
2019
TRIENNIAL SAFETY REVIEW OF
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS
(SCDOA) AUTOMATED PEOPLE MOVER SYSTEM

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2019 TRIENNIAL ON-SITE SAFETY REVIEW OF SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS (SCDOA) AUTOMATED PEOPLE MOVER SYSTEM

ACKNOWLEDGEMENT

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

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1. EXECUTIVE SUMMARY

The California Public Utilities Commission's (CPUC or Commission) Rail Safety Division (RSD), Rail Transit Safety Branch staff (staff) conducted an on-site system safety program review of the Sacramento County Department of Airports (SCDOA) from May 13 through May 17, 2019. The review focused on verifying SCDOA's implementation of its System Safety Program Plan (SSPP) as well as SCDOA's compliance with State and Federal rules and regulations and internal plans and standard operating procedures (SOPs). This report details staff's investigatory actions, findings, and recommendations. The review revealed areas of non-compliance, as discussed below.

On Monday, May 13, 2019, SCDOA personnel and Staff met for an opening conference, which preceded the on-site review activities. Staff conducted the 2019 SCDOA triennial on-site security review on May 21, 2019. A post-review conference meeting occurred on June 24, 2019, with Staff providing SCDOA personnel with a summary of its review. Staff identified three findings of non-compliance and issued three corresponding recommendations for corrective actions.

Section 2 (Introduction) of this report, provides a summary of the authority under which the California Public Utilities Commission (CPUC or Commission) performs the triennial reviews and presents a brief chronology of the review. Section 3 (Background) includes a description of the SCDOA system. Section 4 (Safety Review Procedure) explains the procedures used by Staff during the System Safety Review. Section 5 (Findings and Recommendations) outline Staff's findings of non-compliance and recommendations, organized by source checklist numbers. Finally, the Appendices include a list of abbreviations and acronyms used in the report and a listing of the checklists, as well as the complete set of the 32 review checklists with summaries of all review activities, and the original comments, findings, and recommendations.

This report reflects Staff's triennial safety review of SCDOA. The SCDOA on-site triennial security review report is contained in a separate Report and is brought before the Commission for approval in a separate Resolution.¹

¹ Staff's security review and report, "2019 Triennial Security Review of Sacramento County Department of Airports" is being brought before the Commission concurrently in Resolution ST-232.

2. INTRODUCTION

The Commission General Order (GO) 164-E, *Rules and Regulations Governing State Safety Oversight of Rail Fixed Guideway Systems*, and the Federal Transit Administration (FTA) Rule, Title 49 Code of Federal Regulations (CFR) Part 674, *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 plans a minimum once every three years. The triennial review verifies compliance and evaluates the effectiveness of each rail transit agency's System Safety Program Plan to assess the level of compliance with GO 164-E and other Commission and regulatory safety requirements. This is the fourth triennial safety review of SCDOA. The previous review occurred in February 2016.

On April 11, 2019, staff mailed a letter to SCDOA's Director, advising that the Commission's triennial safety review had been scheduled beginning May 13, 2019. The letter included 32 checklists that served as the basis for verification of the effective implementation of SCDOA's SSPP. Staff conducted an opening conference on May 13, 2019 with SCDOA's management team and their contractor's (Bombardier) on-site supervisors and managers.

The triennial safety review consisted of on-site physical inspections of vital relays, vehicles, electric power systems, observations of the day to day duties performed by SCDOA employees and contractors from various job classifications, records review of SSPP elements, SCDOA standard operating procedures (SOPs), and other SCDOA rules. At the conclusion of each review activity, staff provided SCDOA representatives with a verbal summary of the preliminary findings and discussed any recommendations for corrective action.

On June 24, 2019, Staff conducted a post-review exit meeting with SCDOA's management team. Staff provided attendees a summary of the review and findings of non-compliance derived from the 32 checklists and discussed the need for corrective actions where applicable.

3. BACKGROUND

SCDOA APM System Description

SCDOA embarked on a Sacramento International Airport (SMF) development process to identify and implement the vision developed in the Final SMF Master Plan to modify existing airport infrastructure and develop new facilities through the year 2020. The Sacramento County Board of Supervisors (Sacramento BOS) approved the Master Plan in February 2004.

Completed concurrently with the Master Plan was the *Terminal Modernization Program* (TMP), which included preliminary facilities requirements, terminal complex alternatives, and evaluation of four terminal development concepts—two of which included an Automated People Mover (APM) system. The Sacramento BOS approved the selection of the preferred terminal development concept which was ranked highest with respect to long term strategic, operational, environmental, feasibility/constructability, and customer service. Allowing the existing Terminal B to continue in operation while its replacement was constructed was a key decision factor for the approval.

Through authorization from the Sacramento BOS in June 2007, SCDOA contracted with Bombardier Transportation Holding (BTH) for the design, supply, and installation and Operations and Maintenance (O&M) of an airport APM System at SMF as part of the TMP.

The APM System includes a completely automated dual lane shuttle offering passengers a connection between the Central Terminal B and Airside Concourse B. General system and operating characteristics are given in Table 1-1 and the configuration of the APM system is provided in Figure 1-1. The complete system includes power distribution, power rail and vehicle power collector assemblies and interface, communication system, the CITYFLO 650 communications-based train control system required to operate the system, automatic station platform doors, and CX-100 vehicles. The CX-100 vehicle is a fully automated, air-conditioned vehicle capable of operating in various modes twenty-four hours per day.

Major APM facilities consist of:

- An elevated dual-lane exclusive guideway with an emergency/backup walkway located between guideways.

- Two passenger stations with flow-through configurations (one center platform and two side platforms) located on level three on of the Central Terminal building and level two of the Concourse building.
- A maintenance facility located on level one under the Concourse B station
- A Central Control Room located within the maintenance facility.
- Two equipment rooms, each on level one of their respective buildings: Central Terminal and Concourse B.
- A power distribution substation located on level one of the Central Terminal building.
- The APM System is designed for two 2-car trains, but will initially operate in a two 1-car train configuration. The System will be expanded when deemed necessary by SCDOA to accommodate passenger growth.

Facilities & Trains	
Stations	2
Route length	1100 feet per lane
Trains in service	2, initially 1-car, ultimately 2-car
Maintenance Facility	1
Central Control Room	1
Estimated Rider ship (passengers per hour per direction)	
Initial	2300
Ultimate	3000
Operations	
Peak period	Dual Lane Shuttle
Off-peak period	Single Lane Shuttle
Night period	On-call Single Lane Shuttle
Average Round Trip Time	Approx 3.0 minutes
Cruise Speed	Approx 20 mph
Operating Hours	24 / 7 / 365

Table 1-1: SMF APM System Characteristics

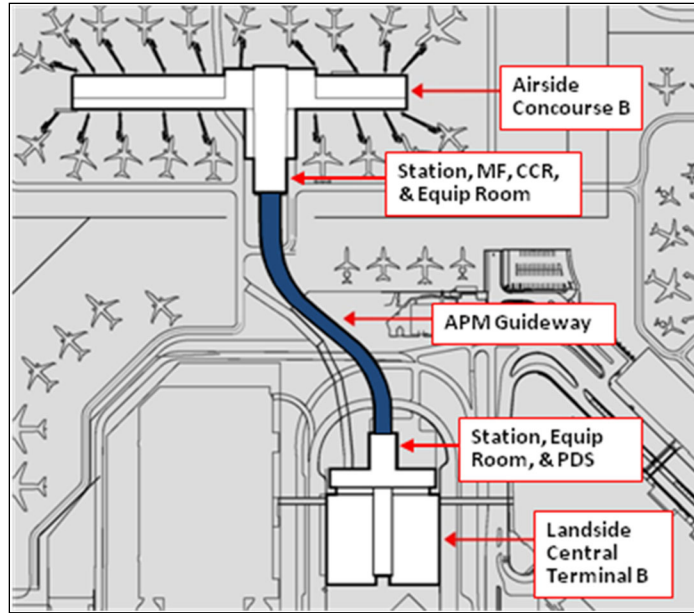


Figure 1: SMF APM System and Facility Configuration

The APM operates wholly on the SMF property, mostly above the Concourse B apron. It is intended for airline and airport employees/contractors and ticketed passengers only. It is beyond the boarding pass checkpoint, but on the landside of the TSA security screening checkpoint, so departing passengers and their carry-on luggage have not yet been cleared through TSA security. No checked luggage will be on the System. Arriving passengers traveling from Concourse B to Central Terminal B will be originating from the secure side of the Airport, having cleared security at their airport of origin.

Scheduled maintenance for the System occurs at the night period to minimize interference with passenger service. Any unscheduled maintenance will take place as needed, taking into consideration the need for safe and reliable service for airport patrons and employees.

Status of 2016 SCDOA Triennial Safety Review Recommendations

Staff performed the previous triennial on-site safety review in 2016. Staff utilized 27 separate checklists to guide that review and made 1 recommendation for corrective action.

Commission Resolution ST-192 adopted January 19, 2017 and granted approval of Staff’s final report and its recommendations, ordering SCDOA to develop appropriate corrective action plans and an implementation schedule. Resolution ST-192 also

ordered SCDOA to submit monthly status reports tracking the implementation of these corrective actions through full completion.

SCDOA developed and submitted a corrective action plan and an implementation schedule to fulfill the lone recommendation. The 2016 Triennial Safety Review Audit Corrective Action Plan (CAP) was implemented and was corrected, verified by Staff, and closed out.

4. SAFETY REVIEW PROCEDURE

Staff conducted the 2019 review in accordance with the Rail Transit Safety Branch Procedure RTSB-4, *Procedure for Performing Triennial On-Site Safety and Security Reviews of Rail Transit Systems*. Staff developed 32 checklists to cover various aspects of system safety responsibilities based on Commission and FTA requirements, the SCDOA SSPP, safety related SCDOA documents, and staff knowledge of the SCDOA system. An index of the 32 checklists is contained in Appendix B and the completed checklists are in Appendix D of this report.

Each checklist identified safety-related elements and characteristics that were either inspected directly by Staff or by reviewing reports and records. The checklists reference criteria include Commission general orders, SCDOA rules and SOPs, and other documents that establish the safety program requirements. The completed checklists include the staff's findings and recommendations corresponding to non-compliant findings with SCDOA's SSPP, its procedures, or Commission regulations. The methods used to perform the review include:

- Discussions with SCDOA management;
- Reviews of procedures and records;
- Observations of operations and maintenance activities;
- Interviews with rank and file employees; and
- Inspections and measurements of equipment and infrastructure.

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

Upon completion of the safety review and inspection activities associated with each checklist, staff verbally reviewed findings and, if appropriate, preliminary recommendations for corrective actions with the respective SCDOA personnel. This practice not only provides a chance to clear up any misunderstandings about the findings and recommendations, it also provides the SCDOA representative an opportunity to promptly address any necessary safety improvements.

5. FINDINGS AND RECOMMENDATIONS

The reviewers and inspectors who participated in the On-Site System Safety Review identified three findings of non-compliance and recommended improvements to SCDOA's system safety program. Review findings identify areas where changes should be made to adhere to their SSPP and improve the SCDOA system safety program. The review results are derived from activities observed, documents reviewed, issues discussed with management, and field inspections. These findings and recommendations are listed below and are grouped by checklist number.

1. **Policy Statement & Authority for SSPP (SCDOA Leadership Involvement and Commitment to Safety)**

No findings of non-compliance; no recommendations.

2. **SSPP Goals & Objectives**

No findings of non-compliance; no recommendations.

3. **Overview of Management Structure**

No findings of non-compliance; no recommendations.

4. **SSPP Control & Update Procedure**

No findings of non-compliance; no recommendations.

5. **SSPP Implementation Activities & Responsibilities**

No findings of non-compliance; no recommendations.

6. **Hazard Management Process**

No findings of non-compliance; no recommendations.

7. **System Modification**

No findings of non-compliance; no recommendations.

8. Safety and Security Certification

No findings of non-compliance; no recommendations.

9. Safety Data Collection and Analysis

No findings of non-compliance; no recommendations.

10. Event Investigations

No findings of non-compliance; no recommendations.

11. Emergency Management Program

No findings of non-compliance; no recommendations.

12. Internal Safety Audits

No findings of non-compliance; no recommendations.

13-A. Rules Compliance: Observation & Enforcement

No findings of non-compliance; no recommendations.

13-B. Rules Compliance: Operations Safety Compliance

No findings of non-compliance; no recommendations.

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

No findings of non-compliance; no recommendations.

13-D. Rules Compliance: Rules, SOPs, & Manuals

No findings of non-compliance; no recommendations

13-E. Rules Compliance: Operations Control Center

No findings of non-compliance; no recommendations

14-A. Facilities & Equipment Inspections: Non-Revenue Facilities, Maintenance Facilities, & Maintenance Equipment

No findings of non-compliance; no recommendations.

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

No findings of non-compliance; no recommendations.

14-C. Facilities & Equipment Inspections: Bridges & Aerial Structures

Findings:

APM bridges and structures are not being inspected per AOP 30-22, General Order 143-B, General Order 164-E, and other reference criteria.

Recommendations:

SCDOA must inspect APM bridges and structures and track noted conditions per AOP 30-22, General Order 143-B, General Order 164-E, and other reference criteria.

14-D. Facilities & Equipment Inspections: Measurement & Testing Instrumentation

No findings of non-compliance; no recommendations.

15-A. Maintenance Audits and Inspections Fixed Guideway Revenue Vehicles

No findings of non-compliance; no recommendations.

15-B. Maintenance Audits and Inspections: Signal System, Data Transmission System, Vital Relay Maintenance, & Traction Power System

No findings of non-compliance; no recommendations.

15-C. Maintenance Audits and Inspections: Fixed Guideway

No findings of non-compliance; no recommendations.

16. Training and Certification Programs for Employees and Contractors

No findings of non-compliance; no recommendations.

17. Configuration Management

No findings of non-compliance; no recommendations.

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

No findings of non-compliance; no recommendations.

19. Hazardous Materials Programs

No findings of non-compliance; no recommendations.

20. Drug and Alcohol Program

No findings of non-compliance; no recommendations.

21. Procurement Process

No findings of non-compliance; no recommendations.

22. General Order 172 – Personal Electronic Device Prohibitions/In-cab Cameras

Findings:

1. Staff found the APM Contractor Personal Electronic Device Policy does not comply with CPUC General Order 172 Section 4.3 e. Video-based rules-compliance testing program was not being conducted.
2. CPUC General Order 172 Section 7 Requirements for Emergency Contact Procedures was not communicated in writing to all affected employees. SCDOA is in the process of updating the SCDOA PED Policy and included CPUC General Order 172 Section 7 in its upcoming revision.

Recommendations:

1. SCDOA APM or the contractor must review some portion of the video loop recordings for violations of CPUC General Order 172 for the purposes of conducting a video-based rules-compliance testing program in compliance with CPUC General Order 172 Section 4.3 e. video-based rules-compliance. Procedures should identify a minimum quantity of such observations.
2. SCDOA APM shall communicate Emergency Contact Procedures to all affected employees in writing, as outlined in CPUC General Order 172 Section 7.

23. General Order 175-A – Rules and Regulations Governing Roadway Worker Protection Provided by Rail Transit Agencies and Fixed Guideway Systems

No findings of non-compliance; no recommendations.

APPENDICES

- A. Abbreviations and Acronyms List
- B. SCDOA 2019 Triennial Safety Review Checklist Index
- C. SCDOA 2019 Triennial Safety Review Checklists

APPENDIX A

ABBREVIATIONS and ACRONYMS LIST

Abbreviation / Acronym	Description
AE	Accountable Executive
AEM	All Employee Meetings
AOP	Airport Operating Procedure
APM	Automated People Mover
ATCS	Automatic Train Control System
BOS	Board of Supervisors
BTH	Bombardier Transportation Holding
CAO	Chief Administrative Officer
CAP	Corrective Action Plan
CCLB	Central Control Logbook
CFR	Code of Federal Regulations
Commission	California Public Utilities Commission
CPUC	California Public Utilities Commission
DTS	Data Transmission System
FAA	Federal Aviation Administration
FMI	Field Modification Instruction
FTA	Federal Transit Administration
GO	General Order
HSE	Health Safety & Environment
ISA	Internal Safety Audit
MMIS	Maintenance Management Information System
MSDS	Material Safety Data Sheet
O&M	Operations and Maintenance
PED	Personal Electronic Device
RSD	Rail Safety Division

RTSB	Rail Transit Safety Branch
SAP	Substance Abuse Professional
SCDOA	Sacramento County Department of Airports
SCNHM	Safety Concern Hazards Near Miss
SMF	Sacramento International Airport
SMS	Safety Management System
SOP	Standard Operating Procedure
SSC	Safety & Security Committee
SSCP	Safety and Security Certification Plan
SSP	System Security Plan
SSPP	System Safety Program Plan
Staff	Rail Safety Division personnel
TCA	Temporary Change Authorization
TMP	Terminal Modernization Program
TSA	Transportation Security Administration

APPENDIX B

2019 SCDOA TRIENNIAL SAFETY REVIEW CHECKLIST INDEX

Checklist No.	Element / Characteristic	Checklist No.	Element / Characteristic
1	Policy Statement and Authority for System Safety Program Plan (SSPP): SCDOA Management Involvement & Commitment to Safety	13-E	Rules Compliance: Operations Control Center
2	SSPP Goals & Objectives	14-A	Facilities & Equipment Inspections: Non-Revenue Facilities, Maintenance Facilities, & Maintenance Equipment
3	Overview of Management Structure	14-B	Facilities & Equipment Inspections: Stations and Emergency Equipment
4	SSPP Control & Update Procedure	14-C	Facilities & Equipment Inspections: Bridges & Aerial Structures
5	SSPP Implementation Activities & Responsibilities	14-D	Facilities & Equipment Inspections: Measurement & Testing Instrumentation
6	Hazard Management Process	15-A	Maintenance Audits and Inspections: Fixed Guideway Revenue Vehicles
7	System Modification	15-B	Maintenance Audits and Inspections: Signal System, Data Transmission System, Vital Relay Maintenance, & Traction Power System
8	Safety and Security Certification	15-C	Maintenance Audits and Inspections: Fixed Guideway
9	Safety Data Collection & Analysis	16	Training & Certification Programs for Employees and Contractors
10	Event Investigations	17	Configuration Management and Control
11	Emergency Management Program	18	Local, State, & Federal Requirements
12	Internal Safety Audits	19	Hazardous Materials Program
13-A	Rules Compliance: Observation & Enforcement	20	Drug and Alcohol Program
13-B	Rules Compliance: Operations Safety Compliance	21	Procurement Process
13-C	Rules Compliance: Controller, Manual Driver, and Maintenance Personnel Hours of Service	22	General Order 172
13-D	Rules Compliance: Rules, SOPs, & Manuals	23	General Order 175-A

APPENDIX C

2019 SCDOA TRIENNIAL SAFETY REVIEW CHECKLISTS

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	1	Element	Policy Statement and Authority for System Safety Program Plan: SCDOA Management Involvement and Commitment to Safety
Date of Audit	May 13, 2019 10:30-11:15	Department(s)	SCDOA Management
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steve Espinal Matt Ames	Persons Contacted	Cynthia A. Nichol, Airport Director Fred Cortez, Senior Airport Manager Chris Martin, Airport Manager David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Policy Statement and Authority for SSPP: SCDOA Management Involvement and Commitment to Safety -

Interview SCDOA Senior Airport Manager and Airport Manager (Management) to determine and discuss:

1. Source, frequency, and depth of safety information provided to Management, whether safety is included as a regular topic at Safety and Security Committee (SSC) meetings, and how the SSC provides reports at SSC Meetings.
2. Methods and incentives included in the management performance system to facilitate a system safety culture within the organization.
3. Types of formal meetings held and attended by Management to discuss safety performance, such as ongoing evaluation of goals and targets.
4. Management awareness of high priority safety issues related to operations, maintenance, & capital projects for the APM system.
5. Management awareness of the status of corrective actions including those initiated by incidents, hazardous conditions, internal safety & security audits, CPUC triennial reviews, and CPUC inspections.
6. How the SSC reports to Management and provides for their participation in safety activities.

7. Which individuals and departments are involved in making safety decisions and to what degree Management is involved?
8. Scope of Management involvement, coordination, and communication in developing SSPP revisions.

FINDINGS AND RECOMMENDATIONS

Activities:

1. The Airport Director is the Accountable Executive (AE) and has been at the Airport for 6 months. The AE does not typically attend SSC Meetings. The AE receives SSC reports and is informed of any system issues from several sources, including SSC meeting minutes, annual ISSA reports, and alert messages. The SSC utilizes the prescribed Hazard Management Process for escalating issues up to the AE. The Safety Management Section (SMS) meet quarterly to discuss safety issues. To date the APM at Sacramento International Airport has not had a CPUC reportable accident.
2. Safety is part of an ongoing everyday discussion and process for airport personnel. Safety is part of the mission and goals of the airport. Safety also determines capital outlay. AE meets with personnel to communicate about safety expectations. There are no incentives beyond having a job regarding improving the safety culture.
3. The SSC Meeting is where APM system data, customer and personnel feedback, safety performance and evaluation of Management's safety goals are communicated. There are monthly safety and security meetings held with the APM Contractor and SCDOA Personnel. The meetings include discussing hazardous conditions and maintenance issues.
4. The APM System currently has no high priority safety issues open. If one existed, Management would be notified through the Hazard Management Process. The APM Contractor has 15 employees. Safety issues are communicated continuously.
5. Management is made aware of the status of CAPs in compliance with Airport Operating Procedures. The SSC discusses all aspects of CAPs from initiation through implementation. The Facilities Coordinator is aware of all public complaints and hazardous conditions. The Associate Administrative Analyst is responsible for organizing and disseminating the hazardous conditions to personnel. The information is well organized and sent to the appropriate personnel for correction.
6. The SSC reports to applicable management of each member. The hazard management process is followed to communicate to Management. The AE attends Emergency Exercises. Management is required to attend the monthly safety and security meeting. Management is responsible for seeing through the close out of the Corrective Action Plans (CAPs).
7. Each Division and Section is responsible for their safety. The APM Contractor controls and reports issues to the Airport. Both the APM Contractor and SCDOA Personnel share in the decision-making process regarding CAPs.
8. SSPP reviews are coordinated by the SSC. All changes are reviewed by Management, CPUC and APM Contractor. The Sacramento County Facilities Coordinator is made

aware of SSPP changes.

Findings:

None.

Comments:

For Safety Management System compliance – communicate safety data, safety concerns, hazards, near misses, event occurrence information, and SSC information to the AE by a defined structured mechanism.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	2	Element	SSPP Goals and Objectives
Date of Audit	May 13, 2019 11:15-12:00	Department(s)	SCDOA Management
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steve Espinal Matt Ames	Persons Contacted	Cynthia A. Nichol, Airport Director Fred Cortez, Senior Airport Manager Chris Martin, Airport Manager David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

SSPP Goals and Objectives -

Interview Management and review appropriate records to:

1. Determine how the SSPP goals and objectives are evaluated, documented and achieved via a reduction in incidents, hazards, rule violations, safety metrics, etc.
2. Determine how safety performance is reported to Management.
3. Determine if Management receives safety information in order to ensure that the SCDOA APM is meeting its safety goals and objectives. Are rule violations and other key safety metrics being tracked and reported to Management?

FINDINGS AND RECOMMENDATIONS

Activities:

1. The APM was designed utilizing hazard management principles, safety and security were considered during design. AOPs are followed to address the SSPP goals and objectives. Goals and objectives are achieved by assessment of safety data – over 2700 days without incident. APM Contractor has a procedure for documenting, assessing, and tracking rule violations. SCDOA had no reportable accidents since its inception in 2011. Employees do document hazards. Staff reviewed the Safety Concerns Hazards and Near Miss (SCHNM) records regarding hazardous conditions. Most of the reports are very minor in nature. Complaints from passengers are kept and evaluated for safety concerns. How management handles rules violations are also evaluated. In one example, management

issued a final warning to a new employee who violated fundamental safety rules; the employee corrected their actions and remains an employee of the APM Contractor and has had no rules violations since the final warning.

2. Safety performance is reported to Management in accordance with AOPs, JHAs, near-miss reporting, and audits. The management is made aware of the safety concerns using the SCHNM report. Based on the current safety concerns documented, personnel generate SCHNM reports for all hazards including the most minor.
3. The SSC ensures that the APM system is meeting safety goals and objectives. Rule violations and safety data are tracked by the SSC. Management does review employee safety reports, passenger complaints, ISA audit reports and rules violations.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	3	Element	Overview of Management Structure
Date of Audit	May 13, 2019 12:00-13:00	Department(s)	SCDOA Management
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steve Espinal Matt Ames	Persons Contacted	Fred Cortez, Senior Airport Manager Chris Martin, Airport Manager David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Overview of Management Structure -

Interview Management and review appropriate records to:

1. Discuss the process to integrate safety into 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, performing Accident/Incident Investigations, and implementing corrective action plans.
4. Review SSC meeting agendas and minutes from the past twelve months in order to verify that the meetings were held according to the requirements in the SSPP
5. Determine if the SSC has personnel resources allocated to support interdepartmental coordination on safety issues and concerns?
6. Ensure that the organization chart accurately depicts both the SCDOA APM organization and the SSC organization.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Each work process checklist includes safety information within the checklist that must be discussed and acknowledged. Safety issues and concerns are communicated through JHAs, SOPs, and CAPs. The SSPP and AOPs incorporate safety considerations.

Based on management statements safety is integral part of SCDOA. Passengers are monitored for safety the entire operating day. APM Vehicles are designed to fail safe or stop upon failures. When one APM Vehicle suffers a catastrophic failure the other APM Vehicle goes through a detailed inspection during nonservice hours to insure reliability.

2. The Airport and APM Contractor have effective processes for resolving safety issues. The Airport has specific personnel (SMS Manager) assigned to Safety who are onsite. This manager reviews safety issues for applicability to procedures and other safety related organizations. The APM Contractor reports safety concerns, hazards, and near misses. SCDOA has had no reportable accidents since its inception in 2011. Safety has been designed into the system. According to SCDOA the APM Vehicles have a 99.84% reliability rate.
3. The Airport and APM Contractor have no resource issues regarding safety related schedules, audits and investigations. Based on SCDOA Personnel comments the APM has ample personnel resources. The Internal Safety Audit (ISA) is thorough.
4. Review of SSC meeting agendas and minutes from the past twelve months indicates SSC Meetings were held, per documentation provided to Staff. The SSC meeting are very detailed and a myriad of issues are discussed. Attendees are also documented.
5. The SMS Manager coordinates all aspects of safety between departments. Based on SCDOA Personnel comments, they have adequate personnel resources.
6. The organization chart depicts SCDOA Management, SCDOA Department Personnel, and the SSC structure. The organizational chart is complete and thorough.

Findings:

None.

Comments:

Generate for CPUC Staff, a diagram of the APM Oversight structure. This diagram should demonstrate the relationship between Airport Management, the APM Contractor, and the SSC. SCDOA provided a diagram reflecting the APM Oversight structure.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	4	Element	System Safety Program Plan: Control and Update Procedure
Date of Audit	May 13, 2019 13:00-13:30	Department(s)	Department of Airports
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steve Espinal Matt Ames	Persons Contacted	Chris Martin, Airport Manager David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Safety Program Plan: Control and Update Procedure -

Interview the SSC and review appropriate records to:

1. Ensure that the SSC understands and is implementing the SSPP control and update procedure requirements.
2. Verify that the required annual SSPP review process is being implemented in accordance with the SSPP. Review applicable correspondence and records for the last 3 years.
3. Review responsibility for SSPP reviews and comments, verify SSPP reviews and changes progress according to internal timeframes, are comprehensive in scope, and are signed-off by designated personnel.

FINDINGS AND RECOMMENDATIONS

Activities:

1. The SSC understands the procedure outlined in the SSPP. The SSPP is reviewed on an annual basis and updated following the plan review and modification process. Personnel involved in the APM system are knowledgeable of the requirements.
2. The SSPP is being reviewed on an annual basis. Records of correspondence have been provided to Staff. SCDOA provided a SSPP with tracked changes demonstrating the SSPP review.

3. The SSPP review process begins in the 3rd Quarter of each year with submittal in the 1st quarter of the next year. The review and any changes are tracked by the SSC and documented in SSC meeting minutes. The SSPP was signed off by management.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	5	Element	System Safety Program Plan: Implementation Activities and Responsibilities
Date of Audit	May 13, 2019 13:30-14:00	Department(s)	Department of Airports
Auditors/ Inspectors	Daren Gilbert Stephen Artus Steve Espinal Matt Ames	Persons Contacted	Chris Martin, Airport Manager David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Safety Program Plan: Implementation Activities and Responsibilities -

Interview the SSC 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 have in performing SSPP or general safety tasks.
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.

FINDINGS AND RECOMMENDATIONS

Activities:

1. APM Contractor is the single contractor for the APM System. The APM Contractors primary contractual obligation is to operate the APM in accordance with the SSPP and AOPs. The SSPP and AOPS are integrated into APM Contractor SOPs. Both SCDOA and the APM Contractor are responsible for adhering to the SSPP.
2. No challenges identified in performing SSPP and general safety tasks. No issues identified.

3. The APM organization is held accountable by Management, APM Contractor personnel, and the SSC. No serious or potentially serious deficiencies were found. The APM Contractor defines the standard operating procedures and personnel are required to adhere to the SOP's.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	6	Element	Hazard Management Process
Date of Audit	May 13, 2019 14:00–15:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Colleen Sullivan Steven Espinal Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Gus Gonzalez, Safety Specialist Ron Reichel, SMS Manager Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SIA APMS Accident/Incident Investigation Procedures, Revision 2, December 2015
4. SIA APMS Event Investigation Procedures, Revision 3, August 2018
5. SMF-HMP-106 Hazard Identification and Risk Assessment
6. APM Contractor HSE Policy – SMF-HMP-112

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Hazard Management Process

Interview specified representatives and review appropriate records to determine whether:

1. SCDOA APM is identifying hazards through the sources described in the SSPP. Sources may include, but are not limited to:
 - Reports and complaints from passengers, field or management personnel;
 - APMS Contractor’s Central Control logs and maintenance systems;
 - Reports from APMS Contractor’s shift pass down;
 - Review of APMS Contractor’s Central Control logs for unusual occurrences;
 - SCDOA / APMS Contractor’s OSHA 300A;
 - Annual internal audits;
 - APMS Contractor’s weekly and monthly facility inspections;

- APMS Contractor’s Employee Rule book compliance;
 - Results from CPUC Triennial Reviews;
 - Results from accident investigations and trend analysis.
2. SSC maintains a mechanism to capture and track identified hazards through analysis and resolution.
 3. SCDOA has defined minimum thresholds for the notification and reporting of hazards to the CPUC and has a specified process for reporting of hazard resolution activities to the CPUC (as required by items (e) and (f) in Section 6 of GO 164-D/E).
 4. Identified hazards are being evaluated according to the methods established in the SSPP.
 5. Corrective Action Plans (CAPs) are developed to address identified hazards and the CAPs identify the individual or department responsible for implementation and a schedule for completion.
 6. The SSC follows up on outstanding CAPs developed to mitigate or resolve hazards.
 7. Request examples of how the SSC followed the process, monitored other departments, and ensured identified hazards were reported to the SSC.

FINDINGS AND RECOMMENDATIONS

Activities:

1. SCDOA relies on SCHNM reports generated by personnel regarding hazardous conditions. There are 11 open items in the report ranging from a broken bolt for the seismic plate to a broken chair in the break room. The broken bolt for the seismic plate was reported on January 29, 2019, and subsequently repaired on June 6, 2019. Passengers can log a complaint via email to: air-market@saccounty.net. There have been repeated complaints of planes landing late and large crowds waiting for the APM late at night. For example, on July 21, 2018, eight complaints were documented regarding a large crowd that formed at the APM doors including the elderly. Based on passenger comments, the APM Contractor and SCDOA Personnel did not immediately respond appropriately to the large number of travelers. In response to this issue, SCDOA and the APM Contractor conducted drills on August 22 and 29 to simulate the APM Vehicles going out of service and opening the doors and allowing passengers to walk from terminal B to the airport main building while running one APM Vehicle.
2. SCHNM and passenger complaints are documented and evaluated regarding hazardous conditions.
3. SCDOA has defined minimum threshold in the SSPP to report hazards to the CPUC.
4. SCDOA is following their SSPP and evaluating their hazards based on the MIL standard.
5. Corrective Action Plans (CAP) are developed and have been provided to the CPUC during the audit.

6. CAPs are followed up on by the SSC and the SSC will discuss the CAPs when necessary.
7. The SSC notes were reviewed. Safety issues are discussed, such as unscheduled door openings (doors forcibly opened by patrons) and the installation of an in-kind hand grip on the stanchions. The hazards are tracked through closure.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	7	Element	System Modification
Date of Audit	May 13, 2019 15:00–15:15	Department(s)	Department of Airports
Auditors/ Inspectors	Steven Espinal Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SIA APMS Safety and Security Certification Plan
4. SMF APMS modification / change request form

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

System Modification -

Interview specified representatives and review appropriate records to determine whether:

1. System modification projects addressed safety issues and concerns during all phases of the project with the involvement of other required departments through the SSC process.
2. The SSC 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 the SSPP and reference document 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 the configuration management process has been followed to address system modifications, and no unauthorized modifications were implemented.

FINDINGS AND RECOMMENDATIONS

Activities:

The only modification regarding the SCDOA APM was the Terminal B Power Distribution System (PDS) Room Fire Alarm Head Modification discussed on March 29, 2016 during the Safety and Security Committee meeting. It was determined an annual test of the fire alarm could be conducted. This modification request was withdrawn for a new fire alarm head in the PDS room on June 14, 2017. Testing will be conducted on an annual basis.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	8	Element	Safety and Security Certification
Date of Audit	May 13, 2019 15:15–15:30	Department(s)	Department of Airports
Auditors/ Inspectors	Steven Espinal Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SIA APMS Safety and Security Certification Plan

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Safety and Security Certification -

Interview the specified representatives involved in the Safety Certification Program (SCP) and review the records for all minor/major projects to determine whether:

1. A formal SCP has been submitted and approved by the Commission.
2. Each submitted SCP was consistent with General Order 164-D/E, 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 documented and addressed in the Safety Certification process.
5. All identified hazards have been eliminated or controlled as required under the SCP.
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/E.

FINDINGS AND RECOMMENDATIONS

Activities:

No safety certification was conducted, required or needed since granting the approval to operate the APM in 2011.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	9	Element	Safety Data Collection and Analysis
Date of Audit	May 14, 2019 8:00–9:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Steven Espinal Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Ron Reichel, SMS Manager Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SIA APMS Accident/Incident Investigation Procedures, Revision 2, December 2015
4. SIA APMS Event Investigation Procedures, Revision 3, August 2018
5. SCDOA Form V submittals

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Safety Data Collection and Analysis -

Interview the specified representatives responsible for safety data collection and analysis, and review the safety data collection and analysis program requirements to determine whether:

1. The data collected includes, at minimum: information concerning events, employee performance failures, equipment failures, procedural deficiencies, and rules violations.
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 the Hazard Management Process as necessary.
4. The safety data and analyses are made available to all departments for use in planning their safety-related activities and implemented according to the SSPP.
5. Periodic reporting regarding the results of the safety data analysis is provided to Management as appropriate.

FINDINGS AND RECOMMENDATIONS

Activities:

1. The Facilities Coordinator monitors corrective actions through closure and the Associate Administrative Analyst maintains the spreadsheets regarding the information collected from passenger complaints, equipment failures, and rule violations.
2. The safety data is collected from passenger and employee concerns.
3. The hazards are evaluated using the SSPP and the MIL standard.
4. Personnel have access to all the APM hazard records.
5. The more critical safety data is discussed at the System Safety Committee meetings. The Administrative Associate Analyst tracks all the information relating to safety.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	10	Element	Event Investigations
Date of Audit	May 14, 2019 9:00–9:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Steven Espinal Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Ron Reichel, SMS Manager Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SIA APMS Accident/Incident Investigation Procedures, Revision 2, December 2015
4. SIA APMS Event Investigation Procedures, Revision 3-4, August 2018 – February January 2019
5. SCDOA Form V submittals

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Accident/Incident Investigations -

Interview the specified representatives responsible, and randomly select any CPUC-reportable accidents and/or incidents involving an injury or fatality to determine whether:

1. All accidents and incidents were reported within two hours of occurrence, as required by General Order 164-D/E, Sections 7.1 and 7.2.
2. All immediately reportable accident or incident notifications to CPUC contained all the information required by General Order 164-D/E, Section 7.3.
3. All accidents and incidents were investigated in compliance with the requirements of General Order 164-D/E, Section 8, and applicable reference criteria.
4. Video recordings from inward-facing in-cab cameras are reviewed under the required conditions listed in General Order 172, Section 4.3.

5. A final report was submitted for each accident or incident according to the requirements in General Order 164-D/E.
6. 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 (CAPs) to address the identified causes with the goal of minimizing the probability of recurrence;
 - e. A schedule for implementing CAPs (if any), including completion date or plan for monitoring progress on an on-going basis.

FINDINGS AND RECOMMENDATIONS

Activities:

According to SCDOA, and confirmed by Staff, there have been no reportable accidents on the system since inception in 2011. SCDOA retains video for three weeks.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	11	Element	Emergency Management Program
Date of Audit	May 14, 2019 11:00–11:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Steven Espinal Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SCDOA Airport Emergency Plan
4. APM Contractor System Operations Rule Book Rev. G

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Emergency Management Program

Conduct the necessary interviews regarding 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 the emergency planning, training, and drill/exercise program and specific examples of coordination with emergency response agencies on emergency planning and drill/exercises.
2. Verify a drill/exercise schedule has been created and followed and verify emergency responders and other outside agencies participation in emergency planning.
3. Determine when was the last drill/exercise performed and if a post-drill action report was developed? Was the post-drill action report used to make revisions to SCDOA's Emergency Plan and/or procedures? If so, have these corrective actions been implemented with SCDOA staff and emergency responders?
4. Determine if SCDOA conducts periodic meetings with sheriff and fire departments in SCDOA jurisdictions, emergency response agency familiarization activities have

occurred as scheduled and corrective actions have been implemented.

5. 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 five (5) employees from safety sensitive job classifications and review their emergency response training records to verify who has been trained and that training has been properly documented.

FINDINGS AND RECOMMENDATIONS

Activities:

1. SCDOA conducts annual emergency drills. A recent emergency drill involved participation from police, fire, and other law enforcement agencies. A suspicious container was left in the airport and first responders responded to the threat.
2. SCDOA Personnel provided a sign-up sheet which included police, fire, FBI and other agencies.
3. Dates of emergency exercises conducted include: May 2019, August 2018, July 2017 and June 2016. Drills also include smoke within an APM Vehicle.
4. SCDOA conducts yearly drills with law enforcement and the fire department. The airport has its own police and fire departments. These departments are dispatched by the airport.
5. The APM Contractor has 15 employees in total and training records for all safety sensitive employees were provided. Four SCDOA employees coordinate with law enforcement and security personnel daily. APM Contractor Personnel have been trained to address smoke within an APM Vehicle within three minutes.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	12	Element	Internal Safety Audits
Date of Audit	May 14, 2019 11:30–12:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Steven Espinal Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. SCDOA Audit Schedules 2015-2017, 2018
4. SCDOA Internal Safety Audit Reports 2016-2018

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Internal Safety Audits (ISA)

Interview SCDOA representatives involved in ISAs, 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 were evaluated within a three-year period.
3. Verify CPUC was notified 30 days in advance of the scheduled audit via a letter and/or an email and checklist(s) were provided prior to the audit.
4. Verify each audit identifies the appropriate departments, personnel, the safety-related activities addressed, and the reference criteria.
5. Verify audits have been properly documented, included references for documents, activities reviewed, criteria for evaluation, and notes to support findings and recommendations.
6. Verify Annual Reports for 2016-2018 are accompanied by a formal letter of certification signed by the Accountable Executive indicating the compliance status

with its SSPP, and if not in compliance, identifies the activities conducted to achieve compliance.

7. Verify Corrective Actions from the internal safety audit process were scheduled, tracked, and implemented.

FINDINGS AND RECOMMENDATIONS

Activities:

1. The three-year Internal Safety Audit schedule is clearly detailed and provided to the CPUC for review.
2. Both the 21 elements of safety and the five elements of security are audited.
3. The CPUC was notified prior to the SCDOA Internal Safety Audits.
4. According to the CPUC SCDOA representative, the ISAs were conducted by a qualified auditor, who conducted a thorough and detailed internal safety audit. The SCDOA audit report was reviewed by Staff and determined to adhere to the requirements of the SCCOA SSPP and General Order 164-D/E.
5. The SCDOA ISA reports are detailed and provide all the requisite information.
6. SCDOA has provided formal letters of certification for its SSPP and associated activities.
7. The corrective actions are addressed and completed in a timely manner.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	13-A	Element	Rules Compliance: Observation and Enforcement
Date of Audit	May 16, 2019 10:00–10:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. CPUC General Order 172
4. APM Contractor System Operations Rule Book Rev. G
5. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Observation and Enforcement

Interview the appropriate representatives, perform field observation of personnel and review appropriate records to:

1. Verify the APM Contractor performs formal observations of controllers as specified in the SSPP.
2. Verify the APM Contractor performs observations of maintenance employees as specified in the SSPP and/or referenced or supporting procedures.
3. Verify that both operations and maintenance employees are evaluated based on their performance during unannounced observations to determine their compliance with safety rules, procedures, and/or practices.
4. Determine if any accidents were caused by failure of operations and procedures and verify corrective actions implemented.

5. Determine how the APM Contractor performs efficiency tests of operating and maintenance personnel and verify corrective actions for rule violations.
6. Verify if SCDOA SSC receives reports from the APM Contractor regarding the performance of rules checks, assessments, and testing? Are hazards identified from the rules compliance process and reported to SCDOA SSC and managed through the hazard management process.
7. At random, select several operating procedures and verify that these rules are being followed. Also, conduct a random sample of controllers to determine if they are carrying their operating rules, if they have the proper safety equipment, and if their radios are functioning, and verify that they do not possess any personal electronic equipment visible in the Central Control operator's desk such as cellular phones, MP3 players, pagers, etc. as per SCDOA rules.

FINDINGS AND RECOMMENDATIONS

Activities:

- 1.-2. Staff found the APM Contractor conducts Efficiency Evaluations with Lead Technicians. This requires Lead Technicians to conduct unannounced observations of operations and maintenance employees.
3. Each employee is multi-functional trained and are evaluated based on their performance related to the tasks they are assigned at the time of the observation.
4. No accidents have occurred due to the failure of operations or procedures; no accidents occurred during the period covered by the audit.
5. All Efficiency Evaluations are archived and stored on the SCDOA server.
6. SCDOA SSC receives Efficiency Evaluations, rulebook updates and PPE inspections from the APM Contractor through meetings, which are held every Friday. This meeting also determines if any employees needs Training or Requalification.
7. Staff conducted inspections of the OCC and the APM Maintenance Facility to verify rules, policies and procedures are being followed by employees. Staff found no discrepancies during these inspections.

Findings:

None.

Comments:

The APM Contractor should ensure full name, date and times are filled out on evaluation forms.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	13-B	Element	Rules Compliance: Operations Safety Compliance
Date of Audit	May 16, 2019 10:30–11:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bita Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
3. CPUC General Order 172
4. APM Contractor System Operations Rule Book Rev. G
5. APM Contractor SOPs
6. APM Contractor Roadway Worker Protection (RWP) Manual

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Operations Safety Compliance

Interview APM Contractor personnel responsible for Operations Safety, observe/inspect operations, and review documentation as necessary to determine whether:

1. Maintenance Workers -
 - a. Observe access authority provisions and procedures for workers to determine whether they are following the Rule Book.
 - b. Interview at least two workers to evaluate their knowledge and understanding of the APM Contractor Rules and Procedures for mainline operations.
2. Controllers -
 - a. Applicable reports, logs or records are properly prepared, maintained, and available upon request for review.

- b. Duties are performed in accordance with the Standard Operating Procedures, APM Contractor Rule Book and Bulletins.
- c. APM Contractor controllers are knowledgeable in dealing and coordinating with others during incidents, accidents, and emergency response situations.

FINDINGS AND RECOMMENDATIONS

Activities:

1.-2. Staff conducted interviews of Central Control Technicians over 2 days and noted they all had their rulebook readily available and were very knowledgeable of APM Rules, Procedures and OCC Logbook entries. All APM Contractor Personnel are classified as Technicians and are not segregated as Controllers or Maintenance workers. Safety SCHNM Forms are posted in the Central Control so employees can easily access safety related issues.

Findings:

None.

Comments:

Staff found APM Contractor Personnel professional, knowledgeable and helpful during the audit.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	13-C	Element	Rules Compliance: Controller, Manual Driver, and Maintenance Personnel Hours of Service
Date of Audit	May 15, 2019 9:30–10:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B, Rule 12.04 Hours of Service-Safety Sensitive Employees
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. APM Contractor System Operations Rule Book Rev. G

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Controller, Manual Driver, and Maintenance Personnel Hours of Service

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

- Controller
- Manual Driver
- Fixed Guideway and Signal Maintenance
- APM Vehicle Maintenance

Review the employees' timecards for a three-month period during the past 18 months to determine whether:

1. The employee was in compliance with hours of service requirements for safety-sensitive employees and did 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.-2. Staff reviewed Hours of Service records from 1/27/19 – 4/20/19 for employees: 10204280, 10202512, 10201100, 1085529, 10203636, 10203637, 1082434, 10204028, 10202333, 10200465, 10201654, 1041443. Past 3 years of records were reviewed during prior regular inspection.

Staff ensured APM Contractor Personnel worked no more than a 12-hour shift with 8 consecutive hours off-duty before returning to work the next shift.

Findings:

None.

Comments:

Ensure all documents that require a signature, are signed by employee and/or supervisor.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	13-D	Element	Rules Compliance: Rules, SOPs, & Manuals
Date of Audit	May 15, 2019 10:00–11:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. APM Contractor System Operations Rule Book Rev. G
5. APM Contractor SOPs
6. OMC Training Matrix
7. SCHNM Records

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Rules, SOPs, & Manuals

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

1. The APM Contractor Rule Book, Maintenance Procedures and all active Operating Bulletins are reviewed, revised systematically and distributed to the relevant personnel.
2. All Operating Bulletins were approved by the Operations Superintendent with concurrence of affected departments if applicable and issued in a timely manner.
3. An employee record of all Operating Bulletins issued and received is maintained.
4. Active Operating Bulletins are posted in specified locations, and inactive bulletins are removed in a timely manner.
5. CPUC Staff received all new operating rules and bulletins during the past 36 months, and issuance was tracked.

6. Conduct interviews with SCDOA SSC representatives to discuss their role in ensuring that safety concerns are addressed in the APM Contractor Rule Book and rules compliance program.
7. Does the SCDOA SSC representative receive reports from the APM Contractor operations and maintenance departments regarding the performance of rules checks, assessments, and testing?
8. Are hazards identified during the rules compliance process reported to the SCDOA SSC and managed through the hazard management process?

FINDINGS AND RECOMMENDATIONS

Activities:

- 1.-2. Staff found the APM Contractor does not utilize operating bulletins within their system. The APM Contractor makes corrections to System Operations Rule Book, Policies and Procedures, and then issues the updated documents directly to employees at All Employee Meetings (AEM) or individually if the employee was not present.
3. Employees are required to sign the Sign Off Sheet to ensure all employees have received most current documents.
4. N/A. Documents are updated and provided directly to employees.
- 5.-6. Staff reviewed SCDOA PED Policy changes in 2018 from inception to the final employee Sign-Off Sheet. The SCDOA SSC Manager tracks the process to which, employees can add their comments or suggestions.
- 7.-8. APM Contractor Personnel fill out a SCHNM (Safety Concern Hazards Near Miss) Form to report any safety related concerns. Staff viewed a SCHNM Form filled out by APM Contractor Personnel who identified a parking lot safety concern of a blind spot due to overgrown shrubbery. The SCHNM Form showed pictures and comments of before and after mitigation.

Findings:

None.

Comments:

SCDOA uses the Hazard Management Process to analyze and fulfill each safety related concern on the SCHNM Form, starting from the original write up to completion and mitigation.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	13-E	Element	Rules Compliance: Operations Control Center
Date of Audit	May 15, 2019 12:00–13:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. APM Contractor System Operations Rule Book Rev. G
5. APM Contractor Central Control SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Rules Compliance: Operations Central Control

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

1. Control Center records have been maintained as required.
2. Review Control Center reports/logs related to intrusion alarms, false presence, and others associated with system monitoring.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff viewed the Central Control Logbook (CCLB) and Delay Reports from March 2018 to May 2019. Staff found CCLB and Delay Reports maintained as required.
2. APM Contractor Personnel explained the facility door fault found by Staff on November 23, 2018 at 14:50. The fault was recorded in the CCLB, including all associated events that followed.

OCC Controllers filled out the Delay Report and detailed the event with timestamped entries of the event starting with the door fault, to the sweeping of the track, and finally return to normal service. All the Central Control records are readily available and found on the OCC Server.

Findings:

None.

Comments:

Central Control Log Book Records are detailed, up to date and well kept.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	14-A	Element	Facilities & Equipment Inspections: Non-Revenue Facilities, Maintenance Facilities, & Maintenance Equipment
Date of Audit	May 17, 2019 8:00–9:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Eric Madero Sal Herrera Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. SCDOA Safety and Security Committee Tracker
5. APM Contractor Monthly / Weekly / Site Safety Walk Inspections
6. APM Contractor Maintenance Management Information System MAXIMO
7. APM Contractor COMPASS Work Orders
8. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities & Equipment Inspections: Non-Revenue Facilities, Maintenance Facilities, & Maintenance Equipment

Interview the appropriate representatives, perform field observations of APM Contractor personnel inspecting facilities and equipment, and review appropriate records for past 3 years to determine whether:

1. Required inspections were performed per supporting references.
2. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.

3. Potential hazards found during inspections are immediately reported, documented, and tracked through resolution, Corrective Action Plans developed, and implemented in a timely manner.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed SCDOA representatives, observed field observations of APM Contractor personnel inspecting facilities and equipment. Staff reviewed appropriate records for past 3 years.

1. Inspections were performed 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 immediately reported, documented, and tracked. Corrective Action Plans were developed and implemented in a timely manner.

Findings:

None.

Comments:

1. Staff found high voltage insulating gloves are being tested annually and informed SCDOA that OSHA & NFPA requires testing every 6 months. SCDOA immediately changed its policy. As a result, no gloves are out of the recertification period.
2. SCDOA should create a pre-use inspection policy/procedure for cable jacks used for feeder breakers. SCDOA added a pre-use inspection to PM forms.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	14-B	Element	Facilities and Equipment Inspections: Stations and Emergency Equipment
Date of Audit	May 17, 2019 9:00–10:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	James Matus Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. SCDOA Safety and Security Committee Tracker
5. APM Contractor Monthly / Weekly / Site Safety Walk Inspections
6. APM Contractor Maintenance Management Information System MAXIMO
7. APM Contractor COMPASS Work Orders
8. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Stations and Emergency Equipment

Interview the appropriate representatives, perform field observations of APM Contractor personnel inspecting facilities and equipment, and review appropriate records for past 3 years to determine whether:

1. Required inspections were performed per supporting references.
2. Inspections were properly documented and noted, and discrepancies were corrected in a timely manner.
3. Potential hazards found during inspections are immediately reported, documented, and tracked through resolution, Corrective Action Plans developed, and implemented in a timely manner.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff inspected the APM facilities for proper maintenance of equipment. Staff performed a visual inspection of the facility and reviewed appropriate documents from the past 3 years.

1. Required inspections were performed per supporting references.
2. Door inspections were documented per PM 311, PM 411, PM 511, and PM 611 which is the annual door inspection. Defects were noted and repaired as inspected.
3. Hazards found during inspections are reported, documented, and repaired. All documents reviewed were properly stored.

Audits of compliance for maintaining of equipment is performed by the facilities coordinator and documented. Items reviewed for proper maintenance from the past 3 years included: AED stations, fire extinguishers, including halon system, air compressors, eye wash stations, hand powered tools, doors, golf carts, and intrusion systems.

Findings

None.

Comments:

Any jacks used for heavy lifting should require an inspection prior to use. SCDOA added a pre-use inspection to PM forms.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	14-C	Element	Facilities and Equipment Inspections: Bridges and Aerial Structures
Date of Audit	May 17, 2019 10:00–11:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Sal Herrera Eric Madero Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. SCDOA Safety and Security Committee Tracker
5. APM Contractor Monthly / Weekly / Site Safety Walk Inspections
6. APM Contractor Maintenance Management Information System MAXIMO
7. APM Contractor COMPASS Work Orders
8. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Bridges and Aerial Structures

Interview appropriate representatives, perform field observation of appropriate personnel performing inspections and review appropriate records to determine whether:

1. Structures inspections were performed in accordance with reference criteria.
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 SSC is aware of all safety hazards identified from Facilities and Equipment Inspections.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff reviewed SCDOA APM bridges and aerial structures inspections and records.

1. Inspections were not performed in accordance with reference criteria or AOP 30-22.
 2. No bridge inspection performed. Bridge Art has been inspected, inspections documented, and noted discrepancies were corrected in a timely manner.
 3. The SSC is aware of the noted discrepancies from the Bridge Art inspections.
- Bridge Artwork has been inspected and maintained per policy.

Findings:

APM bridges and structures are not being inspected per AOP 30-22, General Order 143-B, General Order 164-E, and other reference criteria.

Comments:

None.

Recommendations:

SCDOA must inspect APM bridges and structures and track noted conditions per AOP 30-22, General Order 143-B, General Order 164-E, and other reference criteria.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	14-D	Element	Facilities and Equipment Inspections: Measurement and Testing Instrumentation
Date of Audit	May 17, 2019 11:00–12:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	James Matus Sal Herrera Eric Madero Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 - 11.
4. SCDOA Safety and Security Committee Tracker
5. APM Contractor Monthly / Weekly / Site Safety Walk Inspections
6. APM Contractor Maintenance Management Information System MAXIMO
7. APM Contractor COMPASS Work Orders
8. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Facilities and Equipment Inspections: Measurement and Testing Instrumentation

Interview responsible representatives, review appropriate records, and inspect a representative sample of 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 measuring or testing instrument.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed documents pertaining to the inventory of tools needing annual calibration. Inventory of all tools needing calibration are logged in a binder as a master list. Tools are logged by date of calibration with their proper ID asset numbers. Asset ID numbers are paired with tool serial numbers along with certifications of calibration. Tools are also kept on file via Maximo. Tools are calibrated by the company CPM Labs.
2. Staff randomly selected tools in use from the master list to confirm that tools can be found and that proper ID tags were on the tools with the current calibration dates. Tools selected were #09-torque wrench, #012-dial indicator, #21-torque wrench, #42-torque wrench, #60-micrometer, #67-torque wrench, #69-multimeter, and #38-pressure gauge. Tools inspected were found in compliance with proper ID tags and current calibration dates. Tools that were inspected were stored in conventional tool boxes where maintenance personnel have access.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	15-A	Element	Maintenance Audits and Inspections: Fixed Guideway Revenue Vehicles
Date of Audit	May 16, 2019 00:01 –1:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	James Matus Eric Madero Sal Herrera Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor APMS Technician I

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor Maintenance Management Information System MAXIMO
5. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Fixed Guideway Revenue Vehicles (FGRV)

1. Perform field observations of APM Contractor personnel inspecting FGRV 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. Review the maintenance records for each FGRV model for the past 3 years to verify:
 - a. The preventive maintenance (PM) performed was at the required maintenance interval

- b. The records were properly documented with the necessary review and approval
 - c. Noted defects were corrected in a timely manner
3. Verify if the APM Contractor has performed their major change-out/overhaul of safety critical systems and or structural integrity of the FGRV as per maintenance procedures.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff performed field inspections and observations of APM Vehicles. Field inspections included joint craft inspections with APM Contractor Maintenance Personnel. Field inspections of the APM Vehicles were performed off a detailed daily maintenance checklist provided by the APM Contractor. Staff inspected the APM Vehicles and observed APM Contractor Personnel check all necessary required maintenance items on the daily checklist. After following a quality inspection process, performed by APM Contractor Personnel, checklists properly noted minor repairs.
2. Staff reviewed documentation for the past 3 years regarding the proper maintenance of the vehicles. Documents of maintenance intervals for PM 100, PM 200, PM 300, PM 400, PM 500, PM 600, and PM 601 were reviewed. Documents reviewed were orderly and completed correctly. Supervisor signatures were provided on PMs. Audits of maintenance activities were also noted throughout the past 3 years. All repairs are tracked by completing work orders which Staff verified.
3. Staff verified with APM Contractor Personnel the status of any major overhauls. The APM Contractor has scheduled any major change outs or overhauls at a 10-year interval for APM Vehicles.

Findings:

None.

Comments:

Ten-year intervals for major overhauls need to be planned and properly procured prior to the major change-out schedule. Vehicles have been in service for 8 years currently.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	15-B	Element	Maintenance Audits and Inspections: Signal System, Data Transmission System, Vital Relay Maintenance, & Traction Power System
Date of Audit	May 16, 2019 2:00 –3:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Eric Madero Sal Herrera Steven Espinal Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor APMS Technician I

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor Maintenance Management Information System MAXIMO
5. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Signal System, Data Transmission System, Vital Relay Maintenance, & Traction Power System

1. Perform field observations of APM Contractor personnel inspecting the Signal System, Data Transmission System, Vital Relays & Traction Power System components to determine whether they are in compliance with applicable reference criteria. Select at least one fixed guideway section or component and conduct field inspections.
2. Review the maintenance records for these components for the past 3 years to verify:
 - a. The preventive maintenance (PM) performed was at the required maintenance interval
 - b. The records were properly documented with the necessary review and approval
 - c. Noted defects were corrected in a timely manner

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed SCDOA APM inspections and records for Signal System, Data Transmission System, Vital Relay Maintenance, & Traction Power System, and conducted field observations. Battery Inspection was conducted on January 11, 2019 and 100% of the Uninterruptable Power System (USP) batteries were within proper range for the backup power system. The required job briefing was conducted and APM Contractor personnel performed PMs in accordance with SOPs and PM work orders.

2. Staff reviewed the following records:

12500 East Guideway/Power Rail Inspection, PM_312_Monthly Guideway Power Rail Inspection East: 2017-02-01, 2017-03-31, 2017-06-05, 2017-12-04, 2017-10-09, 2017-08-04, 2018-02-04, 2018-04-07, 2018-06-01, 2018-08-11, 2018-10-12, 2018-10-03, 2019-02-07, 2019-04-04

12501 West Guideway/Power Rail Inspection: 2017-01-07, 2017-03-01, 2017-04-29, 2017-11-11, 2017-07-06, 2017-09-04, 2018-01-10, 2018-03-07, 2018-05-02, 2018-06-30, 2018-08-30, 2018-11-20, 2019-01-03, 2019-03-05, 2019-05-05

12504 Low Voltage Switch Gear/PM_314_Monthly PDS/UPS Inspection all completed for 2017, 2018 and 2019.

The APM Contractor updated the procedure to reflect inspections every 60 days.

PM records were completed properly. PMs were conducted in the specified timeframe and noted defects were corrected in a timely manner.

Traction power substation was clean and relatively dust free. The transformer winding temperatures are shown below:

	High Voltage	Low Voltage
Winding Side	Temp (C)	Temp (C)
Left	51	53
Right	54	56
Center	53	53

Findings:

None.

Comments:

PM_312_Monthly Guideway Power Rail Inspection records referred to above are conducted bimonthly while the procedure states monthly. The APM Contractor determined inspecting and cleaning the power rail monthly was excessive. According to the APM Contractor, there was little return on investment inspecting and cleaning the power rail monthly. Currently the power rail is inspected every other month. The APM Contractor inspection procedure has been updated to reflect the change.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	15-C	Element	Maintenance Audits and Inspections: Fixed Guideway
Date of Audit	May 16, 2019 01:00 – 02:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Sal Herrera Eric Madero Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor APMS Technician I

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor Maintenance Management Information System MAXIMO
5. APM Contractor SOPs

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Maintenance Audits and Inspections: Fixed Guideway

1. Perform field observations of APM Contractor personnel inspecting the fixed guideway to determine whether they are in compliance with applicable reference criteria. Select at least one fixed guideway section and conduct a field inspection.
2. Review the maintenance records for these components for the past 3 years to verify:
 - a. The preventive maintenance (PM) performed was at the required maintenance interval
 - b. The records were properly documented with the necessary review and approval
 - c. Noted defects were corrected in a timely manner

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff performed a field observation of guideway inspections being performed. Inspections were conducted in accordance with applicable reference criteria.
2. Staff reviewed PM's for past 3 years and determined that all are with-in required intervals. Records are all being documented, and all defects are corrected in a timely manner.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	16	Element	Training and Certification Programs for Employees and Contractors
Date of Audit	May 16, 2019 11:00–11:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Michael Rose Richard Fernandez Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor Training Plan and Tracker

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Training and Certification Programs for Employees and Contractors

Interview representative in charge of Controllers and Maintenance employees Certification Programs. Review appropriate records to determine whether:

1. The employee has completed the initial training program, refresher, and remedial training as necessary.
2. The employee has been recertified at the correct frequency and currently meets the criteria to perform his/her duties. Verify corrective actions taken to discipline employees and contractors for failure to follow established procedures after training and certification are established and consistent.

FINDINGS AND RECOMMENDATIONS

Activities:

1.-2. Staff reviewed the OMC Training Matrix, which outlines all categories of administered training, tests, and certifications to employees. Each date for every category has either a white background (good), yellow (60 days to expiration), orange (30 days to expiration), or red (expired). No employees were delinquent for required training or certifications. Staff then inspected individual employee files and found employee 1023637 missing Supervisor Signature, Name, and Date on documents.

Findings:

None.

Comments:

Ensure all documents are completed and correctly filled out with required name, signature and dates.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	17	Element	Configuration Management and Control
Date of Audit	May 17, 2019 13:00–14:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Configuration Management and Control

1. Randomly select two recent changes pertaining to the APM system at SCDOA during the last year to ensure configuration management documentation was properly updated to include at a minimum:
 - a. As-built drawings.
 - b. As-built specifications.
2. Randomly select a Project Concept Submitted to SSC and verify that:
 - a. SMF APM Modification / Change Request forms were used.
 - b. Forms were circulated to the SSC.
 - c. SSC performed a review, analysis, and approval of form by completing the SMF APM Modification / Change Request form for the project.
 - d. The change was reviewed and approved by SCDOA’s Director or Deputy Director of Operations & Maintenance.
 - e. Change was circulated to the proper departments for implementation.
 - f. All necessary parties or contract employees within or outside the agency were properly notified about the change.

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed SCDOA and APM Contractor representatives who oversee the Configuration Management process and noted the following:

1. No changes were made to the APMS during the past year. There have been no modifications since 2011. A Configuration Management process is in place when needed. The system uses Temporary Change Authorization (TCA) Form during primary request and Field Modification Instruction (FMI) Form during the final request. Staff reviewed some samples of these forms being utilized.

2. The track, APM Vehicles, and system have not been modified within the past three years. With regards to the Central Control, if a computer monitor is changed, for example, it is likely that this would trigger a configuration management and control process. SCDOA may add some new APM Vehicles in the future. There was a discussion about what they would need to do to comply with the CPUC's General Orders and the Commission's Rail Transit Safety Branch procedures if new APM Vehicles are added in the future.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	18	Element	Local, State, and Federal Requirements
Date of Audit	May 16, 2019 11:30–12:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Michael Rose Richard Fernandez Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor Injury and Illness Prevention Plan (IIPP)

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Local, State, and Federal Requirements

Conduct the necessary interviews and review appropriate records to determine if:

1. The APM Contractor held monthly meetings concerning safety issues.
2. An appropriate procedure and reporting form is being implemented and is periodically distributed to all employees to effectively report safety hazards in the work place.
3. Required corrective actions have either been satisfactorily completed or are being actively tracked and documented.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed monthly APM Contractor All Hands Safety Meetings and Agendas. The monthly All Hands Meeting has a sign in sheet that requires all employees to sign and date to ensure every employee, across all shifts has received the required safety briefing and meeting agenda items.
2. The APM Contractor utilizes the Safety Concern Hazard Near Miss (SCHNM) Form to report all safety hazards in the workplace.

3. The SCHNM Form also allows the APM Contractor and Personnel to keep a detailed record and track the safety hazard up to and including mitigation.

Findings:

None.

Comments:

The SCHMN Form allows tracking of a safety hazard and corrective action plan by both management and the employee. The SCHMN Form has a designated area for feedback from the employee; this helps APM Contractor Personnel take ownership in safety.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	19	Element	Hazardous Materials Program
Date of Audit	May 17, 2019 14:30 – 15:00	Department(s)	Department of Airports APMS Contractor Airport Planning and Environment
Auditors/ Inspectors	Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bita Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. General Order 143-B
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. SCDOA’s Hazard Communications Program
5. APM Contractor Blood borne Pathogen CBT Program.
6. APM Contractor Hazardous Materials Communication Program
7. APM Contractor Hazardous Materials Program

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Hazardous Materials Program

1. Select at random two APM Contractor personnel responsible for handling hazardous materials and verify that they have received specific training for reporting requirements, product release or spill, and the response and cleanup of spill incidents.
2. Verify that hazardous materials discharge/spill reports for incidents that occurred during the past 3 years have been prepared and filed.
3. Verify all Material Safety Data Sheets (MSDS) are available to all personnel who handle hazardous materials

FINDINGS AND RECOMMENDATIONS

Activities:

Staff interviewed APM Contractor personnel and reviewed the APM Contractor Hazardous Materials Program documentation including the following:

1. Staff randomly selected the following two APM Contractor Personnel responsible for handling hazardous materials: #10202512 and #10202333. Staff reviewed records that show that they have received specific training for reporting requirements, product release or spill, and the response and cleanup of spill incidents.
2. There have not been any hazardous materials discharge/spill incidents in the past three years and the spill log, which serves as the report template, is blank, so no such reports have been prepared and filed during the past year. If the APMS ever has its first hazardous materials discharge/spill incident, the fields in the spill log will be filled out by hand.
3. Central Control is where the MSDS sheets are kept. The APM Contractor's MSDS sheets are always available to every employee to review in a binder hung on the wall in the OCC or in electronic format on the site server, where these can be accessed using APM Contractor owned computers in their electrical maintenance room, which is open 24/7.

The order of the MSDS sheets in the binder mentioned above are alphabetized and there are tabs for the letters of the alphabets in the binder, so an employee can find the MSDS they want to review.

Findings:

None.

Comments:

The APM Contractor is going to make improvements to their spill kit.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	20	Element	Drug and Alcohol Program
Date of Audit	May 16, 2019 12:00–12:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Michael Rose Richard Fernandez Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
3. APM Contractor Drug & Alcohol Use and Testing at Site Policy
4. APM Contractor System Operations Rule Book Revision G

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Drug and Alcohol Program

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

1. Verify the APM Contractor has a policy for managing the use of over-the-counter drugs.
2. Select at least two safety-sensitive employees who tested positive for drugs or alcohol in the past 3 years and 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.
 - d. Employees who retested positive are disciplined.

- e. Verify that consequences for repeat offenders were carried out as required in the reference material.

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff verified that APM Contractor Policy Number AME-5, Section 8 Over the Counter Medication, meets the requirement for managing the use of over the counter drugs.
2. The APM Contractor has zero positive test results for drugs and/or alcohol for the years 2016, 2017 and 2018. The APM Contractor does have a Policy in place in the event of a positive drug and/or alcohol test of an employee.

Staff verified that the APM Contractor met the minimum requirement, 25% Drug and 10% Alcohol testing for the years 2016, 2017 and 2018.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	21	Element	Procurement Process
Date of Audit	May 17, 2019 13:30 – 14:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Colleen Sullivan Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 164-D/E
2. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
3. APM Contractor Procurement Plan
4. APM Contractor Safety Data Sheets

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

Procurement Process

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

1. Verify APM Contractor personnel are following applicable Procurement Policy and Procedures and ensure safety issues and concerns are addressed in the procurement process.
2. Determine adequate procedures and controls are in place to preclude the introduction of defective or deficient equipment into the APM System.
 - a. Are procurements of new equipment and material first reviewed by the engineering, operations, and/or maintenance staff to verify the new equipment or materials won't present a hazard to the existing system?
 - b. Do all procurement processes for hazardous materials address all appropriate rules and regulations?

- c. Have unexpected delays or process complications delayed the procurement of goods or services available for usage or resulted in vendor provided services being acquired and implemented in a timely manner?

FINDINGS AND RECOMMENDATIONS

Activities:

1. SCDOA orders approximately 90% of all parts through the APM Contractor's system. The APM Contractor provides parts to 20 Automated People Mover (APM) systems in the United States and 10 more internationally. All the tools purchased by the APM Contractor are calibrated by the Site Coordinator. The calibration schedule was provided to Staff and is inputted into the Maximo database.

2.a. APM Contractor Technicians inspect all new parts. The parts are either Green Tagged and approved for use or Red Tagged for return to the manufacturer. The Site Coordinator and Supervisor check for broken parts.

Red tagged parts are sent back to the APM Contractor headquarters in Pittsburgh, Pennsylvania.

The APM Contractor uses Maximo software. When they complete a purchase order report, it must be approved by the APM Contractor Manager.

2.b. The APM Contractor considers safety and ergonomics whenever a new part is purchased.

All procurement processes for hazardous materials address all appropriate rules and regulations.

Staff reviewed the Material Safety Data Sheets (MSDS). SCDOA Personnel review and audit the MSDS sheets.

2.c. The APM Contractor goes with the best option in order to reduce delay. They know where there are any glitches in the system and what to do about these to speed up procurement. They can also get parts from SFO quickly and vice versa.

Findings:

None.

Comments:

None.

Recommendations:

None.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	22	Element	General Order 172 – Personal Electronic Device Prohibitions/In-cab Cameras
Date of Audit	May 15, 2019 11:00-12:00	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Richard Fernandez Michael Rose Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Mngr. Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager Bitu Manesh, APMS Site Administrator

REFERENCE CRITERIA

1. General Order 172
2. General Order 164-D/E
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor PED Policy

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

General Order (GO) - 172 Personal Electronic Device (PED) Prohibitions/In-cab Cameras Compliance

Interview appropriate representatives and review documentation to determine the following:

1. Determine if the APM Contractor has developed and implemented a PED zero-tolerance policy and program usage, as required by General Order 172, Section 5.
2. Is the zero-tolerance policy being enforced?
3. What is the failure rate of in-cab cameras and how many cameras failed in the last three years? Verify the recording retention complies with General Order 172.
4. Verify the APM Contractor has conducted random evaluations for PED usage as required by General Order 172, Sections 4.3.e, 4.5, and 6.2.
5. Does the PED procedure comply with General Order 172?
6. Verify if APM Contractor personnel comply with PED rules (Field Activity - See Checklist 13-B).

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff reviewed SCDOA SSPP and Personal Electronic Device Usage Restrictions Policy Revision B.
2. Staff found the SCDOA PED Policy has been continually enforced with no PED violations found during the past 3 years.
3. The APM Contractor upgraded their in-cab camera system from analog to digital in January 2017, with zero digital camera failures on the new system.
4. The APM Contractor conducted random evaluations for PED usage under CPUC General Order 172 Section 6.2 only.
5. The APM Contractor has not fulfilled General Order 172 Section 4.3 e. video-based rules-compliance testing.
6. Staff conducted observations as part of this checklist.

Findings:

1. Staff found the APM Contractor Personal Electronic Device Policy does not comply with CPUC General Order 172 Section 4.3 e. Video-based rules-compliance testing program was not conducted.
2. CPUC General Order 172 Section 7 Requirements for Emergency Contact Procedures was not communicated in writing to all affected employees. SCDOA is in the process of updating the SCDOA PED Policy and included CPUC General Order 172 Section 7 in its upcoming revision.

Comments:

Staff found 2018 SSPP and previous versions do not contain CPUC General Order 172 Section 6.1, a reference in SCDOA-AMP SSPP for video-based enforcement and random monitoring program. SCDOA APM Personnel presented to Staff, the latest SSPP revision which includes CPUC General Order 172 Section 6.1 reference requirements.

Recommendations:

1. SCDOA APM or the contractor must review some portion of the video loop recordings for violations of CPUC General Order 172 for the purposes of conducting a video-based rules-compliance testing program in compliance with CPUC General Order 172 Section 4.3 e. video-based rules-compliance. Procedures should identify a minimum quantity of such observations.
2. SCDOA APM shall communicate Emergency Contact Procedures to all affected employees in writing, as outlined in CPUC General Order 172 Section 7.

**2019 CPUC SYSTEM SAFETY REVIEW CHECKLIST FOR
SACRAMENTO COUNTY DEPARTMENT OF AIRPORTS AUTOMATED
PEOPLE MOVER (SCDOA APM)**

Checklist No.	23	Element	General Order 175-A – Rules and Regulations Governing Roadway Worker Protection Provided by Rail Transit Agencies and Fixed Guideway Systems
Date of Audit	May 17, 2019 13:00–13:30	Department(s)	Department of Airports APMS Contractor
Auditors/ Inspectors	Sal Herrera Eric Madero James Matus Matt Ames	Persons Contacted	David Delemos, Facilities Coordinator Kathy Sutton, Assoc. Adm. Analyst II Matt Ogden, APMS Contractor Manager Scott Cavanaugh, APMS Supervisor Patrick Vaughn, APMS Supervisor Michelle Washington, APMS HSE Manager

REFERENCE CRITERIA

1. General Order 175-A
2. General Order 164-D/E
3. SIA APMS System Safety Program Plan (SSPP), Revision 8 – 11
4. APM Contractor RWP Plan
5. APM Contractor System Operations Rule Book Revision G

ELEMENT/CHARACTERISTICS AND METHOD OF VERIFICATION

General Order (GO) 175-A - Rules and Regulations Governing Roadway Worker Protection Provided by Rail Transit Agencies and Fixed Guideway Systems

Interview appropriate representatives and review documentation to determine the following:

- 1) Determine if the APM Contractor is following their procedure and adhering to General Order 175-A.
- 2) Verify RWP training records and compliance testing (Sections 9.3 and 9.4) has been performed and:
 - a. Verify no employees are required to perform work without training, at maximum intervals of 24 months.
 - b. Training/re-training sessions sign-in sheets with different job classifications and training certificates for the past 3-years are on-file

- 3) Verify the APM Contractor maintains a record of near miss program documents, unsafe acts, right to challenge history and training including 24-month retraining.
- 4) Verify RWP complies with yard and end-of-line storage track requirements.
- 5) Witness a job safety briefing if possible and work site for verification (Field Activity - See Checklist 15-A,B,C).
- 6) Verify if roadway workers have a roadway worker rule book (Field Activity - See Checklist 15-A,B,C).

FINDINGS AND RECOMMENDATIONS

Activities:

1. Staff conducted observations of SCDOA APM Personnel to ensure they are following General Order 175-A - Rules and Regulations Governing Roadway Worker Protection Provided by Rail Transit Agencies and Fixed Guideway Systems.
2. Most Personnel have been trained and all Sign in sheets for training are available. A few personnel were not in compliance with General Order 175-A Section 9.4 a.
3. The SCDOA APMS has a process for reporting and tracking near misses and right to challenge incidents.
4. There are no yard or end-of-line storage tracks in the system, however the RWP plan complies with General Order 175-A requirements.
- 5.-6. Staff witnessed a Job briefing, and all workers have Rule books available.

Findings:

None.

Comments:

SCDOA APM was not in compliance with General Order 175-A Section 9.4 a. retraining every 24 months. However, SCDOA APM had found this prior to the Triennial audit and started retraining personnel. The Maximo system had the RWP training scheduled for every 3 years. All SCDOA employees have been retrained and Maximo has been updated to reflect a 24-month schedule.

Recommendations:

None.