

Rail Transit Safety

Quarterly Newsletter

Welcome Phoenix METRO!

The end of 2008 marked the beginning of light rail service in Phoenix. Almost 200,000 people participated in METRO's Grand Opening on December 27 and 28. METRO offered free rides along the 20-mile light rail system, hosting a series of celebrations featuring live events, music, ribbon cutting, street performers, and exhibits. Phoenix Mayor Phil Gordon, U.S. Transportation Secretary Mary Peters, U.S. Representatives Ed Pastor and Harry Mitchell, both D-Ariz., Mesa Mayor Scott Smith and Tempe Mayor Hugh Hallman all participated in the Grand Opening.



The \$1.4 billion system began construction in February 2005. METRO anticipates at least 26,000 boardings per day in the first year of operation; however, most

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Federal Transit Administration
Office of Program Management
Office of Safety and Security



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light rail systems in the West have far exceeded their initial ridership projections.



METRO features an alignment of mostly embedded track with some direct fixation track and ballasted track in the yard. Twenty-eight stations span the alignment, designed with platforms at car floor level to expedite passenger boarding and alighting and meet Americans with Disabilities Act (ADA) requirements. To address unique concerns related to sun and heat, METRO stations have a series of seating and waiting areas with canopies, green screens, and trees for shading. Cooled water fountains are also provided. Beyond the ends of the platforms, pedestrian crossing traffic signals are used

to guide passengers across the tracks and streets to sidewalks. The station design discourages jaywalking, and crosswalk countdown timers are used at the station crosswalks.

METRO operates a fleet of 50 dual-articulated light rail vehicles procured from Kinkisharyo in Osaka, Japan. The LRV car bodies were manufactured in Japan with at least 60 percent of the components manufactured in the United States to meet Buy-America requirements. Final assembly of the light rail vehicles occurred at METRO's Operations and Maintenance Center (OMC).



The vehicles have 70 percent low-floor area. Only the forward ends of the main passenger sections have raised floors to permit the installation of powered trucks. The articulated section includes a truck design with dropped frame or running gear, providing a continuous level low floor through the articulated section to the main passenger compartments. These bi-directional vehicles accommodate 66 seated passengers with a full capacity of 172 passengers with standees at AW2 (four standing passengers per square meter).



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To ensure the comfort of passengers, these vehicles are also equipped with oversized air conditioning units and tinted windows. In lieu of mirrors, these vehicles use built-in cameras that feed into monitors in the cab to provide operators with views of the side of the train, including the doors. The trains use crash energy management (CEM) principles, including folding couplers and shock absorbing bumpers.

Passenger doors are provided on both sides of the vehicle for level loading and unloading from either

side. Operator cabs have been designed to incorporate ergonomic features and fail-safe controller positions.

A Traction Electrification System (TES) provides electric traction power to operate the LRVs. There are 15 site-built 2,000 kilowatt traction power substations. The Overhead Contact System (OCS) is installed on more than 1,300 round, painted poles with the contact wire nominally 18'-6" above the rails.

System operations are centrally controlled from the Rail Control Center (RCC) with communications links to facilities and trains over the Supervisory Communications and Data Acquisition (SCADA) and radio systems. A Carrier Transmission Subsystem, consisting of fiber optic transmission links with multiplex and copper cable connections, provides the backbone and network required to link together all facilities and control sites throughout the METRO system. RCC controllers will have the ultimate responsibility for the control, coordination and monitoring of all train movements on the main line through the use of these systems.

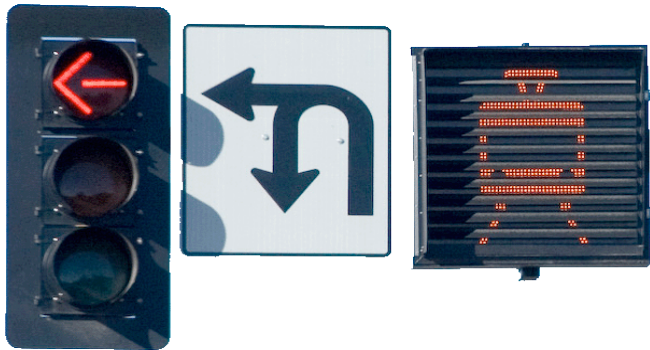
The primary means of communications between OCC and train operators is via two-way radio. A telephone system links the OCC, OMC, stations, and other wayside facilities. A public address system supports communication with patrons at stations, and staff within the OMC. A Variable Message Board (VMB) system and emergency call boxes also facilitate communications with patrons at stations. Closed Circuit Television (CCTV) surveillance is provided for monitoring activities at stations,

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onboard LRV's and for security surveillance at the OMC and other selected locations. Intrusion Detection is included at key locations as well.

METRO operates almost entirely in a semi-exclusive right-of-way. Train movement along the alignment is regulated primarily via the street traffic control system, using predictor-priority traffic signals managed by the cities of Phoenix, Tempe and Mesa. Track circuits are provided at select locations for train detection, to protect against inadvertent switch movements under trains, and to provide a measure of train separation in areas of poor sight visibility. METRO signals are used as the primary means to coordinate the movements of LRVs with the street traffic.



There are 148 light rail intersections along the alignment. U-turns are allowed except where specifically prohibited. However, left and U-turns must occur on green arrow only. There is no turning allowed on solid green lights. There are no shared lanes and all turn lanes are protected with green arrow only. Slip ramps onto frontage roads are signalized, and train approaching signals are provided.

METRO performed an extensive safety and security certification program for the system from

preliminary engineering through final acceptance as ready for passenger operations. METRO and its supporting team of contractors worked closely with the designated state safety oversight (SSO) agency, the Arizona Department of Transportation (ADOT), the Federal Transit Administration (FTA), and the Transportation Security Administration (TSA) to address design, engineering, testing and operational readiness issues affecting safety and security.

Congratulations METRO for successfully and safely placing the light rail system in passenger service!

SSO Audit Program Results and Planned Activities for 2009

Audit Program Results to Date

FTA's Office of Safety and Security conducts audits of State Oversight Agencies (SOA) to assess compliance with 49 CFR Part 659, FTA's SSO Program. Since the revised 49 CFR Part 659 Rule went into effect on May 1, 2006, FTA has conducted 19 audits at SOAs and the rail transit agencies in their jurisdictions. As a result of these audits, FTA has made 250 total findings. These consist of 165 findings of "Non-Compliance (NC)" and 85 findings of "Compliance with Recommendation (CR)." FTA makes a non-compliance finding when it determines that a required component of an SOA's and rail transit agency's program does not meet the

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Part 659 requirements. FTA makes a compliance with recommendation finding it FTA determines that a component of an SOA's and rail transit agency's program technically meets the requirements of Part 659, but can be improved to meet the intent of Part 659 or to support more effective implementation.

The audits evaluate compliance across each of the following program areas:

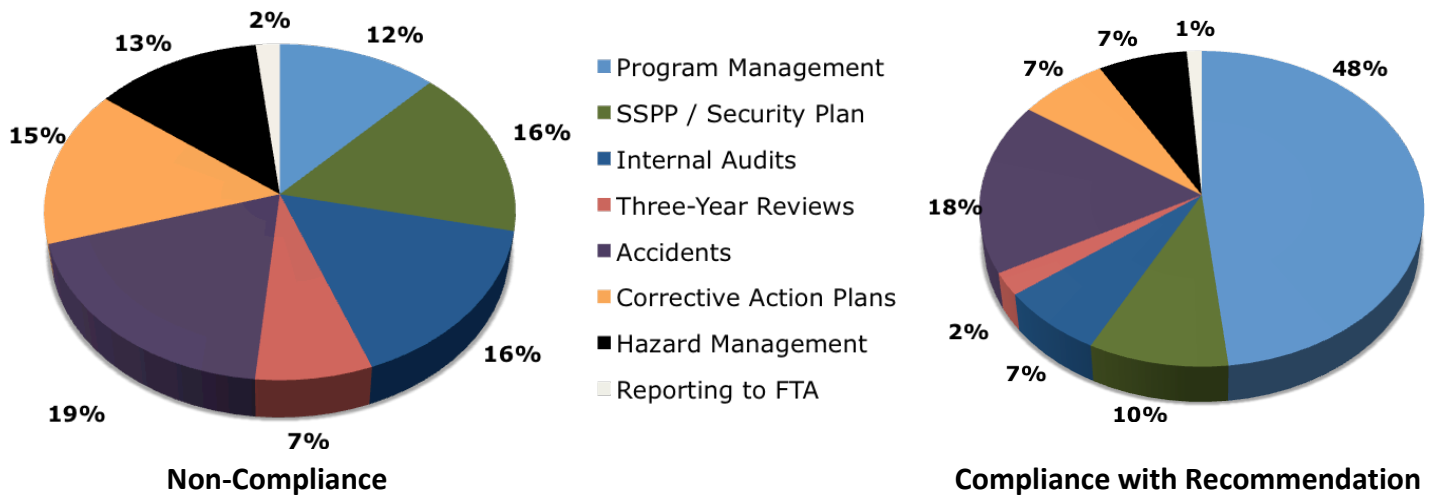
- **Program Management/Program Standard** – evaluates the SOA's management of its SSO Program, the assignment of resources and responsibilities, the use of contractors, and management activities as specified in §659.9, §659.11 and §659.15.
- **System Safety Program Plan (SSPP)/Security Plan Review and Approval** – evaluates the SOA's implementation of program policies for requiring, reviewing, and approving rail transit agency System Safety Program Plans (SSPPs) and Security Plans as specified in §659.17, §659.19, §659.21 and §659.23.
- **Internal Safety Audits** – evaluates the SOA's policies to require rail transit agencies to conduct internal safety and security reviews, and annual assessments of the SSPP and System Security Plan as specified in §659.25 and §659.27.
- **Three-Year Safety Review** – evaluates the SOA's performance of three-year safety reviews to assess rail transit agency implementation of its SSPP and System Security Plan as specified in §659.29.
- **Accident Reporting, Investigation, Reporting and Corrective Action Plans (CAP)** – evaluates the SOA's policies and procedures for performing and overseeing accident notifications, investigations, investigation reports, and CAP development and tracking as specified in §659.33, §659.35, and §659.37.
- **Hazard Management Process** – evaluates the SOA's policies to require rail transit agencies to implement a hazard management program and the SOA's processes for tracking the resolution of identified hazards as specified in §659.31.
- **Reporting to FTA** – evaluates the SOA's policies and procedures for certifying and reporting to FTA, as specified in §659.39 and §659.43.

As shown in the following charts, findings of non-compliance have most frequently been identified in the areas of Accident Notification, Investigation and Reporting (19%), Internal Safety Audits (16%), SSPP and Security Plan Review and Approval (16%), and CAP development and tracking (15%).

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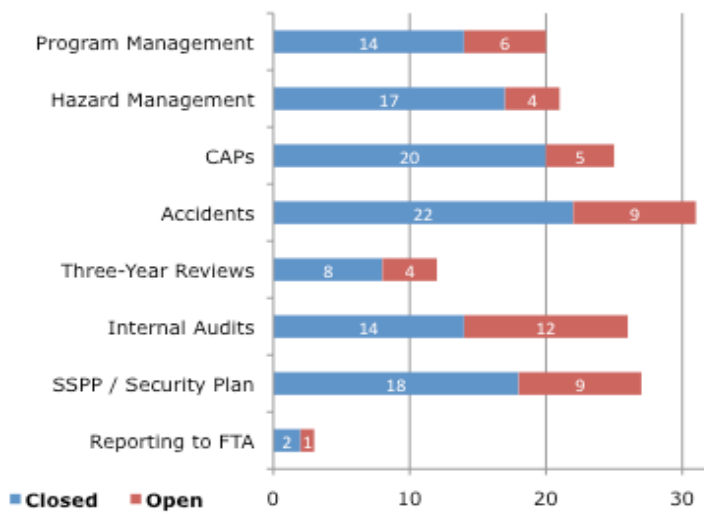
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Percentage of Total Findings by Audit Program Element

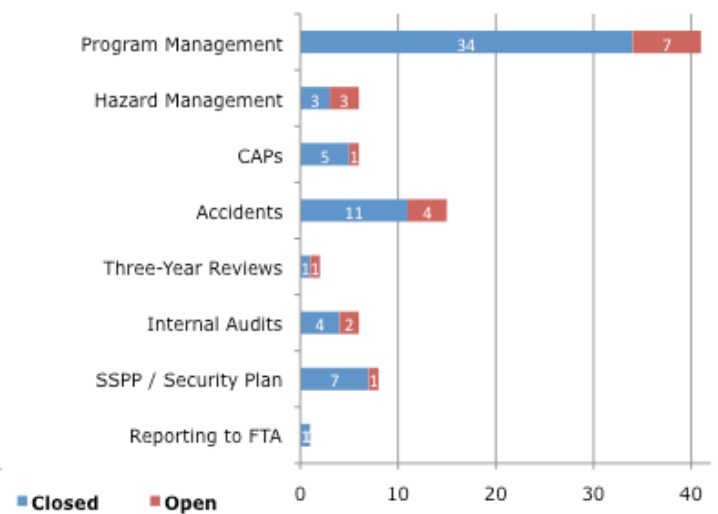


Of the 250 findings that FTA has made since the revised Part 659 Rule went into effect, 55 Non-Compliance findings and 19 Compliance with Recommendation findings remain open. The charts below present a graphical representation of the number of open and closed findings as a portion of the total findings by program element.

Non-Compliance



Compliance with Recommendation



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Audit Schedule for 2009

As part of its ongoing administration of the SSO Program, FTA plans to conduct SSO Audits of the following SOAs during 2009:

- Utah Department of Transportation, February 9-11
- New Jersey Department of Transportation, February 24-26
- Minnesota Department of Public Safety, March 16-18
- Wisconsin Department of Transportation, April 13-15
- Oregon Department of Transportation, May 18-20
- Colorado Public Utilities Commission, June 15-17
- Washington State Department of Transportation, July 13-15
- Tennessee Department of Transportation, September 14-16

In order to ensure the audits are efficient and effective, FTA notifies the SOA of its intent to perform the audit ten weeks prior to arriving onsite. At the time of notification, FTA requests that the SOA submit the following materials:

- System Safety Program Standard, as required by 659.15
- Transit Agency SSPP(s), as required by 659.19
- SSPP Approval Letter(s), as required by 659.17(c)
- SSPP Review Checklists (completed checklist documenting the SOA's review and approval of the plan), as required by 659.17(c)
- Transit Agency Security Plan(s), as required by 659.21 (because of the sensitive security information that may be contained with these documents, FTA may opt to review the security plans while on site)
- Security Plan Approval Letter(s), as required by 659.21(c)
- Security Plan Review Checklists (completed checklist documenting the SOA's review and approval of the plan), as required by 659.21(c)
- Internal Safety and Security Review Schedule(s), as required by 659.27(a)
- Internal Safety and Security Review Checklists and Procedures, as required by 659.27(d)
- Internal Safety and Security Review Notification(s), as required by 659.27(c)
- Internal Review Annual Reports from the previous three years (659.27(f))
- Formal Transit Agency Annual Letters of Certification, as required by 659.27(g)
- Documentation of Annual Report Review and Approval, as required by 659.27(i)
- Three-Year Review Procedures, as required by 659.29
- Three-Year Review Final Report(s), as required by 659.29
- All CAPs from the last Three-Year Review, as required by 659.37(a)(2)
- Mechanism Used to Track Hazards Through Resolution, as required by 659.31(b)(4)
- Three Most Recent Accident Notifications, as required by 659.33(a)

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- Accident Tracking Log, as required by 659.33(c)
- Rail Fixed Guideway System Accident Investigation Procedures, as required by 659.35(b)
- Rail Fixed Guideway System Accident Investigation Procedures approval letter, as required by 659.35(c)
- SOA Accident Investigation Procedures, as required by 659.35(b)
- Three most recent Final Investigation Reports, as required by 659.35(d)
- Formal documentation of SOA's adoption of the Investigation Reports, as required by 659.35(e)(2)
- Periodic Rail Fixed Guideway System Investigation Status Reports, as required by 659.35(f)
- CAPs including two from accident investigation findings, as required by 659.37(b)
- CAP approval letter as required by 659.37(c)
- CAP Tracking Log, as required by 659.37(f)(1)

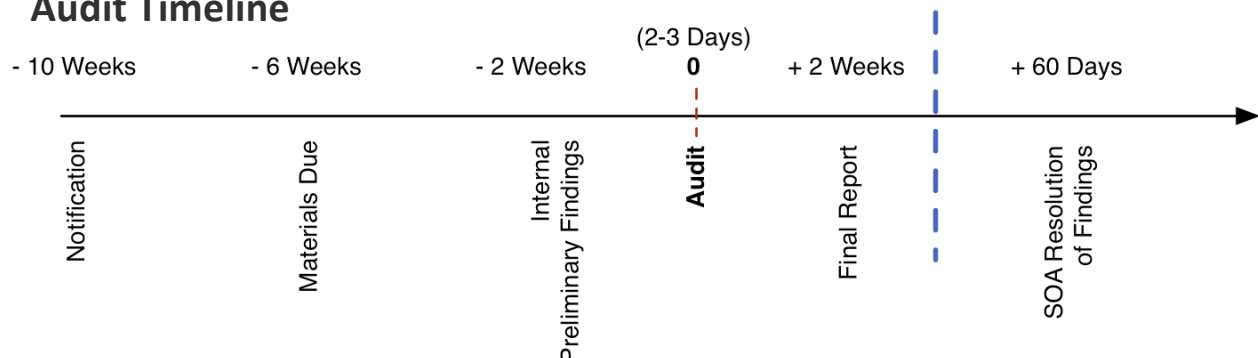
The Audit Team reviews materials prepared by the SOA to guide and document the oversight program.

The pre-audit review activities are also supported by FTA's prior evaluation of materials submitted as part of the SOAs initial submission. A critical part of the pre-audit process is to ensure that necessary documents will be available for review by the audit team. As such, FTA requires that all requested materials be submitted no later than six (6) weeks prior to the scheduled onsite audit.

After the agency notification, the Audit Team Leader and/or designated Team Member works with the SOA to finalize the audit schedule, ensure that the requested audit materials are received, and arrange audit details. An Audit Team member also coordinates with the appropriate FTA Regional Office and provides scheduling details. Two weeks prior to the audit, the audit agenda is finalized and the Audit Team should be in receipt of all requested materials. Once the audit agenda is finalized, the Audit Team Leader will forward a copy of the final audit schedule to the SOA, as well as a detailed list of agency personnel expected to participate in the individual audit sessions.

To prepare for the audits, FTA recommends that each SOA scheduled to be audited in 2009, begin gathering and reviewing the aforementioned list of requested materials to assure all materials are available, up-to-date, and compliant with the requirements of Part 659.

Audit Timeline



Accident Investigation Guidance

SOA Participation in Rail Transit Agency Accident Investigations

SSO Audit Program results consistently indicate that SOAs need to improve their processes for accident notification, investigation, reporting, and CAP development to comply with Part 659. While FTA recommends that SOAs participate in the actual onsite investigation of rail transit agency accidents whenever possible, it also recognizes that in many cases the large geographical distances that separate SOAs from the rail transit agencies they oversee, limited resources, and inexperience at the SOA and/or rail transit agency level with regards to rail accident investigation, often prevent this from happening. FTA has sought to address these issues through sections §659.15(b)(6), §659.33, §659.35, and §659.37 of the Part 659 Rule.

§ 659.15 System Safety Program Standard

- **§659.15(b)(6)** requires the SOA to document in its Program Standard the thresholds for incidents that require an oversight agency investigation. The roles and responsibilities for conducting investigations shall include: coordination with the rail transit agency investigation process, the role of the oversight agency in supporting investigations and findings conducted by the

NTSB, review and concurrence of investigation report findings, and procedures for protecting the confidentiality of investigation reports.

§ 659.33 Accident Notification

- **§659.33(a)** states that the oversight agency must require the rail transit agency to notify the oversight agency within two (2) hours of any incident involving a rail transit vehicle or taking place on rail transit-controlled property where one or more of the following occurs:
 1. A fatality at the scene; or where an individual is confirmed dead within thirty (30) days of a rail transit-related incident;
 2. Injuries requiring immediate medical attention away from the scene for two or more individuals;
 3. Property damage to rail transit vehicles, non-rail transit vehicles, other rail transit property or facilities and non-transit property that equals or exceeds \$25,000;
 4. An evacuation due to life safety reasons;
 5. A collision at a grade crossing;
 6. A main-line derailment;
 7. A collision with an individual on a rail right of way; or
 8. A collision between a rail transit vehicle and a second rail transit vehicle, or a rail transit non-revenue vehicle.

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- **§659.33(b)** also states that the oversight agency shall require rail transit agencies that share track with the general railroad system and are subject to the Federal Railroad Administration notification requirements, to notify the oversight agency within two (2) hours of an incident for which the rail transit agency must also notify the Federal Railroad Administration.
 - **§659.33(c)** requires that the SOA identify in its program standard the method of notification and the information to be provided by the rail transit agency.
- § 659.35 Investigations**
- **§659.35(a)** requires that the SOA investigate, or cause to be investigated, at a minimum, any incident involving a rail transit vehicle or taking place on rail transit-controlled property meeting the notification thresholds identified in §659.33(a).
 - **§659.35(b)** also requires that investigations be performed using the SOA's own investigation procedures or those that have been formally adopted from the rail transit agency and that have been submitted to FTA.
 - **§659.35(c)** states that in the event the oversight agency authorizes the rail transit agency to conduct investigations on its behalf, it must do so formally and require the rail transit agency to use investigation procedures that have been formally approved by the oversight agency.
 - **§659.35(d)** requires that each investigation be documented in a final report that includes a description of investigation activities, identified causal and contributing factors, and a corrective action plan.
 - **§659.35(e)** requires that the final investigation report be formally adopted by the oversight agency for each accident investigation. If the oversight agency has conducted the investigation, it must formally transmit its final investigation report to the rail transit agency. If the oversight agency has authorized an entity other than itself (including the rail transit agency) to conduct the accident investigation on its behalf, the oversight agency must review and formally adopt the final investigation report. If the oversight agency does not concur with the findings of the rail transit agency investigation report, it must either:
 - i. Conduct its own investigation according to paragraphs (b), (d) and (e)(1) of this section; or
 - ii. Formally transmit its dissent to the findings of the accident investigation, report its dissent to the rail transit agency, and negotiate with the rail transit agency until a resolution on the findings is reached.
 - **§659.35(f)** requires the SOA to have the authority to require periodic status reports that document investigation activities and findings in a time frame determined by the oversight agency.

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§ 659.37 Corrective Action Plans

- **§659.37(a)** states that the SOA must, at a minimum, require the development of a corrective action plan for (1) results from investigations, in which identified causal and contributing factors are determined by the rail transit agency or oversight agency as requiring corrective actions; and (2) for findings from safety and security reviews performed by the oversight agency.
- **§659.37(b)** requires that each corrective action plan identify the action to be taken by the rail transit agency, an implementation schedule, and the individual or department responsible for the implementation.
- **§659.37(c)** requires that the corrective action plan be reviewed and formally approved by the oversight agency.
- **§659.37(d)** requires the SOA establish a process to resolve disputes between itself and the rail transit agency resulting from the development or enforcement of a corrective action plan.
- **§659.37(e)** requires the SOA identify the process by which findings from an NTSB accident investigation will be evaluated to determine whether or not a corrective action plan should be developed by either the oversight agency or rail transit agency to address NTSB findings.
- **§659.37(f)** requires the rail transit agency provide the oversight agency (1) verification that the corrective action(s) has been implemented as described in the corrective action plan, or that a

proposed alternate action(s) has been implemented subject to oversight agency review and approval; and (2) periodic reports requested by the oversight agency, describing the status of each corrective action(s) not completely implemented, as described in the corrective action plan.

- **§659.37(g)** requires the SOA to monitor and track the implementation of each approved corrective action plan.

To comply with these requirements, FTA recommends SOAs remain actively involved in the day-to-day operations of the rail transit agencies they oversee. The intent of this recommendation is to improve the knowledge base and skill level of SOA Program Managers with regards to rail transit operations and maintenance, the hazards that exist in the rail transit environment, and how these hazards can lead to rail transit accidents. To improve the accident investigation capabilities of SOA Program Managers, FTA also recommends that Program Managers attend training courses such as those offered by the Transportation Safety Institute (TSI), including:

- Transit Rail Incident Investigation (FT00430),
- Advanced Rail Incident Investigation (FT00461), and
- Transit Rail System Safety (FT00543)

More information about these courses can be found at:

<http://transit-safety.volpe.dot.gov/Training/Courses/default.asp#train2>

SSO Agency Feedback on Effective Accident Investigation Practices

Special thanks given to Ms. Susan Hausmann, Mr. Brian Cristy, and Mr. Timothy Davis for their support and cooperation in developing this article.

Although the above recommendations can help to improve the overall accident investigation capabilities of the SOA, FTA recognizes that meeting the accident notification, investigation, reporting and CAP requirements of Part 659 continue to present a challenge to the SSO community. This is due to the large variances that exist between SOAs and within the rail transit industry. Available resources, rail transit experience, accident investigation capabilities, levels of authority, proximity to the rail transit agency, and the size, location and type of rail transit operations being overseen all differ greatly between SOAs. As a result, each SOA is faced with its own set of unique challenges and must develop its own approaches to overcoming these challenges.

To gain deeper insight into these issues and an SOA perspective on how to best overcome them, FTA contacted Ms. Susan Hausmann, Transit System Safety and Security Manager, Texas Department of Transportation (TxDOT), Mr. Brian Cristy, Director, Transportation Oversight Division, Massachusetts Department of Public Utilities (MDPU), and Mr.

Timothy Davis, Assistant Director, Transportation Oversight Division, MDPU. Ms. Hausmann serves as SSO Program Manager for the state of Texas, overseeing three geographically dispersed rail transit agencies in Houston, Dallas, and Galveston, TX. Because Ms. Hausmann's oversight program applies to so many rail transit agencies located across such a wide area, she is presented with a number of unique challenges in assuring accidents are reported to her SOA within the 2 hour timeframe required by Part 659. She has also had to develop special tools and practices for monitoring accident investigations.

Mr. Cristy and Mr. Davis serve as SSO Program Manager and Assistant SSO Program Manager for the state of Massachusetts, overseeing the fifth largest transit agency in the US—the Massachusetts Bay Transportation Authority (MBTA). Unlike TxDOT, MDPU is located in close proximity to MBTA and has staff that work onsite on a daily basis. Because of the size of MBTA however, MDPU faces its own unique challenges in administering the accident notification, investigation, reporting, and CAP requirements of Part 659. Excerpts from FTA's conversations with Ms. Hausmann, Mr. Cristy, and Mr. Davis are provided below.

Conversation with Ms. Hausmann

Given their geographically dispersed nature, how do you monitor and oversee the activities of the rail transit agencies under your program?

Susan Hausmann (SH): It's all about building effective relationships. Though I may not be able to be onsite as frequently as other SOAs, I work closely and communicate frequently with the safety departments and personnel at each rail transit

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agency. I've built strong open relationships with the individuals so they are not hesitant about communicating issues and concerns. I also monitor outside resources such as local newspapers, websites, and other news media for any articles related to the agencies. This was especially useful during start-up of the Houston light rail system.

How do you receive accident notifications from the RTA's you oversee and how do you assure they meet the two-hour notification requirement?

SH: TxDOT receives notification of accidents/incidents via email. If the accident is quite severe however, we will also normally be notified by phone. Once notification is received, I will review the email and may contact the rail transit agency for more information depending on the nature and severity of the accident.

To date, each of the rail transit agencies have been very good at meeting the two-hour notification requirement. TxDOT communicated this requirement to each of the rail transit agencies before the final revised Part 659 Rule went into effect and encouraged each agency to provide comments to FTA pertaining to the rule revision. In this manner, the rail transit agencies were prepared for the new requirement. Once in effect, TxDOT worked closely with the safety departments of each rail transit agency to ensure they understood the requirement. In the future, TxDOT hopes to establish an on-line system that can be used for reporting.

How do you assure accident reports are complete and meet the requirements of your standard?

SH: Last year I developed a report format that is based on the accident investigation checklist used by Houston Metro. This format is very comprehensive

and follows a National Transportation Safety Board (NTSB) investigation outline. Each rail transit agency is required to use this format to submit their investigation reports within 30 days of the accident. I then review each accident report to assure they are thorough and contain all required elements. Generally, the rail transit agencies are very good at submitting detailed investigation reports. In fact, in many cases, the investigation reports are accompanied by train logs and police reports related to the accident.

What do you view as being the most important factor to administering your SSO Program and the accident investigation process?

SH: Again, I think building and maintaining a strong relationship with each rail transit agency is the most important. The SOA must be able to work in partnership with the transit agencies to meet the requirements of Part 659, and this can only be achieved through positive working relationships.

Do you have any recommendations or advice for FTA or the other SSO Agencies involved in the Program?

SH: It would be useful for FTA to communicate more frequently with the SOAs. These quarterly newsletters are a good start, but I think more could be done to inform us about program issues or the challenges being faced by other SOAs, and how to best overcome these issues and challenges.

Additional financial support would also be helpful. It is difficult to complete all of the training that FTA recommends and to participate in all of the Program conferences and meetings that FTA holds each year when state budgets are so limited.

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Conversation with Mr. Cristy and Mr. Davis

How do you receive accident notifications from the RTA's you oversee?

Brian Cristy (BC)/Timothy Davis (TD): MDPU receives notification of accidents/incidents involving MBTA via MBTA's "All-Page" system. When an accident occurs, a text message is sent to MDPU SSO personnel who review the message to determine if the accident is reportable under Part 659. Because not all MBTA rail transit staff are fully versed in the requirements of Part 659, MDPU SSO personnel are notified of every rail related accident/incident that occurs. In this manner MDPU SSO personnel make the determination as to whether or not the accident/incident is reportable under Part 659. The SSO representative on duty at the time of notification will then contact the MBTA operations control room and/or safety department directly to obtain any follow-up information and to provide direction as to whether or not the accident/incident is reportable.

Given your close proximity to the RTAs you oversee, do you ever participate in the actual onsite accident investigation process, and if so, what types of activities do you perform?

BC/TD: MDPU's Program Standard requires MBTA to conduct accident investigations on behalf of the SSO Agency. MDPU has emphasized however, that although MBTA performs rail transit accident investigations on behalf of the SSO Agency, MDPU has the authority to participate in and question all accident investigation activities. As such, MDPU has a Transit Engineer and a Transit Inspector that both

work onsite with MBTA staff and are responsible for observing, overseeing, and participating in the investigation process. In particular, MDPU's Transit Inspector has more than 30 years of rail transit experience and has come to be seen as a valuable resource during the investigation process.

In all cases, not just during accident investigations, MDPU views the administration of Part 659 as a task that can only be accomplished in partnership with MBTA. MDPU therefore considers the presence of onsite staff as a means of developing this partnership as well as an opportunity for training rail transit agency personnel with regards to the requirements of Part 659 and the requirements of MDPU's Program Standard.

What processes do you use to review accident investigation reports submitted by the rail transit agencies under your jurisdiction?

BC/TD: To support the accident investigation process, MDPU developed an accident investigation checklist that MBTA is required to complete. The checklist serves as a guide for MBTA staff and identifies all the information required by MDPU as part of the final investigation report. It also helps to assure that the investigation process is properly documented and auditable. The MDPU Transit Inspector and Transit Engineer are responsible for reviewing submitted accident investigation reports and for assuring all checklist items have been properly completed. If the accident investigation reports do not meet the checklist requirements, the Transit Inspector will reject the report and work with MBTA to resolve any open issues prior to approval.

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Do you ever employ outside contractors or engage the support of FRA inspectors to support the investigation process and to identify/verify accident root causes?

BC/TD: Yes. MDPU has hired a former FRA Inspector as an outside contractor who is called upon to support investigations, audits, and inspections involving MBTA's signaling systems.

Every area has an FRA Regional Office that SSO Program Managers can contact to learn if there are any retired FRA inspectors working in their areas as consultants or that may be interested in serving as a contractor to the SSO Agency. MDPU has found that employing a single contractor in this manner is far less expensive and far more useful than contracting a large consulting firm. The former FRA Inspector that MDPU employs charges a rate that is 2 to 3 times less than that of larger firms and because he is familiar with the region and MBTA's operations, is capable of responding to MDPU's needs more efficiently than others.

In addition to contacting the Regional FRA Office, SSO Program Managers may also be able to identify individuals who have recently retired from the rail transit agency that may be interested in working for the SSO in a contract capacity. Again the familiarity of these individuals with the systems the SSO Agency is responsible for overseeing can be very beneficial to the investigation process.

What system or processes do you have in place to monitor the status of accident investigations, and corrective action plan development and implementation?

BC/TD: MDPU uses a hazard tracking form that MBTA is required to complete within 24 hours of the occurrence of the accident. This form serves as an intermediate report between the initial notification and MBTA's submittal of the final investigation report, which must be submitted to MDPU within 60 days of the accident. MDPU enters the information on the form into its own database for tracking. In addition, MBTA maintains a sister database, which is more detailed, but is also used to track accident investigation findings and corrective action plans. MDPU's Transit Inspector and Transit Engineer meet with MBTA on a monthly basis to review all open items.

What do you view as being the most important factor to administering your SSO Program and the accident investigation process?

BC/TD: Most important is viewing the program as a partnership between MDPU and MBTA. Having an active presence onsite has been very beneficial in administering the program and in tracking the status of open items, but MDPU believes strongly that meeting the requirements of Part 659 can only be achieved in partnership with the rail transit agency. Through its onsite presence, MDPU communicates and works with MBTA operations, maintenance, and safety personnel on a daily basis. This has helped MDPU to become familiar with day-to-day operations and onsite activities, as well as to develop relationships with MBTA personnel that are necessary to complete thorough accident investigations and to administer the other requirements of Part 659.

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Can you provide any advice to FTA and/or other SSO Agencies with regards to overseeing the accident notification, investigation, reporting and CAP processes of RTAs?

BC: FTA should consider developing a training course directed towards educating front-line rail transit employees with regards to the requirements of Part 659. In many instances, MDPU has had to train MBTA personnel as to why they need to complete certain actions or fulfill certain MDPU requests. If front-line rail transit agency staff were provided basic instructing regarding the Part 659 requirements, MDPU's administration of the program would be far easier.

It would also be useful for FTA to provide a general investigation course directed towards helping front-

line transit employees with writing and developing accident investigation reports that meet the requirements of Part 659.

FTA should also consider developing a training course directed towards SSO Program Managers with regards to auditing. Many SSO Agencies conduct audits of the rail transit agencies under their jurisdiction only once every three years, and even then often hire contractors to conduct the audits on their behalf. With the provision of a basic training course in auditing specific to the SSO Program and how to verify that rail transit agencies are meeting the requirements of the SSO Program Standard and Part 659, these SSO Agencies may be able to perform audits themselves more frequently, and far more effectively.

We Want Your Feedback

To provide feedback pertaining to this issue of the SSO Quarterly Newsletter; to obtain additional information pertaining to any of the topics discussed in this issue; or to request that a specific topic of interest to your organization be discussed in upcoming issues, please contact:

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About the Newsletter

The FTA Rail Transit Safety Newsletter is a technical assistance newsletter published quarterly by the Federal Transit Administration. This Newsletter is distributed free to members of the State Safety Oversight Community, including FTA regional offices, state safety oversight agencies, and rail transit agencies.

