

Appendix K
Updated: January 31, 2019

Process for ODOT Triennial Safety Program Audits of RTAs

Procedure for ODOT SSO Program Triennial Audit of Rail Transit Agency (RTA) Safety Programs

Updated: March 7, 2017

The Part 674 approach to the RTA Triennial Audit is essentially the same as the intended full Triennial Review required in Part 659 and described in the Federal Transit Administration's (FTA) best practices document – Recommended Best Practice (RBP) for States Conducting Three-Year Safety Reviews (March 2009), <https://www.transit.dot.gov/oversight-policy-areas/ss0-three-year-review-recommended-best-practices-march-26-2009-final>.

FTA's RBP (pages 4 and 5) identifies eight (8) distinct verification methods that are currently used by SSO agencies during their Three-Year Safety Reviews:

- **Document Review:** Sampling the RTA's SSPP and referenced and/or supporting procedures to ensure that each required element of the State's Program Standard and 49 CFR Part 659 is addressed.
- **Rules Review:** Sampling the RTA's operating rules and bulletins and maintenance rules and procedures to determine if they have been reviewed and updated on a regular basis, if they have been distributed to appropriate RTA personnel as specified in the SSPP, if training has been offered, and if this process has been tracked.
- **Records Review:** Sampling of the RTA's records for evidence of implementation of the SSPP and referenced or supporting procedures. Records reviewed and/or sampled may include, but are not limited to, training records, records of employee rules compliance checks, internal safety audit reports, maintenance inspection reports, minutes of safety committee meetings, etc.
- **Interviews with RTA Senior Management:** Discussions held with senior RTA management, including the RTA's Chief Executive Officer (CEO), to assess their knowledge of the RTA's safety program, as specified in the SSPP and referenced or supporting procedures, and to gauge their commitment to the safety program.
- **Interviews with RTA Safety Personnel:** Discussions held with RTA safety personnel, including the Chief Safety Officer, to assess implementation of the RTA's safety program, to identify issues in its implementation, and to highlight areas of compliance and non-compliance with Part 659 requirements.
- **Interviews with Other RTA Personnel:** Discussions held with other RTA personnel (including a representative sample of rank and file operations and maintenance personnel) to verify their understanding of requirements specified in SSPP and referenced or supporting procedures.
- **Field Observations:** Observations and sampling conducted on-site at the RTA to observe implementation of the processes and procedures described in the SSPP and supporting or referenced documents, procedures and materials related to the RTA's safety program.
- **Inspections and Measurements:** Inspections and measurements conducted on-site at the RTA to ensure that the RTA's infrastructure and equipment is maintained to the specifications identified in the RTA's standards, procedures, and manuals.

Each of these verification methods has specific strengths and limitations. To adequately assess implementation of each of the 21 SSPP elements required in § 659.19, FTA believes that more than one verification method should be used.

Sampling Rate

The RBP indicates that a sampling approach should be developed, but it does not indicate what that sampling rate should be. The audit process is not expected to be 100% of the rail system, and generally, the higher the sampling rate, the higher the cost will be for the Triennial Audit. The Triennial Audit approach described here addresses all of FTA's verification methods described in the RBP focused on the interim Agency Safety Plan (ASP), which is the Part 659 compliant RTA SSPP. In the future, this process will mature, along with Risk Monitoring described in the program standard and procedure SSO-008, and focus on the Agency Safety Plan and the safety management system (SMS) as these processes are developed and implemented at the RTA.

The point of this full Triennial Audit will be to address Part 659 compliance, and then build on that experience to make future Triennial Audit cycles more sophisticated and effective at measuring the risk environment and identifying potentially unmitigated risk at the RTA. As a focus in developing this proposed Triennial Audit process, there is a need to build "corporate knowledge" of the RTA rail transit systems' safety performance and risk environment through experience, data collection, and analysis of risk-related information. This information includes experience with investigations, internal audits, close calls/hazards, and completion of CAPs. At first, these analyses will be used to corroborate lagging indicators and then can be developed into leading indicators to be used in preventing future safety events. Further, the results of this data and information analyses will be used in targeting/developing the audit sample sets, focused on safety events that have occurred (rather than based on a random sample principle) and explore the effectiveness of CAPs implementing mitigations to control risk experienced within the rail transit system.

This sampling approach allows the Triennial Audit process to be systematic and provide a programmatic feedback loop to address any remaining unmitigated risk or address mitigations that are not fully successful in managing risk to a level as low as reasonably practicable (ALARP). This approach also enables the SSO program to get a jump-start on developing the Part 674 compliant risk monitoring data and information analysis tools and activities, including verification of CAPs implementation evidence and effectiveness (risk monitoring also discussed in procedure SSO-008).

Triennial Audit Approach

The Triennial Audit of the RTA's rail transit system requires the successful completion of the following tasks, which are summarized in the following subsections:

1. Building Knowledge and Tools
2. Planning and Preparation
3. Completing Onsite Activities
4. Reporting and Corrective Actions.

This Triennial audit approach is intended to be transparent as well as efficient, effective, and sustainable, allowing the required activities to be completed within current grant funding levels now and for future Triennial Audits and ongoing Risk Monitoring activities (as required in Part 674) at each RTA.

Building Knowledge and Tools

1. **Triennial Audit Plan.** The SSO program audit team will meet to go over the preparation and analysis activities, and develop the Triennial Audit Plan. Once the Triennial Audit activities commence, the Triennial Audit Plan will be used to manage schedule and resources, tracking progress of all planned activities to completion.
2. **Audit Scope.** The SSO program defines the triennial time period to match the RTA three-year cycle of internal safety program audits. The SSO program triennial audit will occur the year following the completion of the RTA three-year internal safety audit cycle, so that all audits, investigations, and resolution of CAPs can be reviewed and physically checked for appropriate resolution. This audit scope is intended to be synergistic with ongoing risk monitoring activities at the RTA.
3. **RTA Notification.** In the year that the triennial audit is due, the SSO program will communicate with the RTA to determine an appropriate timeframe for the triennial audit. The SSO program will notify and schedule with the RTA for the planned on-site portion of the triennial audit, at least 60 days in advance of the on-site activities. This is typically done as part of existing on-site quarterly meetings.
4. **Documentation Collection.** A list of documents will be collected to be reviewed and analyzed for the Triennial Audit. Primary documents of interest include RTA rail transit programmatic and process level documents related to operations, maintenance, infrastructure and vehicle issues, and safety (and security), with a focus on the RTA's minimum standards for safety.

Documentation List

- a. System Safety Program Plan (SSPP)
- b. System Security Plan (SSP)
- c. Organizational Chart
- d. Safety and Security Policy Statements
- e. Operating Rulebooks
- f. Emergency Response Procedures
- g. System safety and security statistics for the most recent three year period prior to the review.
- h. Inspection and Maintenance Manuals, including standards (this request would be targeted to the rail systems and infrastructure being audited)
- i. SOPs related to the rail systems and infrastructure being audited, including command and control

- j. Other relevant documentation, as determined by the analyses activities and discussions.
5. **Complete Document Review Verification for Triennial Audit.** Once the documentation is collected, it is reviewed and analyzed to address the requirements of the RBP for the Document Review verification method across all 21 elements of the SSPP.
 6. **Collect Risk Data and Analysis.** The SSO program collects significant safety information from the RTA rail systems. The following data and information will be collected, reviewed, and analyzed to support the sampling used in the Triennial Audit.
 - a. All RTA investigations, including reports and related CAPs for the previous three years, as well as the current year.
 - b. All safety/security program related internal audits for the current and previous three-year cycle, including all Audit Reports and CAPs. This includes the related findings and recommendations.
 - c. The previous Triennial Audit report, completed templates, and CAPs.
 - d. All Investigation and Audit CAP closure data and evidence for the previous three years.
 - e. Close call/Occurrence/Hazard data and information for the previous three years.
 - f. The RTA's safety data and information analyses from the previous three years, such as from the executive safety committee meetings.
 - g. FTA Audits of the SSO program – the previous two FTA Audits. This activity will focus on the findings and recommendations directed towards the RTA, and SSO program progress towards completing the corrective actions (what was determined to be an appropriate response and what was actually accomplished to close the CAPs).
 7. **Complete Data Analysis to Identify High-Priority Topics for Triennial Audit.** The audit team will complete an analysis of these compiled data sets to determine the Triennial Audit sampling of topics within each of the safety program elements/topics, including the minimum standards for safety. This analysis is documented in a separate report, updated annually. The use of this analysis will maximize audit effectiveness and efficiency by placing priority on previously-identified areas of risk, including a check for implementation and effectiveness of related and closed CAPs. The close call data that was used for the FTA's Safety Advisories and for Hazard data reporting will be used to focus on potential emerging risk and an opportunity to be predictive. This analysis activity will be further enhanced over time through experience and developing the Part 674 Risk Monitoring capabilities. Previous safety-related events and internal audit findings will be reviewed and assessed for effectiveness of resulting changes and mitigations.
 8. **Complete Rules and Records Verification for Triennial Audit.** In addition, based on the FTA RBP for the Rules and Records verification categories, the audit team will analyze the RTA rules and records across all elements and topics of the safety program documents and minimum safety standards, as appropriate. Results of this part of the audit

will be used to advise the rest of the Verification methods for the audit. The amount of records reviewed will be expanded in Triennial Audits over time based on lessons learned through this audit and ongoing Risk Monitoring.

Planning and Preparation

9. **Progress Meeting.** The audit team will meet to review the analyses and progress through the first three Verification Categories (Documents, Rules, and Records Reviews) and preparation for the on-site portion of the Triennial Audit.
10. **Audit Template Development and Schedule.** For each of the program documentation elements or groups of elements, a template is used to document details to be checked, interviews of RTA staff (and other related staff), and inspections of locations, equipment, and/or documents. An example template form is provided at the end of this procedure. The completed audit templates should be shared with the RTA at least 30-days in advance of the on-site visit. The draft templates are provided ahead of time to facilitate the scheduling of interviews, inspections, and documentation review. Invitations to FTA headquarters and regional offices and the Transportation Security Administration (TSA) should be made with sufficient time for them to schedule the time to attend. All of this information is a part of the Audit Plan. The SSO program audit team typically coordinates with the RTA Safety Department staff for all scheduling.
11. **Coordination with the RTA.** The SSO program audit team continues to communicate with the RTA as the triennial audit on-site week approaches to share information about any changes, to provide the list of team members that will attend, and to update the interview times and personnel schedule for each interview/inspection. The on-site activities will be planned ahead of time, but will need to be flexible because of conflicting schedules and activities at the RTA during the on-site visit.
12. **Complete Update of Triennial Audit Plan.** The Triennial Audit Plan will be a living document, providing flexibility as some activities are completed and other activities are scheduled/re-scheduled until all required Triennial Audit reviews, interviews, and inspections are completed.

Completing Onsite Activities

13. **Track Access Training.** All members of the SSO program audit team will need to have current track access training from the RTA. Typically, the RTA will need to be available on the first day to provide track safety training to all of the team members prior to the start of the data collection on-site inspections and interview events that require access to the RTA Facilities and Right-of-Way locations.
14. **On-site Briefings.** The SSO program on-site audit team will provide opening and closing briefings for the RTA staff during the on-site visit. These briefings will be focused on sharing activities to be completed and any observations from the preparation

and completion of the on-site interviews and inspections. The entire Triennial Audit is intended to be transparent, with all aspects shared with the RTA management and staff.

15. **Complete Interviews (Senior, Safety, and Other Staff); Field Observations; and Inspections and Measurements Verification for Triennial Audit.** The Triennial Audit Team will complete all on-site activities based on an approved schedule and checklists. This will include a team of 3 to 5 people (SSO and contractor staff). The audit team typically covers all of the interviews and inspections in two groups to assure that all topics and issues can be covered. Each audit team member is responsible for taking notes, collecting documentation, and taking photos of all activities completed. This documentation is then added to the templates each evening of the on-site activities. At least one person on the audit team will be responsible for consolidating all of the notes and documentation for each topic of the on-site audit activities. An additional trip may be required to follow up on questions or rescheduled activities.

Reporting and Corrective Actions

16. **Complete Triennial Audit Draft Report.** The draft triennial audit report will be completed and shared internally with SSO program management and with the RTA for review, input, and edit. The report will include both findings and recommendations. The effort to draft this report typically takes 30-45 days after the on-site visit, and is done at the offices of the SSO program team.
17. **Draft Triennial Audit Report for RTA Review.** The RTA will typically have two weeks to review the draft Triennial Audit Report. If there is a need to meet to discuss issues or questions from the draft report, this will be completed either via teleconference or in person as scheduled by the RTA and the SSO program team. Any disputes of specific findings or recommendations will either be resolved via communications between the parties or will be documented in the report if not resolved. Any changes or corrections from the RTA will be incorporated into the Triennial Audit Report at this point.
18. **Final Triennial Audit Report and CAPs.** Once the triennial review and audit report is finalized (including internal approval by management), it is delivered to all parties –SSO program team, RTA staff, and any other participants (such as FTA staff). With the delivery of the final triennial report, the RTA will be requested to develop appropriate CAPs to address all findings and recommendations. This is usually accomplished within 30 days after delivery of the final triennial report.
19. **CAPs Approval.** The RTA will submit the CAPs developed from the final triennial report for the SSO program team to review and approve. If there are any issues or questions with these CAPs, the SSO program team will contact the RTA staff to share specific comments and issues. A CAPs tracking table will be developed and include the recommendation/finding, CAP developed by the RTA, any comments from the SSO program, RTA person assigned responsibility, and date CAP is due to be resolved. Once the CAPs are agreed to, the SSO program will formally approve the RTA CAPs via letter.

At that point, the CAPs will be added to the RTA monthly CAP status document and tracked until completion and evidence of completion collected.

Grouping of Safety and Security Program Topics

In development of the Triennial Safety Program Audit planning documents, the elements/topics of the Safety and Security program documents can be grouped for efficiency in completion of the audit activities. These groupings also match the safety management system (SMS) required for the Agency Safety Plan (ASP) development. The general list of Minimum Standards for Safety documents have also been added to the groupings.

Grouping 1. Safety Program Definition and Administration

- SSPP Element 1. Policy Statement
- SSPP Element 2. Purpose, Goals, and Objectives
- SSPP Element 3. Management Structure
- SSPP Element 4. Plan Review and Modification
- SSPP Element 5. Plan Implementation
- Documentation and Tracking of Minimum Standards for Safety

Grouping 2. Safety Risk Management and Safety Data Analyses

- SSPP Element 6. Hazard Management Process
- SSPP Element 9. Safety Data Acquisition
- SSO Program Standard Requirements/Procedures for Hazard/Risk Identification, Data Collection, and Analyses/Assessments
- Hazard Log, Risk Register, and Corrective Actions/Mitigations Tracking and Status
- Safety Performance Criteria, Targets, and Measures

Grouping 3. Management of Change

- SSPP Element 7. Safety Certification Process
- SSPP Element 8. System Modifications
- SSPP Element 17. Configuration Management
- SSPP Element 21. Procurement
- Configuration Management Plan (CMP)
- Safety and Security Certification Plan (SSCP)
- Tracking of Significant Capital Projects
- Safety-Related Procurement Specifications/Requirements

Grouping 4. Notifications and Investigations of Safety Events

- SSPP Element 10. Reportable Event Notification, Investigation, and Reporting
- RTA Investigation Procedure(s)
- SSO Program Standard Requirements/Procedures for Safety Event notifications and investigations

Grouping 5. Emergency Management

- SSPP Element 11. Emergency Management Program
- SEPP All Elements/Topics

Emergency Operations/Management Plan(s) and Related Training for RTA staff and
Emergency Responders
Drills and Exercises Program
Most Recent TSA BASE Review

Grouping 6. Internal Safety Audits (ISAs)

SSPP Element 12. Internal Safety Audit Program
Assuring Integration of the Safety Department in Policy and Procedure Development and
Changes
Tracking the Three-Year Cycle of ISAs

Grouping 7. Rules Compliance and Training

SSPP Element 13. Rules Compliance
SSPP Element 16. Training and Certification Program
Rail Operating Rule Book and Required Training
Right-of-Way or Roadway Worker Protection (RWP) Plan and Required Training
Command and Control/Train Control Standard Operating Procedures (SOPs) and
Required Training
Field Supervision SOPs and Required Training
Inclement Weather Refresher Training
Certification/Refresher Training and Record-Keeping

Grouping 8. Inspection and Maintenance (I&M)

SSPP Element 14. Facilities and Equipment Inspections
SSPP Element 15. Maintenance Audit and Inspection Program
Transit Asset Management (TAM) Plan
Inspection and Maintenance (I&M) Manuals, SOPs, and Standards

Grouping 9. Compliance with Local, State, and Federal Safety Requirements

SSPP Element 18. Compliance with Local, State, and Federal Safety Requirements,
includes OSHA-Related Requirements
SSPP Element 19. Hazardous Materials Program
SSPP Element 20. Drug and Alcohol Program

OHIO DEPARTMENT OF TRANSPORTATION STATE SAFETY AND SECURITY OVERSIGHT PROGRAM - RAIL FIXED GUIDEWAY SYSTEMS		
ODOT/GCRTA Triennial Safety and Security Review Checklist – System Safety Program		
SSOA: Ohio Department of Transportation	RAIL FIXED GUIDEWAY SYSTEM: Greater Cleveland Regional Transit Authority	DATE OF REVIEW: September 21 – September 25, 2015
Control No. S15.1 Estimated time 4 Hours for interviews	SSPP/SSP Section: Sections 15 (Maintenance Audit and Inspections)	Form SSOA Reviewers: Kevin Chandler Brian Kummerer GCRTA Participants: Teresa Coleman - Manager P&W Casey Blaze – Manager Rail Equipment John Fedikovich – Assistant Director Rail Jacob Kabelen - Supervisor Track (Day) Nicholas Kinnear - Supervisor Traction Power Paul Neumeyer - Signals Chris Smith – Quality Manager Maintenance Jim Stock – Engineering Joe Shaffer - Engineering
<p>Requirement: Section 15.1 • Maintenance audits and inspections are performed and documented according to the maintenance program.</p> <p>Emphasis on problems/issues concerning Track Circuit, Signals and Switch outages in the Yard and on the East Side</p> <ol style="list-style-type: none"> 1. Are Switch Inspections, Signal Inspections, Track Circuit Inspections, occurring on a monthly basis <ul style="list-style-type: none"> ▪ Review Inspection Standards and Sample Forms 2. Are Yard Track Inspections, Substation Inspection and other Wayside Facilities Inspections occurring on a monthly basis <ul style="list-style-type: none"> ▪ Review Inspection Standards and Sample Forms a. Are all scheduling and actual maintenance performed tracked using UltraMain/CITME database system: <ul style="list-style-type: none"> ○ Are the inspections triggered by CITME reminders ○ Is there a monthly summary report being sent to management for their review <ul style="list-style-type: none"> ▪ Based on incomplete inspections ▪ Based on problems and issues found b. Are all of the facilities that need to be inspected on a monthly basis in the CITME system c. Are the data from the monthly inspections being input to CITME on a timely basis <ul style="list-style-type: none"> ○ Review usage of: SOP #.3250.06 - Supervisor completion of Ultramain work orders <p>Note: Request CITME records for Track Circuits, Signals and Switch inspections and repairs – (Feb – Aug 2015)</p> <p>Emphasis on HRV/LRV PM Inspections</p> <ol style="list-style-type: none"> 3. Are Vehicle Maintenance Inspections (HRV & LRV) occurring based on mileage standards; and are they being done timely <ul style="list-style-type: none"> ○ Are Quality Checks being done on a regular basis to ensure Inspection standards are being met <ul style="list-style-type: none"> ▪ Specifically: Brake shoes; Line Breakers; Ground Brushes; Wheels; Motors <p>What is the role for the Maintenance (Equipment and Material)Planners in coordinating Inspections and audits to improve maintenance/inspection practices</p> <ol style="list-style-type: none"> 4. Are they an integral part of the process 5. Are they sufficiently available for consultation and special projects 		

Status of Bridges in system – Jim Stock (Issues with ODOT bridge construction and mud/debris on the ROW; Buckeye-Woodhill bridge rebuild; E. 55th bridge entrance to Yard, others)

Notes:

6. Pull up 6 months of records from CITME and examine the data for HRV/LRV Vehicle PM trends and other issues
7. Physically Inspect up to 5 Track Circuit, 5 Switch and 5 signal locations –
 - Priority: Viaduct,, Eagle Ave, E. 40th, E. 79th-E. 97th areas
 - Secondary: Shaker Square and the Crossing at the Intersection of Shaker & Van Aken
8. Physically Inspect the Yard Operations – Attention to switches and Track conditions
9. Physically Inspect up to 5 different Track Segments – Belvoir Station area (flooding); Waterfront (flooding)

What is that status for providing CITME terminals in the Vehicle inspection areas?

Question: What is being done about the Propulsion Overload problem caused by not coasting through the Section Insulators and the impact of the Voltage/Current hit on the electrical components especially on the LRVs when the Operators do not Coast as required?

Inspections: HRV microprocessor inspection and discussion; Section insulator testing discussion; LRV Maintenance "A" inspection

Special topic: Signal system status

Finding

Recommendations

Prepared By: _____

Date: _____

ODOT SSO Program Triennial Audit Report Outline

Summary of Triennial Audit Results

Introduction

 Objectives

 Approach

Rail System Description

Triennial Process and Schedule

Analysis for Triennial Audit

Review of Safety Program Documents and Activities

Appendix – Schedule On-Site Triennial Activities

Appendix – Triennial Review and Audit Forms

Corrective Actions Table Headings

Number

Recommendation

Corrective Action

ODOT SSO Comments

Responsibility

Due Date