. As of October 2014, there were only four entries for Hazards which have been entered in Industry Safety. Also, staff randomly reviewed ATU/VTA Joint Meeting's Hazard Report Forms which list the hazards, reporting department, and closure date. The hazard forms showed the mitigation and closure date; however, none of the of rail related hazards were entered in IS database or analyzed using methodology as stated in its SSPP and AS-RM-PR-4160 Section 4.3 and Appendix 7.2. This is a recommendation for Checklist 9 – Hazard Management Process.
3. VTA Risk Management prepares monthly and quarterly reports to senior and executive manager. Also, VTA holds monthly Rail System Safety Review Board (RSSRB)/Firelife Safety Committee, ATU/SEIU joint committee meeting to discuss safety incidents and safety data, and made available to VTA departments for use in planning their safety-related activities.
4. VTA has two designated staff, one for safety and one for security, responsible for incident/accident reporting to CPUC, and NTD for Safety and Security data. VTA

performs Internal Safety Audit to ensure the quality and integrity of collected safety data.

Findings:
None

Comments:
None

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**10**	**Element**	**Accident/Incident Investigations**
Date of Audit	October 15, 2014 River Oaks Facility	**Department(s)**	Operations Department System Safety Department
Auditors/ Inspectors	Michael Warren Steven Espinal	**Persons Contacted**	Steven Keller, Director of System Safety and Security Michael Brill, Transit System Safety Officer David Lera, Captain, Office of the Sheriff, County of Santa Clara Cathy Hendrix – Sr. Management Analyst

REFERENCE CRITERIA

1. Code of Federal Regulations, Title 49 Part 659.33 – Accident notification
2. Code of Federal Regulations, Title 49 Part 659.35 – Investigations
3. Code of Federal Regulations, Title 49 Part 659.37 – Corrective Action Plans
4. CPUC General Order 164-D
5. CPUC General Order 172
6. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
7. VTA SOP 530 (LRA-PR-0530), Light Rail Accident/Incident Investigation/ Reporting Procedures version 11 dated 2/6/2013
8. VTA SOP 531, ICP_FRA Reporting Requirements Vasona Corridor version 3 dated 2/6/2013

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Accident/Incident Investigations

Interview the VTA representative(s) responsible, and randomly select at least four CPUC-reportable accidents and/or incidents involving an injury or fatality to determine whether:

1. All accidents and incidents were reported to CPUC according to the requirements in General Order 164-D.
2. All accidents and incidents were reported within two hours of occurrence, as required by General Order 164-D, Sections 7.1 and 7.2.
3. All immediately reportable accident or incident notifications to CPUC contained all the information required by General Order 164-D,

Section 7.3.

4. All accidents and incidents were investigated in compliance with the requirements of General Order 164-D, Section 8, and the AIIP.
5. Video recordings from inward-facing in-cab cameras are reviewed under the required conditions listed in General Order 172, Section 4.3.
6. Verify if FRA (on joint corridor), NTSB, and NTD notifications are made as applicable depending on the incident reporting threshold. Review some records.
7. A final report was submitted for each accident or incident according to the requirements in General Order 164-D.
8. Each final report includes identification of:
   a. All evidence processed during the investigation;
   b. Findings of the most probable cause(s);
   c. Findings of contributory cause(s);
   d. Corrective Action Plans to address the identified causes with the goal of minimizing the probability of recurrence;
   e. A schedule for implementing the CAPs, including completion date or plan for monitoring progress on an on-going basis.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed the VTA Director of System Safety and Security, Transit Systems Safety Officer, Captain SC Sheriff and Senior Management Analyst regarding Accident/Incident Investigations and Staff reviewed the following records and documentation:

1. Accidents selected for review.
   a. July 30, 2012 First Street & Mission Street
   b. June 3, 2013 Tasman Station
   c. June 8, 2013 Sunol Street Crossing
   d. January 17, 2014 Stokes Street & Southwest Expressway
2. Staff confirmed Form R notifications VTA submitted for the four accidents selected for review were within 2-hours as required by GO 164-D, Sections 7.1 & 7.2.
3. All accidents selected contained the information required by GO 164-D, Section 7.3 upon notification to CPUC Staff.
4. VTA investigates accidents following their Accident/Incident Investigation/Reporting Procedures.

5. VTA reviews inward-facing in-cab camera recordings under the conditions listed in GO 172, Section 4.3.
6. Staff verified National Response Center (NRC) notifications for the applicable accidents selected for review. Notifications to NRC are used to update NTD, FRA, NTSB databases as applicable.
7. A final report was submitted to CPUC for the four accidents selected in accordance with requirements in GO 164-D.
8. Staff's review of accidents selected showed the following:
    a. First Street & Mission Street: Final Report was submitted to CPUC Staff on 10/30/2012. 30 day interim status reports were submitted to Staff as required. Staff accepted final report on 12/14/2012. Automobile driver was found to be at fault while making an illegal maneuver. No corrective action was made.
    b. Tasman Station: Final Report was submitted to CPUC Staff on 11/22/2013. 30 day interim status reports were submitted to Staff as required. Staff accepted final report on 5/12/2014. Patron was impaired and found to be at fault trying to board a moving train. No corrective action was made.
    c. Sunol Street Crossing: Final Report was submitted to CPUC Staff on 12/30/2013. 30 day interim status reports were submitted to Staff as required. Staff accepted final report on 6/23/2014. Pedestrian was impaired, failed to observe crossing warning devices and was found to be a fault. No corrective action was made.
    d. Stokes Street & Southwest Expressway: Final Report was submitted to CPUC Staff on 6/16/2014. 30 day interim status reports are being submitted to Staff as required. Staff is currently reviewing Final Report.

Findings:
None.

Comments:
Captain Lera has agreed to review the video concerning the LRV vs. Automobile accident that occurred on May 16, 2013 at North First Street and Metro Drive. Also if there are any inaccuracies in the San Jose Police Department report case number 13-136-0664 based on video evidence, Captain Lera has agreed to generate and issue a supplemental report.

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**11**	**Element**	**Emergency Management Program**
Date of Audit	October 9, 2014 River Oaks Facility Guadalupe Yard – LR Division	**Department(s)**	Security Department System Safety Department Light Rail Technical Training Department
Auditors/ Inspectors	Howard Huie Joey Bigornia	**Persons Contacted**	Michael Brill, Transit Systems Safety Officer Cathy Hendrix, Senior Management Analyst David Lera, Captain, Office of the Sheriff, County of Santa Clara Janice Broock, Transportation Superintendent

REFERENCE CRITERIA

1. Code of Federal Regulations, Title 49 Part 659.23 – System security plan: contents
2. CPUC General Order 164-D
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA Emergency Operations and Business Recovery Plan (EOP)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Emergency Management Program

Conduct the necessary interviews regarding VTA's emergency planning, training, and drill/exercise program and review appropriate records prepared during the last three years to:

1. Solicit an overview of the process for VTA's emergency planning, training, and drill/exercise program and specific examples of coordination with emergency response agencies on emergency planning and drill/exercises
2. Determine the biggest challenges VTA safety department face in coordinating or supporting VTA's emergency planning process.
3. Verify that a drill/exercise schedule has been created and followed. Determine when was the last one performed? Was an after action report developed? Was the after action report used to make changes to VTA's Emergency Operation and Business Recovery Plan (EOP) and/or procedures? If so, have these changes been communicated to VTA personnel?
4. Verify the process through which emergency responders and other outside agencies are involved in the VTA emergency planning.

5. Verify that drill outcomes and evaluations were incorporated into response plans and procedures as appropriate.
6. Determine if VTA has held periodic Fire Life Safety meetings, emergency response agency familiarization activities have occurred as scheduled and corrective actions have been implemented.
7. VTA emergency response training:
    a. Review training programs to verify they contain training curriculums for emergency response procedures and activities appropriate for each job classification.
    b. Review training programs to verify frequency of employee emergency response training.
    c. Randomly select six (6) employees from the following safety sensitive job classifications and review their emergency response training records to verify who has been trained and that training has been properly documented:
        a. Train Operators
        b. Field Supervisors
        c. Rail Controllers

FINDINGS AND RECOMMENDATIONS

Activities:

1. VTA's definition of drills is outside agencies, such as the local law enforcement or local fire departments, contacting VTA to practice their procedures to familiarize themselves with VTA's equipment and/or rail system. The majority of the drills take place in VTA's maintenance yard. VTA's definition of exercises is the opposite of a drill where VTA reaches out to the local agencies to test their internal procedures and/or rail system with the support of the local agencies. VTA follows the guidelines of HSEEP (Homeland Security Exercise Evaluation Program) to set up their drills and exercises. VTA hosts at a minimum a yearly exercise and 2 to 3 drills per year but VTA has hosted more since Levi Stadium opened. Santa Clara Sheriff's SWAT also request training for their new recruits to familiarize themselves with VTA's rail system, equipment, and trains. Once the exercise is completed, the Safety Department holds a hot wash or debriefing, which is to critique how the exercise went and to discuss areas for improvement. VTA notes the critique and the areas to improve, sends out an evaluation notice to all the participating agencies for feedback. When the commenting period has expired, the Transit System Safety Officer creates a draft Exercise Report with an After Action Report/Improvement Plan along with an Improvement Plan matrix with all of VTA's deficiencies. The Improvement Plan matrix consists of the following: Core Capability, Issue/Area for Improvement, Corrective Action, Capability/Element, Primary Responsible Organization, Organization Point of Contact (POC), Start Date, Completion Date. Shortly after the final report is completed, an After Actions meeting is held with Safety Management,

Operations Management, and Chief of Security to determine responsible party/parties to make the necessary corrections. Upon completion of the corrective actions, the responsible party reports back to the Safety Manager as to when the incident was completed and closed. The Safety Manager updates each corrective action with its respective date in the respective Final Emergency Exercise Report. Each Emergency Exercise from conception to completing the Final Exercise Report with all the identified corrective actions (CAPs) takes approximately 6 to 7 month. The completion of the CAPs varies depending on the severity, manpower, resources, etc.

2. VTA reports recent Executive Level Personnel changes have not affected their Safety and Security job tasks.
3. VTA does not currently have formal schedules for exercise or drills. Drills are implemented per request by outside agencies, such as local law enforcement, local fire departments, etc. Table Top Exercises (TTX), Functional Exercises, and Full Scale Exercises are to test how well VTA personnel and outside agencies perform in accordance with VTA's Emergency Operations Plan (EOP). Exercises were followed per various topics of the EOP. VTA has never had an exercise or drill where the EOP was found lacking but has always found that VTA personnel or the outside agency needed improvement in following VTA's emergency procedures. Staff reviewed the following exercise and drill documentation from 2011 to 2014:
    a. "VTA Great Mall Attack TTX", January 2, 2014. Participants: VTA and Milpitas Fire Department
    b. "Great Mall Station" Full Scale Exercise (FSE), June 1, 2014. Participants: Allied Barton, Milpitas Fire, Milpitas PD, San Jose FD, Santa Clara Sheriff Transit Patrol and Bomb Squad, VTA, USR Corporation, Willdan Homeland Solutions.
    c. "Emergency Operations Plan TTX", April 3, 2013. Participants: VTA.
    d. "Operation Diridon" FSE, October 5, 2013. Participants: San Jose Fire Department, VTA, URS Corporation, Willdan Homeland Solutions.
    e. No TTX for 2012.
    f. "Metropolitan Transportation Commission (MTC) 2012 Regional Functional Exercise", June 14, 2012. Joint efforts with MTC. Participants: VTA and URS Corporation.
    g. No TTX but have full scale exercise.
    h. "Bomb Attack with a secondary device", May, 11, 2011. Participants: SJFD, VTA, Marin County Search and Rescue, Sheriff Bomb Squad, Santa Clara County EMS, Santa Clara Valley Water Department, TSA, Office of Emergency Services, San Jose Water Company.

    After action items were tracked to completion. Emails and/or other forms of completion are located in the appropriate Exercise/drill folders.
4. See answer to question #1 above.
5. VTA's EOP is revised through regular reviews. The Emergency Exercises and Emergency Drills are a measure of how well VTA's personnel and outside agencies follow the EOP.

To date there have not been any deficiencies found in the EOP from Emergency Exercises or Emergency Drills.

6. The Fire Life Safety Meeting is performed after each monthly RSSRB. Currently VTA does not include outside agencies in the Fire Life Safety meetings but are in the process of incorporating them. VTA is looking into scheduling a Quarterly Fire Life Safety meetings but the schedule has not been decided. VTA is waiting for responses and commitments from outside agencies.
7. Staff reviewed VTA employee records from each classification and found the following:

a. Train Operators

Badge #	Initial Hire Date as Bus Operator	T/O Hire Date - LRT
9213	1/27/97	4/30/99
13533	7/23/12	7/27/13
2513	3/31/81	10/29/90
13096	7/29/10	7/20/12
5591	7/29/10	9/10/07
13100	7/29/10	4/13/13

b. Field Supervisors

Badge #	Initial Hire Date as Bus Operator	T/O Hire Date - LRT	Promoted to Field Supervisor
8744	3/19/81	3/17/97	10/23/95
13184	2/1/11	10/21/11	2/3/14
12436	5/19/08	2/12/11	10/29/12
11762	1/17/2006	2/26/07	10/29/12
11843	5/1/2006	6/27/2008	9/29/14

c. Controllers

Badge #	Initial Hire Date as Bus Operator	T/O Hire Date - LRT	Promoted to Controller
3374	11/15/90	8/21/00	12/4/06 (Supervision)
3274	4/7/89	3/19/00	7/9/07 (went back to Fare Inspector) 10/29/12

			(Supervision –Field & OCC)
5234	2/22/99	12/11/00	4/20/09 (Supervision and currently Instructor for new Controllers)

No exceptions were noted for emergency response training records review which is received during the VTA employee's initial hire and reiterated during refresher courses.

Findings:

1. Staff noted that for years 2011 and 2012 VTA did not have any Emergency Table Top Exercises however this was corrected in 2013 and 2014.
2. VTA's Fire Life Safety meetings did not include emergency response agencies from cities and jurisdictions served by the light rail system in the past three years as per VTA's SSPP Element #5, Fire/Life Safety Program. However, VTA's Transit System Safety Officer stated that VTA is in the process of contacting local law enforcement and local fire departments within the area VTA's light rail serves to participate in a quarterly Fire Life Safety meeting. VTA is waiting for responses and commitments from the local agencies.

Comments:
None.

Recommendations:

1. VTA should include local emergency response agencies in their Fire Life Safety meetings per VTA's SSPP Element #5, Fire/Life Safety Program.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**12**	**Element**	**Internal Safety Audits/Reviews**
Date of Audit	October 7, 2014 River Oaks Facility	**Department(s)**	System Safety Department
Auditors/ Inspectors	Howard Huie Joey Bigornia	**Persons Contacted**	Mike Brill – Transit System Safety Officer

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
3. VTA Internal Safety Audit Schedule 2011 - 2013
4. VTA Internal Safety Audit Schedule 2014 – 2016

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Internal Safety Audits/Reviews

Interview the VTA representatives involved in ISSAs, and review appropriate records to:

1. Determine if a three-year internal audit schedule was developed and submitted to CPUC.
2. Verify that all elements of the SSPP were evaluated within the past three years.
3. Verify CPUC was notified 30 days in advance of the scheduled audit via a letter and or an email and a draft checklist was submitted along with it.
4. Verify that each audit lists the involved VTA departments, the safety-related activities addressed, and the reference criteria for the audit.
5. Determine whether the ISSAs adequately address interdepartmental and interagency communication issues, and whether or not VTA has a process for addressing and overcoming non-responsiveness of departments' non-responsiveness and failures to implement audit recommendations.
6. Determine how expertise for auditing specific functions is evaluated, and how personnel are assigned per the SSPP to ensure ISSA quality. An example of a function is signal inspection.
7. Verify that audits have been properly documented and included

references for documents and activities reviewed, criteria for evaluation, and notes to support findings and recommendations.

8. Verify that Annual Reports are accompanied by letters from the GM/CEO stating VTA's compliance status with its SSPP and Corrective Action Plans for elements determined not to be in compliance.
9. Verify that Corrective Actions to address findings from the internal safety audit process were scheduled, tracked, and implemented.
10. Review CPUC RTSS Checklists for reviewing and approving VTA's Annual Reports.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed VTA's Transit System Safety Officer regarding the Internal Safety Audits and determined the following:

1. VTA's Annual Report dated February 14, 2013 identifies the Three-Year Internal Safety Audit Schedule, from 2011-2013, and the FTA elements to be reviewed. However the first 5 elements of the FTA Safety Model, specific to VTA Management, are not included. The Internal Safety Audit (ISA) schedule per VTA's SSPP, Element # 9 also does not identify the first 5 elements of the FTA Safety Model to be reviewed. VTA's safety element checklist titles and numbers did not match the FTA's Safety Model. Staff could not determine which of the FTA elements have been audited and VTA did not have the FTA's 21 item safety model to reconcile to staff. VTA's 2014 – 2016 ISA schedule was provided prior to Triennial Safety Review as reference to show schedule for the next three years.
2. VTA's 2011 – 2013 ISA schedule shows all the elements in VTA's SSPP are scheduled in the 3 year cycle. VTA's 2011 ISA report showed checklists 7, 9, 10, 12, 17, 16, and. The 2012 ISA report showed checklists 6, 13, 17, 15, 19, 23, 25, and 26. And the 2013 ISA report showed checklists 8, 17, 11, 14, 18, 20, 21, and 22. All ISA reports reconciled with the SSPP 3 year review cycle.
3. VTA did not have a copy of the notification sent to the CPUC designated representative for availability to attend the 2011 VTA ISA; however documentation is on the CPUC file server. From 2012-2014, VTA was able to show the ISA notifications and the checklists sent to designated CPUC representative. VTA will be moving to a shared calendar program, Outlook and Industry Safe, where all participants and observers will be notified via email and automatically be placed on event calendar.
4. VTA's ISA checklist used for the element(s) reviewed, identify safety related activities and reference criteria such as Standard Operating Procedure (SOP) and SSPP Section.
5. VTA tracks the ISA findings and recommendations through a hard copy spreadsheet

attachment in the Annual ISA Report. The Transit System Safety Officer and Senior Management Analyst review the spreadsheets once a month to update the progress of the Corrective Action Plans (CAPs). The CAPSs status is presented at the Rail System Safety Review Board (RSSRB) monthly meetings. VTA's database for capturing corrective actions is Industry Safe (IS) which has been in use since March 2013, however its current usage is for field incidents. VTA is currently expanding IS to include Safety Department issues (e.g. CAP from ISA's, Accidents, etc.) – see checklist #6, Section 6. VTA anticipates they will have IS in beta test mode to accommodate Safety's incidents and CAPs before the end of 2014.

6. VTA does not have a formal training program for their ISA auditors. During the monthly RSSRB meetings, the attending managers decide which department is to be audited, identifies the element to be audited, and requests a specific department to identify the personnel to perform the audit. Per VTA's SSPP, Element #9, the person(s) assigned to perform the audit must be from another department other than the department that's being audited. The ISA checklist(s) are created by the Transit Systems Safety Officer, distributed 30 days in advance to the auditor(s), the designated CPUC representative, the respective department(s) per VTA's SSPP, Element #9.
7. VTA's Transit System Safety Officer sends out the ISA checklist(s) and all reference documentation 30 days in advance to the auditor(s), the department(s) being audited, the designated CPUC representative, and other pertinent parties to review and prepare for the ISA. All recommendations are referenced to the areas of deficiencies. Staff reviewed the 2011-2013 Annual Report RSSRB Internal Safety and Security Audit Corrective Action Plan spreadsheets. Staff found that all CAPs were referenced to a description, rule and/or SOP, and estimated date of completion.
8. VTA's Annual ISA Reports for calendar years 2011 – 2013 contain the Annual Compliance letter signed by VTA's Chief Executive Officer.
9. See answer to question #5 above.
10. CPUC Acceptance letters and RTSS 5 checklists with Staff signatures were filed with the respective VTA 2011-2013 Annual ISA Reports.

Findings:

1. FTA's Safety Model elements 1 through 5 were not found in VTA's SSPP list of ISA elements or in VTA's 3 Year-Cycle ISA Calendar and were not being reviewed as part of VTA's Internal Safety Audits.

Comments:

1. VTA's ISA checklist titles did not match the FTA's Safety Model's elements. This made it difficult to reconcile VTA's checklist with the FTA's Safety Model elements. VTA may consider creating a spreadsheet which reconciles the elements or change the checklist

titles to match the FTA Safety Model elements.

Recommendations:

1. VTA should include the FTA's Safety Model elements 1 through 5 in the three year ISA cycle and in VTA's SSPP, Element #9, list of ISA elements as required by 49 CFR 659 and GO 164-D, Sections 3 and 5.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-A**	**Element**	**Rules Compliance: Observation and Enforcement**
Date of Audit	October 6, 2014 Guadalupe Division	**Department(s)**	Service Management Unit Operations Department Light Rail Technical Training Department Light Rail Maintenance Training Department System Safety Department
Auditors/ Inspectors	Debbie Dziadzio Arun Mehta	**Persons Contacted**	Dean Palmquist, Technical Training Supervisor David Acosta, Maintenance Training Supervisor Denise Patrick, Transit System Safety Officer Janice Broock, Transportation Superintendent Robert Daniels, Field Operations Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 172
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. Use of Communication Devices By Bus and Light Rail Employees Policy, OPS-PL-0001 version 2 dated 3/5/2012
5. VTA SOP 1.2 Video Based Random Monitoring and Enforcement version 2 dated 10/3/2012
6. VTA Operating Rulebook dated 2011
7. VTA Standard Operating Procedures
8. VTA Maintenance Procedures

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Observation and Enforcement

Interview the appropriate VTA representatives and review appropriate records to:

1. Verify that VTA performs formal observations of Rail Controllers and Operators as specified the SSPP and/or supporting procedures.
2. Verify that VTA performs observation of Maintenance Employees as specified in the SSPP and/or supporting procedures.
3. Review documentation to verify that supervisors are citing operating and maintenance personnel for rule violations.

4. Verify that VTA has conducted random evaluations regarding personal electronic device use as required by General Order 172, Sections 4.3.e, 4.5, and 6.2.
5. Verify that operations and maintenance employees are evaluated based on their performance during unannounced observations to assess their compliance with safety rules, procedures, and/or practices.
6. Determine whether any accidents/incidents were determined to have resulted from inadequate operations procedures and verify appropriate Corrective Action Plans (CAPs) were implemented in response.
   a. If so, verify what steps were taken to correct these issues (i.e., employee retraining, suspension, dismissal, etc.).
7. Determine how VTA performs efficiency testing of operating and maintenance personnel and verify CAPs are implemented when appropriate
8. Determine whether VTA has developed and implemented a zero-tolerance policy and program regarding personal electronic device usage, as required by General Order 172, Section 5.
9. Verify the VTA Committee that receives reports from Operations and Maintenance Departments regarding rules compliance assessment and testing. Are hazards identified from the rules compliance process, reported to the Committee, and tracked through the Hazard Management Process?
10. At random, select several operating procedures (4 or 5) and ride the system to verify that these rules are being followed (such as proper BCBs berthing, any speed restrictions, or end of line vehicle inspections, etc.).
11. Review VTA appropriate program documentation, and ensure that the following are addressed:
    a. Medical Monitoring
    b. Fatigue Management
    c. Over-the-Counter Medications
    d. Stress
12. Interview operations and maintenance supervisory staff to determine their familiarity with rules and procedures and how they monitor employee compliance with rules and procedures.
13. Conduct random interviews of operators and mechanics to verify how often they receive training on rules and procedures and how the transit agency monitors their compliance with rules and procedures.
14. Conduct a random sample inspection of transit operators to determine if they are carrying their rulebook, if they have the proper safety equipment in their cabs, and if their radios are functioning.
15. Accompany a light rail supervisor personnel during compliance checks and assess how these checks are conducted and ensure that final reporting matches the findings in the field.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff verified (by records/spreadsheet review) that VTA performs formal observations on the operators, and safety sensitive maintenance personnel via SPRAT, recertification and policy requirements. Rail controllers are only tested via scheduled recertification (which includes LRV operations) at least one time per year. Operators are tested via recertification and covert LRV ride checks performed by supervisors and trainers at least three times per year.
2. VTA performs and documents SPRAT (Safety Procedures and Rules Adherence Test), WP&S observations, Roadway Worker Protection (RWP) observations, Lock out Tag out inspections and daily observations verifying operating rules compliance. In 2012, a trainer observed excessive speed violation by a maintenance personnel operating an LRV in the yard and reported the incident to the appropriate supervisor. Another incident of SPRAT testing of scenario retrained on 4/15/2014.#5 was that on 3/18/2014 involving "hi-water indicator at Bassett Underpass", one Operator (#13422) out of a total of 27 operators tested, failed the test. The operator was
3. Staff reviewed rules compliance checks documentation (SPRAT, ride checks, recertification records) for 10% of operating and maintenance personnel and found VTA to be in compliance.
4. Staff verified that VTA conducts random evaluations regarding personal electronic devices (PED) use as required by General Order 172. During the interview, Staff was advised of an incident which happened in July, 2014, where a maintenance employee was observed using his cell phone while fouling track area in the yard. Employee was reported to appropriate supervisor. Another instance occurred where an operator was observed listening to a transistor radio in his shirt pocket. The operator was reported and subsequently disciplined.
5. Same as #2
6. Staff reviewed records of employees involved in red signal violations for the past 9 months. Employees were disciplined, retrained, suspended or removed from rail service per VTA policies.
7. VTA advised Staff that they conduct efficiency testing of their personnel through SPRAT. SPRAT was initiated by VTA in 2009. Since its inception, there have been 4-5 SPRAT violations, none resulting in any accidents or incidents. SPRAT violations are kept in a separate file from personnel files. Any violations resulting from SPRAT can result in a retraining; however, no discipline is issued per an agreement with ATU.
8. VTA has established a zero policy and program for PED (OPS-PL-0001). However, while discussing element #4, Staff found an exception in discipline of an operator that was found to be using a PED while operating an LRV. Instead of VTA's mandatory 30 day suspension, the operator in question was given a negotiated 20 day suspension. Staff was advised that this particular policy is currently under arbitration with the union.

9. Staff was advised that VTA does not have a formal committee to receive reports from Operations and Maintenance Departments regarding rule compliance assessment and testing. Currently, SPRAT reports are reviewed by Training Supervisor and Operations Superintendent. The rule compliance ride checks are reviewed by the Training Supervisor only.
10. Staff rode VTA system on 5 separate occasions making observations on BCB's, station announcements, procedures when approaching, entering, and exiting a work zone that is set-up with flags and a watchperson, sounding the bell before departing a station, ringing bells across at-grade rail crossings and PED. Staff took no exception to the operations observed. Operators complied with VTA Operating Rules, CPUC General Orders, and Federal Regulations.
11. Staff reviewed the appropriate documentation relating to Medical Monitoring, Fatigue Management, Over-the-counter medication, and Stress. Staff was also advised of a novel concept called Joint Workforce Investment (JWI) between VTA management and ATU. This concept has resulted in a (future) fitness center at VTA Guadalupe Yard for all personnel designed to aid in the battle against fatigue and stress.
12. Staff interviewed supervisors of operations, rail control and maintenance and determined they were qualified in the VTA operations rules and procedures and CPUC General Orders.
13. Staff interviewed 8 operators and 6 maintenance technicians. Personnel were knowledgeable of the training requirements including yearly recertification. Operators were aware of compliance ride check requirements and SPRAT. Maintenance personnel were familiar with RWP (GO 175) requirements but unfamiliar that there is a formal rules compliance check program to ensure their compliance and safe work practices.
14. Staff interviewed 8 Operators. During the interview, Staff asked the operators for their Operating Rules Book, VTT and Medical cards, DMV License, their Paddle and its contents, current Superintendent's Notice. Staff found all to be in compliance.
15. Staff accompanied VTA Line Supervisor and observed him/her performing ride checks on two separate operators. Line Supervisor checked for operating speeds through turnouts, curves, over switches, entering, exiting stations, bells, smoothness of ride, station announcements, possession of rule book, VTT and Medical cards, DMV License. Staff took no exceptions to observation of Line Supervisor.

<u>Findings:</u>

1. VTA does not have a formal rules compliance observation program for Rail Controllers. Other than SPRAT, VTA Maintenance Department does not have a formal rules compliance observation program. In both areas, there is constant observation and coaching, however, nothing is documented.

2. VTA has established a zero policy and program for PED (OPS-PL-0001). However, while discussing element #4, Staff found an exception in discipline of an operator

that was found to be using a PED while operating an LRV. Instead of VTA's mandatory 30 day suspension, the operator in question was given a negotiated 20 day suspension. Staff was advised that this particular policy is currently under arbitration with the union.

Comments:
None

Recommendations:

1. VTA should establish a formal rules compliance check program for Rail Controllers and Maintenance Personnel as per 143-B, Section 13.04.
2. VTA should be consistent in their disciplinary process regarding violations of VTA Operating Rules, CPUC General Orders, and Federal Regulations.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-B**	**Element**	**Rules Compliance: Operations Safety Compliance**
Date of Audit	October 7, 2014 Guadalupe Division	**Department(s)**	Service Management Unit Operations Department Light Rail Technical Training Department Light Rail Maintenance Training Department System Safety Department
Auditors/ Inspectors	Debbie Dziadzio Arun Mehta	**Persons Contacted**	David Acosta, Maintenance Training Supervisor Dean Palmquist, Technical Training Supervisor Janice Broock, Transportation Superintendent Garry Stanislaw, Safety Projects Manager Robert Daniels, Field Operations Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 172
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. Use of Communication Devices By Bus and Light Rail Employees Policy, OPS-PL-0001 version 2 dated 3/5/2012
5. VTA SOP 1.2 Video Based Random Monitoring and Enforcement version 2 dated 10/3/2012
6. VTA Operating Rulebook dated 2011
7. VTA Standard Operating Procedures
8. VTA Maintenance Procedures
9. VTA RWP Manual

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Operations Safety Compliance

Interview VTA representatives responsible for Operations Safety, perform random observations and operations inspections, and review appropriate records to determine whether:

1. Maintenance Workers:
   a. Know and understand applicable wayside safety rules;
   b. Comply with the PED Rules when performing any duties on or

near railways;
   c. Know and understand the rules and procedures for mainline operations.
2. Operators:
   a. Are in compliance with the applicable rules and procedures ;
   b. Comply with PED Rules while inside operator cabins;
   c. Are properly trained and knowledgeable in handling accident/incidents and emergency response situations, and coordinating with OCC during the same.
3. Controllers:
   a. Are properly preparing and maintaining records, reports, and logs;
   b. Perform duties in accordance with standard operating procedures, rule books, and bulletins;
   c. Are trained and knowledgeable in dealing with accidents/incidents and emergency response situations, and coordinating with VTA personnel and other agencies during the same.

Randomly select 10% controllers, 10 % operators, and 10% maintenance personnel, and perform ride-along or on-site inspections to verify their compliance with applicable rules, that they have the proper safety equipment, that their radios are functioning, and that they are complying with the personal electronic device policy.

FINDINGS AND RECOMMENDATIONS

Activities:

1. VTA advised Staff that maintenance employees are qualified via recertification, training, and testing including random observations. Staff was advised that VTA's Safety Department is instituting a new initiative where a" hazard tracking module" will be incorporated in the very near future throughout VTA system as part of the "Industry Safe" software program. Any hazards noted by VTA employees will be transmitted to the Safety Department who will input information into the hazard module for tracking and trending purposes.

2. See Checklist 13-A

   Staff was advised of CARE (Customers Are Resources to Excellence) where customers report any Operations noncompliance (including PED violations) via radio, telephone, email, voicemail, texting, etc. VTA asserted that the operators are well trained and qualified in accident/incidents and become the first incident commanders in an event until additional help arrives. Operators are issued an "Operator Event Card" to be kept in their pouch at all times. This card outlines procedural steps to be taken in the event of collisions with vehicles, pedestrians, objects, derailments, track blockage, injured or ill passenger, etc.
3. Staff interviewed VTA controllers and reviewed Unusual Occurrence Reports, Telephone, Train Order Logs, Vasona Track Bulletins (which is sent to Union Pacific Main Office – Omaha), Special Instructions Log, and Gate Checks (train consists). Staff was advised by VTA that controllers are qualified in the roles and responsibilities via recertification and testing. Currently, there is no formal rules compliance observation program in place. VTA advised that observations occur daily and if necessary, couching and counseling is provided as necessary. Staff advised that the controllers fall into the category of safety sensitive employees and are subject to the same random rules compliance checks that operators are subject to. Staff observed no PED in use during the audit.

Findings:

1. Currently, there is no formal rules compliance observation program in place for maintenance and controllers. VTA advised that observations occur daily and if necessary, couching and counseling is provided as necessary. Staff advised that the controllers and certain maintenance personnel fall into the category of safety sensitive employees and are subject to the same random rules compliance checks that operators are subject to as per General Order 143-B.

Comments:
None

Recommendations:

1. VTA should institute a formal rules compliance observation program as per General Order 143-B, Section 13.04 (Same as Checklist 13-A).

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-C**	**Element**	**Rules Compliance: Operator, Controller, and Maintenance Personnel Hours of Service**
Date of Audit	October 8, 2014 Guadalupe Division	**Department(s)**	Service Management Unit Operations Department Way, Power, & Signals Department Vehicle Maintenance Department
Auditors/ Inspectors	Debbie Dziadzio Arun Mehta	**Persons Contacted**	Robert Daniels, Field Operations Supervisor Phil Sharp, LR Vehicle Superintendent Janice Broock, Transportation Superintendent Joel Milburn, WP&S Superintendent

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. General Order 143-B, Rule 12.04 Hours of Service-Safety Sensitive Employees
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Operator, Controller, and Maintenance Personnel Hours of Service

Select at least 10% safety-sensitive employees at random from each of the following classifications:

- Train Controller
- Train Operator
- Substation Maintenance
- Overhead Maintenance
- Facilities Maintenance
- Track Maintenance
- Signals Maintenance
- Revenue Vehicle Maintenance
- Non-Revenue Vehicle Maintenance
- Supervisors or Managers

Inspect the employees' time cards for a three-month period during the past 18 months to determine whether:

1. Shifts were in compliance with the requirements that safety-sensitive employees may not remain on duty for more than 12 consecutive hours, or for more than 12 hours in any 16 hour period.
2. Each initial on-duty status was preceded by eight consecutive hours of off-duty status.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff interviewed VTA Supervisors from Operations, Maintenance, WP&S, and OCC. Staff requested Hours of Service records for 10% of safety sensitive personnel from each department. VTA was using a work time tracking system called BDT that was tied into payroll. As of June 9, 2014, VTA is now utilizing a new tracking system called Trapeze.
2. Staff reviewed records which were partly BDT based (time cards) and partly Trapeze (database). Staff found no exceptions on the time card record keeping from data reviewed. The Trapeze records supplied were not as comprehensive as the previous system. While questioning the various aspects of Trapeze records, it was communicated to Staff that VTA Supervisors had little training or none at all in the new system. VTA Supervisors acknowledged that they needed additional training to use the Trapeze system.
3. During the interview process, Staff learned that Supervisors and Rail Controllers were salaried employees and their time keeping is currently not part of Trapeze. Staff also reviewed hard copies and PDF copies of this group of employees. No exceptions were found.

Findings:
None

Comments:
Staff recommends a training program for VTA Supervisors to better understand, and utilize the capabilities of the Trapeze system.

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-D**	**Element**	**Rules Compliance: Contractor Safety Program**
Date of Audit	October 14, 2014 Guadalupe Division	**Department(s)**	Operations Department System Safety Department Engineering & Transportation Infrastructure Development Department Light Rail Technical Training Department
Auditors/ Inspectors	Debbie Dziadzio Daniel Kwok Robert Hansen	**Persons Contacted**	Dean Palmquist, Technical Training Supervisor Art Douwes, Operations Manager, Operations Engineering Adolf Daaboul, Sr. Transportation Engineer, Engineering & Transportation Infrastructure Development

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. Restricted Access Procedures / RWP Manual
5. Inspectors Work Instructions, Doc. #EC-CO-WI-0005

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Contractor Safety Program

Interview the VTA representative responsible for the Contractor Safety Program and review VTA's relevant program documentation to determine whether:

1. VTA has developed and implemented a control document clearly establishing its responsibilities and requirements for the contractor safety program, including:
   a. Training and certification for contractors and their employees.
   b. The rules, regulations, and procedures applicable to contractors and their employees.
2. VTA's procedures and practices clearly identify that VTA is ultimately in charge on its system, and that contractors and their employees must comply with all established safety rules and procedures.

3. VTA procedures require regular internal audits and inspections of construction sites to monitor compliance with its safety requirements.
4. VTA procedures establish the range of activities for monitoring Contractors and their employees, and enforcing compliance with safety requirements through regular unscheduled and unannounced compliance checks, as well as by scheduled periodic audits and inspections.
5. The Safety Department, Quality Assurance and Engineering & Construction has reviewed construction plans, performed site inspections, reviewed and approved contractor safety plans, and ensured contractors operate in compliance with VTA Operating Rules and Procedures Manual.
6. VTA's monitoring and enforcement activities are properly recorded, distributed, and filed.
7. There is sufficient interagency coordination among various contractors regarding safety issues.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed an Excel spreadsheet initiated, developed, implemented, and utilized by Training Department that serves as a control document. The spreadsheet categorizes various personnel and their craft to determine the frequency of RWP training. RWP training is in accordance to General Order 175 and VTA Wayside Procedures, which clearly identify roadway workers and their various types of protection while working on rail right-of-way. The spreadsheet has a flagging system to ensure VTA Training personnel contact roadway workers prior to their expiration dates. The training records are on hard and soft copies for review.
2. VTA personnel advised that before Contractors and their personnel work on VTA property, they must first receive a Restricted Access Permit (RAP) from VTA one week prior to scheduled work. From the RAP, contractors and their personnel are listed and at that time, Training Department will work to ensure all contractor personnel have the required RWP training. Staff reviewed Contract Documents that clearly state VTA is ultimately in charge of its system. During Staff's review of the contract documents recently awarded for the Tasman Pocket Track project, Staff observed that the documents outline VTA and the Contractor's responsibilities regarding the Roadway Worker Program and training.
3. Staff interviewed VTA personnel, reviewed various Construction Inspector's Reports, and Daily Inspection Reports and determined that although there is daily and sporadic inspections of construction sites by VTA Engineering Department Inspectors, there is no

formal internal audit or inspections of sites to monitor compliance of its safety requirements. A construction site inspection may include confirming the correct tools are being utilized, contractors have a training sticker on their helmet (to ensure they have attended RWP training), lock out tag out (LOTO) is being followed and utilized, but the inspectors are unfamiliar with the various types of protection that is being utilized by VTA for the roadway workers, including Operator responsibilities approaching, entering, and exiting work zones. Also, there are no compliance checks or monitoring that is performed by Training and Operations Departments on contractors at the work zones.

4. Staff interviewed VTA personnel regarding enforcing compliance. VTA has between 10 and 15 staff or contract inspectors operating on all shifts, with the goal of having one inspector at each active work area at all times during any construction activities. Per VTA staff, these inspectors perform rules compliance checks on a daily basis, however, there is no formal procedure or checklist associated with the checks. Instead, the inspectors have general site inspection forms which include a space for safety findings. These daily site inspections are not audited by the Safety Department. The lead inspector is responsible for each of the site inspectors, and communicates with each at least once a day.
5. Staff interviewed VTA personnel, reviewed Construction Inspector's Reports, and Daily Inspection Reports. Staff also reviewed Contract Documents to confirm safety plans are contained in the documents. According to VTA personnel interviewed, pre-project construction plans are circulated internally, allowing each affected department to provide comments then incorporated through plan revisions. Contractors' Site Specific Safety Plans are reviewed by VTA and require approval by the Safety Department. Contractors are trained in VTA's Roadway Worker Protection Manual, the Operating Rules and Procedures Manual, and additional procedures.
6. During Staff's interview with VTA personnel, it was determined that although the Engineering Department performs construction site inspections as notated above, they do not share their finding with other departments.
7. VTA asserted that there are no current multi-contract projects which would require significant inter-agency communication. In general, work within the shared VTA/Caltrain right-of-way requires contractors to communicate with both agencies. The Roadway Worker Protection Manual addresses procedures for selecting an Employee-In-Charge when multiple contractors are present at a work zone.

Findings:

1. There is no formal monitoring program to ensure contractors and their personnel are in compliance to General Orders and VTA Operating Rules.
2. There is no formal enforcement of rules compliance regarding contractors and their employees performed by VTA personnel.
3. Although there are safety plans in place, construction site inspections being performed, there is no program in place to monitor compliance to VTA Operating Rules.
4. Engineering Department does not share construction site inspection findings with other

departments.

Comments:
None

Recommendations:

1. All VTA employees must be trained in RWP according to General Order 175 and VTA Wayside Procedures. A formal compliance monitoring program should be instituted to ensure VTA is monitoring all contractors and their personnel to ensure compliance to all General Orders and VTA Operating Rules. A formalized checklist or inspection sheet should be instituted to assist inspectors from Engineering, Training, and Operations Departments.
2. VTA should establish a range of activities for monitoring contractors and their employees and enforce compliance to General Orders and VTA Operating Rules through regular unscheduled and unannounced compliance checks as well as by scheduled periodic audits and inspections by Engineering, Training, and Operations Departments.
3. VTA should establish or formalize a program to monitor VTA Operating Rules compliance and circulate findings internally for review and comments by other departments.
4. With a formal monitor system of rules compliance, all findings, both pros and cons, should be properly recorded, distributed to various departments and filed.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-E**	**Element**	**Rules Compliance: Operating Rules and Maintenance Procedures Manual and Operations Bulletin Revisions**
Date of Audit	October 15, 2014 Guadalupe Division	**Department(s)**	System Safety Department Operations Department Service Management Unit Light Rail Technical Training Department Light Rail Maintenance Training Department
Auditors/ Inspectors	Debbie Dziadzio Daniel Kwok	**Persons Contacted**	George Sandoval, Operations Manager, LR Maintenance Administration Janice Broock, Transportation Superintendent Dean Palmquist, Technical Training Supervisor Art Douwes, Operations Manager, Operations Engineering John Carlson, Superintendent, Service Management Steve Jovel, Assistant Transportation Superintendent

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA SOP 1.1 Light Rail SOP Program version 8 dated 12/5/2007
5. VTA Maintenance Standard Procedures Program MTN-PR-1000 dated 4/26/1999

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance:
Operating Rules and Maintenance Procedures Manual and Operations Bulletin Revisions

Interview VTA representative responsible for operations rules and procedures, maintenance procedures, and review necessary documentation to determine whether:

1. The Standard Operating Procedures, the Maintenance Procedures and all active Operating Bulletins are reviewed, revised systematically and

distributed to the relevant personnel. Discuss the process used to review and update rules and procedures.

2. The results of each review of the Standard Operating Procedures, the Maintenance Procedures and Operating Bulletins are documented in a memorandum to file, providing a summary of the results and the appropriate manager's determination whether revisions are needed.
3. All Operating Bulletins were approved by the Chief Operating Officer with the concurrence of affected departments.
4. Operating Bulletins were issued in a timely manner and provided to affected personnel.
5. A record is maintained of all Operating Bulletins issued, and employees receiving the bulletins.
6. Active Operating Bulletins are posted in specified locations, and inactive bulletins are removed in a timely manner.
7. All new operating rules and bulletins were distributed to CPUC Staff during the past 12 months, and the rule/bulletin distribution process has been tracked.
8. Does VTA Safety Department conduct assessments to evaluate safety-related impacts to rules changes and bulletins?
9. Interview VTA Safety Department representatives to determine when rules and procedures were last reviewed (certain rules and procedures should be reviewed after accidents) and revised.
10. Conduct interviews with VTA Safety Department representatives to discuss their role in ensuring that safety concerns are addressed in VTA's rules compliance program.
11. Do Safety Department representatives support any rules compliance activities?
12. Do Safety Department representatives receive reports from the VTA's operations and maintenance departments regarding the performance of rules checks, assessments, and testing?
13. Are hazards identified from the rules compliance process and reported to VTA Safety Department and managed through the hazard management process?

FINDINGS AND RECOMMENDATIONS

Activities:

From interviewing VTA department representatives, Staff has determined the

following:

1. Operating bulletins are revised on an as need basis. Operating bulletins are revised though RRPD (Rail Rules Procedure Development) Committee, which reviews and updates the procedure and sends it out for a 10 day review through the RSSRB (Rail System Safety Review Board). Changes to the SOP also go through the RRPD and RSSRB process. SOP changes for operators are typically brought up through the NLRO (New Light Rail Operator) program. If the instructors (usually veteran operators), notice a procedure is no longer in practice or has changed, they will highlight the procedure and it will be brought to the RRPD for revision and review. Changes to the VTA system may also trigger changes to the SOP. There is no systematic overall review of VTA procedures.
    a. Maintenance SOP's are developed jointly by the Maintenance and Engineering Departments, on an as-need basis. Currently, there is no complete SOP for Maintenance; one is in development and is expected to be complete within a year.
2. During RRPD and RSSRB meetings, the respective Department Secretaries takes the minutes for the meeting, distributes the minutes to relevant parties, and archives. Staff reviewed the meeting minutes for May 28th, 2014, Jan 22nd, 2014, July 2012 and November 2013.
3. Operating Bulletins are signed by the Chief Operating Officer (COO). Prior to COO's signature, bulletins pass through the RSSRB, where departments give their input and resolve any conflicts or issues.
4. Operating Bulletins are kept in the SOP. All SOP manuals are tracked via database. New Operating Bulletins and Train Orders are also posted on a wall in the operator's break room.
5. Recipients of the new SOP manuals are required to sign a form to confirm that the new manual is received and the old one destroyed.
6. If an Operating Bulletin is no longer in effect, bulletins on the wall are archived to a clipboard near the current bulletins for reference. Records of old Operating Bulletins are filed and kept in storage for a period of 5 years. Bulletins and train orders are also distributed to operators in a pouch when they pick up their train keys and radio when they report for duty. Staff verified that current Operating Bulletins and Train orders are posted and inactive bulletins are removed. Staff found a map of the Tasman Pocket track covering some active operating bulletins. The map was subsequently removed by VTA personnel.
7. RRPD committee revises the rule book which then goes through RSSRB for review and approval. The rule book is reviewed and, if necessary, revised approximately every three (3) years RRPD committee revises the rulebook, which then goes through RSSRB for review and approval. The rulebook is revised roughly once every three year.
8. The Safety Department holds the RSSRB meetings, and also performs the final review of rulebook changes and bulletins.
9. The latest revision to the rulebook was January 1st, 2014. The rulebook is usually

revised once every 3 years.

10. The Safety Department has a seat on the RRPD and is chair of the RSSRB.
11. The Safety Department checks LOTO compliance, blue flag procedures, and performs spot checks at the work zones. Operation Line Supervisors perform covert ride checks 3 times per year on each operator, in accordance to VTA's SSPP.
12. The Operations Department does not send ride check results to the Safety Department. A procedure is currently in development.
13. Hazards are brought up verbally from employee to supervisors and are discussed during monthly safety meetings. The issue is tracked via the safety meeting minutes and the issue is carried to the next month until it is resolved or rectified. If an issue is not resolved satisfactorily, then the employee may fill out a Safety or Health Hazard Report form (Form A401a.doc), which is provided to employees by the Union contract. If the form is utilized, then the Union will also track the issue. Refer to Checklist #6 regarding Hazardous Management Reporting.

Staff follow-up meeting with Safety Department (Bruce Turner) on 2/10/15 and their additional responses below:

10. The Safety Department ensures safety concerns regarding rules compliance by performing audits as per VTA's SSPP, attending various safety meetings (i.e. VTA, ATU, Rail Safety, etc.) and face-to-face meetings with employees.
11. The Safety Department checks LOTO compliance, blue flag procedures, and performs spot checks at the work zones. Operation Line Supervisors perform covert ride checks 3 times per year on each operator, in accordance to VTA's SSPP, SPRAT ride checks.
12. Operations Department information, regarding various rules compliance checks, is input in OPS Docs and Industry Safe database which includes CAPs regarding observed non-compliance of VTA operating rules and CPUC General Orders. This database is also utilized by the Safety Department where information is analyzed. There currently is no maintenance department procedures manual (SOP) regarding rules compliance observations nor the frequency of such observations. Staff has been advised that a manual is in the development stage.
13. Refer to Checklist #6 regarding Hazardous Reporting.

<u>Findings:</u>

1. VTA does not perform a complete systematic review of their SOPs at set or designated intervals.

2. There is no formal SOP procedure for reviewing and revising the operating rule book.
3. There is no formal monitoring of rules compliance via checks, assessments, and testing for the maintenance department.

Comments:

1. Although there is no timeline requirement for SOP review, VTA should consider instituting a set timeline for all SOP Manual review (i.e. every 3 years, every 5 years, etc.).

Recommendations:

1. VTA should complete the Standard Maintenance Procedures Manual.
2. VTA should establish a formalized procedure via SOP to outline the review and possible revision of the rule book.
3. VTA should formalize a process for monitoring rules compliance in Maintenance Department.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**13-F**	**Element**	**Rules Compliance: Operations Control Center & SCADA**
Date of Audit	October 9, 2014 Guadalupe Division	**Department(s)**	System Safety Department Operations Department Service Management Unit
Auditors/ Inspectors	Debbie Dziadzio Howard Huie (Rupa Shitole)	**Persons Contacted**	Abrar Ahmad, Assistant Superintendent, Service Management George Sandoval – Operations Manager, LR Maintenance Administration Ferdie Centeno – Sr. Communications System Analyst, WP&S

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. OCC Policy and Procedures Manual
5. SCADA Maintenance Procedures

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Operations Central Control & SCADA

Interview VTA representatives responsible for operations rules and procedures and review necessary documentation to determine whether:

1. The OCC Manual is reviewed and revised, as necessary, on an as needed basis.
2. Revisions to the OCC Manual are made either through Operating Bulletins, or other written documents signed by the appropriate Department Managers.
3. Review Unusual Occurrence Logs and verify if properly maintained.
4. Perform review records to determine whether SCADA has been maintained as required, and that all preventative and corrective maintenance practices comply with the applicable reference criteria.
5. Review SCADA reports/logs related to intrusion alarms, false presence, and others associated with SCADA monitoring.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed the responsible VTA personnel and reviewed the necessary documentation to determine the following:

1. The Rail Rules and Procedures Development (RRPD) Committee consists of the various VTA departments heads, field supervisors, and ATU Union representatives. E.g. Light Rail Technical Training, Safety, OCC, Maintenance, Way Power & Signals, and Operations. The RRPD Committee meets once every other week and decides when and which of VTA's manuals or SOPs need to be updated. The designated CPUC representative is invited to attend as an observer. VTA does not have a formal process or cycle for all manuals or SOPs to be reviewed and/or updated. The RRPD Committee does not update any maintenance procedures. Upon completion of the update, the Light Rail Technical Training Department give it to the rest of the RRPD Committee for a ten day review period, where the other departments can comment, raise concerns, or further edit the manual or SOP. Once the RRPD agrees the update(s) are accepted, the manual or SOP is given to the RSSRB for the final approval. VTA stated that SCADA Training will be included in the new OCC manual. However, VTA has not indicated a time as to when the new OCC manual will be formally updated.
2. VTA's OCC Operation's Manual has not been reviewed or updated for the last 10 years.
3. Staff reviewed Unusual Occurrence Reports (UOR's) for 4 weeks and found the reports to be logged and maintained properly.
4. VTA's Operations Manager stated that VTA does not have any documentation or formal written procedures regarding VTA's current SCADA system. VTA's existing SCADA system runs on a Windows 2000 platform network. According to VTA's Operations Manager, VTA is changing out their existing SCADA system due to software and hardware being outdated and no longer supported. In addition, the existing SCADA system no longer successfully backed up to tape since March of 2014. VTA's Communication System Analyst attempted to reinstall the tape backup software but was not successful as the original backup license for the software could not be found to complete the installation. In addition, VTA has found that the drives on parts of the existing SCADA system have failed. VTA is in the process of transitioning the current SCADA system to a new SCADA system, which started in June 2014. VTA is currently has a maintenance contract with GE, but only for software. VTA's current contract with GE for software support at a priority 1 level, emergency, is a 1 hour response time to return a call. VTA did not inform Staff of the transition nor does VTA currently have a Safety Certification Plan written or submitted to the CPUC for review. VTA's Operations Manager stated that they only write Safety Certification Plans for construction projects.
5. VTA's SCADA Intrusion Alarms are logged, by the OCC, in the OCC Radio Telephone Log. VTA presented the OCC Radio Telephone Log for the month of September and from October 1 through 8, 2014. Logs are kept for 3 years onsite and archived offsite for 6

years. All incident responses are tracked through VTA's Infoview database. The Controller generates an Unusual Occurrence Reports (UOR). Reference to the UOR is sent from Assistant Superintendent of Bus and Rail OCC to County Communications. County Communications will route the call to the appropriate agency or department. When the incident has been resolved, the investigating agency or department which resolved the call will either notify County Communications or the OCC to update the status and/or close out the incident. Updates to the initial call are done by controller and if any additional services are needed, the controller will notify the appropriate department for follow up. The corresponding department(s) is to notify the OCC close out incident when the task is complete. Items/incidents that take more than a day to close and/or are not closed in the same day is put on a Passdown list to carry over until the item is officially closed. VTA has two Passdown lists, one for short term (Daily Passdown) and one for long term (Long Term Passdown). Items/issues that are placed on the Passdown list are for items/issues that are unsafe conditions. The Daily Passdown list has SOP (SOP 8.6) but Long Term Passdown does not. VTA has no formal documentation to close out incidents. Staff randomly selected approximately 15 call items from September 1 – October 8, 2014, traced the call from beginning to end and found numerous calls were not formally closed.

Findings:

1. There has been no review of the OCC Manual in the past 10 years. VTA personnel advised that review and revisions occurred when necessary, however, Staff was aware of a current policy in OCC and VTA personnel was not.
2. VTA does not have hardware or software documentation for their existing SCADA system. VTA does not have any SOPs, Procedures, or maintenance plans for their SCADA system. Staff reviewed the 2011 VTA Triennial Security Review Report and found that there was a recommendation for VTA to write formal documentation for SCADA Cyber Security and Disaster Recovery. VTA had complied, wrote the documentation for both, and presented it to Staff to close Staff's recommendation. However, during the safety review regarding SCADA maintenance, VTA said that there was no documentation for their SCADA system. VTA did not inform Staff that a new SCADA system was being implemented. VTA did not write a Safety Certification Plan with a list of certifiable elements, details of field and system integration testing, and training criteria for VTA's Controllers for new system.
3. VTA does not have a formal process to close out incidents and trouble calls to hold the responsible department(s) to complete the tasks. VTA's OCC Radio Telephone Logs show numerous incidents that are technically open but no longer monitored and tracked. VTA cannot verify that these incidents have been investigated and the incident closed.

Comments:

None

Recommendations:

1. VTA should institute a timeframe to review all manuals (yearly, every two years, every five years, etc.). The manual should include SCADA training.
2. VTA should:
   a. Create a Cyber Security Plan and a Disaster Recovery Plan per recommendation of the Commission approved CPUC 2011 VTA Triennial Security Review and VTA SSPP.
   b. Create formal documentation to the purpose and functionality of the SCADA system per VTA's SSPP.
   c. Create a Safety Certification Plan and/or Project Outline detailing the SCADA system replacement for Staff and VTA's RSSRB to review and approval per GO 164-D, FTA Handbook for Transit Safety and Security Certification, and VTA's SSPP.
3. VTA should create a formal process to track all their SCADA and call in incidents to its completion, per GO 164 and VTA's SSPP.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-A**	**Element**	**Facilities and Equipment Inspections: Non-Revenue Facilities and Wayside**
Date of Audit	October 15, 2014 Guadalupe Division	**Department(s)**	Enterprise Risk Management Way, Power, and Signals Department
Auditors/ Inspectors	Jimmy Xia Robert Hansen Yan Solopov	**Persons Contacted**	David Lasich, Facility Maintenance Representative Bruce Turner, Transit Systems Safety Supervisor Joel Milburn, Way, Power, & Signals Superintendent Walter Marchetti, Environmental Health and Safety Supervisor Randy Hester, Light Rail Equipment Supervisor Cathy Hendrix, Senior Management Analyst Tim Potter, Sr. Communications Systems Analyst, Voice

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-3003 Facilities and Equipment Maintenance Responsibilities dated 6/22/2011
5. VTA MTN-PR-3004 Responsibilities for the Facilities Maintenance Library dated 7/16/2001
6. VTA MTN-PR-3005 New Employee Checklist (Facilities) dated 11/24/1999
7. VTA MTN-PR-3105 Card Access, Lock, and Key Control dated 7/19/2001
8. VTA MTN-PR-3106 Facility Housekeeping dated 12/5/2003
9. VTA MTN-PR-3107 Fire Suspension/Alarm System: Monitoring, Test, Maintenance and Repair dated 12/7/2001
10. VTA MTN-PR-3108 Crane Inspection and Use Procedure dated 10/9/2002
11. VTA MTN-PR-3301 Maintenance and Storage of Tools and Equipment dated 3/22/2002
12. VTA MTN-PR-6310 5-Year Dry Standpipe Testing and Certification dated 10/15/2000
13. VTA Injury and Illness Prevention Program (IIPP) Plan

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Non-Revenue Facilities and Wayside
Interview VTA representatives and review appropriate records for past 3 years to determine whether:

1. Required inspections were performed as per supporting references.
2. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.
3. Potential hazards found during inspections were tracked from recommendation, Corrective Action Plans, and implementation.
4. Check a sampling of hazards identified during inspections to ensure they are immediately reported, documented, and tracked through resolution.
5. Check a sampling of "*Corrective Action Plans*" to determine timeliness of resolution and ensure follow-up activities are performed, hazard resolution has taken place, and a measure of the effectiveness of implemented hazard controls has taken place, documented and noted discrepancies were corrected in a timely manner.

FINDINGS AND RECOMMENDATIONS

Activities:
Staff interviewed VTA representatives and reviewed the following records related to the inspections of the following items for the past 3 years.

1. Dry Standpipes:
    a. Corrective Action Plan for revising the 5-Year Dry Standpipe Testing and Certification issued by Joel Milburn, VTA's Way, Power, & Signals (WP&S) Superintendent, on 9/30/14
    b. Corrective Action Plan to initiate the 5-Year dry standpipe inspection, which has been past due, as quickly as possible issued by Joel Milburn on 9/30/14
2. Fire Suspension/Alarm Systems:
    a. Fire Alarm and Life Safety System Inspection Certificate for VTA's Guadalupe Division for the inspection done on 1/26/13
    b. Garter Brother Fire & Life Safety Work Order No: 045608 dated 1/26/13
    c. Garter Brother Fire & Life Safety Work Order No: 138562 dated 4/27/13
    d. Tyco Integrated Security Service Ticket, dated 7/20/13
    e. Fire Alarm Inspection and Testing Report dated 12/09/13 by Tyco Integrated Security
    f. Fire Alarm Inspection and Testing Report dated 5/10/14 by Tyco Integrated Security
    g. 5-year fire suspension/alarm system inspection report entitled Inspection, Testing, and Maintenance Fire Sprinkler System NFPA 25, Chapter 5 as amended by CCR, Title 19,

for all buildings in VTA's Guadalupe Division, dated 7/26/2014, completed by the contractor, STATCOMM INC.

h. Fire Sprinkler System Service Proposal dated 9/22/14 by STATCOMM INC.

3. Facility Housekeeping:
   a. Monthly Safety Inspection Checklists dated 1/12/14, 2/17/14, 3/31/14, 4/17/14, 5/16/14, 6/17/14, 7/17/14, 8/24/14, and 9/16/14
4. Crane Inspections:
   a. Reviewed inspection records dated 1/7/2013, 5/17/2013, 7/2/2013, 10/8/2013, 10/9/2013, and 1/27/2014. Annual inspections were performed on 5/23/2013 and 4/9/2014.

Review Results from Interviews and Records Review:

1. Dry Standpipes: See Findings and Comments sections below
2. Fire Suspension/Alarm Systems:
   a. The required inspections of VTA's fire suspension/alarm systems were performed by the appropriate VTA's contractor as per supporting references.
   b. Inspections including discrepancies found from inspections were properly documented and noted on the contractors' inspection reports or work orders. All the discrepancies as noted on the inspection documentation that staff reviewed were corrected in a timely manner, except for those from the 5-year fire sprinkler system inspection completed by STATCOMM INC. on 7/26/14.
   c. STATCOMM INC. sent its Fire Sprinkler System Service Proposal to repair the defects found from the 5-year fire sprinkler system inspection completed on 7/26/14 as mentioned above to David Lasich, VTA's Facility Maintenance Representative, on 9/22/14. Subsequent to the audit, per an email from David dated 10/22/14, he stated that there is a purchase requisition in for the repairs and he estimates that all corrections be made no later than 11/30/14. . On 3/4/15, David sent an email to staff with STATCOMM INC. 5-year certification report for VTA, dated 2/9/15, that shows STATCOMM INC. corrected all deficiencies found from the 7/26/14 inspection and certified the fire sprinkler system for all buildings in VTA's Guadalupe Division as of 1/22/15.
   d. The inspections dated 1/26/13, 4/27/13, 7/20/13, and 12/9/13 as listed under the Activities section above resulted in satisfactory test results with no defects found.
   e. There is one defect noted on the Fire Alarm Inspection and Testing Report dated 5/10/14 by Tyco Integrated Security. Staff followed up with VTA's Facility Maintenance Representative on the status of this defect after the audit. Consequently, per an email from a technician from Tyco Integrated Security dated 10/28/14, this defect was actually corrected by the technician on the date of the inspection.
3. Facility Housekeeping:
   a. When VTA facilities employees perform the monthly safety inspection of facilities such as the Guadalupe rail facility, they also look for housekeeping items, which are

included in the inspection checklists.

b. VTA's monthly safety inspections were performed as per supporting references.
c. The inspections including discrepancies found from inspections were properly documented and noted on the Monthly Safety Inspection Checklists.
d. All the discrepancies as noted on the Monthly Safety Inspection Checklists that staff reviewed were corrected in a timely manner, except for the one related to cabinets that has been continuously noted since the 2/17/14 inspection. According to VTA's Light Rail Equipment Supervisor who maintains these checklists, there is an excessive amount of cabinets in the light rail maintenance facility by the on-site employees' opinion. He talked to the light rail maintenance superintendent about that issue recently, and the superintendent will address it beginning of next year. He doesn't think it is a safety violation; it's just that VTA employees like less cabinets in their workplaces.

4. Tools and Equipment:
    a. According to VTA's Light Rail Equipment Supervisor, there are no inspections related to the maintenance and storage of tools and equipment. VTA just supplies tools and equipment to its employees. If the employees find defects with their tools, they notify their supervisor who will replace the defective tools with ones that work properly.
5. Card Access, Lock, and Key Control:

    The following is a summary of how VTA conducts maintenance of its locks, keys, and card access systems based on the discussion of this subject matter staff had with Cathy Hendrix, VTA's Senior Management Analyst, and Tim Potter, VTA's Communications Systems Analyst:

    a. Electrified door locks:

    Tim Potter uses the proprietary software made by Software House to monitor the status of the CCURE card access system that controls VTA's electrified doors and responds to problems reported by users (VTA employees). Once a year, VTA checks the backup batteries for the CCURE system. When he sees alarms activated in the CCURE system, they will be resolved by VTA themselves or one of VTA's many vendors, depending on the nature of the problem. Typically, most of the repair work is done by vendors.

    There is no staff at VTA for regular, physical inspections of doors on a regular basis. If there is physical problem with a door, that could be reported verbally or via email to Tim, who will respond by sending someone to repair the problem. Typically, he calls the appropriate vendor to repair the problem. If the problem is an emergency and if the vendor can't get there quickly, then Tim can repair the problem himself.

    VTA has only one technician on-site 2 days a week who repairs card access equipment and CCTVs. The vendors chosen for repair work depend on the kind of problem. For instance, if it's a lock problem, then a locksmith does the repair; if it's electronic problem, then the technician mentioned above does the repair. Rest of the time (5 other days of a week) when the technician is not on-site, a vendor is on call as needed,

and that same technician may come in or another technician from the vendor can come in to do repair work as necessary.

b. Regular doors:
VTA's Facilities Maintenance department is responsible for maintaining all regular doors and lock hardware at all VTA facilities according to VTA's Card Access, Lock, and Key Control procedure, MTN-PR-3105.

6. Crane Inspections:
   a. Acceptable issues were noted on the following inspections dates and units:

7/2/2013	Units 4, 7, and 11
10/9/2013	Units 7 and 26
1/27/2014	Unit 7
4/9/2014	Units 2, 4, 7, 11, and 13

   b. Unacceptable issues were noted on the inspection dated 1/7/2013. Unit 10: "2 bolts for a jib stop are pulled out of the wall." Unit 11: "Some small kinks in wire rope. No broken wires. OK for now. Unit passed." No follow-up documentation was provided to indicate the issues had been resolved.

Findings:

1. VTA's most recent 5-year Dry Standpipe Testing and Certification was due in December 2013. However, that has not been done as of the date of this checklist review. Since that is past due, VTA's WP&S Superintendent initiated a CAP on 9/30/14. VTA's contractor for completing the testing and certification, STATCOMM INC., has been contacted. VTA is currently in the process of scheduling the inspection of the dry standpipes with the contractor. The contractor will perform the inspection within a couple months of the date of this checklist review. VTA representatives stated that they will research a reminder system for future 5-year dry standpipe tests (e.g. one that reminds VTA of an upcoming test 4 years and 6 months after the previous test) using Microsoft Outlook or the SAP database.
2. VTA's representative, stated that VTA's New Employee Checklist procedure, MTN-PR-3005, Version #1, dated 11/24/1999, is outdated and not applicable anymore. The position of Facilities Maintenance Supervisor as mentioned in the procedure has been eliminated about 10 years ago.

Comments:

1. VTA's WP&S Superintendent initiated a CAP to update VTA's 5-Year Dry Standpipe Testing and Certification procedure, MTN-PR-6310, version #1, dated 10/15/2000, because it's outdated and needs to be updated to reflect the new stations that have been added to the system that are subject to the testing after this procedure was first issued. In addition, VTA's Transit Systems Safety Supervisor suggested that VTA should specify that the dry standpipe testing and certification is to be completed within five years of the previous testing and certification in the revised version of the procedure currently in the works. The VTA

representatives and staff think that is a good suggestion, which should be implemented by VTA.

Recommendations:

1. VTA should take any action necessary to ensure that the 5-year dry standpipe testing and certification is conducted according to the frequency as stated in its 5-Year Dry Standpipe Testing and Certification procedure, MTN-PR-6310.
2. VTA should review the New Employee Checklist procedure, MTN-PR-3005, to determine if it should either update the procedure to reflect the elimination of the Facilities Maintenance Supervisor position and the transfer of the responsibilities for that position to a different responsible party or eliminate this procedure.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-B**	**Element**	**Facilities and Equipment Inspections: Stations and Emergency Equipment**
Date of Audit	October 9, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Arun Mehta Yan Solopov	**Persons Contacted**	Joel Milburn, Way, Power and Signals Superintendent Ernie Cuen, Passenger Facilities & Wayside Maintenance Supervisor Denise Patrick, Transit System Safety Officer Thomas L. Hardesty, Signals Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-6201 Signals Department Platform Preventive Maintenance dated 6-27-2011
5. VTA MTN-PR-6301 WPS Daily Station Maintenance dated 9/30/2005
6. VTA MTN-PR-6302 Trash Removal
7. VTA MTN-PR-6303 Landscape Maintenance
8. VTA MTN-PR-6304 Preventative Maintenance Steam Cleaning and Station Detail
9. VTA MTN-PR-6305 Elevator Preventative Maintenance and Trouble Calls
10. VTA MTN-PR-6309 Annual Backflow Testing for Station Maintenance

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Stations and Emergency Equipment
Interview VTA representatives and review appropriate records to determine whether:

1. Required inspections were performed.
2. Inspections were properly documented and noted discrepancies were corrected in a timely manner.
3. Potential hazards found during inspections were tracked from recommendation, Corrective Action Plans, and implementation.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed the VTA staff per the prescribed checklist elements. Ernie Cuen is the supervisor in-charge of station maintenance; Tom Hardesty is the supervisor in-charge of Signals which includes electrical and emergency equipment at the stations

1. Staff inquired about inspection frequency. These are performed by the supervisors on a weekly basis. Station cleaning maintenance is done on a daily basis and on an as- needed basis. VTA maintains a day shift staff of 16 and a night shift staff of 10. The day time shift is from 7 AM to 3:30 PM and the night time shift works from 3 PM until 11:30 PM. 5 people out of 16 in the day shift are the "lead" crew and 2 out of 10 in the night shift are the "lead" crew. Station cleaning includes platforms, escalators and elevators and break rooms for VTA staff at the stations. Station electrical maintenance on items such as lights, Ticket Vending Machines (TVM), etc., is performed on a monthly, quarterly and semiannual basis. The Electrical maintenance crew of 19 people uses white forms for monthly, blue forms for quarterly and green forms for semiannual maintenance. Staff reviewed maintenance documents for both station and electrical sides of this checklist and found them in order. The stations and the electrical are being maintained at the required frequencies. The Maintenance SOPs 6201 thru 6901 are being consolidated into one SOP which is being reviewed by the VTA upper management for approval.
2. The Stations Supervisor, Ernie Cuen, performs inspections of the stations twice a week. This includes surprise inspections. Actions are taken when warranted. The inspection findings are documented. Progressive disciplinary actions are taken against staff out of compliance with VTA Rules, as is warranted. An employee was fired for stealing. Another employee was disciplined for attending college on company time. Disciplinary action was taken for filling out a maintenance form falsely - specifically, it was filled out in advance of completed work, which is against the rules. Another example of deficiency during station inspection happened on 10/5/14 at the Great America location. Supervisor Ernie Cuen found the station crew working on the caution strip and they did not stop working when the train approached and passengers were de-boarding. He corrected the situation immediately and instructed them to stop the work immediately when trains approach. He also instructed the team lead to conduct safety debriefing prior to work start.
   The Signals supervisor also performs station inspections for electrical and emergency equipment twice a week. Staff reviewed the records folder for Cottle Station for the period of Feb 2011 through September 2014 (monthly preventative forms described above). Staff reviewed the records folder for St. James North Station, and Substation 6, for Jan-2011 through September 2014. Staff reviewed records folder for Hamilton Station, January 2011 through September 2014. Staff reviewed records folder for Reamwood Station, January 2011 through September 2014. The records reviewed were found to be in order.
   Supervisor, Tom Hardesty, also performs unannounced / surprise checks. He checks signals, phones, Ticket Vending Machines, and anything electrical. He found instances of

defects in Station PM spreadsheet – i.e. fixing lighting. Upon doing so, he opened a work order immediately, completed the work and closed the work order within 3 days. Another example of an inspection defect was found at the Old Ironsides station. A contractor for CCTV camera installation had pulled a cover off a pole, displaying wires, and forgot to replace it when his work was completed. This was detected during an inspection and was corrected in a timely manner.

3. VTA acts on hazardous conditions identified by VTA staff and by patrons. For example, a customer C.A.R.E report dated 5/20/14 documented a call received from an anonymous patron regarding "flooding of a planter and water overflow". Ernie Cuen was immediately notified and he sent a crew to fix the problem within an hour. Other hazardous findings examples include those from operators regarding overgrown tree branches hitting the trains. Stations Supervisor, Ernie Cuen, took a train ride to confirm the complaint and got the branches cleared in a timely manner.

Findings:
None

Comments:
None

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-C**	**Element**	**Facilities and Equipment Inspections: Tunnels, Bridges, and Aerial Structures**
Date of Audit	October 10, 2014 Guadalupe Division	**Department(s)**	Maintenance Engineering Department
Auditors/ Inspectors	Howard Huie Rupa Shitole	**Persons Contacted**	Denise Patrick, Transit System Safety Officer Arthur Douwes, Operations Manager, Operations Maintenance Engineering Manjit Singh Khalsa, Senior Systems Engineer, Operations Maintenance Engineering Erica Casillas, Associate Systems Engineer, Operations Maintenance Engineering

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-7101 Bridge and Structures Inspection dated 6/4/2008

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Tunnels, Bridges, and Aerial Structures
Interview VTA representatives and review appropriate records to determine whether:

1. Structures inspections were performed.
2. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.
3. Potential hazards found during inspections were tracked until resolution.
4. The RSSRB Committee and System Safety Department is aware of all safety hazards pertaining to civil structures.

FINDINGS AND RECOMMENDATIONS

Activities:

1. VTA schedules all aerial and tunnel structures to be inspected every two years. Each inspection must be performed by a California licensed Civil (CE) and/or Structural Engineer (SE), per VTA Maintenance Procedure MTN-PR-7101. VTA's list of structures and tunnels consisted of 83 sites. However, site # 49- Route 237 Underpass/Bridge was excluded as it falls under a State jurisdiction. Staff reviewed all 81 inspection records for 2011 and 2013 to confirm inspections were reviewed by a licensed CE or SE. Staff did not find any discrepancies. VTA keeps all the individual inspection reports in the Bridge and Structure Maintenance System (BMS) database. The individual reports are printed and bound together according to the year the inspection was performed. All recommendations for repairs in the 2011 inspection reports are shown in the Specification For Repairs (SFR) drawings. Recommendations for repairs in the 2013 inspections are not incorporated in the current SFR drawings as the contractor has not completed the recommendations from the 2011 inspections. Once the recommendations for the 2011 inspections have been completed and reconciled with the 2013 inspections, a new set of SFR drawings will be created and put out to bid for repairs. Staff randomly selected and reviewed 8 inspection sites from year 2011 to confirm the recommended repairs in the inspections were in the SFR drawings, sites: 1, 7, 14, 21, 38, 50, 59, 71A. Repair recommendations for sites 38 and 71A in the SFR. In a Light Rail Facilities Structure Repair Project meeting, dated January 28, 2012, meeting minutes show "Contractor stated no repairs needed for S38." Site 71A was not included in the SFR due to the current contractor was not qualified to perform the necessary recommended repairs. VTA presented emails with a secondary contractor dated February 4, 2014 and October 16, 2014, where the repairs to the sound wall have been completed and 3D-HD Survey Modeling performed. However, an additional 3D Survey was to be done after the coming rainy season to ensure the repairs are permanent and the sound wall will not further settle or crack. Staff also reviewed sites #16 – 40 from the 2013 inspection reports to confirm the 2011inspections were completed, in progress, or on the schedule to be repaired.

Structure #	Structure Name/Type
1	Miyuki Tunnel/ Tunnel
7	Blossom Hill Station Per/Bridge
14	Branham Station/Station
16	Capitol Expressway/Bridge
17	Hillsdale Avenue/Bridge
18	Canoas Creek Bridge/Bridge
19	Carol Drive L/Bridge
20	Masonic Drive/Bridge
21	Masonic Drive UP/Bridge
22	Curtner Station/Station
23	Curtner Station/Bridge
24	Curtner Avenue Left/Bridge
25	Curtner Avenue Right/Bridge
26	Alameda Road/Bridge
27	Alma RR SED/Bridge
28	Alma Avenue/Bridge
29	Alma Avenue/Bridge
30	Alma (Tamien) Station/Station
31	Alma Station/Bridge
32	Alma Station/Bridge
33	Alma Station/Bridge
34	Willow Street Viaduct/Bridge
35	Virginia Station/Station
36	Route 87 Connector Lip/Bridge
37	Bassett Street OH/Bridge
38	SPRR/LRT Grade SEP/Bridge
39	Guadalupe River/San Carlos/Bridge
40	Guadalupe River/Tasman/Bridge
50	Evelyn Station Pedestrian Underpass/Bridge
59	Diridon Tunnel (EB and WB)/Tunnel
71A	Sound Walls #1, #2, and #3, north of Hamilton Station

2. VTA's repair contractors create Progress Notes that are given to VTA Engineering team on a weekly basis to review. VTA's engineering team sends out a VTA inspector to review the work to ensure it's done correctly and approves the work. The engineering team updates the Progress Notes. A Contractor Repair Calendar (CRC) is established

jointly between VTA's engineering team and the repair contractor. The CRC is created on a weekly basis for a three week outlook and updated as necessary depending on track allocation and other circumstances. Staff spot checked approximately 12 records between the CRC and the Progress Notes with Assistant Transportation Engineer to confirm the repairs were completed as per scheduled.

3. VTA did not have any Serious, Critical, Imminent Failure, Failed ratings in any of the structural inspections. All repairs are tracked from beginning to completion through the Progress Notes, Contract Repair Calendar, and the Bridge and Structure Maintenance System database.
4. VTA Safety Department claims to be aware of all hazards.

Findings:
None

Comments:
None

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-D**	**Element**	**Facilities and Equipment Inspections: GO 95 Right-of-Way Compliance**
Date of Audit	October 14, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Steve Espinal Jimmy Xia Yan Solopov	**Persons Contacted**	Joel Milburn, Way Power & Signals Superintendent Glenn Travis, Light Rail Power Supervisor Gurpreet Gill, Way Power & Signals Supervisor

REFERENCE CRITERIA

1. CPUC General Order 95
2. CPUC General Order 164-D
3. CPUC General Order 143-B
4. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
5. VTA-MTN-PR 6150 Inspection of Overhead Catenary dated 9/30/2005

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: GO 95 Right-of-Way Compliance
Select at least four (4) of mainline or yard track sections at random from each of the following areas:

1. Vasona Line
2. Guadalupe Line (Santa Teresa and Almaden)
3. Tasman West Line (Mountain View)
4. Tasman East Line (Alum Rock)

Interview VTA representatives, review appropriate records, and perform visual inspections and measurements to determine whether for each track section:

1. Right-of-Way inspection and maintenance standards and programs are compliant with General Order 95.
2. The required monthly, semi-annual, and annual inspections were performed during the past 3 years as required by the referenced procedure.
3. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.

4. Potential hazards found during inspections were tracked from recommendation, Corrective Action Plans, and implementation.
5. All right-of-way components are in compliance with the applicable reference criteria, or variances were submitted properly and approved by CPUC.

FINDINGS AND RECOMMENDATIONS

Activities:

Overhead Catenary System Inspection

Staff inspected San Carlos Street and Woz Way on the Guadalupe line for a hard spot on the OCS system which has caused carbon chipping in the past. Staff witnessed LRV's moving through below the overpass without sparks or serious bouncing. VTA staff stated the problem has been temporarily resolved. They are waiting for Engineering Department approval for the proposed permanent repair plan. The chips on the LRV's were filed down. The OCS was inspected and there were no General Order 95 violations found.

Based on inspection records the south pole at Bassett Tunnel was not properly insulated. Upon inspection the South Pole was properly insulated and there were no safety issues. Staff conducted a walking inspection of the OCS for this section of the track. There were no General Order 95 violations found. This is part of the Guadalupe Line.

Inspected Gish and I-880 for possible vegetation growing into the OCS. Upon inspection there were no vegetation concerns. This is part of the Guadalupe Line.

A walking inspection was conducted from Ironsides Road to Patrick Henry Road. There were no General Order 95 violations seen. This section of the OCS is part of the Tasman West line.

A walking inspection was conducted on from I-880/Milpitas to McCarthy Ranch road. No General Order 95 violations were observed. This is section of the track is considered the Tasman East line.

Overhead Catenary System Document Review

Staff reviewed four inspection reports of overhead catenary system inspections from each mainline track section (Vasona Line, Guadalupe Line, Tasman West

Line, and Tasman East Line) to verify whether any hazards were identified and resolved. Staff reviewed the following reports:

Vasona Line

Section: San Fernando to Diridon
Date Performed: 8/29/2012
Hazards: None

Section: Campbell to Winchester
Date Performed: 10/31/12
Hazards: None

Section: Fruitdale to Bascom
Date Performed: 10/2012
Hazards: None

Section: Bascom to Hamilton
Date Performed: 10/2012
Hazards: Water was found in a hole. It was pumped out on the day of the inspection.

Tasman East

Section: Berryessa to Penitencia
Date Performed: 3/30/2012
Hazards: None

Section: Hostetter to Berryessa
Date Performed: 4/2012
Hazards: Water was found in a hole. It was pumped out on the day of the inspection.

Section: Cropley to Hostetter
Date Performed: 4/2/2012
Hazards: None

Section: Montague to Cropley

Date Performed: 5/4/2012
Hazards: None

Tasman West

Section: Lick Mill to Champion
Date Performed: 9/2012
Hazards: None

Section: Great America to Lick Mill
Date Performed: 8/21/2012
Hazards: Water was found in a manhole. It was pumped out on the day of the inspection.

Section: Lockheed to Borregas
Date Performed: 9/25/2012
Hazards: Water was found in vaults. It was pumped out on the day of the inspection.

Section: Borregas to Crossman
Date Performed: 6/2012
Hazards: None

Staff reviewed the following VTA Overhead Catenary System inspection records that were completed during the past 3 years for the following lines.

1. Overhead Catenary System Inspections
    a. Vasona Line
        i. Monthly Overhead Catenary System Inspection Forms for the following time periods: January to December 2012, January to December 2013, and January to September 2014
    b. South Line (Santa Teresa)
        i. Monthly Overhead Catenary System Inspection Forms for the

following time periods: January to December 2012, January to December 2013, and January to September 2014

c. Lick Spur (Almaden)

    i. Monthly Overhead Catenary System Inspection Forms for the following time periods: January to December 2012, January to December 2013, and January to September 2014

d. Tasman West Line

    i. Monthly Overhead Catenary System Inspection Forms for the following time periods: January to December 2012, January to December 2013, and January to September 2014

e. Tasman East/Capital Line

    i. Monthly Overhead Catenary System Inspection Forms for the following time periods: January to December 2012, January to December 2013, and January to September 2014

Review Results:

1. Overhead Catenary System Inspections

    a. The required monthly inspections for all the lines staff selected were performed during the past 3 years as required by the referenced procedure.

    b. In general, inspections were properly documented and noted on the Monthly Overhead Catenary System Inspection Forms and discrepancies found during inspections were corrected in a timely manner.

Findings:

None

Comments:

VTA staff measures and documents the conductor cable thickness as good or bad.

This technique does not allow conductor wear to be trended with a goal of conducting predictive maintenance. Documenting the conductor thickness will help VTA Power Department to conduct trending and predictive maintenance on the OCS.

SAP business enterprise software makes it very difficult to track maintenance from work order through completion. Updated work tracking software will make tracking work orders more efficient and easier to conduct Internal Safety and Triennial Audits. The Light Rail Power Supervisor suggested including a Defect Repair Coding system including topics such as Negative Rail Bonds, Rail Gaps, Anchors and Contact Rails, etc.,

VTA Light Rail Power Supervisor intends to start an infrared testing program in the spring of 2015.

Stray current issues on Substation 31 have been mitigated by using AC filters. Substation 31 is a currently a functional substation. VTA has been working with PG&E to find the source of the AC stray current.

Many Monthly Overhead Catenary System Inspection Forms that staff reviewed are missing any combinations of the following information on various lines on the forms: inspectors' initials and badge numbers and dates. Also, staff noticed that inspectors often put dates that are incomplete in the date fields on the inspection forms. Hence, staff suggested the following to address these issues: 1) Inspectors need to make sure that they fill out the Monthly Overhead Catenary System Inspection Forms properly and correctly during inspections, including putting the initials, badge numbers, and dates in the appropriate fields and preferably, the acronym "N/A" in any fields in the form that are not applicable. 2) Inspectors also need to put full dates in the following format in all the date fields on the inspection forms: Month/Day/Year (e.g. 10/14/2014 or 10/14/14). Staff suggested that maybe VTA's Way, Power, and Signals Department supervisors can remind the inspectors about staff's two suggestions mentioned above during the weekly safety meetings. The VTA representatives agreed to staff's suggestions and will take action to address the issues with inspectors' paperwork as

mentioned above.

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-E**	**Element**	**Facilities and Equipment Inspections: Signal Communication, Train Control, Grade Crossing**
Date of Audit	October 9, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Ronnie Cremeans Kevin McDonald John Madriaga	**Persons Contacted**	Thomas Hardesty, Signal Supervisor Kirk Bertolet, Signal Supervisor Joel Milburn, WP&S Superintendent

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. CPUC General Order 75-D
4. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
5. MTN-PR-6205 Grade Crossing Warning System Inspection and Preventive Maintenance, Version No. 2, Dated September 5, 2008
6. MTN-PR-6206 Vital Relay Testing dated 7-1-2011
7. MTN-PR-6204 WPS Power Switch Preventative Maintenance

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Signal Communication, Train Control, Grade Crossing

Interview VTA's representative responsible for Wayside Maintenance, and randomly select Preventative Maintenance (PM) records from the past 3 years and determine whether:

1. VTA's Track and Turnout and Crossing Maintenance:
   a. Perform detailed inspections of the mainline switches and crossing's components to determine whether or not they are in compliance with the applicable reference criteria.
   b. Randomly select at least six grade crossings of the mainline. Select two grade crossings for each line
   c. All required PM activities were documented on standardized inspection report forms.
   d. Defects and non-compliances noted on inspection report forms were tracked from recommendation, Corrective Action Plan, and implementation.

2. Vital Relays Preventative Maintenance:

   a. Review the records of preventive maintenance, scheduled and unscheduled maintenance activities for vital relays to determine if inspections were performed at the required frequencies as specified in the reference criteria.

   b. Determine if inspections were properly documented and corrected in a timely manner.

   c. Determine if VTA identified and implemented the acceptable limits for voltage and amperage readings for vital relay inspection records.

FINDINGS AND RECOMMENDATIONS

Activities: Staff interviewed VTA's Signal Department personnel and performed the following activities.

1. VTA's Track and Turnout Crossing Maintenance: Staff inspected and observed VTA performing operation, maintenance, and test activities for the following locations.

   a. South Bascom Crossing DOT 750164K XHD-59 (Vasona Line)
   b. Stokes Crossing DOT 750163D (Vasona Line)
   c. Innovation Way East Crossing PUC 82-B 10.04 (Tasman West Line)
   d. Mainline Power Switch RP 2060R (Vasona Line)

2. Staff also reviewed the circuit drawing plans at these locations. Refer to findings section.

3. Inspected vital relays at First and Younger Signal case.

4. Staff reviewed all Preventive Maintenance records associated to South Bascom, Stokes and Innovation Way East Crossing's from 2011-2014.

Findings:

1a. Staff observed more than one color change noted on the circuit drawing plans at South Bascom Crossing as required by FRA CFR 49 rule 234.201.

1b. Staff observed more than one color change noted on the circuit drawing plans at Stokes crossing as required by FRA CFR 49 rule 234.201.

1c. No exceptions were noted at Innovation Way East Crossing.

1d. No exceptions were noted at Mainline Power Switch RP 2060R.

.

2. No exceptions were noted on PM records inspections.

3. Staff was provided with relay testing schedule and found no exceptions on 2 and 4 year relay testing records associated to First and Younger signal case. Relay test records were properly recorded and were performed within FRA required 2-4 year periodic testing regulations.

Comments:
None

Recommendations:
1. VTA should make sure that all circuit plan changes need to be approved by VTA Engineering department and sent back to VTA Signal Supervisor for distribution.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-F**	**Element**	**Equipment Maintenance Program: Measurement and Testing Instrumentation**
Date of Audit	October 17, 2014 Guadalupe Division	**Department(s)**	Maintenance Engineering Department Way, Power, and Signals Department
Auditors/ Inspectors	Daniel Kwok Michael Warren	**Persons Contacted**	Art Douwes, Operations Manager Engineering Brigido Sanchez, Quality Assurance & Warranty Specialist George Sandoval, Operations Manager, LR Maintenance Administration Manjit Khalsa, Senior Systems Engineer

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. NTSB Safety Advisory R-13-1 and R13-2, Use of Jumpers
4. MTN-PR-7202 Precision Measuring Equipment (PME) Calibration Program dated 6/15/ 2005

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Measurement and Testing Instrumentation
Interview responsible VTA representatives from each department, review appropriate records, inspect equipment storage facilities, and inspect no fewer than eight measuring or testing instruments to determine whether:

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 scheduled testing/calibration due date is shown on each instrument.
3. Tools and instruments requiring calibration are addressed in an appropriate procedure(s)

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed VTA's PME Master List and Issue Log which catalogs all instruments used at

VTA, assignment, and status. If personal tools are used, then the tool is issued a number and logged in the master list. Personal tools must also be calibrated in accordance with VTA procedure (MTN-PR-7202).
Calibrations are valid for one year, which instruments must be checked and, if needed, recalibrated. This is shown on both the calibration certificate and calibration sticker on the instrument.

Staff selected and reviewed 10 hand tools and instruments, and verified the tools and instruments are inventoried, labeled, and calibrated.
Staff noted the Master Wheel Gage is a custom tool designed by LRV Maintenance which determines if a wheel of a vehicle is past the condemning limit. The Go/No-Go Wheel Gage uses a 3mm rod to assess tolerance for Go/No-Go.

Paper Records:

Tool Name	**Tool Asset #**	**Calibration Dates (3 year period)**		
Torque Wrench	1242-22	8/21/2012	8/20/2013	8/19/2014
Torque Wrench	8096-12	8/21/2012	Out of Service	8/19/2014
Digital Freq Counter	Q0049	8/21/2012	8/20/2013	8/19/2014
Multimeter	Q0074	8/21/2012	8/20/2013	8/19/2014
Micrometer	8096-15	8/21/2012	8/20/2013	8/19/2014
Temperature Gun	8096-32	8/21/2012	8/20/2013	8/19/2014
Master Wheel Gage	IDK S/N-5813	N/A	8/20/2013	8/19/2014
Ohm-meter	5367-E	9/4/2012	Out of Service	8/26/2014
Multimeter	11782-1	9/4/2012	8/28/2013	8/19/2014
Multimeter	12622-3	9/4/2012	8/28/2013	8/19/2014
Power Supply	52225-30	9/4/2012	8/28/2013	8/26/2014
Loop Detector	52225-31	9/4/2012	8/28/2013	8/26/2014

Instrument calibration stickers:

Tool Name	**Tool Asset #**	**Sticker Status**	**Due Date**
Torque Wrench	1242-22	Current	8/19/2015
Torque Wrench	8096-12	Current	8/19/2015
Digital Freq Counter	Q0049	Current	8/19/2015
Multimeter	Q0074	Current	8/19/2015
Micrometer	8096-15	Current	8/19/2015
Temperature Gun	8096-32	Current	8/19/2015
Master Wheel Gage	IDK S/N-5813	Current	8/19/2015

Ohm-meter	5367-E	Current	8/26/2015
Multimeter	11782-1	Different Date vs. Calibration Cert.	8/26/2015
Multimeter	12622-3	Different Date vs. Calibration Cert.	8/26/2015
Power Supply	52225-30	Current	8/26/2015
Loop Detector	52225-31	Current	8/26/2015

2. Next scheduled instrument calibration due dates are shown on the sticker for each instrument (see above).
   Staff noticed a peculiarity with the dates of tools and instruments having the same calibration dates (dates from all WPS are the same, dates from all LRV Maintenance are the same). VTA Staff explained the instruments are labeled on the date the contractor begins to calibrate the instruments. The tools are batched, collected and calibrated before being returned to be used. The user must ensure that the calibration sticker is current for the instrument prior to each use (ref. SOP 7202-PR-MTN §3.4.1).
3. Instruments which are not calibrated are red tagged and stored at the QA office or quarantine barn until it is recalibrated in the following cycle.

Findings:

1. Two multimeters have been found to have differing dates on their calibration stickers then to their calibration certificate.
   VTA indicates the contractor used for calibration made an error while printing the certificates and have issued new certificates with the correct date of "8/26/2013", matching the sticker calibration date.

Comments:

None.

Recommendations:

1. VTA should review the current calibration stickers for their multimeters to ensure they match with the calibration certificate records and correct them if they do not match.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**14-G**	**Element**	**Facilities and Equipment Inspections: Track and Wayside**
Date of Audit	October 10, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Kevin McDonald John Madriaga Debbie Dziadzio	**Persons Contacted**	George Sandoval, Operations Manager LR Maintenance Administration Francisco Vargas, Sr. Track Supervisor Joel Milburn, WP&S Superintendent Gareth Shepherd, EH&S Specialist

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. MTN-PR-6403 Wayside (Track and Right-of-Way) Inspections dated 8/18/2005
5. MTN-PR-6404 WPS Wayside (Track and Right-of-Way) Maintenance dated 9/30/2005
6. MTN-PR-6419 WPS Inspection and Maintenance of Right-of-Way Fencing dated 9/30/2005

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Track and Wayside (ROW)

Interview VTA representatives, conduct field inspections, and review appropriate records for past 3 years to determine whether:

1. Required inspections were performed as per supporting references.
2. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.
3. Potential hazards found during inspections were tracked from recommendation, Corrective Action Plans, and implementation.
4. Check a sampling of hazards identified during inspections to ensure they are immediately reported, documented, and tracked through resolution.

5. Check a sampling of "*Corrective Action Plans*" to determine timeliness of resolution and ensure follow-up activities are performed, hazard resolution has taken place, and a measure of the effectiveness of implemented hazard controls has taken place, documented and noted discrepancies were corrected in a timely manner.

FINDINGS AND RECOMMENDATIONS

Activities:

Inspection records examined: Penitencia Creek Station south to turnout S-1107
Field inspection: Penitencia Creek Station south to switch 1107

Findings:

VTA SSPP version 12 February 2014: *Light rail station safety inspections* (page 31), references VTA MTN procedure 6301, 2.0 and 2.1, *Scope* "This procedure applies to all VTA Light Rail Stations. Daily station maintenance consists of, but is not limited to, ***inspection,*** cleaning, and ***repair of all stations***, driver waiting rooms, and right of way in front of station.

1. Cracked window on station platform

VTA SSPP version 12 February 2014: *Light rail station safety inspections* (page 31), references VTA MTN procedure 6301, 2.0 and 2.1, *Scope* "This procedure applies to all VTA Light Rail Stations. Daily station maintenance consists of, but is not limited to, ***inspection,*** cleaning, and ***repair of all stations***, driver waiting rooms, and right of way in front of station.

2. Fouled guardrail at turnout S-1107:

CPUC G.O. 143-b section 14.05: CFR 49 213.133 (a) "…each switch, frog, and guard rail shall be kept free of obstructions that may interfere with the passage of wheels."

VTA MTN procedure 6415, *Maintenance-turnouts and track crossings* 4.22.1 "…each switch, frog, and guard rail must be free of obstructions that may interfere with the passage of wheels."

Comments:

1. Graffiti has been spray painted over signs that warn pedestrians not to cross the tracks at station platform.

2. While reviewing Hi-Rail and Quarterly Track Inspection reports, Staff observed that VTA personnel were filling out the paperwork incorrectly or not to VTA recording requirements. Both inspection report forms instruct VTA personnel to indicate their inspection points by Station Names or Mile Posts. On the inspection reports, VTA personnel recorded inspection points by intersections or street names.

Recommendations:

1. VTA should ensure all facilities are properly maintained, and all track areas are free of fouling materials as per VTA procedures.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**15-A**	**Element**	**Maintenance Audits and Inspections: Rail Vehicles (Revenue & Non-revenue)**
Date of Audit	October 07, 2014 October 14, 2014 Guadalupe Division	**Department(s)**	Vehicle Maintenance Department Quality Assurance
Auditors/ Inspectors	Michael Borer Rupa Shitole Debbie Dziadzio Kevin McDonald John Madriaga	**Persons Contacted**	Phil Sharp, LR Vehicle Superintendent

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-5102 Light Rail Vehicles with Hazardous Defects dated September 24, 2001
5. VTA MTN-PR-5120 LRV Wheel Inspections and Reprofiling dated February 21, 2014 & October 29, 2003
6. VTA MTN-PR-5139 A-PM Inspection KI Light Rail Vehicles dated November 12, 2013 & May 9, 2003
7. VTA MTN-PR-5140 B-PM Inspection KI Light Rail Vehicles dated February 27, 2003
8. VTA MTN-PR-5141 LFLRV Major Inspection "C" dated February 27, 2004
9. VTA MTN-PR-5142 LFLRV Major Inspection "D" dated September 1, 2004
10. VTA MTN-PR-5143 LFLRV Major Inspection "E" dated January 10, 2007
11. VTA MTN-PR-5149 Daily Inspection KI Light Rail Vehicles dated January 20, 2006
12. VTA MTN-PR-5154 Light Rail Vehicle Testing Procedure dated October 6, 2011
13. VTA MTN-PR-5156 Preventive Maintenance (PM) Scheduling for Light Rail Vehicles dated November 12, 2013 & August 21, 2001
14. VTA MTN-PR-5158 Light Rail Vehicles Maintenance Work Orders dated

September 24, 2001

15. VTA MTN-PR-5159 Light Rail Vehicles Placement and Status Report dated August 10, 2001
16. VTA MTN-PR-8501 High-Rail and On-Track Equipment Operation dated August 4, 2010

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Rail Vehicles

1. Perform detailed inspections of VTA's revenue and non-revenue rail vehicles to determine if the following components are properly and adequately maintained:
    a. Axle-mounted gearbox
    b. Truck, axle, and wheel assemblies
    c. Brake systems
    d. Door assemblies
    e. Lighting
    f. Passenger doors
    g. Passenger component and safety appliances
    h. Public address and intercom systems
2. Determine whether the cars are in compliance with the applicable references based on record review and inspections.
3. Randomly select 10% of the fleet and review the maintenance records for those vehicles for the past 3 years. Check to see that:
    a. The preventive maintenance (PM) performed was consistent with the transit agency's maintenance program;
    b. The PMs were conducted on schedule;
    c. The records were properly documented with the necessary review and approval
    d. Noted defects were corrected in a timely manner
    e. The proper type of PM was conducted according to the maintenance cycles promulgated in the maintenance program.
4. Randomly review UOR Trend Analysis by System and check failure history and hazard tracking log for the previous three years. Note if a correlation between the PM maintenance cycle and corrective action/hazard reports exist to ascertain possible PM procedural deficiencies.
5. Review corrective action plan to monitor and note repetitive failures that might indicate mechanic error and/or training requirement, ineffective procedure, and/or material deficiencies.
6. Randomly interview maintenance personnel, including both supervisors and mechanics, to

verify that they have available the most current maintenance procedures and that they understand and have been properly instructed on using the information.

7. Ask these personnel if they have access to the testing and measurement equipment or devices that may be specified by inspection and testing procedures.
8. Ask these personnel if they know of any immediate safety concerns or hazards that are the result of poor maintenance activities.
9. Interview maintenance supervisors to verify how they communicate these issues to the VTA's Safety Department and other departments.
10. Verify if VTA has performed their major change-out/overhaul of safety critical systems and or structure integrity of the LRV(s) as per maintenance procedures.
11. Randomly select a minimum of three Hi-rail maintenance vehicles to review the completed Preventative Maintenance (PM) and unscheduled maintenance records associated with each car selected over the last three years to determine whether or not:
    a. The vehicles were inspected during preventative maintenance at the required frequencies as specified in the referenced criteria.
    b. The records were properly documented with the necessary review and approval.
    c. Noted defects were corrected in a timely manner.
    d. Any necessary adjustments or modifications to the rail system are tracked and monitored for performance and safety.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff conducted initial meeting with VTA personnel and reviewed contents of Checklist 15-A related to revenue service vehicles and requested records that pertain to components contained within.

Staff conducted physical mechanical inspections on the following LRV Units;
#950
#926
#963
#973
#904
#933
(Findings noted on these LRV's will be noted in the FINDINGS below).

Staff conducted random Preventative Maintenance Records inspection to confirm that VTA Personnel were adhering to SOP, SSPP, and General Order 143-B requirements on the following LRV Units;

#916
#971
#969
#997
#961
#943

Staff interviewed VTA personnel and conducted inspections related to non-revenue vehicles and the following was found:

1. Visual inspection of Hi-rail vehicles 27007, 27010 and 29245 was conducted.
2. Examination of inspection records for Hi-rail vehicles 27007, 27010 and 29245 for 2014 and 2013 was performed.

Findings (Related to revenue vehicles):

The following findings were reported to VTA Personnel. LRV's selected were supplied by VTA Personnel as available vehicles that were either in process of inspection or pulled from service to accommodate Staff request for inspection.

1. Unit #963
   c) Danger stickers faded or missing.
   d) High voltage stickers faded or missing
2. Unit #973
   c) Pantograph Carbon worn beyond condemning limits.
   d) Cutout cock damaged.
3. Unit #997
   d) Wheel sheet incomplete. (Wheel tool locked in office)
   e) Air compressor work order showing AWP
   f) C-truck work order showing AWP
4. The following details the "LRV Tire Status" Sheet 1-Oct showed three LRV's; Unit #904, 982, and 989 was found to "Down/Tire Profile/Limited use". The "LRV Tire Status" Sheet 20-Aug showed Four LRV's; Unit #904, 982, 917 and 989 was found to "Down/Tire Profile/Limited use". The "LRV Tire Status" Sheet 2-May and 18-June showed one of the LRV's; Unit #989 was found to "Down/Tire Profile." From 8/20 to 10/1 the following cars had added mileage: #904 396 miles, #982 1,037 miles, and #989 19 miles.
5. During nighttime audit related to this checklist :
   c) Staff observed Daily Inspections and did not see any mechanic go under the cars to do a visual inspection as per procedures. Staff observed two trains with two cars each that were separated inside the shop.
   d) There was a 'cone' at the east end of the shop and none was observed at the west end, where the cars come into the shop.

6. Related to Non-Revenue Vehicles: There was no expiration tag on the fire extinguisher for vehicle 27010.

Findings (related to non-revenue vehicles):

7. There was no expiration tag on the fire extinguisher for vehicle 27010.

Comments:

Staff has not received a clear explanation as to why VTA is running LRV's that are down/tire profile defects. Staff would also request that VTA not run cars with defects of any kind.

Recommendations:

1. VTA should perform maintenance as directed by its procedures and manufacturer standards. VTA Light Rail Vehicle (LRV) Preventative Maintenance (PM) Procedure MTN-FR-5139 7.4.1.1 requires carbon contact strips to be REPLACED if any excessive wear, (1/4" min. across entire carbon strip) chips or cracks are present.
2. VTA should provide all requested documentation as per GO 143-B requirements. VTA LRV PM #MTN-PR-5156 requires Removal and Rebuild of A, B, C Trucks outlined in MTN-PR-5143. Request was made for documentation of completion which could not be provided by VTA Personnel.
3. VTA should inspect each item during inspections and repair/replace as outlined in VTA's procedures and LRV Preventative Maintenance Manual. VTA was present during inspection and notified of defects.
4. VTA should perform inspection as outlined in MTN-PR-5154 Light Rail Vehicle Testing Procedure dated October 6, 2011.
5. VTA should ensure that all Hi-rail vehicle fire extinguishers have expiration tags firmly attached.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**15-B**	**Element**	**Maintenance Audits and Inspections: Traction Power System**
Date of Audit	October 16, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Steve Espinal Jimmy Xia	**Persons Contacted**	Glenn Travis, Power Supervisor Gurpreet Gill, WP&S Supervisor

REFERENCE CRITERIA

1. CPUC General Order 95
2. CPUC General Order 164-D
3. CPUC General Order 143-B
4. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
5. MTN-PR-6151 Inspection of Way, Power, and Signal Substations dated 1/22/2013

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Traction Power System

Interview VTA representatives and select at least one section of rail traction power system at random from each of the following areas:

1. Vasona Line
2. Guadalupe Line (Santa Teresa and Almaden)
3. Tasman West Line (Mountain View)
4. Tasman East Line (Alum Rock)

For each section, review the appropriate documentation to determine whether:

1. The rail traction power system is inspected and maintained in compliance with applicable standards.
2. Substations and are inspected and maintained in compliance with applicable standards.

Perform a visual inspection of one substation for each of the above areas to determine whether they are in compliance with VTA standards, and are in a state of good repair. Perform a detailed inspection of substation components.

Review VTA's stray current program to determine whether:

1. VTA is active in mitigating the effects of stray current on its own and surrounding structures.
2. VTA has procedures in place to identify and correct hazards caused by stray current.
3. Any hazards identified have been addressed and tracked through Corrective Action Plans to completion.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff conducted Substation Inspections and discovered the following:

1. Inspected Substation 6 on the Guadalupe line. The substation was clean and quiet. The fire extinguisher was current. Annunciator system functioned as designed. The telephone was functioning properly.

2. Substation 29 was inspected on the Vasona Line. The doors and gates locked properly. Weekly inspections were conducted on a timely basis. Fire extinguishers inspection tags were current. There were no high voltage signs and the phone was not functioning properly.

3. Substation 22 was clean and quiet. The fire extinguishers tags were current. The log book was properly filled in. The diode and SCR was recently repaired. The annunciators were functioning properly.

4. Substation 23 was clean and quiet. The weekly inspections were conducted on a timely basis. The fluid levels on all the batteries were in the proper range. Fire extinguishers tags were all current and the phone was functioning properly.

5. Staff reviewed VTA's records to verify that quarterly, semiannual, and annual inspection reports for five randomly selected substations (constituting 25% of VTA's total substations) were completed in a timely manner. Staff verified the completion of the following inspection reports:

6. **Substation Document Review**

Substation 5

- Quarterly Inspections dates performed: 1/1/2011, 4/1/2011, 7/1/2011, 10/1/2011, 1/1/2012, 4/1/2012, 7/1/2012, 10/1/2012, 1/1/2013, 4/1/2013, 7/1/2013, 10/1/2013, 1/1/2014, 4/1/2014, 7/1/2014
- Semiannual Inspections dates performed: 4/1/2011, 10/1/2011, 4/1/2012, 10/1/2012, 4/1/2013, 10/1/2013, 4/1/2014
- Annual Inspections dates performed: 10/1/2011, 10/1/2013, 10/1/2013

Substation 2

- Quarterly Inspections dates performed: 2/1/2011, 5/1/2011, 8/1/2011, 11/1/2011, 2/1/2012, 5/1/2012, 8/1/2012, 11/1/2012, 2/1/2013, 5/1/2013, 8/1/2013, 11/1/2013, 2/1/2014, 5/1/2014
- Semiannual Inspections dates performed: 2/1/2011, 8/1/2011, 2/1/2012, 8/1/2012, 2/1/2013, 8/1/2013, 2/1/2014, 8/1/2014
- Annual Inspections dates performed: 2/1/2011, 2/1/2012, 2/1/2013

Substation 7

- Quarterly Inspections dates performed: 2/1/2011, 5/1/2011, 8/1/2011, 11/1/2011, 2/1/2012, 5/1/2012, 8/1/2012, 11/1/2012, 2/1/2013, 5/1/2013, 8/1/2013, 11/1/2013, 2/1/2014, 5/1/2014
- Semiannual Inspections dates performed: 5/1/2011, 11/1/2011, 5/1/2012, 11/1/2012, 5/1/2013, 11/1/2013
- Annual Inspections dates performed: 5/1/2011, 5/1/2012, 5/1/2013

Substation 29

- Quarterly Inspections dates performed: 3/1/2011, 6/1/2011, 9/1/2011, 12/1/2011, 3/1/2012, 6/1/2012, 9/1/2012, 12/1/2012, 3/1/2013, 6/1/2013, 9/1/2013, 12/1/2013, 3/1/2014, 6/1/2014
- Semiannual Inspections dates performed: 1/1/2011, 7/1/2011, 1/1/2012, 7/1/2012, 1/1/2013, 7/1/2013, 1/1/2014, 7/1/2014
- Annual Inspections dates performed: 6/1/2011, 6/1/2012, 6/1/2014

Substation 28

- Quarterly Inspections dates performed: 2/1/2011, 5/1/2011, 8/1/2011, 11/1/2011, 2/1/2012, 5/1/2012, 8/1/2012, 11/1/2012, 2/1/2013, 5/1/2013, 8/1/2013, 11/1/2013, 2/1/2014, 5/1/2014
- Semiannual Inspections dates performed: 5/1/2011, 11/1/2011, 5/1/2012, 11/1/2012, 5/1/2013, 11/1/2013
- Annual Inspections dates performed: 11/1/2010, 11/1/2011, 11/1/2012, 11/1/2013

Substation 23

- Quarterly Inspections dates performed: 1/1/2011, 4/1/2011, 7/1/2011, 10/1/2011, 1/1/2012, 4/1/2012, 7/1/2012, 10/1/2012, 1/1/2013, 4/1/2013, 7/1/2013, 10/1/2013, 1/1/2014, 4/1/2014, 7/1/2014
- Semiannual Inspections dates performed: 1/1/2011, 7/1/2011, 1/1/2012, 7/1/2012, 1/1/2013, 7/1/2013, 1/1/2014, 7/1/2014
- Annual Inspections dates performed: 3/16/2011, 1/1/2012, 1/1/2013, 1/1/2014

Substation 17

- Quarterly Inspections dates performed: 1/5/2011, 3/1/2011, 6/1/2011, 9/1/2011, 12/1/2011, 3/1/2012, 6/1/2012, 9/1/2012, 12/1/2012, 3/1/2013, 6/1/2013, 9/1/2013, 12/1/2013, 3/1/2014, 6/1/2014
- Semiannual Inspections dates performed: 2/1/2011, 8/1/2011, 2/1/2012, 8/1/2012, 2/1/2013, 8/1/2013, 2/1/2014, 8/1/2014
- Annual Inspections dates performed: 9/1/2011, 9/1/2012, 9/1/2013

Substation 22

- Quarterly Inspections dates performed: 1/1/2011, 4/1/2011, 7/1/2011, 10/1/2011, 1/1/2012, 4/1/2012, 7/1/2012, 10/1/2012, 1/1/2013, 4/1/2013, 7/1/2013, 10/1/2013, 1/1/2014, 4/1/2014, 7/1/2014
- Semiannual Inspections dates performed: 4/1/2011, 10/1/2011, 4/1/2012, 10/1/2012, 4/1/2013, 10/1/2013, 4/1/2014
- Semiannual Inspections dates performed: 4/1/2011, 10/1/2011, 4/1/2012, 10/1/2012, 4/1/2013, 10/1/2013, 4/1/2014
- Annual Inspections dates performed: 10/1/2011, 10/1/2013, 10/1/2013

Findings:

1. Telephones in substations 2, 5, 13, 29, 30 and 32 are not functioning.
2. There were missing high voltage signs on the exterior of the substation 29.

Comments:

Inspection reports covered two substations due to close proximity, and were stored in the folder for just one of them. As such, it may be difficult to track down individual reports without knowing which substation's folder they are stored in.

Recommendations:

1. VTA should repair all non-functioning phones in all Substations including 2, 5, 13, 29, 30 and 32.
2. VTA should inspect all substations and attach high voltage signs as needed if faded or missing.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**15-C**	**Element**	**Maintenance Audits and Inspections: Train Control and Signal Systems Maintenance**
Date of Audit	October 8, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Ronnie Cremeans	**Persons Contacted**	Thomas Hardesty, Signal Supervisor Kirk Bertolet, Signal Supervisor Joel Milburn, WP&S Superintendent

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. MTN-PR-6205 Grade Crossing Warning System Inspection and Preventive Maintenance, Version No. 2, Dated September 5, 2008
5. MTN-PR-6207 Ten Year Cable Inspection & Insulation Resistance Test dated 6-27-2011

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Train Control and Signal Systems Maintenance

Perform detailed inspections of the signal system components to determine whether or not they are in compliance with applicable reference criteria. Select at least one track section at random from each of the following areas to inspect, including at least one at-grade section, one and one aerial section (review records for past 3 years and conduct field inspections):

1. Vasona Line
4. Guadalupe Line (Santa Teresa and Almaden)
5. Tasman West Line (Mountain View)
6. Tasman East Line (Alum Rock)

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed VTA's Signal Department personnel and performed the following activities.

1. Staff inspected the following Highway Grade Crossing (please add names of other crossing(s) inspected if different from checklist 14-E,
    a. South Bascom Crossing DOT 750164K XHD-59 (Vasona Line)
    b. Stokes Crossing DOT 750163D (Vasona Line)
    c. Innovation Way East Crossing PUC 82-B 10.04 (Tasman West Line)
    d. Skyport Drive (on North First Street)

    Staff observed that the Emergency Notification Signs (ENS) were only present on the Signal Houses at South Bascom Crossing and Stokes Crossing.

2. Staff also reviewed records related to 10 year insulation megger testing for the past three years.
3. No exceptions were noted during 10 year insulation records inspected.
4. Temporary signal mast installed was within height specifications at Skyport Drive. VTA is in process of replacing the temporary signal mast.

Findings:
None

Comments:
1. Staff noted that the ENS needs to be placed on the warning device masts facing the motorists (same direction as other signs on the masts) prior to September 1, 2015. VTA should ensure to place the Emergency Notification Signs (ENS) as required at all heavy rail at-grade crossings per GO 75-D. Additionally, California MUTCD also requires the ENS sign at all LRT crossings with flashing lights or automatic gates. The 2012 FRA Rule states an ENS sign must be placed on each approach of the crossing.

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**15-D**	**Element**	**Maintenance Audits and Inspections: Tracks and Turnouts**
Date of Audit	October 6, 2014 October 7, 2014 October 8, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Kevin McDonald John Madriaga	**Persons Contacted**	Joel Milburn, Way, Power &Signals Superintendent Francisco Vargas, Track Supervisor George Sandoval, Operations Manager LR Maintenance Administration

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. MTN-PR-6403 Wayside (Track and Right-of-Way) Inspections dated August 18, 2005
5. MTN-PR-6404 WPS Wayside (Track and Right-of-Way) Maintenance dated September 30, 2005
6. MTN-PR-6405 Track Geometry Standards dated September 15, 2000
7. MTN-PR-6406 Inspection and Maintenance of Ballast dated September 15, 2000
8. MTN-PR-6407 Inspection and Maintenance of Ties dated September 15, 2000
9. MTN-PR-6408 Inspection and Maintenance of Rail dated September 15, 2000
10. MTN-PR-6409 Maintenance of Fastenings dated September 15, 2000
11. MTN-PR-6410 Inspection and Maintenance of Joints dated September 15, 2000
12. MTN-PR-6411 Inspection and Maintenance of Continuous Welded Rail (CWR) Track dated September 15, 2000
13. MTN-PR-6415 Inspection and Maintenance of Turnouts and Diamond Crossings dated September 15, 2000
14. MTN-PR-6416 Inspection and Maintenance of Rail Crossings dated September

15, 2000

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

1. **Maintenance Audits and Inspections: Tracks and Turnouts**
2. Review VTA's records of preventative maintenance, schedule and unscheduled maintenance activities for two separate 6 month periods in the past 3 years:
3. Track Inspection:
    a. Randomly select at least two separate track inspection reported areas to determine whether:
        i. Mainline tracks, yard leads, and transfer tracks were inspected at the proper frequency.
        ii. Inspections were properly documented and noted defects were corrected in a timely manner and tracked until completion.
    b. Randomly select at least two separate recorded geometry car inspection reports to determine whether:
        i. Mainline tracks, yard leads, and transfer tracks were inspected at the proper frequency.
        ii. Inspections were properly documented and noted defects were corrected in a timely manner and tracked until completion.
    c. Review VTA internal rail defect reports to determine whether:
        i. Mainline tracks, yard leads, and transfer tracks were inspected at the proper frequency.
        ii. Inspections were properly documented and noted defects were corrected in a timely manner and tracked until completion.
4. Turnout Inspection:
    a. Randomly select at least two separate turnout inspection reported areas to determine whether:
        i. Mainline tracks, yard leads, and transfer tracks were inspected at the proper frequency.
        ii. Inspections were properly documented and noted defects were corrected in a timely manner and tracked until completion.

5. Perform detailed inspections of mainline tracks to determine whether or not they are in

compliance with applicable reference criteria. Select at least one track section at random from each of the following areas to inspect, including at least one at-grade section, tunnel section, and one aerial section:

a) Vasona Line
b) Guadalupe Lines (Almaden and Santa Teresa)
c) Tasman East Line (Alum Rock)
d) Tasman West Line (Mountain View)
e) Guadalupe Yard

FINDINGS AND RECOMMENDATIONS

Activities:

Record inspection periods reviewed:
January 1, 2012 to July 31, 2012 and January 1, 2014 to July 31, 2014

PM and track inspection records for two areas:

1. Hamilton platform (aerial section)
2. Miyuki tunnel

Two separate Geo car reports (only one recorded this triennial period--in 2014)

Internal rail defect reports

Records for two turnout inspection areas:

1. Newly constructed "Pocket Track" at Patrick Henry Dr.
2. S-19 and RP-21 turnouts west of Bay point Station

Visual Inspections

1. Hamilton platform (aerial)
2. Miyuki tunnel (tunnel)
3. Pocket track
4. Bay point Station and west turnouts

5. Guadalupe yard

Findings:

PM and track inspection records and Records for two turnout inspection areas: S-19 and RP-21 turnouts

1. **2012:** No monthly walking inspections in entire year (MTN PR-6403 4.1.2)
2. **2012:** No monthly turnout inspections in entire year (MTN PR-6403 4.1.3)
3. **2012**: No first quarter "Detailed turnout/mechanism inspection" (MTN PR-6403 4.1.4)
4. **2012**: No first or last quarter "Signaled and electronically controlled track switches" inspections (May and September of 2012 only; MTN PR-6403 4.1.5).
5. **2014:** VTA weekly Hi-rail and quarterly walking inspection forms did not consistently indicate locations of deviations or defects according to VTA inspection form policy (*by station or milepost limits*), or did not list "*additional personnel accompanying the inspection trip*" (VTA supervisors indicated that it is VTA policy for inspections to be done in teams).

PM and track inspection records

6. **2014:** Only one inspection record, dated 1-21-14, notes any surface or profile irregularity at Hamilton Platform: "2 inches, non-critical".

Records for two turnout inspection areas: S-19 and RP-21 turnouts

7. **2014:** Mandated track inspections were done, but conditions noted by CPUC track inspectors in "Visual Inspections" section below for S-19 and RP-21 turnouts were not observed by VTA inspectors or noted on inspection forms.

Geometry car inspection reports

8. **2012:** No geometry car inspection documented for 2014.

Visual inspections

9. **Hamilton platform:** At location D641, track surface/profile was string lined and measured to be 2 7/8". At adjacent location 50' farther outbound, track surface/profile

was 1 ¾".

10. **Baypointe -** Cracked concrete tie supports at S-19 and RP-21 (CPUC G.O. 143-b section 14.05, CFR 49 213.133 (a) and MTN 6415-4.22.1)

11. **Baypointe -** Cracked windows on station platform (4) (SSPP version 12 February 2014: *Light rail station safety inspections* (page 31), references MTN 6301-2.0 and 2.1)

12. **S-19 -** Fouled guardrail (CPUC G.O. 143-b section 14.05, CFR 49 213.133 (a) and MTN 6415-4.22.1)

13. **S-19** and RP-21 - Fouled ballast (MTN 6406-4.1.3)

14. **Inadequate tension on switch stand handles in the Guadalupe yard - (**CPUC G.O. 143-B section 14.05, CFR 49 213.135 (e) and MTN 6415-4.24.8)

15. **Guadalupe yard Gate 4 curve alignment -** Due to lateral force the gate 4 curve line rail leading into the yard is lifted free of the tie plates and canted to the field side by approximately 5/16" **(**MTN 6409-4.2.2 and 4.2.6).

Comments:

Inspection documentation

1. PM/track inspections and turnout inspections beginning in January of 2014 showed a marked improvement over the inspections prior to that date. Weekly, monthly, quarterly and special inspection forms were created that began to address acute deficiencies in VTA's inspection program.

2. VTA inspection forms consistently revealed general, non-specific remarks by VTA track inspectors about track geometry deviations that were not consistent in terminology from one inspector to the next.

Inspection documentation and training

3. Per VTA SSPP version 12, element 13, the CPUC would recommend additional comprehensive track inspection training for all VTA workers assigned to inspect track. Currently 8 hours of track safety standard training is given. CPUC would like to see a 40 to 80 hour course in track inspection with extensive field work and a passing score of 85% would give track inspectors the strong technical knowledge needed to recommend the correct remedial action when encountering track defects and deviations. This level of training could also ensure that all track inspectors use the same track inspection

terminology.

Recommendations:

1. VTA should ensure all Wayside (e.g. switch, track, alignment, light rail station, geometry car) inspections are performed in accordance with VTA maintenance procedures MTN-PR-6403, MTN-PR-6405, MTN-PR-6415, MTN-PR-6417, MTN-PR-6406, MTN-PR-6409, and MTN-PR-6301 (Refer findings section for details)
2. VTA should perform all Geometry car inspections as required by MTN-PR-6403 and annual reports should be available for review upon CPUC request as per GO 143-B, Section 14.05 requirements.
3. VTA should provide training in the following areas. Direct and train inspectors to use station or milepost landmarks to describe location of defects or deviations as directed on inspection forms. Also, inspectors should indicate all additional personnel on inspection. Train inspectors to use standard terminology for all potential track defects or deviations. Also train inspectors to document conditions like cracked concrete tie supports, fouled ballast and fouled guardrails and indicate those conditions on inspection forms.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**15-E**	**Element**	**Maintenance Audits and Inspections: WP&S Quarterly Audit Program**
Date of Audit	October 10, 2014 Guadalupe Division	**Department(s)**	Way, Power, and Signals Department
Auditors/ Inspectors	Arun Mehta	**Persons Contacted**	George Sandoval, Operations Manager – LR Maintenance Administration Joel Milburn, Way, Power and Signals Superintendent Brigido Sanchez, Quality Assurance & Warranty Specialist Bruce Turner, Transit System Safety Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-6801 WPS Quarterly Audit dated 1/20/2012

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: WP&S Quarterly Audit Program

Interview VTA personnel and review records for the past 2 years to determine if:

1. The audit is being performed at the required frequency stated in the procedure.
2. All WP&S Departments are being audited under this program
3. Audit reports are properly maintained
4. Corrective Action Plans are well documented
5. Follow up of Corrective Action Plan takes place in a timely manner until completion

FINDINGS AND RECOMMENDATIONS

Activities:

VTA WP&S Manager, provided a background to Staff regarding a new SOP, "VTA MTN-PR-6801 WPS Quarterly Audit", initiated in February, 2012, in response to the 2011 CPUC Triennial Audit of VTA. The 2011 Triennial Audit identified deficiencies in the maintenance practices utilized by various Way Power & Signal (WP&S) Departments. The WP&S Manager initiated a new SOP to

conduct self-directed internal audits to ensure compliance with VTA Maintenance Procedures and Preventive Maintenance (PM) are being carried out as planned. These audits are in addition to the CPUC regulated Internal Safety Audits (ISAs). He commissioned VTA Guadalupe Division Quality Assurance Department to conduct quarterly audits of all his four WP&S departments. He also requested the CPUC Representative to be a participant in these quarterly audits to add credibility and value.

Staff interviewed the VTA representatives on the prescribed elements contained in this checklist. The audit took place as planned on October 10, 2014. A follow-up of the audit was requested by Staff and it took place on October 15, 2014 at 10 AM at the Guadalupe Division with Joel Milburn and Brigido Sanchez.

1. According to VTA MTN-PR-6801 WPS Quarterly Audit SOP, VTA should have conducted 8 Quarterly audits in the past 2 years. However, since the inception of the SOP MTN-PR-6801 WPS Quarterly Audit in February 2012, VTA conducted only 6 audits instead of the 8 quarterly scheduled for the 2 years from March 2012 through March 2014. WP&S Superintendent is charged with scheduling these audits. He advised Staff that they were short in conducting the required audit because of lack of time and resources and the heavy maintenance work load which took priority over the audit schedule. He further suggested that the frequency of the audits identified in the SOP was too high to be meaningful and he thought semi-annual frequency instead of quarterly frequency would be more meaningful. He advised Staff that VTA will work internally to revise SOP 6801 to be more effective and meaningful now that they have had 3 years of experience. VTA assured Staff that they appreciate the value and benefits of the audit and will make every effort to keep up the schedule in the future.

   VTA conducted quarterly audits of the four departments as follows.

   a. 03/27/12 Station Maintenance & Signals
   b. 07/05/12 Track
   c. 02/04/13 Station Maintenance & Power
   d. 06/21/13 Signals
   e. 11/12/13 Station Maintenance
   f. 03/18/14 Track
   g. 09/04/14 Power

2. There are four maintenance departments under WP&S: Track, Signals, Power and Station Maintenance. The SOP 6801 calls for two departments to be audited during each of the quarterly audits. As the table under Element 1 shows, VTA did not audit two departments per audit as the SOP 6801 dictates. VTA conducted only 8 departmental audits instead of the 16 scheduled for the 2 years from March 2012 through March 2014. WP&S Superintendent is charged with scheduling these audits. As in Element 1, VTA Superintendent cited lack of time and resources as the reason for non-compliance and

further suggested that the frequency of the audits was too high and needed to be cut down from quarterly to semi-annual to be more meaningful. He will work with the VTA auditor to revise the SOP 6801 to make it more effective and meaningful going forward.

3. Staff reviewed several of the quarterly audit reports and found them to be comprehensive and very well maintained by the VTA auditor.
4. A review of the audit reports showed that corrective action plans (CAPs) are not being documented and maintained effectively. The recommendations are being written-up by the VTA auditor; however the CAPs are not being written and followed-up by the WP&S Superintendent / Supervisors responsible for the corrective action. The VTA auditor is following-up and maintaining all the audit reports by himself. SOP 6801 Section 4.5 states "WPS Supervisors shall review the audit report, act on findings that require corrective actions within 14 days after the audit report was received and implement improvement efforts as necessary". Staff did not find any separate documents generated by WP&S Supervisors which could be called a "Corrective Action Plan" in response to the recommendations/findings in the audit reports. It was revealed that there was a lack of communication and understanding between the VTA auditor and the WP&S Superintendent. There was apparently no formal consensus and buy-in of the audit recommendations and no formal CAPs were being prepared and documented by the WP&S Superintendent / Supervisors. The WP&S Superintendent advised Staff that going forward; he will sit down with the VTA auditor, come to a consensus on the audit recommendations and then document formal CAPs and follow them up in a timely manner. Staff believes that the revised version of SOP 6801 should clearly define the generation of a formal CAP document to be generated by the WP&S Supervisors and a need for them to track it to completion.
5. Because of the issues identified in Element 4 above, the corrective action plans are not being documented and followed-up in an effective manner. Records and discussion showed that the VTA auditor maintains the audit reports and follows up on corrective actions by calling or emailing the concerned department representatives from time to time. Some of the recommendations in the audit reports were followed through and proper corrective action was taken to completion, however the other recommendations were being left incomplete without proper follow-through. Many of the entries in the "Verification Notes or CA Taken" column of the Audit Reports have either no entry or a "NA" entry or non-conclusive entries being made by the VTA Auditor rather than WP&S Supervisors. The VTA auditor admitted that some of the recommendations are being repeated in subsequent audits of the same department due to the lack of a properly documented corrective action plan and an effective way of follow-up. VTA staff stated that they will take proper action as identified in Element 4 and do a better job of follow-through of corrective action plans to completion. As in Element 4, Staff believes that the revised version of SOP 6801 should clearly define the generation of a formal CAP document to be generated by the WP&S Supervisors and a need for them to track it to completion.

Findings:

1. The quarterly audits are not being performed at the required frequency stated in the SOP 6801. During 2 years from March 2012 through March 2014, VTA conducted only 6 quarterly audits instead of the 8 scheduled. Further, VTA conducted only 8 departmental audits instead of the 16 scheduled.
2. Corrective action plans are not being documented and followed-up in an effective manner to meet all the recommendations of the VTA auditor.

Comments: CPUC Staff compliments VTA on the proactive initiatives taken by way of generating and implementing SOP 6801to improve the WP&S PM deficiencies identified in the 2011 CPUC Triennial Audit of VTA. Staff hopes to see improvements going forward by VTA following upon the recommendations provided here.

Recommendations:

1. VTA should comply with SOP MTN-PR-6801 WPS Quarterly Audit dated 1/20/2012, and conduct the quarterly audits at the prescribed frequency.
2. VTA Auditor and WP&S Superintendent / Supervisors need to meet and agree upon the recommendations provided by the VTA auditor after each audit. WP&S Supervisors need to create a formal corrective action plans document and provide a regular follow-up of status until the plans are fully implemented to completion. Future SOP 6801 revision should clearly define this in Section 4.5.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**16-A**	**Element**	**Training and Certification Programs: Operators, Controllers, and Foremen**
Date of Audit	October 16, 2014 Guadalupe Division	**Department(s)**	**Light Rail Technical Training Department**
Auditors/ Inspectors	Debbie Dziadzio	**Persons Contacted**	Dean Palmquist, Technical Training Supervisor

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. Light Rail Operating Rulebook dated 2011
5. VTA SOP 1.5 Operator Certification dated 7/7/2010
6. VTA SOP 1.9 Light Rail Operator Retraining/Refresher dated 6/2/2010
7. OCC Training Policy/Procedures

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Training and Certification Programs: Operators, Controllers, and Foremen

1. Select at least five (5) employees at random in each of the following classifications:
   a) Train Operator
   b) Train Controller
   c) Light Rail Supervisor
   d) Way, Power and Signal workers
   e) Motormen/Conductors of Historic Streetcars
   f) Mechanics

2. Review training, certification, and recertification records of the selected employees related to RWP, PED, and other specific job required training to determine whether:
3. All personnel successfully completed initial training programs, and any discrepancies were addressed and resolved.
4. All personnel have been retrained and recertified at the correct frequency and are currently certified to perform their duties according to the procedures.
5. Verify that a process for maintaining and accessing employee training records is in place.

6. Verify that categories of safety-related work requiring training and certification have been identified.
7. Verify that employee and contractor job classifications requiring initial and refresher training and certification have been identified.
8. Verify that VTA has a process is in place to assess compliance with its training and certification requirements.
9. Verify that corrective actions taken to discipline employees and contractors for failure to follow established procedures once trained and certified are established and consistent.
10. Verify that contractor training requirements are specified in contract documents.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed training records for 10% of personnel in various classifications including Train Operators, Controllers, Rail Supervisors, WP&S Workers, Historic Car operators, Mechanics and Techs.
2. Staff inspected records for initial LRV training, certification, recertification, PED, RWP, LOTO, Confined Space, OSHA High Voltage, Electricity Safety, Tamper Training, Fork Lift, LR Maintenance, Overhead Line Worker, Overhead Catenary Worker.
3. Staff determined that all personnel successfully completed initial training programs and any discrepancies were addressed and resolved.
4. Thru the training records review, Staff determined that all personnel have been retrained and recertified at the correct frequency and are currently certified to perform their duties according to the procedures.
5. Light Rail, Maintenance, WP&S, and Contractor records are updated and maintained in the Training Department. There is one area specific for Maintenance, WP&S, and Contractor records and another area for LRV Operators. OCC training records are maintained in the Trainers' area in OCC.
6. Staff determined that specific personnel (i.e. electricians, trackmen, LRV operators), had comprehensive training requirements, determined by their classification. An example would be the LRV Operator's requirement for the annual recertification, RWP, PED, and any other training that VTA Management feels would be beneficial for that particular year. Another would be an Overhead Electrician. This employee would require LOTO every three (3) years, Electric Safety, High Voltage, Fork Lift, LR Maintenance (annually), Confined Space, Overhead Line, and Overhead Catenary Worker Safety. There are specific training requirements for WP&S and Contractors. The training also includes PED, Operating Rules, and RWP.
7. Staff reviewed an Excel Spreadsheet maintained and utilized by the Training Department. The spreadsheet tracks all personnel in their perspective classification and the training requirements and recertification for each.
8. The comprehensive spreadsheet mentioned above flags personnel and advises timing for

recertification or any other training that is mandated, necessary, and needed. Maintenance uses an Excel spreadsheet and OCC Training Department uses a Training Tracking Chart.

9. Staff interviewed VTA personnel and determined that Corrective Action Plans (CAPS) non-compliance to CPUC General Orders, VTA Operating Rules and Policies are not consistent.
10. Staff reviewed Contract Documents for Tasman Pocket Track project and confirmed contractor RWP training requirements were contained in the contract documents.

Findings:

None

Comments:

VTA management and supervisors should be consistent in development, tracking and closure of CAPs and with consequences and discipline relating to CPUC GO violations and VTA rules violations. (See also checklist 13-A)

Recommendations:

None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**16-B**	**Element**	**Training and Certification Programs: Maintenance Employees and Contractors**
Date of Audit	October 16, 2014 Guadalupe Division	**Department(s)**	**Light Rail Maintenance Training Department**
Auditors/ Inspectors	Robert Hansen Michael Warren	**Persons Contacted**	Dean Palmquist, Technical Training Supervisor David Acosta, Maintenance Training Supervisor Janice Broock, Transportation Superintendent George Sandoval, Operations Manager LR Maintenance Administration Garry Stanislaw, Safety Projects Manager Robert Daniels, Field Operations Supervisor Mike Brill, Transit System Safety Officer

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-6800 WPS Training Program dated 6/27/2011
5. VTA MTN-PR-7401Light Rail Training & Certification Requirements dated 6/27/2011

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Training and Certification Programs: Maintenance Employees and Contractors

1. Select at least three (3) employees at random in each of the following classifications:
    a. Track Workers
    b. Track Equipment Operators
    c. Overhead Line Workers
    d. Electro-Mechanics / Electronic Technicians
    e. Light Rail Maintenance Foreperson
    f. Substation Maintainers
2. The training program standards and course implementation are reviewed and modified as necessary to meet the requirements of the reference criteria.
3. Review the training and certification records for the last three years to determine whether or not:

a) The employee has received the required training to perform his/her duties
b) Documents are on-file to show that the employee is qualified to perform his/her duties
c) The employee has been re-certified at the required frequency

4. Verify that VTA has a process is in place to assess compliance with its training and certification requirements.
5. Verify that corrective actions taken to discipline employees and contractors for failure to follow established procedures once trained and certified are established and consistent.

FINDINGS AND RECOMMENDATIONS

Activities:

On Thursday, October 16, 2014, Staff met with representatives from VTA's Light Rail Maintenance Training Department to review the agency's maintenance employee and contractor training programs.

1. Staff reviewed the past three years of training records and re-certifications for the following maintenance personnel:
    a. Track Workers – All workers received Electrical Safety for Non-Electricians, Roadway Worker Protection, FRA Track Test, Operations Rulebook, and Hi-Rail Recertification training. Forklift training is given as needed, and uncertified personnel are not allowed to use the equipment.
        - Employee #7040 – No defects found in training records
        - Employee #13002 – No defects found in training records
        - Employee #13940 – No defects found in training records
    b. Overhead Line Workers – All workers received Electrical Safety for Non-Electricians, Confined Space Awareness, Lock-Out/Tag-Out (LOTO), Roadway Worker Protection, Operations Rulebook, Hi-Rail Recertification, and NFPA-70E Training:
        - Employee #7071 – No defects found in training records
        - Employee #11031 – No defects found in training records
        - Employee #11141 – No defects found in training records
    c. Light Rail Vehicle Maintenance Personnel:
        - Employee #12180 (Electrical/Mechanical Technician)
            - Recently changed department
            - Initially certified for LRV maintenance September 26, 2014
            - Training included E/M training program, light rail maintenance procedures course, Peterbilt (hi-rail) training, and machine guarding.
        - Employee #7070 (Electrical/Mechanical Technician)
            - Original LRV Maintenance Certification on May 7, 2002
            - Electrical/Mechanical Training, including Workplace Electrical Safety,

Electrical Safety for Non-Electricians, High-Voltage Safety, Lock-Out/Tag-Out (LOTO), Forklift, and NFPA-70E, was performed as required.
        - Operational Training, including Roadway Worker Protection, High-Rail Recertification, and Maintenance Recertification, was performed as required.
    - Employee #1630 (Paint & Body Technician)
        - Paint & Body Training, including a Qualitative Fitness for Duty Test Form, Electrical Safety for Non-Electricians, High Voltage, LOTO, and Forklift, was performed as required
        - Operational Training, including Maintenance Recertification and Roadway Worker Protection, was performed as required

d. Maintenance Forepersons (only two current employees):
    - Employee #7050
        - Original LRV Maintenance Certification on June 18, 2002
        - No defects found in training records, including Workplace Electrical Safety, Electrical Safety for Non-Electricians, High-Voltage, LOTO, Forklift, and NFPA 70E
    - Employee #7068
        - No defects found in training records, including Electrical Safety for Non-Electricians, High-Voltage Safety, LOTO, Forklift, Peterbilt (Hi-Rail), and NFPA-70E

e. Traction Power Substation Personnel:
    - Employee # 7039
        - No defects found in training records, including Maintenance Recertification, Hi-Rail Recertification, and Roadway Worker Protection
    - Employee #10391
        - No defects found in training records, including Maintenance Recertification, Hi-Rail Recertification, and Roadway Worker Protection Training
    - Employee #10599
        - No defects found in training records, including Electrical Safety for Non-Electricians, High Voltage Safety, Confined Space Awareness, Hi-Rail Recertification, and Roadway Worker Protection

Staff was informed that SCVTA has two primary types of hi-rail vehicles, Peterbilt and Unimog, with separate training programs for either type.

A change in electrical work procedures caused many personnel to receive additional lock-out/tag-out training. This is routinely combined with the 3-year high-voltage electrical safety training.

2. Training curriculum are reviewed and revised accordingly whenever departments are

made aware of new requirements from any governing entity. For example, new requirements enacted in NFPA-70E regarding electrical safety in the workplace, as well as hydraulic safety and crane safety standards brought proactive training at SCVTA in advance of the respective standards' publications. Notable governing agencies include FRA, OSHA, Cal/OSHA, CPUC, and NTSB.

The Risk Management department is responsible for distributing new standards upon publication, and coordinates with the Chief Operations Officer and the CPUC Representative to ensure new regulations are properly handled by the appropriate departments. Additionally, Operations Training is continuously updating in response to internal and external information and publications. The Injury and Illness Prevention Plan Committee also works with Risk Management and may become involved in changes in training programs.

SCVTA maintains a database of rulebooks and training documents with revisions, and provided a list of revisions to the Roadway Worker Protection Manual as an example. According to the database, revisions were made on March 20, 2009, December 31, 2009, December 29, 2011, and June 24, 2014.

3. See Item 1 of this list for details of the training records review.
4. SCVTA explained three types of tests routinely performed to ensure employees are compliant with training and certification requirements:
    a. Safety Procedures and Rules Adherence Testing (SPRAT):
        - Random tests for compliance
        - 3-4 items from list of 28 scenarios checked per year, with 20-30 people checked per item
        - By agreement with Unions, SPRAT tests do not lead to any disciplinary action
    b. Way Power & Signals (WP&S) Field Observations:
        - WP&S Supervisors always have Field Observation Forms during field visits
        - The WP&S Superintendent expects 1-4 form submittals from each supervisor per month
        - All roadway workers, including contractors, are observed and reported
        - Disciplinary action is possible when discrepancies are noted
        - SCVTA does not maintain a governing procedure documents, which may result in inconsistency in reporting among shifts and supervisors
    c. Shop LOTO Random Inspections
        - Supervisors observe directly
        - SCVTA is in the process of creating standardized forms LOTO inspections, but no such form is currently implemented

    SCVTA personnel explained that any employees discovered to be uncertified for a certain activity will be disallowed from performing that duty until retraining can be performed.
5. Staff requested to review instances of employees and contractors receiving disciplinary actions as a result of failing to follow established procedures.
    - Three employees of a contractor working on the SCVTA guideway received

operations retraining in Roadway Worker Protection procedures. Original training was provided on March 28, 2014. After being observed disregarding the procedures, they received retraining on July 25, 2014.

- Staff reviewed retraining records for Employee #9853.
- Multi-tiered disciplinary action is assigned in an escalating fashion:
  - Severity of action is dependent on an employee's service history, e.g. prior infractions
  - The employee's superintendent performs a records review
  - The Operations Retraining Class is not considered disciplinary action
  - As a last resort, termination of an employee is negotiated through an arbiter selected by the Union representing the employee.

Findings:

1. No procedure or standardized form exists for Shop Lock-Out/Tag-Out Inspections and Way Power & Signal Field Inspections, which may result in inconsistent reporting, unenforced rules, and potentially hazardous conditions.

Recommendations:

1. VTA should ensure that procedures and standardized forms exist for all types of rules compliance checks performed throughout VTA.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**17**	**Element**	**Configuration Management and Control**
Date of Audit	October 15, 2014 River Oaks Facility	**Department(s)**	Operations Engineering Unit System Safety Department
Auditors/ Inspectors	Michael Warren Daniel Kwok Rupa Shitole	**Persons Contacted**	Art Douwes, Manager – Manager, Operations Engineering Manjit Khalsa, Sr. Systems Engineer - Operations Engineering Kenneth Ronsse, Deputy Director, Engineering and Transportation Infrastructure Development Division Adolf Daaboul, Sr. Transportation Engineer-Engineering and Transportation Infrastructure Development Division

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA MTN-PR-1001 Light Rail Configuration Management Program version 2 dated 1/20/2011

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Configuration Management and Control

1. Randomly select two VTA system modifications or design changes during the last 3 years to ensure configuration management documentation was properly updated to include at minimum:
   a. Engineering Design Peer Review;
   b. Design and Analysis Review by the System Safety Department;
   c. VTA Configuration Review Board (CRB) Approval
   d. Design and Analysis Review by CPUC if required;
2. Randomly select two Project Concept submitted to the System Safety Department and verify that:
   a. Configuration Change Request Forms were used;
   b. Potential Hazard Checklist was used

c. Forms were circulated to the CRB for approval;
d. The System Safety Department performed a review, analysis, and approval of the Modification and Change Request Forms for the project;
e. The modification or change was reviewed and approved by CRB and RSSRB Committees.
f. The modification or change was circulated to the proper departments prior to implementation;
g. All necessary parties or contract employees within or outside the agency were properly notified of the modification or change.
h. As-Built or In-Service Drawings are updated accordingly and filed properly

FINDINGS AND RECOMMENDATIONS

Activities:
Staff interviewed the VTA Maintenance Engineering Division, Engineering & Construction Division, and Safety Division representatives responsible for Configuration Management and Control and determined the following:

VTA has at least two separate internal entities that implement modifications to the system. The two known entities are Maintenance Engineering and Engineering & Construction.

Maintenance Engineering:

1. Project: Installation of RC Filter and PQube Device for NEG Rail monitoring at Sub 31
    a. Configuration change design was initiated by Associate System Engineer, then reviewed and approved by Operations Manager, Engineering and Deputy Director Operations Maintenance.
    b. System Safety Division performs design and analysis review and endorsed the configuration change when the configuration change request was presented to Rail System Safety Review Board (RSSRB) on April 2, 2014.
    c. Configuration Change was reviewed and approved at the RSSRB level.
    d. No review by CPUC required.
2. Same project used from Section 1.
    a. A Configuration Change Request Form was used and assigned Control #: 23.
    b. A Potential Hazards Checklist was prepared by initiating Associate System Engineer.

c. Configuration Change Request Form and associated documents were circulated to RSSRB for approval.
d. System Safety Division reviewed the modification and approved the Change Request Form on 4/17/2014.
e. Configuration Change Request Form has appropriate RSSRB approvals.
f. The modification was circulated to the proper departments by means of the RSSRB committee and then posted on VTAnet, which accessible by all departments.
g. See Section f.
h. As-Built drawings have been updated accordingly and filed properly.

Engineering & Construction:

3. Project: Santa Clara Pocket Track
    a. Project Draft Design was reviewed by Maintenance Engineering, System Safety, and Program Manager, Transit by use of the Technical Comment Review and Response Form.
    b. See section a.
    c. This project has not received approval from either Configuration Review Board (CRB) or RSSRB.
    d. GO-88B Forms have been submitted to CPUC Staff for Patrick Henry Drive/Tasman Drive Crossing (12/2/2013) and Old Ironsides Drive/Tasman Drive Crossing (12/2/2013).
4. Same project used from Section 1.
    e. A Configuration Change Request From was not used. Engineering & Construction does not use a Configuration Change Request Form. Capital Projects begin with a Capital Projects Request Form endorsed by the Division Chief. Capital projects are then entered into a master list that are scored and ranked by a VTA-coded, software program and re-verified by department heads using metrics such as: effects on safety, effects on security, effects on ridership, etc.
    f. A Potential Hazard Checklist was not used. Engineering & Construction does not use a Potential Hazards Checklist. A Field Diagnostic Meeting was held on 9/5/2013 with CPUC, VTA Operations, VTA Program Manager, VTA Project Manager, City of Santa Clara, DKS (engineering contractor), and URS (engineering contractor) to voice concerns and potential hazards.
    g. No forms were circulated to CRB or RSSRB for review or approval for this project.
    h. No Modification or Change Request Forms were presented to System Safety Department to perform review, analysis, and approval.
    i. See Section c.
    j. According to System Safety, at the 30%, 65%, 90%, and final design stages Safety,

Operations, and other appropriate departments are submitted the project draft designs for review and comments. See Question 1, Section a.

k. The project is still under construction and has not yet been implemented. As such, there is no implementation to report to necessary parties.
l. As-built drawings have been generated/updated and filed appropriately.

Findings:

1. For the Santa Clara Pocket Track Project, the Light Rail Configuration Management Program (MTN-PR-1001) was not followed.
2. The Engineering & Transportation Infrastructure Development Division does not have a Configuration Management Program.

Comments:

VTA Engineering & Transportation Infrastructure Development Division presented three training modules (VTA Project Managers' Boot Camp, Project Manager Training, Capital Projects Delivery Model (PDM)) used for new Project Managers that go over roles, duties, responsibilities, etc. Within these modules, there is no mention of coordination with System Safety Division or other departments within VTA to ensure all foreseeable hazards have been addressed and the modification will be safely integrated into the system.

Recommendations:

1. VTA should develop an agency-wide Configuration Management Program (Same as checklist #7).

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**18**	**Element**	**Local, State, and Federal Requirements: Employee Safety Program**
Date of Audit	October 7, 2014 River Oaks Facility	**Department(s)**	Risk Management
Auditors/ Inspectors	Claudia Lam Steve Espinal	**Persons Contacted**	Walter Marchetti, EH&S Supervisor Mark Mahaffey, Manager- Facilities and Security

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA Injury and Illness Prevention Program (IIPP)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Local, State, and Federal Requirements: Employee Safety Program
Interview VTA personnel and review appropriate records for last 3 years to determine whether:

1. VTA regularly holds Joint Union/Management Safety Committee Meetings, and the Risk Manager serves as the committee chair.
2. The Joint Union/Management Safety Committee Meetings appropriately responds to employees' complaints regarding safety problems.
3. Randomly review Joint Union/Management Safety Committee Meetings Minutes.
4. An appropriate procedure and reporting form is being implemented, and is distributed to all employees to effectively report safety hazards in the work place.
5. Employees are aware of the Employee Safety Program and comfortable utilizing it.
6. Appropriate corrective actions regarding employee safety have either been satisfactorily completed or are being actively tracked and documented.
7. Has VTA had any problems complying with local, state, or federal

requirements? Review documentation of any such problems and assess how the issue was handled and resolved.

8. Verify construction projects have specific procedures in place to ensure worker protection and public safety by fostering an awareness and concern for safety on the job site.
9. Verify that implementation of these procedures is the responsibility of the contractor organization performing the work and VTA.
10. Verify VTA's operating and maintenance safety rules and procedures are included in construction contracts to bind contractors and employees to fulfilling their roles and responsibilities safely.
11. Verify appropriate forms of disciplinary action are taken consistently to correct employees and contractors who have not followed established safety rules and procedures.
12. Review records for some referenced Safety Employee Programs as per SSPP.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed VTA Risk Management regarding the Local, State, and Federal Requirements:

Employee Safety Program to determine the following:

1. VTA holds Monthly ATU/SEIU Join safety committee meetings and Risk Manager serves as the committee chair. Staff reviewed the meeting agenda for 2012-2014 and it showed operation manager, system safety, environmental safety, Operation planning, facility department etc participated in the meetings. The purpose of the meetings is to address safety related issues for bus and light rail safety problems.
2. Staff randomly selected several meeting agenda and meeting minutes and the documents showed meetings appropriately responded to employee's complaints regarding safety problems under Section "REVIEW OF OPEN AND CLOSED ITEMS: Open items (0-6 months), Open items (over 6 months or recurring)". Corrective action items regarding employee safety have been actively tracked till completion.
3. In the beginning of each year, IIPP committee discusses the topics needed to be reviewed. VTA has monthly committee reviews the IIPP procedure and discuss if updates are needed. Printed copies of IIPP go to upper management, superintendent, and supervisor, also electronic copies are also made available in Intranet accessible by every employee. Once procedure is updated and approved, an email will go out to all employees.
4. VTA's Procedure 0200 – hazard report form are made available for operation, maintenance

employees to report safety issues to their supervisors. Staff randomly selected and reviewed several hazard forms from binder "Risk Management Environment Health & Safety Unit" for bus and light rail.

5. Staff reviewed "Employee Safety Training Program" Tailgate/Safety Talks prepared by Risk Management" and Chapter "Safety Training". Documents show new employees are required to have orientation safety training before starting regular assigned work activities. Staff reviewed training exam records for: Hazardous waste training April 2013, Safety Tailgate sheets January 2014, Employees in the respirator program 05/16/2014.
6. According to VTA, VTA is in compliance with local, state, or federal requirement regarding employee safety. VTA provides Roadway Worker Protection Training (RWP) every Friday to ensure workers protection and public safety. Also, resident inspector or engineer (in charge) conducts weekly progress meeting once construction begins. Inspectors during construction perform random check to ensure construction workers have proper Personal Protection Equipment (PPE) on the job site. All contractors need to follow the requirement as their restrictive access requirement. Staff reviewed Contract C828 (13103) LRT Efficiency Project Tasman Drive Pocket Track Contract" Contract documents conformed November 22, 2013. – Chapter 6 Special Condition 6.13 Safety Precautions, programs and First Aid requirements. Staff also reviewed weekly progress meeting that covers "Safety & security", "Construction issues". VTA's safety rules and procedure are included in construction contracts.
7. In IIPP – procedure 0600 Safe Work Practices and discipline procedure, it has a procedure to talk about the progressive discipline if employees don't follow the procedure. Superintendent and supervisors enforce these disciplinary.

Findings:
None

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**19**	**Element**	**Hazardous Materials Program**
Date of Audit	October 15, 2014 River Oaks Facility	**Department(s)**	Enterprise Risk Management Operations Maintenance Department
Auditors/ Inspectors	Jimmy Xia Yan Solopov	**Persons Contacted**	Walter Marchetti, Environmental Health and Safety Supervisor George Sandoval, Operations Manager LR Maintenance Administration David Acosta, Light Rail Maintenance Training Supervisor Randy Hester, Light Rail Vehicle Maintenance Supervisor Steven Keller, Director of System Safety and Security Jesse Soto, Facilities Maintenance Manager Coordinator

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA Injury and Illness Prevention Program (IIPP)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Hazardous Materials Program

1. Select at random at least six VTA employees responsible for handling hazardous materials, and verify that they have received specific training for reporting requirements, product release or spill, and spill incident response and clean-up.
2. Verify that hazardous materials discharge/spill reports for incidents in the past 3 years have been prepared and filed properly. Randomly review records.
3. Verify that all MSDSs are available to all personnel who handle hazardous materials.
4. Verify that a hazardous materials (HazMat) program is documented in a hazardous materials plan or procedure.
5. Verify that VTA has developed an OSHA or state equivalent compliant HazMat program (if

applicable).

6. Verify that the program includes a process to familiarize the employees with the hazards presented by materials used in the work place and the Employee Safety Program.
7. Verify the program assigns roles and responsibilities to specific departments and personnel for reviewing and approving materials used or to be purchased and used on transit agency property.
8. Verify that follow-up activities are performed to verify field use of approved materials to ensure that safe and proper use, handling, storage, and disposal methods are employed.
9. Verify that all MSDS are available to all personnel who work with hazardous materials.
10. Interview VTA Safety Department representatives to discuss VTA's hazardous materials program and the role of the VTA Safety Department in enforcing this program. Be sure to discuss the following:
    a. The procurement process for insecticides, herbicides, chemicals, and solvents.
    b. If a MSDS for each hazardous material is on file with the System Safety Department.
    c. If the approved MSDSs have been entered into an MSDS filing system for tracking.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed VTA representatives and reviewed VTA's Hazardous Materials Program documentation, including the following:

1. VTA Title 22 Hazardous Waste Training April 25, 2012 – 8 am to 11 am River Oaks Auditorium class sign-in sheet and the associated booklet for this class, entitled "Hazardous Waste Handling An Overview of RCRA, California and VTA Standards," dated 4/25/12
2. VTA Title 22 Hazardous Waste Training April 24, 2013 – 9 am to 11 am River Oaks Auditorium class sign-in sheet and the associated booklet for this class
3. The booklet entitled "Hazardous Waste Handling A Review of Current and New Requirements Prepared by Enterprise Risk Management Environmental Health and Safety," dated 4/23/14, which was the reference material for VTA's hazardous waste training conducted in April 2014
4. VTA's topics, calendars, and reference materials for the Tailgate Safety Meetings for the years 2012, 2013, and 2014

Staff randomly selected the following six VTA employees from the rail division who work with hazardous materials, and verified that they have received specific training for reporting requirements, product release or spill, and spill incident response and clean-up by reviewing the documents listed as #1 and #2 above: Greg Bushner, Gurpreet Gill, Thomas Hardesty, Randy Hester, George Sandoval, and Joel Milburn.

Review Results from Interview and Records Review:

1. VTA provides training related to hazardous material handling to its employees who work with hazardous materials from both its bus and rail divisions at the same time once every year. The training is conducted by Walter Marchetti's - VTA's Environmental Health and Safety Supervisor's - staff. VTA has about 30 – 40 employees that attend each annual training class. The training topics cover reporting requirements, product release or spill, and spill incident response and clean-up as mentioned in the reference booklets that were provided to the trainees for the annual training classes held in 2012, 2013, and 2014 as listed in items #1 to #3 under the Activities section above.
2. VTA's Hazardous Waste Training class sign-in sheets for the classes held on 4/25/12 and 4/24/13 are proof that the six employees staff selected physically signed in at either one or both of the classes, which serve as verification that they attended the training. Based on the review of these two sign-in sheets, staff found the following:
    a. Greg Bushner took the training class held on 4/24/13, but not the one held on 4/25/12.
    b. Gurpreet Gill took the training class held on 4/24/13, but not the one held on 4/25/12.
    c. Thomas Hardesty took the training classes held on 4/25/12 and 4/24/13.
    d. Randy Hester took the training class held on 4/24/13, but not the one held on 4/25/12.
    e. George Sandoval took the training classes held on 4/25/12 and 4/24/13.
    f. Joel Milburn took the training classes held on 4/25/12 and 4/24/13.

Per VTA representatives, the reason that Greg, Gurpreet, and Randy didn't attend the 4/25/12 training class is most likely they weren't available at that time. Furthermore, they said that Greg is one of VTA's trainers of the Hazardous Waste Training class, his job doesn't require taking this training himself, and he can take it if he chooses to just to advance his knowledge of this subject. Also according to them, there are some positions for which this training is relevant and there are some for which this training is not relevant as in the case with Greg.

VTA stated that in general, they attempt to spread training around so that every site has at least one trained staff member available to respond to potential spills, but repeat-training each year for 100% of staff is not one of their program's goals. However, training is still available to everyone who is interested.

VTA recently conducted the Hazardous Waste Training for this year in April 2014. According to Walter Marchetti, the sign-in sheet for this class is at VTA's bus division, so it wasn't available for review at the time of this checklist review.

Based on staff's review of the documents listed as #1 and #2 under the Activities section above and the above information, staff verified that all six VTA employees that staff randomly selected have received specific training for reporting requirements, product release or spill, and spill incident response and clean-up within the time period covered by this audit (i.e. 2012-2014).

3. VTA's Light Rail Equipment Supervisor who maintains the spill log for light rail maintenance stated that since 2007, VTA hasn't had any reportable hazardous materials discharges/spills in light rail maintenance. As such, no reports of such incidents have been prepared and filed during the past 3 years.
4. VTA's MSDSs are kept by a third party vendor on an online database called MSDS Online. The online, electronic MSDSs are available to all employees at VTA. Their vendor updates the MSDSs automatically. VTA makes sure MSDS is available immediately for new chemicals. Once VTA enters a MSDS in MSDS Online, any updates to it will automatically be entered when available. MSDS Online is accessible by all employees at VTA. VTA has computer terminals throughout divisions where its employees can access the electronic version of MSDSs. VTA also has CDs containing MSDSs to cover events of power and Internet outages for employees who lack Wi-Fi access. VTA has discarded all their paper MSDSs and no longer uses physical copies. Many VTA managers and supervisors have iPads and they can access MSDSs on their iPads.
5. VTA's hazardous materials (HazMat) program is documented by the following 7 procedures in VTA's Occupational Injury and Illness Prevention Program (IIPP) manual dated February 2014: AS-RM-IIPP-1601, 1602, 1605, 1606, 1609, and 1612 and FRS-RM-1604. All of these procedures combined enforce VTA's HazMat program.
6. The California Electronic Reporting System (CERS) is a HazMat program developed by the state of California and VTA has been using it since 2013. The program is regulated by the county of Santa Clara. CERS is basically an online computer database that contains an inventory of hazardous materials. Nowadays, VTA enters its hazardous material inventory, which is required by the county, into CERS. Previously, the inventory was kept using hard paper copies. Walter Marchetti showed staff a print out of VTA's HazMat program that complies with CERS.
7. VTA's IIPP program includes a process to familiarize the employees with the hazards presented by materials used in the work place and the Employee Safety Program as described in the Hazard Communication Program procedure AS-RM-IIPP-1201 within the IIPP manual.
8. VTA's IIPP program assigns roles and responsibilities to specific departments and personnel for reviewing and approving materials used or to be purchased and used on transit agency property as described in the procedures AS-RM-IIPP-1201 and 1202 in the IIPP manual.
9. VTA performs a number of follow-up activities including but not limited to the following, to verify field use of approved materials to ensure that safe and proper use, handling, storage, and disposal methods are employed:
    a. VTA provides training to its employees in the form of two to four Tailgate Safety

Meetings every month that cover a variety of topics including safe and proper use, handling, storage, and disposal of hazardous materials. They usually have discussions of the training topics during those meetings. Employees can fill out forms if they are not satisfied and have issues or concerns with a Tailgate Safety Training session, and VTA's Environmental Health and Safety Supervisor can resolve these.

b. VTA's safety inspections program covers the inspection of hazardous materials storage and use areas as described in the Safety Inspections procedure AS-RM-IIPP-0701 in the IIPP manual. The safety inspections as described in that procedure is a direct method to verify field use of approved materials to ensure that safe and proper use, handling, storage, and disposal methods are employed.

10. Staff interviewed VTA safety department representatives to discuss VTA's hazardous materials program and the role of the VTA safety department in enforcing this program. Staff's findings from the interview are as follows. The procedure AS-RM-IIPP-1602 in the IIPP manual discusses VTA's hazardous materials program. VTA safety department enforces the program through VTA's IIPP and tailgate safety trainings for its employees.
    a. The procurement process for insecticides, herbicides, chemicals, and solvents are described in the New Chemical Procurement procedure AS-RM-IIPP-1202 in the IIPP manual.
    b. Walter Marchetti showed staff a file drawer in the System Safety Department that contains hard copies of VTA's MSDSs. He said that VTA doesn't keep these hard copies updated because they have all of their current MSDSs on the MSDS Online database, which is accessible by all VTA employees.
    c. VTA's process for approving MSDSs for new chemicals and entering into an MSDS filing system for tracking is mentioned in the procedures AS-RM-IIPP-1201 and 1202 in the IIPP manual. Procedure AS-RM-IIPP-1201 includes a listing of all the chemicals VTA uses as of the date of the printing of the IIPP manual, which is February 2014. The approved MSDSs have been entered into the MSDS Online database for tracking.

Findings:
None

Comments:
None

Recommendations:
None

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**20**	**Element**	**Drug and Alcohol Program**
Date of Audit	October 7, 2014 River Oaks Facility	**Department(s)**	Enterprise Risk Management
Auditors/ Inspectors	Joey Bigornia Howard Huie	**Persons Contacted**	Jackie Adams – Drug and Alcohol Program Manager Juan Mateo-Delgado – Human Resource Analyst Substance Abuse Program

REFERENCE CRITERIA

1. Code of Federal Regulations, Title 49 Part 655 – Prevention of Alcohol Misuse and Prohibited Use in Transit Operations
2. CPUC General Order 164-D
3. CPUC General Order 143-B
4. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
5. VTA Drug and Alcohol Policy

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Drug and Alcohol Program

Interview VTA representatives and review appropriate records prepared in the past 3 years to:

1. Verify that the number of employees in safety-sensitive positions who tested non-negative or refused to take the test was reported accurately.
2. Verify that the Substance Abuse Program meets current FTA requirements.
3. Verify that VTA has a policy for managing the use of over-the-counter drugs.
4. Select at random at least two safety-sensitive employees who tested non-negative for drugs or alcohol in the past 3 years. Determine whether:
   a. The employee was evaluated and released to duty by a Substance Abuse Professional (SAP);
   b. The employee was administered a return-to-duty test with verified negative results;
   c. Follow-up testing was performed as directed by the SAP according to

required follow-up testing frequencies in the reference documents after the employee returned to duty.

5. Verify that consequences for repeat offenders were carried out as required in the reference.
6. Assess whether VTA has ever undergone a federal or state audit of its drug and alcohol program?
   a. If so, what were the outcomes?
   b. Have all findings or recommendations been addressed?
7. Review training program curriculums to verify VTA is training all employees regarding its drug and alcohol policy.
8. Confirm that this information was accurately reported to FTA through the RTA's annual submission to the Drug and Alcohol Management Information System (DAMIS).

FINDINGS AND RECOMMENDATIONS

Activities:

Interviewed VTA Drug and Alcohol Manager responsible for the Drug and Alcohol Program and determined the following:

1. VTA reports there were 35 employees who tested positive. The breakdown per year is: 11 in 2011, 10 in 2013. For Year 2011-2013, there were a total of five refusals to take a drug and alcohol test: 2011 = 2, 2012 = 1, 2013 = 2.
2. The FTA reviewed VTA's Drug and Alcohol Policy in 2013 for compliance to Part 40 and 655 as part of their "random" Annual Review. The random review was approximately 3 days performed with a five FTA staff. The 2013 review included a random selection of 1 (Cummings West) of the 11 subcontractors uses. FTA's review included site visits to the laboratories where samples are taken & analyzed, substance abuse counselors, etc. FTA's letter dated 9-12-2013 to Michael Burns, General Manager, found VTA's Plan compliant with the FTA's requirements. The FTA did request VTA to review their "fifth chance" policy.

The FTA's Triennial Review of VTA's Drug and Alcohol Program Policy was performed July 21-23, 2014. The FTA's draft report was issued on August 19, 2014 and no-deficiencies were found in the FTA's 15-specific areas. Deficiencies were found in 2-areas: Technical Capacity and Procurement which VTA is in-process of addressing. VTA had no repeat deficiencies from the 2011 Triennial Review.

3. VTA's Drug and Alcohol Policy Section 5.3.1 was recently revised on May 21, 2014 for the Over-The-Counter Prescription (OTCP) Policy based on the NTSB's Letter dated April 30, 2014. NTSB's recommendations R-01-26 and R-01-27 which addresses the sleeping

disorders, was sent to all agencies and requested them to review their specific OTCP Policy.

4. Staff selected two-VTA employee files with the following results

Employee #1

a. VTA Operator test was collected on 11-17-13 with a verified positive test result and Supervisor referred Operator to SAP on 11-21-13. The Treatment Program was administered 2-months following evaluation. The employee has an Adverse Notice initial entry recorded in his files after testing positive and a second Notice of Proposed Suspension was issued to employee on 11-26-13 as per Drug and Alcohol Policy requirements.
b. Return to Duty test was administered on 1-24-2014 with a negative result and Operator allowed to return to work.
c. Follow-Up Testing is a five-year mandatory test plan. For Years 1 – 3, the employee is subjected to follow-up random tests/year which is Years 1 = 7 tests, Year 2 = 7 tests, Year 3=7 tests and Year 4 =5 tests. The Follow-Up mandatory tests must all be completed within the time-frame.

Employee #2:

a. VTA Operator test was collected on 4-6-2014 with verified positive result on 4-11-14. VTA Supervisor referred Operator to SAP on 4-17-14. The employee has an Adverse Notice initial entry recorded in his files after testing positive and a second Notice of Proposed Suspension was issued to employee on 5-9-14 as per Drug and Alcohol Policy requirements.
b. Return to Duty Test was administered 6-24-14 with negative result and Operator allowed to return to work on 6-27-14.
c. Follow-up Testing is a five-year mandatory test plan. For Years 1 – 3, the employee is subjected to follow-up random tests/year which is Years 1 = 7 tests, Year 2 = 7 tests, Year 3=7 tests, Year 4 = 5 tests and Year 5 =5 tests. This Operator was randomly tested on 6-22-14 and 5 mandatory tests remain for Year 2014.

If an employee test negative for Years 1-3 and then test positive for Year 4, the employee is allowed to re-enter the SAP program and will be subjected to a five-year test plan per VTA's Drug and Alcohol Program.

5. See #4 above.
6. See #2 above.
7. VTA employees receive a 2-hour Safety Training course. At end of course, they must sign the Acknowledgment of Receipt and Understanding page which is kept on-file at the Human Resources Department. Staff reviewed sign-in sheets of VTA employees attending the Safety Training Course and found no exceptions.
8. FTA Drug Testing DAMIS Data Collection Form Annual Reports to FTA were submitted for

Years 2011-2013. Staff found no exceptions.

Findings:
None.

Comments:
None

Recommendations:
None.

2014 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR SANTA CLARA VALLEY TRANSPORTATION AUTHORITY (VTA)

Checklist No.	**21**	**Element**	**Procurement Process**
Date of Audit	October 16, 2014 River Oaks Facility	**Department(s)**	Contracts and Material Management Operations Engineering Department Quality Assurance Department
Auditors/ Inspectors	Colleen Sullivan Daniel Kwok	**Persons Contacted**	Thomas Smith, Purchasing and Materials Manager, CAMM Sunny Drennan, Purchasing Manager, CAMM Steven Keller, Director of System Safety and Security

REFERENCE CRITERIA

1. CPUC General Order 164-D
2. CPUC General Order 143-B
3. VTA System Safety Program Plan (SSPP) version 12 dated February 2014
4. VTA Procurement Policy and Procedures
5. VTA MTN-PR-8001 Inspection, Testing for Parts Certification dated 6-27-2011
6. VTA Quality Assurance Plan

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Procurement Process

Interview VTA representatives and review appropriate documentation for the past 3 years to:

1. Verify that VTA personnel are following applicable Procurement and Quality Assurance Policy and Procedures, and ensure safety issues and concerns are addressed in the procurement process.
2. Determine that adequate procedures and controls are in place to preclude the introduction of defective or deficient equipment into the VTA System.
3. Determine that adequate procedures are in place to deal safely with defective or deficient equipment in the event such equipment is introduced into the VTA System.
4. Verify that the SSPP and any referenced or supporting procedures include a description of the process used by VTA to ensure that safety issues and concerns are addressed in the procurement process. Ensure that any

updated rules relevant to VTA procurement process are communicated appropriately.

5. Verify that the SSPP contains a description of the basic procurement processes that must be followed by VTA to assure that safety concerns and issues are addressed.
    a. Is the procurement process tied to VTA's hazard management process?
    b. Are procurements of new equipment and material first reviewed by the safety department, engineering, operations, and/or maintenance staff to verify the new equipment or materials won't present a hazard to the existing system?
    c. Do all procurement processes for hazardous materials address all appropriate rules and regulations?
6. Interview Safety Department representatives and have them explain, how they work through their procurement process to ensure that safety issues are identified, assessed, and resolved.
7. Interview VTA personnel responsible for procurement to verify that they are aware of, and are following, the VTA's processes to ensure that safety issues and concerns are addressed in the procurement process.

FINDINGS AND RECOMMENDATIONS

Activities:

1. CAMM (Contracts and Materials Management Department) procures items which are requested to them by the departments in VTA. Approvals of purchases are done by management within the department submitting the Purchase Requisition and must be submitted electronically through the SAP computer program (ref. SOP FRS-PR-025). Requisitions must also include their scope of work, in which the Safety Department is consulted prior to department approval.
2. Staff reviewed a list of approved vendors which CAMM purchases equipment from. CAMM also states, if need be, they may find new vendors through market research, buyer recommendations, and past purchase experiences. Of the items bought through procurement, the requesting department receives the item and checks for quality and if the proper item was received. If found to be defective, then the requesting department would disapprove of the product prior to acceptance. CAMM is involved if there is an issue with the contract or if there is an issue with the requested item's specifications.
3. CAMM does not manage defective parts; such items would go through the warranty section, a division of maintenance. Staff has requested a copy of the Warranty SOP on 11/17/2014, but has not yet received a copy.

4. Department requesting items must determine if the item is safe and if it meets relevant requirements of Federal or State regulations or standards (ref. SSPP Element 23). Procurements for parts go through the RSSRB, where the Safety Department, or any other department, may provide input if there are any safety concerns regarding procurements. Any updates or changes to the rules for procurement are given to business services, then presented to executive management, and disseminated to department staff for comment. After being approved by the parties, it is passed to the General Manager for final review land they issue a notice to all of VTA. All policies are found on the VTA intranet.
5. From interviews, Staff has verified the following in the VTA SSPP for Procurement:
    a. Procurement of approved common supplies may be approved by department management. Procurement of new or special items dealt with through Environmental Health, part of Risk Management, and may involve the RSSRB.
    b. Procurement of new equipment is also brought up in RSSRB meetings for discussion and review to ensure they will not pose a hazard to the existing system.
    c. Chemicals in the approved chemicals list may be purchased by CAMM with only departmental approval. Chemicals which are not on the list must be evaluated through the New Chemical Procurement procedure.
6. From interviews with the VTA Safety Department, Staff noted: all requests for changes or new procurements go through the RSSRB process, where the Safety Department and the Engineering Department are present. And all requisitions must pass through the safety department as mandated by a directive from the CEO. Staff has requested a copy of the written directive from the safety department on 11/4/2014, but has not yet received a copy. Staff has also requested a sample of a procurement item which was reviewed by the safety department, however the wrong documents were sent.
7. Procurement Department does not address safety issues. Safety issues are brought up during the RSSRB meetings.

Findings:

1. Staff has requested a copy of the Warranty SOP from the Safety Department on 11/17/2014, but it was not provided. Warranty SOP provided on 10/2/2015, dated October 2015, did not cover the scope of the audit.
2. Staff has requested a copy of the written directive by the CEO stating all procurement items must go through the System Safety and Security Department from the System Safety and Security Department on 11/4/2014, but it was not provided. VTA Safety and CAMM indicated on 11/25/2014, they were unable to locate the directive from the CEO. VTA Safety indicated a SOP will be written by CAMM.

Comments:

Staff has requested a sample of a procurement item which was reviewed by the System Safety and Security Department, however the wrong documents were sent. Staff notified VTA Safety of the error on 11/17/2014. Staff is awaiting the

documents.

Recommendations:

1. VTA should properly document their policies/procedures/directives and provide any documents requested by Staff for reference or verification as per GO 143-B requirements.