



NATIONAL TRANSPORTATION SAFETY BOARD  
**Investigative Hearing**

Washington Metropolitan Area Transit Authority Metrorail train 302 that encountered heavy smoke in the tunnel between the L'Enfant Plaza Station and the Potomac River Bridge on January 12, 2015

<b>GROUP</b>	
<b>EXHIBIT</b>	

Agency / Organization

Title

## Tri-State Oversight Committee



**d.**



**DRPT**

# Three-Year Safety and Security Review of the Washington Metropolitan Area Transit Authority

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## System Safety Program

Elements 1-10, 12, and 17

**Review Conducted: August through October 2013**

Draft Report: December 2, 2013  
**Final Report: February 14, 2014**

## **Introduction**

Representatives from the Maryland Department of Transportation (MDOT), the District of Columbia Department of Transportation (DDOT), and the Virginia Department of Rail and Public Transportation (DRPT) comprise the Tri-State Oversight Committee (TOC), which provides regular oversight of the Washington Metropolitan Area Transit Authority (WMATA) Metrorail system. To comply with State Safety Oversight Final Rule 49 Code of Federal Regulations Part 659 (Part 659), the Federal Transit Administration (FTA) requires states to designate a State Safety Oversight (SSO) agency to administer safety and security programs for rail transit and fixed guideway systems within their jurisdictions. Specifically, 49 CFR Part 659 requires TOC to conduct an on-site safety review of each element of the WMATA System Safety Program Plan (SSPP) at least once every three years. These reviews must assess WMATA's implementation with all 21 elements of its SSPP and seven elements of its Security and Emergency Preparedness Plan (SEPP), along with related plans and procedures. Beginning in 2013, the TOC has split its Three-Year Safety and Security Review topic areas into separately occurring reviews spread out during a three-year period.

The following report documents the observations and findings of the TOC's review of System Safety program elements. These are mostly interrelated elements for which responsibility is tied closely to the Department of Safety and Environmental Management (SAFE), and so TOC has audited these elements in one review:

- Element 1: Policy Statement
- Element 2: Purpose, Goals, and Objectives
- Element 3: Management Structure
- Element 4: SSPP Review and Modification
- Element 5: SSPP Implementation Tasks and Activities
- Element 6: Hazard Management Process
- Element 7: System Modification
- Element 8: Safety Certification
- Element 9: Safety Data Acquisition
- Element 10: Accident/Incident Notification, Investigation, and Reporting
- Element 12: Internal Safety Audit Process
- Element 17: Configuration Management

The TOC Program Standard and Procedures defines WMATA requirements for these elements in Section 12 and in Appendix B. Specific requirements are cited further, below.

## **Methodology**

The TOC review team included representatives from TOC and its technical consultant, Transportation Resource Associates. In advance of the review, the TOC requested and reviewed numerous WMATA plans, policies, and procedures. The on-site portions of the review occurred Aug. 13-16 and Oct. 3, 2013. During the on-site review sessions, the

review team interviewed WMATA personnel and reviewed various documents and records to assess compliance with procedures. Persons interviewed and documents reviewed are noted at the end of this report. As the review progressed, TOC representatives discussed preliminary findings and addressed questions from WMATA personnel. This report identifies conditions evident during the review period, regardless of the current status of potential remediation activities.

Findings are categorized as Findings of Non-Compliance or Findings of Compliance with Recommendation. A Finding of Non-Compliance refers to an instance of WMATA operating out of compliance with an applicable internal or external written requirement, plan, policy, rule, standard, or procedure. Findings of Non-Compliance may be safety- or security-critical in nature. If a Finding of Non-Compliance is identified, WMATA is required to develop an appropriate Corrective Action Plan (CAP) and take action to achieve compliance with the applicable requirement.

A Finding of Compliance with Recommendation refers to a condition whereby WMATA may technically be conducting business in compliance with existing WMATA, TOC, or FTA procedures and requirements; however, there may be no relevant written plan, policy, or procedure in place, or the existing plan, policy, or procedure is not in accordance with industry best practices or standards (such as those by the American Public Transportation Association). Additionally, WMATA may have a resource or organizational issue preventing sufficient devotion of resources to system safety or security activities. In response to a Finding of Compliance with Recommendation, WMATA is required to formally respond in writing, and is strongly urged to develop an appropriate CAP to update relevant plans, policies, rules, and/or procedures, or to address a particular identified resource or organizational issue.

This review, including all findings presented in this report, intends to assist WMATA with enhancing system safety and security throughout Metrorail operations. Upon receipt of this draft report, WMATA had 30 days to respond with comments regarding the content of this report, primarily for accuracy. Following a meeting between TOC and WMATA on January 13, 2014, regarding the Draft Report, the TOC took comments into consideration before releasing this final report. Upon receipt of the final report, WMATA has 45 days to develop CAPs in response to each finding as noted above.

The TOC would like to thank WMATA personnel for their time, cooperation, and forthrightness throughout the review process.

## **Current Conditions**

### **Element 1: Policy Statement**

The first section of WMATA's SSPP contains a section that is compliant with the requirement in Part 659.19(a) for a Policy Statement and Authority signed by the General Manager in January 2012. It describes the duty of employees to conduct their jobs safely, and outlines the responsibilities of SAFE. Further, this section contains a

policy statement signed by the WMATA Board of Directors. It was most recently updated in 2010 and outlines that body's role in holding the transit agency accountable for conducting a compliant safety and security program.

A separate Board of Directors Safety and Security Committee meets monthly and, on a quarterly basis, invites the TOC to brief its members on TOC activities and concerns. WMATA also holds a monthly Executive Safety Committee meeting involving the General Manager. The General Manager also conducts meetings with individual Executive Leadership Team members to discuss finance, safety and performance; the Chief Safety Officer is invited to join each of these sessions.

There are no findings related to this element.

## **Element 2: Purpose, Goals, and Objectives**

This section describes, as required, the SSPP purpose as well as the goals and objectives to successfully implement the safety program. The requirement for goals and objectives is detailed in Part 659.19(b) and noted in SSPP Section 2. The Office of Performance works with the General Manager, with consultation by SAFE, on targets for annual safety objectives. Each department or office is responsible for attaining their own safety objectives that are measureable and quantifiable. These often include the reduction of injury or accident rates. This is the main set of Key Performance Indicators (KPIs) for SAFE, which lists these on its internal web site.

WMATA personnel noted that even for the more qualitative goals listed in its SSPP, there are indicators of success. One is trade group recognition; in 2013, the National Safety Council named WMATA's General Manager one of its featured "CEOs Who 'Get It.'" WMATA has also conducted an employee engagement survey and instituted safety goals for all non-represented and exempt employees.

There are no findings related to this element.

## **Element 3: Management Structure**

In this section of the SSPP the organizational structure and hierarchy of WMATA are illustrated through organizational charts and described in narratives. It is compliant with Part 659.19(c)(1), (2), and (3) in that it contains an organizational chart for the agency, a description of how the safety function is integrated into the rest of the rail transit organization and clearly identifies the lines of authority used by the agency to manage safety issues.

WMATA has included a comprehensive narrative that clearly explains the current management structure of the agency, the integration of the safety function into the rest of the agency and the lines of management authority. However, the agency and safety department organizational charts provided in the hard copy version of the 2013 SSPP were not legible. Since the time of this review, WMATA provided new organizational

charts as part of the 2014 SSPP for consideration. In addition, as discussed in the findings, WMATA's process for communication information to and from safety committees was not clear.

There are three Findings of Compliance with Recommendation related to this element, described in the Findings section below.

#### **Element 4: SSPP Review and Modification**

Per Part 659.19(d), WMATA has a process in place to specify an annual assessment of whether the SSPP should be updated and identify the required coordination with the oversight agency, including timeframes for submission, revision, and approval. The intent of this section is to insure that changes to the SSPP are executed in a manner that identifies and assesses the impacts of these changes within the document and within the agency. WMATA has been compliant with timeframes for submission to the TOC.

While the SSPP does contain a brief written section addressing this element, it lacks the detail and specificity of the process that was discussed during interviews with SAFE leadership, such as the interface with other departments. The inclusion of this detail is critical to the agency's continuity of operations and consistency of process.

There is one Finding of Compliance with Recommendation related to this element, described in the Findings section below.

#### **Element 5: SSPP Implementation Tasks and Activities**

Compliant with Part 659.19(e), WMATA's SSPP contains a set of matrices and narrative descriptions identifying the safety activities performed by the safety function (SAFE) and the safety activities performed by other agency departments that support the safety program. Activities performed by other WMATA departments, which support SAFE, are also accompanied by position and management accountability.

The matrix of activities performed by both SAFE and other departments, included in this section, clearly identifies specific responsibilities and tasks, department interfaces, and SAFE personnel responsible for each task. It does not, however, include a schedule, identifying whether these activities are performed daily, weekly, monthly, quarterly, annually, or on an as needed basis, as recommended in Part 659.19(e). Such a schedule would be helpful to ensure the responsibilities are routinely accomplished.

Additionally, it was not evident during the review that SAFE has performed engineering design review on new projects, as specified in SSPP Section 5.4.3.

There is one Finding of Non-Compliance related to this element, described in the Findings section below.

## **Element 6: Hazard Management Process**

As specified in Part 659.19(f), the SSPP must contain a documented hazard management process that establishes the process through which the rail transit agency (WMATA) and the oversight agency (TOC) will share information regarding the identification, investigation, evaluation, resolution and tracking of hazards. The objective of this process is to provide an on-going oversight role for hazard management at the rail transit agency. The hazard management process must identify all mechanisms, systems and procedures in place at WMATA to identify hazards, such as: data mining of agency control center logs and maintenance information systems; reports from operators and supervisors; customer complaints; results of formal safety analyses; results from internal safety and security reviews; results from performance testing and other rules compliance activities; results from the oversight agency three-year safety review; and results from accident investigations and trend analysis of minor incidents and near-misses.

Additionally, the hazard management process must describe how identified hazards are investigated, evaluated and analyzed; and how they are being controlled and eliminated, whether by design for minimum risk; use of safety devices; use of warning devices; the provision of procedures and training; and other appropriate means. This section must also describe how identified hazards are tracked through to resolution, and must specify WMATAs on-going reporting requirements for communicating this information to the TOC.

While the SSPP contains thorough documentation of the hazard management process, the real and documented practice of implementing and following the process are lacking. A fundamental requirement for an effective hazard management process is the ability of all employees to readily recognize and identify a hazard, whether a condition or act, and report it into a chain of command and communication in a timely manner. Insufficient documentation was provided to demonstrate that WMATA has a universally understandable definition of a hazard and that there are adequate sources of information and training for employees at all levels on recognizing and reporting hazards. While none of the elements of an SSPP are expendable, some, such as this, are vital and critical to the implementation of the SSPP as a document that directs the system-wide management and mitigation of hazards and clearly communicates this information with the TOC.

Although it is not clearly stated in this section or in Section 5 of the SSPP and was extensively discussed, there seems to be distinct and specific processes for communicating hazards from the Local Safety Committees (LSC) to SAFE, and for adding hazards into the Safety Measurement System (SMS) through SAFE representatives and/or administrative personnel.

There are three Findings of Non-Compliance related to this element, described in the findings section below.

## **Element 7: System Modification**

Part 659.19(g) requires rail transit agencies to clearly specify their processes and procedures regarding those maintenance and construction activities that do not require formal safety certification, but that do require safety inspections and sign-offs prior to placement of the facility, equipment, or vehicle in service (i.e., replacements or repair in kind, etc.) To avoid confusion and to clarify roles and responsibilities, FTA recommends that the rail transit agency safety department coordinate with the maintenance department to develop a formal procedure, if one does not already exist.

The SSPP identifies the Engineering Modification Instruction (EMI) process as the method utilized to assure that safety is not adversely affected by rail system modifications not subject to the safety and security certification process. This process includes evaluation and assurance that a proposed modification does not adversely affect a system, vehicle, equipment or facility previously certified under the safety and security certification process. The SSPP also states that any proposed configuration change, with the exception of IT and CENI project management design changes, will be initiated by an EMI and coordinated with RTTO, RTRA, SAFE, CENI, CENV, TRST, SMNT, CMNT, QAAW and CFO with documentation. However, because CENI and other departments do not follow the EMI process, it is not clear how they manage safety modification and the corresponding configuration control; this is described in detail in the findings section below.

There is one Finding of Non-Compliance related to this element, described in the findings section below.

## **Element 8: Safety Certification**

Rail transit agencies are required, in Part 659.19(h), to describe the process used to ensure that any facilities, equipment, vehicles, and services placed in passenger operations are certified as safe and secure prior to carrying passengers. References to appropriate safety certification plans and procedures should be included in this section of an SSPP.

While there is a description of the safety certification process, two integral pieces of this certification process are vaguely worded and render specific parts of the process to be deficient in implementation effectiveness. Section 5.3.2 identifies the use of a Safety and Security Certification Review Committee (SCRC) to provide guidance for the safety and security certification of major construction and rehabilitation projects and vehicle procurement. It does not, however, identify specific individuals or departments that should be consistent members of the SSRC, nor does it specify the attendance, participation, voting, and approval requirements of membership in carrying out the committees responsibilities in the certification process.

The section also does not describe non-traditionally funded projects for which WMATA is ultimately responsible for safety certification. This deficiency creates situations where



projects are not put through proper safety and security certification processes, rendering the certification process and documentation non-compliant in certain, often large-scale design and construction projects.

There are two Findings of Non-Compliance and two Findings of Compliance with Recommendation related to this element, described further in the findings section below.

### **Element 9: Safety Data Acquisition**

The SSPP, compliant with Part 659.19(i), must identify how information related to safety is identified, evaluated, and distributed throughout the rail transit agency. It must also specify how safety information is reported to the rail transit safety function. Accountability for the reporting and analysis of safety information should also be addressed. As appropriate, this section should reference the procedures developed to support the hazard management process.

The methodologies identified in this section of the SSPP should be followed with documented proof of compliance or, if a specific methodology has been supplanted or antiquated, it should be removed from the list of data acquisition methods.

While the interviews demonstrated the existence of a comprehensive and thorough process for collecting, cataloging, and analyzing safety data, there was very limited or non-existent documentation of these specific processes in the SSPP or supporting documents. Documentation of these procedures is critical to the agency's continuity of operations, operational and management consistency, maximized efficacy, and overall compliance with the requirements of Part 659.19.

There is one Finding of Non-Compliance and one Finding of Compliance with Recommendation related to this element, described further in the findings section below.

### **Element 10: Accident/Incident Notification, Investigation, and Reporting**

Part 659.19(j) requires that a compliant SSPP specify that accidents meeting thresholds established in the revised rule are reported to the oversight agency within two (2) hours. Requirements for reporting to other agencies, such as the National Transportation Safety Board, should also be identified in the SSPP. In addition, this section must describe and reference the procedures and processes used to conduct accident investigations, to identify causal factors, and to develop and track corrective actions. Submission of investigation reports and corrective action plans to the oversight agency and subsequent coordination with the oversight agency must also be addressed.

The SSPP identifies and describes all of the requisite processes for accident notification, investigation and reporting and complies with both Part 659.19(j) and the TOC Program Standard and Procedures. The TOC's experiential evidence and

interview discussions demonstrate many cases of non-compliance between the documented processes or timelines and WMATA's timely completion of investigations and reporting.

There are two Findings of Non-Compliance and one Finding of Compliance with Recommendation related to this element, described further in the findings section below.

### **Element 12: Internal Safety Audit Process**

Rail transit agencies such as WMATA are required in Part 659.19(l) to develop and implement an internal safety review program with a three-year cycle. This process must cover each of the 21 elements required in the SSPP during a three-year cycle. Rail transit agencies must develop a schedule, procedures and checklists, and must submit them to the oversight agency for review. Annual reports must also be submitted documenting internal review activities, schedule, findings, and status of implementation of recommendations. The rail agency's chief executive must submit an annual certification to the oversight agency stating that the internal review process demonstrates compliance with the agency's SSPP. If such certification cannot be made, then an action plan must be submitted to the oversight agency for review and approval.

The WMATA SSPP identifies SAFE as the lead department for managing the ISSA process and clearly stipulates

[REDACTED]

[REDACTED]

[REDACTED]

### **Element 17: Configuration Management**

Configuration management is addressed in Part 659.19(q) and requires rail transit system's SSPP to describe the process and procedures used to ensure configuration management control, including the authority to make changes, the process for making changes, and notification and assurances to all affected departments regarding control of the rail transit agency's design baseline.

While the audit initially focused on SAFE's role in configuration management, the nature of project initiation within WMATA dictates that CENV and CENI, both located within TIES, create and control many of the projects related to design modifications to systems, infrastructure and vehicles.

Follow-up meetings with CENI and CENV identified that CENV uses a decentralized configuration management process that allows for individual change control methods within the sub-departments of CENV, but not with a set of guidelines applied across all of these sub-departments or throughout CENV. Based on the nature of CENV's structure and responsibilities, there is no intent to adjust or reconfigure this process.

CENI is working to develop a department-wide process to not only track and monitor changes and modifications but also enhance the document control, archiving and access protocols by uploading all documents – including drawing, specifications, and supporting materials – into a searchable database located in Documentum. Completion of this process is being coordinated through the WMATA IT department.

While CENI and CENV are the primary departments from which changes would be initiated, there are other WMATA offices and departments that may issue safety-related changes that must be coordinated. The federal requirement for agency-wide configuration management is discussed in a finding below.

There are two Findings of Non-Compliance and one Finding of Compliance with Recommendation related to this element, described further in the findings section below.

### **Findings of Non-Compliance (NC)**

#### **Finding of NC 1: There was no evidence that SAFE is completing review of engineering designs for new projects.**

SSPP Section 5.4.3 states how and which departments must submit documents for design review to SAFE and how SAFE responses are to be incorporated into contracts. However, during this review WMATA was unable to provide documents showing that it had reviewed or provided comments on engineering design for new projects. Following the review, WMATA provided evidence of SAFE's involvement in a Design Control Board discussion regarding a new wayside worker warning system; however, there were no other examples specific to the engineering design projects related to the rail system's operations or infrastructure. SAFE should also ensure that its design review includes how new changes at WMATA, such as those to training or emergency management procedures, are carried through into the engineering designs when relevant. This finding pertains to Element 5.

Recommended Corrective Action: SAFE should comply with SSPP Section 5.4.3 by documenting involvement in the engineering design review process for new projects. In

order to close this finding, WMATA should provide documentation of its engineering design review for two additional new projects (beyond the wayside worker warning system).

**Finding of NC 2: The TOC was not receiving a monthly log of hazards at the time of this review.**

Section 10.5 of the TOC Program Standard and Procedures requires that “[o]n a monthly basis, WMATA must submit a log of hazards to TOC for review. Hazard logs shall be formatted to show at a minimum all open/current hazards and all hazards that were open within the last 120 days.” Although WMATA has provided some TOC members with SMS access, this does not achieve the intention of providing evidence of an analyzed, sorted, and easily comparable monthly view of open and recently closed hazards for review. WMATA previously only intermittently provided hazard logs to the TOC; though following the initial review, SAFE has submitted logs each month since October. This finding pertains to Element 6.

Recommended Corrective Action: WMATA should continue to provide monthly hazard logs to the TOC. WMATA should also note the monthly hazard log requirement in its SSPP. In order to close this finding, WMATA should provide an updated SSPP including the monthly hazard log requirement, and provide six consecutive months (October 2013 – March 2014) of hazard logs to the TOC.

**Finding of NC 3: Hazardous conditions are not being reported through the hazard management process to be analyzed systematically throughout the agency.**

Recent investigations into incidents have revealed hazards that preceded the occurrences but were not appropriately identified or reported. Some frontline employees are not recognizing some potential hazards as hazards, but simply deficiencies. As only one example, investigation of the May 2013 train fire at Silver Spring revealed that a chafed cable had been taped rather than evaluated for proper securement. As another example, it was discovered in 2013 that Train Operators pre-empted malfunctioning emergency intercoms by rigging the response mechanism on the operating console. Although front-line personnel and supervisors are encouraged to report hazards to supervisors, they do not appear to be informed on what a hazard may be. These issues indicate that Section 6.2.1 of the WMATA SSPP is not fully implemented to involve all employees. After this review, WMATA provided a training plan, roster, and user guide for the training of SAFE personnel in the SMS. However, it was still unclear how personnel in other departments, including front-line employees would be further instructed on hazard identification and reporting. This finding pertains to Element 6.

Recommended Corrective Action: WMATA should create or revise and implement a hazard identification, reporting, and resolution training module for all employees in various operating and maintenance departments who may identify and report hazards. In order to close this finding, WMATA must provide training module material or evidence

of some other new mechanism to ensure employees (outside of SAFE) understand what a hazard is and are instructed on how to appropriately identify and report hazards.

**Finding of NC 4: Hazards identified during Local Safety Committee meetings are not integrated into the SMS for analysis across locations.**

WMATA's SMS hazard management module is intended to be the central mechanism for tracking, analysis, and resolution of hazards. Issues raised to the LSC level do not appear to be evaluated for trends and similarities across various locations. Therefore, an issue raised at one LSC may be unknown to those at another LSC, covered by a different Safety Officer. Regardless of whether the hazard is rectified and closed at the LSC level, the purpose of entering lower-level hazards into the SMS is for trend analysis and identification of similar hazards at other locations. This finding pertains to Element 6.

Recommended Corrective Action: WMATA should determine and implement an appropriate method for evaluating the presence of hazards raised at individual or multiple LSC meetings and incorporating them into the SMS (or other mechanism) for further analysis. This may involve a routine examination by one person of all LSC meeting minutes or coordination among Safety Officers. In order to close this finding, WMATA should provide 3 months of hazard logs showing evidence of locally-identified hazards, or provide an updated hazard management procedure encapsulating methods for locally identified hazards to be tracked for resolution and documented for comparison and communication across locations.

**Finding of NC 5: Engineering Modification Instructions do not exist for all infrastructure-related system modifications.**

The SSPP does not identify a process to be utilized in IT and CENI project management design changes, therefore not complying with the requirements of Part 659.19(g) for system modification. However, Operations Administrative Procedure (OAP) 200-06, dated January 21, 2010 and applying to all Offices in the Department of Transit Infrastructure & Engineering Services (TIES), including CENV and CENI, states that the EMI process provides a means for modifying Metro's railcars, wayside and track equipment (mobile and fixed), power and system control equipment, track and structures, and associated systems and equipment, and to monitor the progress and validate the implementation of modifications. This document appears to contradict the SSPP Section 7 exemption of CENI from the EMI process and require that all work in CENI and CENV, which could adversely affect safety, is executed through the use of an EMI. The vague wording and incongruence of documents need to be addressed to identify and clarify the processes used to initiate, monitor, and approve system modifications. Since the time of this review, WMATA has added language to the 2014 SSPP regarding the acquisition of a new software system designed to control infrastructure-related changes.

Furthermore, since the adverse safety impacts of a potential modification may not be readily apparent, the documented modification process should describe the process by which a project or potential project is effectively assessed for safety-adverse characteristics and determined to need an EMI.

EMIs appear to be used for changes involving CENV, but not for modifications involving CENI. An EMI should be included, for example, in Site Specific Work Plans (SSWPs) involving infrastructure modifications. This finding pertains to Element 7.

Recommended Corrective Action: WMATA should develop a procedure to ensure infrastructure changes result in EMIs, and that SAFE ensures SSWPs contain EMIs before approving them, when necessary. The procedure or SSPP should also clearly describe how a project is assessed for whether an EMI is needed. In order to close this finding, WMATA should provide the new procedure and examples of infrastructure-related EMIs.

**Finding of NC 6: The full SCRC is not reviewing and voting on safety and security certification acceptance as required in the SSPP.**

As appropriately indicated in WMATA SSPP Sections 5.3.2 and 8.3 and WMATA Policy/Instruction 10.2/2, a primary member or a designee from each of several relevant departments must attend SCRC meetings to provide input on issues involving certification and vote on acceptance. Meeting minutes indicate that multiple departments are typically not represented during meetings. Further, there is no record of all departmental representatives voting on certification. Interviews indicated that there is a method of committee members to vote outside of meetings, but committee members sometimes do not respond. Since the time of this review, WMATA provided a memo from the Chief Safety Officer to SCRC members noting the importance of alternate members attending meetings. However, on the voting examples that were also provided, there was no option for members to clearly abstain from voting rather than simply not vote; the TOC recommended that SAFE enforce a clear vote or abstention rather than accept silence as abstention, so that important votes are not lost. This finding pertains to Element 8.

Recommended Corrective Action: WMATA upper-level management should require representatives from all relevant departments to attend SCRC meetings and to be involved in decision making as appropriate. In order to close this finding, WMATA should provide new records showing that all necessary departmental SCRC representatives voted on or intentionally abstained from at least three issues.

**Finding of NC 7: WMATA has not provided the TOC with Safety and Security Certification Verification Reports or Final Safety and Security Certificates for projects as stated in SSPP Section 8.3.**

Although the TOC expects that it will receive these items before the Silver Line enters revenue service, the TOC has not received final certification documentation for previous projects. This finding pertains to Element 8.

Recommended Corrective Action: WMATA should provide final Safety and Security Certification Verification Reports and Final Safety and Security Certificates to the TOC in accordance with Section 8.3 of the SSPP. In order to close this finding, WMATA must successfully provide this material for at least one future project other than the Silver Line.

**Finding of NC 8: Rule compliance program information is not used as a source of information in the SMS for hazard analysis per SSPP section 9.1.**

There is no evidence that information from Blackberry rule compliance evaluations, as well as other rule compliance checks occurring throughout the agency, are evaluated for input into the SMS hazard management module. Rule compliance checks should be evaluated for systemic problems that may indicate rule-specific trends or location-specific hazards. This finding pertains to Element 9.

Recommended Corrective Action: Develop, document, and implement a method to evaluate rule compliance checks and incorporate salient results, such as trends and location-specific issues, into the hazard management process (and SMS). In order to close this finding, WMATA should provide the new procedure to incorporate rule compliance issues into the SMS, along with evidence that rule compliance issues have been analyzed in the hazard log.

**Finding of NC 9: Preliminary and Final Reports are not consistently completed and submitted to TOC on time as prescribed in TOC and WMATA requirements.**

Section 9.2 of the TOC Program Standard and Procedures and, resultantly, WMATA's SSPP and Incident and Accident Investigation Policy/Instruction require a preliminary report within three business days and a final report (or status update) within 30 days of an incident's occurrence. TOC's ongoing oversight and an analysis of its records indicate that many reports or 30-day status updates are not being provided in the timeframes required. Although WMATA has recently demonstrated significant improvement in this area, several reports remained overdue at the time of this review. In order to rectify this, SAFE personnel indicated that they were considering automating report tracking and deadline reminders through SharePoint. This finding pertains to Element 10.

Recommended Corrective Action: Continue improvement in complying with the required timeframes for investigation report submissions, with the aid of the weekly report now being sent to WMATA. In order to close this finding, four consecutive weeks of TOC investigation status updates must indicate that no reports are overdue or requiring an outstanding update.

**Finding of NC 10: WMATA does not provide the TOC Final Reports as required, only Draft Final Reports.**

The last investigation reports that WMATA submits to the TOC indicate “Draft.” 49 CFR Part 659 and the TOC Program Standard and Procedures require the TOC to adopt a final investigation report. As confirmed in Section 5.25 of WMATA’s Incident and Accident Investigation Policy/Instruction, “[a]fter TOC adoption of the draft accident investigation report, WMATA will prepare a final accident investigation report and submit it to TOC for its files. This report, in fact, becomes TOC’s report of the particular accident. Once a report has been adopted by TOC, WMATA must submit a copy, “in an unalterable format,” to TOC with the signature of the CSO.” The TOC must receive a Draft Final Report for approval, and then a Final Report that can be reviewed by TOC and formally adopted. This finding pertains to Element 10.

Recommended Corrective Action: WMATA should begin incorporating TOC comments and corrections on Draft Final Reports into its Final Reports and begin providing them to the TOC. In order to close this finding, WMATA must provide Final Reports for one month’s worth of new TOC-reportable investigations.

[REDACTED]

[REDACTED]

[REDACTED]

**Finding of NC 12: There is no system-wide configuration management process.**

The lack of this process, at the system level, minimizes the overall effect of smaller, localized efforts. It also creates non-compliance with Part 659, which states that the transit agency (as a whole) must have a configuration management process. This is a repeat finding from past Triennial Reviews. Since the time of this review, WMATA has



added language to the 2014 SSPP regarding the acquisition of a new software system to control infrastructure-related changes. This finding pertains to Element 17.

Recommended Corrective Action: WMATA should create an overarching process or set of guidelines for agency-wide configuration management, or to ensure all relevant departments create configuration management processes compliant with overall WMATA standards. In order to close this finding, WMATA should provide authority-wide configuration management guidelines or policies.

**Finding of NC 13: SAFE is not fully involved in design criteria review, although SAFE is a member of the Design Control Board.**

The SSPP identifies the Design Control Board (DCB) as responsible for establishing, maintaining and promulgating architectural and engineering criteria and standards for the design, construction, reconstruction, maintenance, and operation of the Metro system. The SSPP states that a representative from TIES, MTPD, and SAFE are on the DCB, but discussions in the interview process determined that SAFE is not fully involved in the design criteria review process. This finding pertains to Element 17.

Recommended Corrective Action: SAFE representative(s) should attend Design Control Board meetings, as required, to provide input on and be part of the approval process for safety-related design changes. In order to close this finding, WMATA must provide three consecutive sets of meeting minutes showing SAFE representation at the Design Control Board.

**Findings of Compliance with Recommendation (CWR)**

**Finding of CWR 1: The WMATA high-level organization chart on p. 42 of the SSPP is not legible.**

Although the organization chart is included as required by 49 CFR Part 659 and the TOC Program Standard and Procedures, the chart cannot be used if personnel cannot read it. After this review, WMATA provided a new chart to be included in the 2014 SSPP that will be reviewed by the TOC. This finding pertains to Element 3.

Recommended Corrective Action: Include a legible WMATA organization chart in the next version of the SSPP, perhaps by splitting it across pages or including an oversize appendix page.

**Finding of CWR 2: The SAFE organization chart on p. 43 of the SSPP does not include the full SAFE department structure.**

On the existing chart, there does not appear to be any levels indicated below Deputy Chief Safety Officer. Although WMATA may have intended for this to be a high-level chart, it is not completely accurate since it is a department-specific chart. After this

review, WMATA provided a full SAFE chart to be included in the 2014 SSPP that will be reviewed by the TOC. This finding pertains to Element 3.

Recommended Corrective Action: Update the SAFE organization chart to include the full department structure in the next version of the SSPP.

**Finding of CWR 3: There is no consistent methodology for communication of information to or from Local Safety Committee members.**

While WMATA Policy/Instruction 10.2/2, Safety Committees, is comprehensive, it is unclear how and what types of safety information are escalated up the chain of command through the Departmental and Executive Safety Committee levels. Conversely, it is unclear how information is disseminated to employees through these committees. In order to ensure that committee operation and dissemination of information is consistent, WMATA should update its P/I to incorporate this information. This finding pertains to Element 3.

Recommended Corrective Action: Update WMATA P.I 10.2/2 to outline the general agenda structure of each committee meeting as well as how safety information is communicated to and from employees through the various levels of committees.

**Finding of CWR 4: The SSPP update and comment process, along with responsibility, is not defined in a procedure or the SSPP.**

Although WMATA personnel described a robust SSPP revision process that incorporates affected departments, it is not explained in a written document. A written process is important both for continuity of operations and to ensure that the annual revision always includes all stakeholders deemed necessary. This finding pertains to Element 4.

Recommended Corrective Action: Describe the update and comment process, including responsibility and stakeholders who provide input, in Element 4 of the SSPP or a separate procedure.

**Finding of CWR 5: There is no mechanism to ensure that capital projects which are joint development initiatives receive WMATA's prescribed level of safety certification before opening.**

For Joint Development and Adjacent Construction (JDAC) projects, WMATA informed the TOC that it cannot compel FTA-funded external agencies to comply with WMATA's specific safety certification process and must accept and operate projects regardless of the adequacy of the safety certification process. Such projects include the Rosslyn station improvements and the Silver Spring Transit Center. In some cases, though safety certification may be occurring, it has not necessarily been completed in accordance with WMATA's stricter internal requirements.

As such, whereas JDAC-type projects are becoming more commonplace, and whereas WMATA's safety certification requirements are stricter than those required for external agencies, WMATA should have a clear process to ensure that safety certification is completed in accordance with WMATA requirements, regardless of whether WMATA owns or is building the project. WMATA cannot compel external entities to comply with WMATA safety certification requirements without clear written contracts and/or agreements whereby WMATA will not accept a project until safety certification is completed to WMATA's satisfaction. Alternatively, WMATA could complete its own safety certification of such external projects. WMATA should therefore consider updating its internal processes and procedures, and revising relevant program documents (including, but not limited to, the SSCPP and the SSPP Element 8) to clearly describe these processes. This finding pertains to Element 8.

Recommended Corrective Action: WMATA should develop and implement a written policy or procedure for ensuring safety certification is completed for all new projects that must be accepted from external agencies, including but not necessarily limited to JDAC projects. In order to close this finding, WMATA should provide a process for ensuring appropriate safety certification of JDAC and other such projects in a revised SSCPP and SSPP Element 8, as well as verification that safety certification (whether by WMATA or another party) will occur on one JDAC project other than the Silver Line project.

**Finding of CWR 6: SSPP Section 8.3 has no definition of which “safety-critical” elements are to be included in Certifiable Item Lists.**

It is unclear what items would be defined as “safety-critical” as referenced in SSPP Section 8.3. Defining this term in the context of safety certification would better ensure that only “safety-critical” items and not ancillary tasks are included in Certifiable Item Lists. Since the time of this review, WMATA revised Section 8.3 and Appendix C in the 2014 SSPP; the TOC will later determine whether the revisions are acceptable. This finding pertains to Element 8.

Recommended Corrective Action: Define the meaning of “safety-critical” in Section 8.3 of the SSPP.

**Finding of CWR 7: There is no methodology or procedure documenting how safety data is collected, analyzed, and how reports are generated.**

Section 9 of WMATA's SSPP is compliant with the basic components required to be included by Part 659. However, although SAFE collects a large amount of data to produce informational reports, the safety data acquisition, analysis, and reporting process discussed during the TOC's review is not documented in a procedure or the SSPP. After this review, WMATA submitted a User Guide for the SMS and a copy of the Incident/Accident Investigation Policy/Instruction; however, these documents do not appear to cover safety data beyond incidents and hazards, or the types of safety data reports produced within the authority. This finding pertains to Element 9.

Recommended Corrective Action: WMATA should include, in its SSPP or a separate procedure, its detailed process for collecting, analyzing, and reporting safety data.

**Finding of CWR 8: There are no established criteria for when an accident investigation committee should convene.**

The decision to initiate an accident investigation committee is at the discretion of the Chief Safety Officer or General Manager, as stated in SSPP Section 10.1 and in Section 5.17 of WMATA Policy/Instruction 10.4/0, Incident and Accident Investigation. However, there are no defined thresholds for when such a committee should formulate. In addition, major incidents have occurred in the past three years for which no committee was established (except the Oct. 6, 2013 Red Line fatality, for which a committee was initiated weeks later rather than the one day prescribed by WMATA's procedures). This finding pertains to Element 10.

Recommended Corrective Action: Define, in the SSPP and/or P/I 10.4/0, criteria or thresholds which would cause an accident investigation committee to be initiated for an incident. For example, WMATA could make the default situation that a committee convenes for Level 1 accidents and the Chief Safety Officer has discretion not to form a committee, rather than the default being that a committee does not convene.

**Finding of CWR 9: The Change Control Board charter and formalized procedures do not include SAFE as a representative.**

SAFE does have representation and input on the Change Control Board. However, WMATA documentation does not include SAFE as a member. This finding pertains to Element 17.

Recommended Corrective Action: Add SAFE to all lists of departments represented on the Change Control Board, and describe SAFE's specific role if necessary in a revised charter or procedures.

**Persons Interviewed**

[REDACTED]



## Documents Reviewed

- Emergency Employee Alert, EEA #13-01; January 2013
- Safety Bulletin, SB #13-03; March 2013
- Safety Bulletin, SB #13-03A; March 2013
- Safety Bulletin, SB #13-04; April 2013
- Hazard Alert, SB #13-06; June 2013
- Meeting Minutes, Executive Safety Committee; Jan. 29, 2013
- Meeting Minutes, Executive Safety Committee; Feb. 26, 2013
- Meeting Minutes, Executive Safety Committee; March 26, 2013
- Meeting Minutes, Executive Safety Committee; April 23, 2013
- Meeting Minutes, Executive Safety Committee; May 28, 2013
- Meeting Minutes, Executive Safety Committee. June 25, 2013
- Hazard Extract; July 15, 2013
- Chief Safety Officer GM/CEO One-on-One Meeting; Sept. 20, 2013
- SOP #48 Rev. 3 Draft and related e-mail chain; September 2013
- TOC Close-Out Summary, CAP #10-253
- Construction and Environmental Safety Manual; March 2013
- Policy/Instruction 4.10/3, Configuration Control Management; June 22, 2012
- Policy/Instruction 4.14/2, Design Control Board; no date
- Safety and Security Management Plan (SSMP) Adherence Review, Systemwide Infrastructure Rehabilitation Program; May 14, 2013
- E-mail from J. Dougherty re: MEAD #200286, Non-Hazardous, Regulated Waste Disposal; July 24, 2013
- Policy/Instruction 10.2/2, Safety Committees; August 2, 2011
- Safety & Security Certification - Project Assessment Form (blank); Aug. 21, 2013
- Memo from J. Dougherty to Executive Leadership Team re: Safety and Security Certification Review Committee; June 11, 2013
- Letter of Acceptance, Contract FQ12118; March 29, 2013
- Letter of Acceptance, Contract FQ9206; July 10, 2013
- Letter of Acceptance, Contract FQ12225; Aug. 20, 2013
- Dunn Loring PCN 250528 Temporary Use Notice; Aug. 26, 2013
- Dunn Loring Parking Garage Certifiable Items List and certification package
- Dunn Loring Parking Garage Safety and Security Certification Final Verification Report; August 2013

- Notice of Receipt, 6<sup>th</sup> 60 day CIL update submission, Contract FQ8143; April 4, 2013
- Notice of Receipt, 9<sup>th</sup> 60 day CIL update submission, Contract FQ8143; Aug. 14, 2013
- Safety and Security Certification ATC-TCM CIL
- Safety and Security Certification Management Plan, WMATA Greenbelt Test Track and Commissioning Facility; Aug. 6, 2013
- Safety Certification Review Committee minutes; March 12, 2013
- Safety Certification Review Committee minutes; April 9, 2013
- Safety Certification Review Committee minutes; May 14, 2013
- Safety Certification Review Committee minutes; June 11, 2013
- Safety Certification Review Committee minutes; July 9, 2013
- Safety Certification Review Committee minutes; Aug. 13, 2013
- Railshop Equipment Rehab CIL package
- SCRC vote 7K Safety Certification Design Verification Report (e-mail)
- SCRC vote OB1 CIL All Phases (e-mail)
- Shepherd Parkway Bus Maintenance Facility, System Certificate of Compliance; Aug. 6, 2013
- Temporary Use Notices, Red Line Rehabilitation; various dates
- Temporary Use Notices, Rehabilitation of Bus-1; various dates
- Rhode Island Parking Garage JDAC, various materials
- JDAC Care Package, Example CILs
- Safety and Security Certification Program Plan, October 2007
- SSC Workshop JDAC (PowerPoint); Feb. 23, 2012
- SSC Workshop JDAC (PowerPoint); April 8, 2013
- General Orders & Track Rights System automatic notification; Sept. 19, 2013
- Internal Safety and Security Audit Standards, Criteria, and Guidelines; Dec. 31, 2012
- Organizational Administrative Procedure 100-01, Creation, Review, Revision and Rescission; April 10, 2013
- Safety and Security Management Plan, Revision 1, 7000 Series Rail Car Project; Nov. 16, 2011
- Letter from J. Dougherty to B. Glenn re: SSMP for System Infrastructure Rehabilitation Program; April 26, 2012
- System Infrastructure Rehabilitation Program Project Management Plan; Sept. 7, 2012
- PMOC Review of WMATA System Infrastructure Rehabilitation Program Safety and Security Management Plan; June 4, 2012
- Safety and Security Management Plan, System Infrastructure Rehabilitation Program, March 2012
- Safety and Security Management Plan, System Infrastructure Rehabilitation Program, September 2012
- Safety and Security Management Plan, Major Capital Projects, Bus Operations and Maintenance Facilities; February 2013
- Fatigue Risk Management Work Plan for WMATA; Sept. 24, 2012

- WMATA Fatigue Risk Management System Recommendations Document I; May 2013
- WMATA's Fatigue Risk Management System: Issues, Options and Actions Required – A White Paper; June 20, 2013
- Business Plan Initiatives, SAFE
- SafeStat, May Report Out; June 20, 2013
- SMS Sample: Incident Report 20130702#20145
- User Guide, Safety Measurement System; May 16, 2012
- Policy/Instruction 10.4/10, Incident and Accident Investigation; Nov. 4, 2011
- Quality Management System Manual; May 2013
- Journey to Innovative Safety Management Systems (PowerPoint); Oct. 24, 2012
- Safety and Security Certification Program Plan, March 2012
- Organizational Chart; May 15, 2013
- System Safety Program Plan, January 2013
- Organizational Administrative Procedure 200-06, Engineering Modification Instruction; Jan. 21, 2012
- CENV Standard Operating Procedure 1, Engineering Modification Instruction; Jan. 5, 2012
- CENV Standard Operating Procedure 2, Engineering Request; Jan. 5, 2012
- CENV Standard Operating Procedure 3, Engineering Test Plan; Jan. 11, 2012
- CENV Standard Operating Procedure 4, Maintenance Service Instructions; Jan. 5, 2012
- CENV Standard Operating Procedure 5, Engineering Service Bulletin; Jan. 5, 2012
- CENV Standard Operating Procedure 9, Maintenance, Inspection, and Calibration Procedures
- Form for Work Authorization (CENI, misc. examples)
- ISSA Audit Flowchart