

## Tri-State Oversight Committee



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

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### System Modification, Safety Certification, Configuration Management, and Procurement SSPP Elements 7, 8, 17, 21

**Review Conducted: Feb. 29 – Mar. 3 and Apr. 6-7, 2016**

Final Report: August 23, 2016

## **1. 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 WMATA's System Modification, Safety Certification, Configuration Management, and Procurement Programs. Generally, this review focused on whether WMATA's practices comply with its own written plans as well as industry standards and best practices. These topics are primarily the responsibility of the Department of Safety & Environmental Management (SAFE), the Office of Chief Engineer, Vehicles (CENV), and the Office of Chief Engineer, Infrastructure (CENI), with support from Supply Chain Enterprise Services (SCES), the Office of Procurement and Materials (PRMT), and the Capital Project Delivery Office (CPDO). The relevant SSPP elements for this review were:

- Element 7 - System Modifications
- Element 8 - Safety Certification Process
- Element 17 Configuration Management Process
- Element 21 - Procurement

## **2. Methodology**

In advance of the audit, the TOC requested and reviewed relevant WMATA plans, procedures, records, and reports. The on-site portions of the audit occurred February 29 – March 3 and April 6-7, 2016. TOC interviewed representatives from CENI and CENV regarding safety certification, configuration management, system modification, and document control processes. TOC also conducted interviews with representatives from PRMT, who discussed safety aspects of solicitation development and interaction with suppliers, and SCES, who highlighted a number of safety processes and procedures related to storeroom management. Representatives from CPDO discussed safety language in contracts and safety certification of contractor-led projects with the team. TOC also interviewed representatives from SAFE regarding each of the audit topics, communication with outside departments, and involvement in ongoing actions outside of

SAFE to ensure that safety procedures are appropriately followed. TOC representatives reviewed additional documentation provided by WMATA during the on-site portion of the review. Lastly, the TOC audit team conducted a field visit and storeroom inspection at the Brentwood Metrorail facility, reviewing WMATA's compliance with procedures and rules governing safety aspects of storeroom operation.

As the on-site portion of the audit began, TOC observed that coordination of audit activities between SAFE and other departments prior to the TOC audit was inadequate. Certain key WMATA personnel did not appear at scheduled interview sessions, despite ample time for WMATA to prepare for the audit. Additionally, SAFE provided the review team with many outdated documents (identified in the report listing of documents received), while individual departments were able to provide current material, indicating that SAFE may not have coordinated with outside departments to respond to TOC's pre-audit document request. To strengthen the audit process and to ensure that audits can be completed in a timely and efficient manner, TOC would like to note that SAFE and other WMATA departments must improve coordination and planning for audit activities.

Findings refer to instances of WMATA operating out of compliance with an applicable internal or external written requirement, plan, policy, rule, standard, or procedure. A Finding may also refer to a condition whereby WMATA may technically be conducting business in compliance with existing WMATA, TOC, or FTA 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 safe practices.

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

### **3. Procurement**

WMATA 2015 SSPP Section 3.6.7.4 identifies the Office of Procurement and Materials (PRMT) as being responsible for procurement of contract services and materials, control of chemical and hazardous material purchases, and ensuring inclusion of safety requirements in WMATA contracts. SSPP Section 21 describes the safety measures incorporated in procurements including contract requirements and inspections of deliverables. However, the WMATA 2015 SSPP does not describe current PRMT responsibilities that were implemented in 2014.

During interviews, representatives from PRMT, SAFE, and SCES provided information on safety aspects of a variety of procurement tasks.

Certain responsibilities associated with Procurement have been taken on by other departments over the past several years, and some responsibilities belonging to other departments were transferred to PRMT, including certain responsibilities for managing WMATA contracts which were re-assigned from CENI to PRMT. Supply Chain Enterprise Services (SCES) is currently responsible for management of all storerooms which previously was a responsibility of PRMT; this change took place prior to late 2014 but is

not currently reflected in all documents, particularly the PRMT Maintenance and Materials Policy and Procedure Manual (2011) submitted to TOC for the review. SSPP Section 3.3.6 indicates that PRMT has responsibility for the Open Materials Storage Facility, but the Chief Procurement Officer indicated that SCES has taken on that responsibility.

WMATA's GM/CEO delegates Contracting Officer authority to the Chief Procurement Officer (CPO). The CPO designates Authority Contracting Officers. The Contracting Officer's Technical Representative ("COTR") and the Contracting Officer's Representative ("COR") are each an authorized representative of the Contracting Officer. The Contracting Officer can designate a responsibility for negotiation of a contract to a Contract Administrator (CA). PRMT has implemented a certification process for individuals assigned to represent the Contracting Officer – CORs and COTRs. All PRMT CORs are certified individuals. CORs have limited contract award authority, and COTRs have no contractual award authority. PRMT maintains lists of COR and COTR certified individuals and a COR certification policy. The primary distinction is that the COR, in addition to performing COTR functions, may also be delegated Contracting Officer authority by the Contracting Official. The COR/COTR is responsible for monitoring compliance with contract requirements through project inspections and oversight of contractor performance. The general description of COTR responsibilities provided in SSPP Section 21.3 and the SSPP reference to the 2008 Contracting Officer's Technical Representative Guide are outdated. A June 2012 version of the COTR Manual was provided during the review. This document describes in detail, COTR responsibilities and methods for monitoring contractor compliance and performing inspections.

The term "authority representative" (AR) can be found in non-PRMT documents across WMATA as a general reference to contracting oversight and authority. The CENI Project Implementation Manual (PIM) is comprised of individual policies and procedures, each approved by CENI and CONS primarily during 2013. PIM procedures describe AR responsibilities for contract management and oversight which include functions performed by a COR/COTR. There are many other functions described in more detail in the PIM as AR responsibilities that are not addressed in PRMT documents, despite the fact that PRMT has taken on many contract managing functions. The PIM does not use COR/COTR terminology and the PRMT COTR Manual does not include any references to the PIM. The link between a COR/COTR and AR responsibilities as defined in the PIM is not clear. The PIM includes AR responsibilities for monitoring of contractor safety and safety certification that are not in the PRMT COTR Manual. It is essential that that these AR safety responsibilities continue to be performed. According to the 2013 CSEM administered by CENI, the AR and COR/COTR may share some responsibilities; it defines the AR in section 4.8 as "individuals designated by the WMATA contracting officer as responsible for administering/supervising contracts [e.g., Project Manager (PM), Resident Engineer (RE), Contracting Officer Representative (COR), Contracting Officer Technical Representative (COTR)]." The CSEM does not refer to the PIM, and does not describe the move of the contract managing function to PRMT.

PRMT representatives provided information on safety aspects of the technical specifications and scope of work included in each solicitation. All solicitations contain a

detailed description of safety tasks that must be completed by contractors during the course of each project. Contractor proposals are provided to the Contract Administrator, who assembles a team for review and seeks input from SAFE and WMATA Legal if necessary. Occasionally, vendors will contact WMATA regarding problems with technical specifications while drafting a proposal for a solicitation. In these instances, Contract Administrators work with WMATA's Program Office and PRMT engineers to develop amendments to solicitations. However this process is not documented in the Procurement Procedures Manual.

Prior to any WMATA contract award, Safety must participate in a technical evaluation panel to determine whether or not the party being awarded a contract can ensure that safety tasks will be carried out effectively. The Procurement Procedures Manual (2015) contains references to these roles.

PRMT's 2015 Procurement Procedures Manual (PPM) discusses the roles and responsibilities of the CORs. PRMT also maintains a COR certification policy and warrant application. CORs working on-site for individual projects have their own award authority up to a certain dollar value depending on the nature of the project contract. Contract Administrators are higher in the chain of command during procurements, and any amount that must be awarded by a COR must be approved by the CA. A CA is involved in each contract along with a COR/COTR. CAs also draft contract modifications for safety reasons and other unforeseen project challenges. CORs must be recertified every 3 years, and PRMT maintains a list of CORs for whom certification has been rescinded.

An update to the PPM is currently underway to add language on sole-source justification and limited-competition bidding for pre-approved vendors. Typically, the PPM is revised every 2 to 3 years, with minor updates completed about every 4 months.

### 3.1. SAFE Involvement in Procurement

Safety's role in the procurement process is a normal portion of the workflow for a procurement. Before solicitations are distributed, SAFE must review and approve them. SAFE representatives stated that unless solicitations are approved, they are not released for public viewing. However, SAFE involvement in the procurement workflow is not well-documented in PRMT documents. A risk assessment is performed during the solicitation review, and a portion of the risk assessment addresses insurance-related aspects of the solicitation. COUN, the legal review team under WMATA general counsel, also reviews every solicitation.

The process by which SAFE learns of new projects is not fully documented. The 2015 Safety and Security Certification Plan (SSCP) identifies which procurements must undergo the safety certification process. A Project Assessment form is distributed to project managers on all new projects, and SAFE contacts project managers once notified about new projects to identify the scope of the project and assess whether safety certification is necessary. The Capital Program Delivery Office / Major Capital Projects Office house project managers, and SAFE representatives indicated during interviews

that project managers are familiar with requirements for internal data sharing during solicitation development; these requirements are not documented in a formal procedure.

SAFE is routinely involved in evaluation of material storage and distribution activities in the later phases of the parts and materials procurement process. At WMATA storeroom facilities, storeroom managers / rail safety officers must prove awareness of the SDS process and demonstrate compliance during inspections conducted by SAFE Safety Officers. Inspections are conducted during these assessments to identify and discuss issues with shop owners / storeroom owners. Storeroom facilities are inspected between two and four times a year. The Safety Facility Improvement Plan includes a form used during safety inspections.

### 3.2. Supply Chain Enterprise Services (SCES)

SSPP Section 3.6.5.6 assigns SCES responsibility for inventory management and verification of compliance with MSDS/SDS requirements for SAFE approval and labeling. SCES is responsible for all WMATA storerooms except bus maintenance storerooms including former PRMT and SMRL facilities. SSPP Section 3.6.5.7.12 describes SRML responsibilities for ten storerooms; this passage of the SSPP may not reflect recent organizational changes and the situation on the ground. All SRML storerooms have been transferred to SCES. This and other references to SRML in the SSPP will require revision following the creation of SCES. There are 11 rail storeroom facilities in total including the central storeroom facility, MSF 400, servicing rail, elevators and escalators, track and structures, systems, and facilities. SCES has an inventory planning group, previously a PRMT function, which works with all groups except WMATA's bus maintenance group. There are 121 total staff members within SCES; about 70 are clerks, working on location in storerooms and field facilities.

There are OAPs for inventory and storerooms including inventory control (600-03), access control (600-05), and inventory disposition (600-06) that still include references to PRMT, despite the fact that SCES has assumed many of these functions from PRMT. Any new documentation regarding storerooms and inventory control must be generated by SCES. When a change occurs, such as the split between PRMT and SCES, WMATA's Program Office is responsible for tracking documents that must be updated. Staff notices may be issued by the GM as an interim measure to explain how processes will be carried out before procedures are revised. These Staff Notices carry weight similar to a Policy Instruction. Until a new procedure can be developed, new organizations such as SCES inherit old procedures and redline them for updates as time passes. SCES has developed the 2013 Maintenance and Materials Policy and Procedure Manual to replace the 2011 PRMT version, although it is unclear if this update was created according to a defined revision schedule, as no update procedure is available.

SCES planners are embedded with maintenance and operations groups. The inventory planning group works with departments to analyze volumes of parts required by individual departments, and develops parts requisition forms (PRs) to obtain the necessary items. SCES tracks usage of all parts and supplies over the past 36 months and constantly

reevaluates necessary levels of inventory for the upcoming year based on previous use and upcoming campaigns. SCES functions as a customer for Procurement, with PRs provided to PRMT for action once they are fully developed. SCES also conducts distribution activities to the storerooms, delivering parts ordered and picking up excess materials. SCES manages Storeroom 450 and processes the sale of surplus materials. This includes auction processes for old computers, vehicles, and other unneeded items. These are all functions previously performed by PRMT.

SCES works with CENV engineers to validate parts obtained from new suppliers, a process which is completed prior to purchase. Purchases of items that require Safety Data Sheet (SDS) are also reviewed by SAFE before they are finalized. Occasionally, vendors will provide a substitute or improvement product which is not consistent with approved items. When SCES physically receives a shipment, the vendor is required to provide a copy of the SDS. Should any inconsistencies be identified, the issue is referred to SAFE and the shipment is not accepted.

The office of Quality Assurance and Warranty (QAAW) has conducted audits of SCES storeroom practices. A business systems manager within SCES also works to identify efficiencies and improve business practices. SCES and PRMT conduct weekly meetings to coordinate on car maintenance parts availability issues and other topics.

During the field portion of the review, TOC team members conducted an inspection of the storeroom facility at Brentwood Yard. WMATA representatives at the site demonstrated how SDSes are accessed digitally and in hard copy. TOC noted that the storeroom was very crowded and expressed a concern about the ability of employees to escape the facility in case of emergency. The WMATA employees present expressed concerns about increasing volumes of inventory filling limited storeroom space, and explained that poor coordination of orders between departments means that inventory is sometimes stored in staging areas which are not fully secure. The TOC team also observed improvised paper emergency exit signage and a lack of emergency lighting in the facility.

#### **4. Safety Certification**

SSPP Section 8.0 describes the Safety and Security Certification (SSC) process for major construction, rehabilitation and vehicle procurement projects. SSC is accomplished through a collaborative effort of SAFE and the entity managing the project, following the process described in the WMATA Safety and Security Certification Plan (SSCP). The 2015 SSPP references the March 2012 edition of the SSCP despite the fact that the current version of SSCP was issued in March 2015. SAFE representatives described the various categories of Safety Certification and their requirements as listed in the SSCP. SAFE utilizes a Project Assessment Form to determine the certification level that is required based on the features of the project. Review of individual projects is assigned to Safety Certification Officers (2 on staff) or on-site consultants (9 available). PROCORE software has been in use for management of project documents since at least 2013, though use of this software is not documented in SSPP or SSCP. SAFE's process for

identifying new projects for review using PROCORE is also somewhat informal and is not documented.

There are four safety certification project categories, described in a matrix on Page 32 of the SSCP. “SAFE Acceptance” is the lowest certification level, and includes minor modifications to station and parking facilities which do not impact fire and life safety systems. SAFE provides a completed Project Assessment Form to local safety officers to indicate that SAFE is aware of ongoing modifications. Category 3, the next-lowest certification level, indicates that no design criteria checklist or construction specifications checklist is completed. On Category 2 projects, no design criteria checklist is completed. Lastly, all safety certification checklists are completed for Category 1 projects.

In PROCORE, Safety Certification Officers may only view complete project documentation for projects that have been assigned to them. New projects appear as Stage 1, and SAFE can generate a report listing all Stage 1 projects to assist staff in identifying new projects. Documentation within PROCORE includes project emails, meetings, project contacts, RFIs, submittals, transmittals, and contract information, listing all open action items with due dates. The software allows a user to review a document, read the comments of other reviews (which are cataloged with the document), and provide feedback.

Though the TOC review team requested a master list of all project submittals to SAFE over the previous year, the list was not provided. SAFE representatives stated that SAFE does not maintain a master list of projects reviewed. SAFE did present correspondence demonstrating SAFE review practices for Engineering Modification Instructions (EMIs.) SAFE does not maintain a master list of EMIs developed outside of PROCORE and reviewed by SAFE; PROCORE is capable of generating reports only on EMIs currently in development.

SAFE assesses projects for safety aspects that require certification, but some projects are classified as “N/A” or “SAFE Approval” and do not receive further review. SAFE has not followed SSCP 3.3.1, which requires SAFE approval of daily certification testing plans prior to revenue operation after contractors perform work on track or ATC components, and SAFE representatives interviewed were not familiar with this process.

Because WMATA’s SSC process has a larger scope than FTA requirements, WMATA develops project-specific SSCPs only when required by FTA. Unique and complicated projects with specific funding thresholds (>\$100 million) qualify for this requirement. SAFE will sometimes train contractors on how to conduct SSC activities, such as development of Certifiable Items Lists (CILs), and other SSC activities. A Safety and Security Certification Final Verification Report (SSCVR) will be completed for major capital projects such as Silver Line extension or 7000-series rail car acquisition.

Track maintenance equipment is currently safety certified via the Category 3 certification level process. However, a previous TOC finding mandated a full Category 1 safety certification for hi-rail vehicles and other track maintenance equipment. SAFE indicated



that cranes, the Track Geometry Vehicle, tampers, and other track maintenance vehicles had recently undergone full Level 1 certification; levels of SSC for other track maintenance vehicles would need to be reclassified to reflect the results of TOC’s finding. SAFE indicated that limited SAFE resources must be allocated toward design review of one-off vehicles and projects rather than toward safety certification of hi-rail equipment with consistent design specifications.

Though some EMIs may require conducting SSC, SAFE indicated that the department has not reviewed any EMI to determine that the EMI warranted safety certification. The requirement for evaluation of EMIs to determine if EMIs require SSC is not documented in the SSPP and/or SSCP.

#### 4.1. Safety and Security Certification Review Committee (SCRC)

SSPP Sections 5.4.2 and 8.3 identify the SCRC as being responsible for overseeing implementation of the SSC process including hazard management and approval of SSC documentation. SSCP Section 2.2.9 provides a listing of specific SCRC’s responsibilities.

A previous TOC finding identified that procedures governing SCRC member reviews are underdeveloped. It is unclear if all members of this committee are reviewing and approving documents as required, and there is little continuity in terms of attendance to SCRC meetings. A current SCRC Membership List was included in SAFE Memorandum dated January 28, 2015; the SCRC consists of 16 members, and each member can name a designee. TOC reviewed SCRC meeting sign-in sheets provided by SAFE for the meetings that took place between January and November of 2015 (A sign-in sheet for December’s SCRC meeting was not provided.) TOC found that SCRC meetings attendance was between 19% and 44%. The SCRC meeting quorum was not achieved. (See SCRC attendance in the table below.)

<b>Month</b>	<b>Number SCRC Attendees</b>	<b>Percentage of Members in Attendance</b>
January	5	31.25
February	6	37.5
March	6	37.5
April	7	43.75
May	7	43.75
June	4	25
July	4	25
August	6	37.5
September	4	25
October	3	18.75
November	5	31.25

Table 1. SCRC Meeting Attendance, January-November 2015

SAFE is currently updating the membership list for the SCRC. The voting process for SCRC committee members has not changed since TOC's 2013 triennial audit of WMATA System Safety Elements. 2013 TOC audit finding NC-6 stated: "The full SCRC is not reviewing and voting on safety and security acceptance as required in SSPP." TOC found that reviewing and voting methods have not changed. Voting records consist largely of email read receipts, and the SCRC continues to classify a non-response from a voting member as a vote to approve. A separate matrix lists individual projects and the votes of all committee members, including whether emails were read only or not reviewed.

A TOC representative regularly attends SCRC meetings as provided for in the SCRC membership list identified in SSPP Section 5.4.2. TOC members have observed a variety of procedural issues during meetings of WMATA's SCRC. Departments that have a project or projects in the process of being certified provide SAFE with slides that contain information about the project completion status and SSC status. The slides are sent to SAFE ahead of the SCRC meeting, and SAFE includes them in a slideshow which is presented at the SCRC meeting. Minutes from SCRC meetings received by TOC consist of these slideshows only. Notes on questions raised and discussion during the meeting are not included in the SCRC meeting minutes. With no active record of open questions and no manner of tracking completion of action items, the SCRC appears to have difficulty maintaining continuity and resolving outstanding issues.

SAFE representatives at SCRC meetings have lacked awareness of the status of major safety certification projects, including safety and security certification of the 7000-series rail cars. Though the project is led largely by a contractor, SAFE involvement in the project appears minimal. During interview follow-up activities, TOC requested safety certificates for sixteen (16) 7000-series rail cars as a demonstration that WMATA continues to complete all procedural aspects of the 7000-series safety certification process with newer cars entering service as required by the 7000-series rail car Safety and Security Management Plan (SSMP); SAFE provided the requested documents. SAFE was also asked to provide information on the burn-in period of the same 16 cars and whether or not burn-in was compliant with the SSMP, and SAFE provided information from Section 3.10.6 of the technical specification associated with the 7000-series procurement describing a required 100-mile simulated revenue service test which was completed for all cars. SAFE also stated that 7000-series rail car Safety and Security Certification Working Group (SCWG) continues to meet. However, requested SCWG meeting minutes were not provided to TOC as of publication of this report.

There was extensive conversation about a 700 MHz radio project at one SCRC meeting observed by TOC. When completed, this project (Radio and Cellular Infrastructure Renewal Project) is intended to improve WMATA's radio communication on all levels including communication with outside Fire and Police personnel. Safety certification activities for this project had begun, and WMATA's SSC Manager asked SCRC members to provide their response to the Baseline CIL review before an upcoming deadline. However, the SCRC members were not provided with the project's technical documentation when the CIL was distributed. It is unclear how SCRC members could review the Baseline CIL for the project without some understanding of its technical details.

No representative of CPDO, the WMATA department managing the project, was available to answer questions from the SCRC members, and SAFE representatives were not prepared to discuss the project in detail.

The SCRC meetings attendees also discussed WMATA's ongoing Portal Approach Warning System project. Little information on the project was provided at the meeting. TOC observers did learn that the system was installed as early as 2014 in three test locations, then turned off for a period of time before WMATA elected to install the system in 19 additional portal locations. One SCRC member stated that he was asked to maintain equipment for this new installations despite the fact that his office was never notified about the status of the project and his personnel has not been trained on the new equipment. SAFE did not complete safety certification of the 2014 installations, and it appears that SSC for the project has still not been completed, despite WMATA having activated the system in certain locations. SAFE representatives did state that SAFE approved an EMI for the Portal Approach Warning System project. It is not clear why the EMI process was used for this project, when it is typically deployed for modification projects rather than for installation of new systems.

## **5. System Modifications**

SSPP Section 7.0 describes the safety assurance process for implementing changes or introducing new systems and equipment. Rail system modifications are managed by the Engineering Modification Instruction (EMI) process described in Section 7.1.1 for Transit Infrastructure and Engineering Services (TIES). The SSPP indicates that CENV and CENI each have their own EMI process and document management system. The EMI review and approval process involves SAFE, CENV and CENI. Key document references for system modification process control in the SSPP include Policy/Instructions 4.14/2 Design Control Board and 4.10/3 Configuration Control Management. By following the EMI process, all proposed changes are tested, evaluated and reviewed for hazards prior to implementation. Changes may not be implemented without an approved EMI. The EMI implementation process requires that technical documentation including drawings, procedures and manuals be revised to reflect all modifications.

### 5.1 System Mod. Process in the Office of safety and Environmental Management

SAFE representatives discussed SAFE's role in the EMI review and approval process. Vehicle EMIs are provided to SAFE by CENV via Documentum. SAFE receives CENI ATC EMIs through PROCORE. All other CENI infrastructure EMIs are provided to SAFE via email. SAFE may distribute the EMI internally for comments from the Safety Officers or have a consultant conduct a safety analysis of the EMI. If technical support is needed, SAFE can consult with Subject Matter Experts (SMEs) from CENV or CENI. Safety has a designated Safety Officer who reviews EMIs generated by CENV but does not have designated reviewers for EMIs from CENI with subject matter expertise in ATC, Power, and Communication areas. The Chief Safety Officer may delegate review to an individual safety officer on an as-needed basis.

SAFE personnel interviewed by TOC stated that SAFE receives EMIs for review and approval as a routine step in the EMI development process. If CENI or CENV does not determine that a hazard analysis is required for an EMI, SAFE can independently evaluate whether or not a hazard analysis is appropriate. If SAFE returns comments after other individuals have reviewed and signed the EMI package, CENI or CENV must revise the EMI package. Comments on the EMI are provided to the originator of the EMI; Deputy Chiefs are responsible for contacting signatories to notify them that the EMI document has changed and has to be reviewed again. SAFE's EMI review process is not explicitly described in SAFE's internal documents or procedures. At the time of this audit, the Acting Chief Safety Officer was the individual responsible for final approval of EMIs once a SAFE reviewer found the EMIs to be satisfactory.

In Documentum and PROCORE, EMI development cannot continue beyond a certain stage until the EMI has been reviewed and approved by SAFE. This function prevents some departments from continuing with EMIs without proper SAFE review. CENI departments which develop EMIs manually have occasionally moved forward on EMIs without SAFE approval, despite the fact that SAFE review and approval is required before EMI can be finalized and EMI implementation can begin. Occasionally, EMIs are developed in response to incidents as a part of corrective action activities. QAAW may conduct a "closeout" process with EMIs to ensure that they are executed properly, but SAFE does not routinely participate in this process.

SAFE presented TOC with EMI's related to recent POWR and ATC projects to demonstrate the scope of EMIs submitted manually and through PROCORE. The Power EMI related to Jumper, Expansion, and Transition Traction Power Cables was submitted to SAFE manually; SAFE staff provided email documentation demonstrating proposed changes to test procedures and project methods. In this instance, SAFE would not approve the revised EMI without validating that proposed changes had been incorporated and that new sign-offs had been obtained from the necessary personnel. SAFE does not maintain a master list of non-PROCORE EMIs.

SAFE also presented a spreadsheet showing the date, status, and approver of ATC Systems Integration Gap Analysis Reports (SIGARs) to the review team. SIGARs are developed following hazard analysis activities for major system modifications, and recommendations for hazard reduction during project implementation. The details of the SAFE analysis associated with each item are stored outside of the spreadsheet. SAFE presented individual submittal details for a selection of ATC SIGARs.

## 5.2 System Modification in Office of Chief Engineer Vehicles (CENV)

SSPP Section 3.6.5.7.6 describes CENV responsibilities for vehicle maintenance and procurement including development of configuration controlled specifications and maintenance documents. CENV resides within the TIES organization. CENV representatives shared information with the review team on how vehicle modifications originate, are tested via an approved test plan, and undergo analysis before an Engineering Modification Instruction (EMI) is generated. EMI development process

including the steps that should be taken before an EMI is generated are described in TIES's OAP-200-06 and CENV SOPs 1 and 3.

EMI OAP 200-06 describes the EMI process flow including detailed individual responsibilities and procedures for completing EMIs from start to finish. The procedure indicates that it is applicable to all TIES employees but it is approved and followed by CENV for vehicle modifications only. CMNT distributes weekly status updates for all EMI campaigns in process. To ensure that an entire campaign is complete, open EMIs are reviewed at regular meetings between CENV and CMNT.

To evaluate potential changes and to determine that an EMI is warranted, CENV will conduct a test following approval of an Engineering Test Plan (ETP). An Engineering Test Report (ETR) validates the results of the ETP. During the ETP phase, CENV determines how many cars will be involved in the test, test criteria, and test duration. The plan tests both the part and its integration with other parts, along with the procedure for installation of the new part developed by CENV. This process includes a hazard analysis on a case-by-case basis; the need for a hazard analysis is based on the safety-critical status of items being tested.

If the ETP is successful, CENV begins the process of developing an EMI. CENV maintains its own SOPs which include templates and procedures for developing a new EMI (SOP 1), ER (SOP 2), and ETP/ETR (SOP 3). CENV is the department charged with creating and maintaining drawings for WMATA vehicles, and follows an internal process for drawing modification review and approval. An updated drawing becomes an attachment to each individual EMI. Once the EMI is created, it is reviewed by the originator, Engineering Manager, Deputy Chief Vehicle Program Services, CMNT, Quality, and SAFE in a defined work flow before becoming final. The EMI approval process is described, to an extent, in EMI OAP 200-06. A MSI or Maintenance Service Bulletin may be developed in lieu of an EMI based on the results of the ETP. TTDC is responsible for confirming that EMIs contain all required information and attachments before being finalized.

Separate EMI numbers are issued for each fleet so that implementation progress can be quickly assessed by fleet. In instances where EMIs are essentially identical across fleets, tests reports are only developed for one series of vehicles. In a strict reading of the CENV EMI SOP, an ETP/ETR should be developed for all fleets. However, CENV representatives indicated that engineers may conduct an analysis rather than a full test at their discretion depending on the complexity of the change. EMIs can be developed by contractors as well, depending on the campaign and the availability of CMNT staff. Several examples of completed EMI/ETP/ETR documents were provided to illustrate how the EMI process is applied to different types of changes for different fleets.

A major design change in a new procurement should require incorporation into the safety certification process. When modifications are made to 7000-series cars, changes must be made to both WMATA's accepted vehicles and the vehicles still being manufactured. SAFE monitors EMIs currently under development and is able to identify EMIs which

could lead to a change in the 7000-series safety certification process. When cars are delivered to WMATA, they should be configured consistently with cars in service. These changes are reflected in car configuration logs and car history books. If cars are in transit and not captured through the EMI or Kawasaki's Field Modification Instruction (FMI) process, Kawasaki is responsible for completing changes on site at WMATA.

Once vehicles are certified and accepted, EMI-driven changes could possibly influence the safety certification of vehicles yet to arrive. WMATA, however, does not conduct a full safety certification each time an alteration is made. For example, a recent EMI covered replacement of a digital control which translates a computer signal into pressure for brake calipers, a modification for which WMATA determined a full safety certification was not required. When the new control device was qualified, a 4000-series train was outfitted with these components, weighted, and then operated at different speeds and acceleration / deceleration rates. The ETP was successful, leading to an ETR, EMI, and eventual procurement.

As described in CENV SOP 2, any employee within WMATA may submit a formal Engineering Request (ER). The TIES Engineering Review Board discusses ERs at monthly meetings. If the group determines action is necessary, an engineer will be assigned to research the issue, and CENV may develop and launch an ETP depending on the results of research.

After an EMI is approved, CENV utilizes Parts Action Forms (PAFs) to approve new parts, a process which is often initiated due to failure of a similar component. PAFs serve to change the Maximo parts description for an individual component, and the PAF cover sheet demonstrates how different departments have reviewed and approved each PAF. Quality (QAAW, under QICO) will review the PAF to ensure that the product is accurately described, and once Procurement obtains the new part, QAAW will inspect the product to ensure that the parts conform to WMATA requirements and specifications. Vendors sometimes no longer supply parts or are unavailable to provide the item using the same vendor number, prompting development of a PAF. In one recent example, when CENV determined that 4000-series bulkhead glass needed to be replaced and the original supplier would no longer deliver the parts, CENV developed engineering drawings to allow other bidders to seek the job of replacing the glass. CENV will request samples from potential vendors and conduct testing to ensure that the materials meet WMATA criteria before allowing a procurement to proceed.

### 5.3 System Modification by Office of Chief Engineer, Infrastructure (CENI)

Section 3.6.5.7.7 of the WMATA 2015 SSPP describes CENI responsibilities for acquisition and construction of new facilities and systems and infrastructure renewal. CENI and SAFE are responsible for safety certification and construction safety for CENI projects. The SSPP refers to inclusion of the Construction Safety and Environmental Manual (CSEM) in contracts to define contractor safety responsibilities and construction safety oversight responsibilities of WMATA Authority Representatives (AR) and SAFE. The CSEM applies to all construction, rehabilitation, or maintenance projects

administered by CENI, and as of 2013 was approved by the GM/CEO, SAFE and TIES. It is unclear if TIES is currently required to review and approve the CSEM, as CENI is now external to TIES and is managed by a Chief Engineer who reports directly to WMATA's General Manager.

During interviews, representatives from CENI described CENI's EMI development process, which is distinct from the process utilized by CENV and IT. CENI manages the EMI process for all infrastructures, and separate offices under CENI individually develop and manage EMIs specific to that discipline. Deputy Chiefs directly oversee this process and assign tasks to individuals under their supervision for processing of EMIs. Policy Instruction 4.10/3, Section 5.03, describes the CENI EMI Process. The OAP 200-06 procedure provides a much greater level of detail for responsibilities, procedures and tasks required to develop an EMI. CENI representatives confirmed in interviews that OAP 200-06 does not apply to CENI. Although OAP 200-06 states that it is applicable to all TIES Offices, which would include CENI, it is titled as a CENV document, approved by TIES, CENV and QAAW. CENI representative stated that CENI staff is developing a draft Modification Instruction Policy and Procedure (EMI-001) to increase standardization of the EMI development process. This document will standardize how EMIs are developed for all CENI offices. When this procedure is issued, it will solely pertain to CENI and have no effect on OAP 200-06.

SAFE receives copies of completed EMIs from CENI for review. SAFE is sometimes, but not always, aware of EMIs under development before they are submitted for formal review. In certain instances, Deputy Chiefs will contact SAFE during EMI development for information, and in other cases SAFE will request information on an EMI under development. There is no master list of EMIs under development by CENI. CENI EMIs for ATC are accessed in PROCORE. All other CENI EMIs are communicated by email. Supplemental EMI documentation provided during the review included a log of 155 ATCS project EMIs, a log of 29 Power EMIs from 9/24/14 to 2/29/16, a list of 34 Communications EMIs from 2012-16, a TSFA log of eight EMIs from 2012-16, and four completed EMI document packages for ATCS, Power, Communications and TSFA.

CENI previously managed technical review and approval of contract changes for design and construction through the CENI Change Control Review Board (CCB). The process was changed relatively recently. The CCB chairmanship was transferred from CENI to the Chief Procurement Officer. PRMT is responsible for developing updated CCB procedures reflecting recent changes. The outdated Change Control Review Board document (9/26/11) provided to the review team was developed as a precursor to the 1101-series PIM document which currently governs the Change Control process effective 1/29/15. PIM 1101 – WMATA Directed Changes and/or Claims Processing establishes the process and authority for contract changes, defining responsibilities of PRMT, OMBS, COUN, SAFE, MCAP, CPDO and CENI. Although PIM 1101 Section 3.1.2 indicates that the CCB is Chaired by the Chief Engineer, this is superseded by Procurement Procedures Manual, 12/21/15 (PPM) Section 18.11.3(b) designating the PRMT Contracting Officer as Chair of the CCB.

SAFE is not a member of CCB but is invited to each CCB meeting. All changes are discussed and reviewed in the context of these meetings. The CENI Change Control Review Board procedure provided to TOC does not reference SAFE involvement in CCB meetings, but SAFE involvement is mentioned in PIM 1101 Part A – WMATA Directed Changes and/or Claims Processing and PPM 18.11.3(b). CENI conducts a technical review of all proposed changes before they are distributed to the CCB members.

#### 5.4 Joint Development and Adjacent Construction (JDAC)

The JDAC organization is part of CENI under the Deputy Chief of Track, Structures and Facility Engineering (TSFA). JDAC representatives described the process of crafting Project Construction Agreements, which outline safety and security requirements. During Joint Development projects, JDAC engineers review design submittals to identify potential safety impacts on the Metrorail system. Joint Development projects typically involve an outside party which develops WMATA land and leases it long-term. JDAC does not conduct QA/QC, but provides oversight and ensures that structures are built to proper specifications, along with coordinating escorts, track rights, and other needs.

JDAC staff includes 3 project managers, 10 construction engineers, a project coordinator, a supervisor of field projects, and 5 field construction inspection facilitators. JDAC's Adjacent Construction process relies heavily on third-party reporting to WMATA regarding upcoming projects. While the Washington, D.C. building permit process requires that builders notify WMATA of all projects within 300 feet of WMATA infrastructure, Maryland and Virginia jurisdictions do not utilize a similar process. JDAC sometimes relies on train operators and other staff to report activity adjacent to rail lines and facilities. JDAC's two Policy Instructions are not currently reflective of all JDAC activities; JDAC staff stated that they are in the process of rewriting the PIs. The most recent update of the Adjacent Construction Project Manual, 9/21/15 was provided following the review. The Manual provides guidance for outside parties undertaking projects adjacent to WMATA including procedures and process requirements that must be followed when working in close proximity to any WMATA facility. Four Policy / Instructions for JDAC projects were also provided, dating from 1991-2008.

#### 5.5 Capital Program Delivery Office (CPDO)

CPDO is identified in SSPP Section 3.6.5.7.13. The CPDO office includes the offices of Infrastructure Renewal Programs (IRPG), System Renewal Program (SRPG), and Track Allocation and Support Services (TASS). Representatives of CPDO discussed the organizational structure and general functions of CPDO, CPDO involvement in safety certification, and the contract change order development process. CPDO completes contracts for major reconstruction and rehabilitation projects, and the vast majority of CPDO projects involve some form of rehabilitation. CPDO has approximately 200 staff, including office directors, project managers, office support for project management, engineers, inspectors, and a track access support group, along with labor forces including ATC technicians and power technicians. CPDO carries out all tasks described in the



Project Implementation Manual (PIM) utilized by CENI; outdated references in this document will need to be addressed during a future formal revision and reissue.

Inspectors under CPDO are largely general inspectors, and do not complete training in individual topical areas. Some incoming CPDO inspectors have skills in specific disciplines, and will be assigned to projects which correspond to their skills. All inspectors complete OSHA training, with recertification required approximately every two years.

On construction and rehabilitation projects larger than \$100 million, contractors are required by default to have a full time, dedicated individual responsible for safety certification on staff. All contractors designate a lead safety individual, which may be a Safety Superintendent. Some contractor project managers rotate safety responsibilities between different individuals on a week to week basis, with a designated individual taking the role of project Safety Marshal.

## **6. Configuration Management**

WMATA 2015 SSPP Section 17.0 describes the configuration management program and responsibilities. The SSPP designates responsibility for configuration control to CENI for infrastructure and CENV for vehicles. The controlling documents referenced in this section are P/I 4.10/3 Configuration Control Management, P/I 4.14/2 Design Control Board, and OAP 200-06. The Policy/Instructions apply to CENI for configuration and change management of facilities, systems and documents. The Design Control Board (DCB) is responsible for control and approval of changes to CENI design criteria and standards and CONS documents. The EMI process described in OAP 200-06 applies to CENV for control of changes only as was stated in System Modification section above.

DCB manages adoption of new WMATA design standards and approving changes and/or deviations to the existing standards. During TOC's last audit of system safety elements in 2013, TOC found that WMATA lacked an authority-wide configuration management policy. The SSPP describes a plan to develop such a policy, but there has been no change in configuration management practices on an agency-wide level since the previous TOC audit of this element.

Within SAFE, the Safety Assurance office has a configuration management SOP, but the SOP is not SAFE-wide. SAFE representatives indicated that the Chief Safety Officer must designate this policy as an OAP for it to apply throughout SAFE, and such a change would require significant edits to the SOP. The DCB Policy Instruction does not discuss specifics of the approval process, including attendance requirements for meetings and voting procedures. In 2013, TOC also observed that issues presented to DCB were not routinely reviewed by SAFE. There are still several formalized processes that need to be established to manage this issue, though SAFE is a member of the DCB and has access to all relevant project documents. SAFE's Manager of Safety Certification and Engineering is assigned to regularly attend the DCB meetings. These meetings are typically scheduled on an as-needed basis – a monthly time slot is allocated for the

meeting, and meetings are cancelled if no design changes are proposed during the period.

As described in interviews with staff from a range of WMATA departments including CENI and CENV, Documentum and PROCORE are among the software tools used to process EMI documents. Signed as-built drawings and specifications are controlled in Documentum. Shop drawings and O&M manuals are maintained in hard copy archives at Carmen Turner Facility. Some of these documents have searchable metadata contained within Documentum. Currently, processes for retrieval and review of archived hard-copy documents are somewhat informal. SharePoint software is referenced in the SSPP, but CENI no longer uses this software for document management.

## **7. Findings**

**Finding 1: Several fire and life safety issues exist in the Brentwood facility storeroom, and it is unclear if fire / life safety issues are routinely evaluated and mitigated at other storeroom facilities.**

TOC's audit team observed improvised paper emergency exit signage, a lack of emergency lighting, and eyewash stations which require refreshing. Hazardous materials were stored in a staging area rather than in the storeroom. The TOC team also observed that an unfenced, rotating, powered storeroom shelf system appeared to present a safety risk to personnel during operation due to insufficient guards, clearance markings and sensors. WMATA must address these safety concerns at the Brentwood facility and other storeroom facilities. WMATA should demonstrate that SAFE conducts regular inspections of all storerooms to identify and resolve similar conditions at other facilities, or initiate a program intended to resolve such conditions.

**Finding 2: WMATA documentation has not been updated to reflect the results of reorganization activities.**

Recent organizational changes have resulted in substantial redistribution of responsibilities and functions across different departments at WMATA. Job titles, department names, and functions described in documentation must be consistent with current organizational structure. WMATA must review and revise policies, procedures, and organizational charts to reflect organizational changes including the SCES takeover of some of PRMT and SRML storeroom functions, the transfer of contracting functions and the CCB functions from CENI to PRMT, and the distinction between responsibilities of the PRMT COR/COTR and the CPDO Authority Representatives in all documentation. Impacted documents include but are not limited to the SSPP, SSCP, CENI PIM, and OAP 600 (03, 05 and 06). Policies, procedures, and organizational charts for other departments must also be evaluated for accuracy.

**Finding 3: No clear process exists to ensure that current WMATA documents are uniformly available across the agency and outdated documents are archived and removed from circulation.**

Outdated documents were provided to TOC's review team in several instances. SAFE provided the review team with outdated documents (identified in the report listing of documents received), while individual departments were able to provide current material which was already in use, indicating that SAFE may not have coordinated with outside departments to respond to TOC's pre-audit document request and that outdated documents remained in circulation after being updated or superseded. WMATA must develop and implement document control procedures to systematically review documents and remove outdated documents from circulation as soon as they are updated or discontinued.

**Finding 4: WMATA does not have an agency-wide configuration management policy.**

The 2015 SSPP describes a plan to develop an agency-wide Configuration Management policy, stating that "WMATA is planning to implement a program to provide configuration control of the technical documents relating to the WMATA Metrorail...infrastructure" and outlining a Product Life Cycle Management pilot program. There has been no movement toward creation of such a policy. Past TOC audits have identified similar concerns with configuration management practices at WMATA. WMATA must develop a configuration management policy covering all departments to ensure consistency and clarity of existing configuration documents.

**Finding 5: WMATA's Design Control Board Policy Instruction does not discuss specifics of the approval process.**

The policy instruction contains insufficient information on voting and attendance requirements, which could contribute to inadequate or inconsistent review of documents by the Design Control Board. WMATA must clarify this policy instruction to provide additional information on specific steps in the review and approval process.

**Finding 6: WMATA's Safety Certification Review Committee voting process is inadequate.**

In a prior audit, TOC reviewers observed that SCRC members review documents via email, and that email "read receipts" were interpreted as evidence that members had reviewed and approved of safety certification documentation. The voting process for SCRC committee members has not changed since TOC's last finding was issued; it is unclear if all members of this committee are reviewing and approving documents as required.

**Finding 7: SAFE's EMI review processes are not documented in an internal procedure.**

SAFE also does not maintain a master list of EMIs reviewed and approved by SAFE and a list of EMIs currently under SAFE review. SAFE must improve tracking of EMIs and develop a procedure to formalize the EMI review process and ensure consistency.

**Finding 8: CENI does not have a formal EMI development procedure.**

P/I 4.10/3 provides a brief overview of the existing CENI EMI development process but does not provide a sufficient level of detail comparable to CENV's OAP 200-06 or the draft CENI Modification Instruction EMI-001. The draft CENI EMI procedure should be fully developed and approved or P/I 4.10/3 should be revised to include detailed EMI process.

**Finding 9: SAFE does not appear to be following SSCP 3.3.1, which requires SAFE approval of daily certification testing plans prior to revenue operation after contractors perform work on track or ATC components.**

SAFE was unable to provide any information on its role or activities regarding the daily certification test requirement. A process must be developed to ensure that all ATC daily certification testing activities are reviewed and approved by SAFE according to the SSCP.

**Finding 10: Organizational and procedural challenges reduce the effectiveness of regular SCRC meetings.**

The SCRC does not record active inquiries, action items, or the details of meeting discussions in meeting minutes, and SCRC members were not able to obtain answers to key project questions during meetings. WMATA should reevaluate the SCRC meeting process to ensure that the meeting minutes reflect a detailed account of meeting discussions, open questions, action items, and priorities for the next SCRC meeting. WMATA must also ensure that SCRC members are briefed on new safety certification projects and have an opportunity to discuss technical questions with the office in charge of the project. SAFE should provide the SCRC membership with a regularly-updated, comprehensive list of projects in the process of SSC, and present the list at the monthly meeting. Lastly, the SCRC membership list must be updated to reflect recent changes in WMATA's organizational structure.

**Finding 11: SAFE has a low level of involvement in safety certification activities conducted by SAFE contractors.**

SAFE should maintain a higher level of engagement in ongoing safety certification projects of all types, and must be consistently aware of project status for safety and security certification projects.

**Finding 12: There are currently no documented thresholds to determine the level of safety certification required for vehicle modifications.**

SSCP Table 2 addresses new vehicle procurements only. SAFE should establish thresholds which trigger safety certification for major vehicle modifications to include in the SSCP.

**Finding 13: Attendance levels at WMATA SCRC meetings are inadequate.**

TOC's review of SCRC attendance records from January to November of 2015 found that between 19% and 44% of all SCRC members attend meetings on a routine basis. The SCRC may not conduct effective reviews if a majority of members do not attend meetings or participate in SCRC proceedings. WMATA must develop a plan to improve attendance at SCRC meetings and ensure that a quorum is present at SCRC meetings before critical decisions are made.

**Finding 14: SAFE does not receive information on all new projects to assess whether or not safety certification is necessary.**

SAFE appears to be aware of many but not all new projects which potentially require safety certification. Workflows and document management must be established to ensure that SAFE is notified of all new projects and has an opportunity to review project documentation to assess the need for safety certification.

**Finding 15: There is no procedure for modification and regular revisions to the Procurement Procedures Manual.**

Section 2.5-c of the PPM states that the CPO shall establish a procedure for issuing modifications and revisions to the PPM which will enable Contracting Officers and other users to maintain a current compilation of the PPM. WMATA must ensure that a defined process governing modification of the PPM Manual is in place, and that a timeline for regular updates of the document is established.

**Finding 16: The Capital Projects Delivery Office does not have a manual which describes and governs how CPDO conducts business.**

CPDO currently carries out tasks described in the Project Implementation Manual, which is not directly relevant to CPDO. CPDO must develop an original procedure describing day-to-day activities within the Office.

**Finding 17: Use of the term "Authority Representative" at WMATA is inconsistent and unclear.**

The term "Authority Representative" appears in a variety of WMATA documents in reference to contracting oversight and authority. Definitions of this term appear to be inconsistent, and representatives of different WMATA departments have different understanding of the meaning of this term. WMATA should streamline language surrounding this term in all documents, including the SSPP and the Procurement

Procedures Manual, to ensure that the functions and responsibilities of the Authority Representative are consistent and well-understood across the organization.

### Persons Interviewed

- ██████████ SAFE
- ██████████ TIES/CENI
- ██████████ TIES/JDAC
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ CENI
- ██████████ PRMT
- ██████████ CENV
- ██████████ CENI/COMM
- ██████████ CENI
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ SAFE
- ██████████ CENV
- ██████████ CENV
- ██████████ PRMT
- ██████████ Chief Engineer
- ██████████ SCES
- ██████████ SRML
- ██████████ SRML
- ██████████ SRML

### Documents Reviewed

- WMATA Safety & Security Certification Plan, March 2015
- CENI Directive 037 – Contract Modification Workflow
- OAP 600-01, Rev 01 10/31/00 - Requisitioning Materials and Services Other Than Inventory
- OAP 600-02, Rev 01 10/31/00 - Inventory Control
- OAP 600-03, Rev 01 10/31/00 - Management and Control of Inventory
- OAP 600-05, Rev 01 10/31/00 - Storeroom Access Control
- OAP 600-06, Rev 01 11/08/00 - Inventory Disposal
- PI 4.10/3 Configuration Control Management, 6/22/12
- PI 4.14/2 Design Control Board, 6/22/12

- PI 4.12/1 Capital Program Prioritization Process, 12/16/02
- PI 1.18/0 Transit Asset Management Policy, 5/20/13
- Safety & Security Certification - Project Assessment Form
- Red Line Return to ATO Safety Verification Report 4/2/2015
- SSMP System Infrastructure Rehabilitation Program - August 2013
- System Safety Program Plan, January 2015
- WMATA DCMP Phase II SSC Oversight Plan, March 2015
- WMATA SSMP Major Capital Projects - Bus Operations and Maintenance Facilities, October 2013
- WMATA Procurement Procedures Manual, Dec 2015
- WMATA Construction, Safety & Environmental Manual, March 2013
- Metrorail Safety Rules & Procedures Handbook, April 2011
- ATC-1000, Instructions for Testing and Inspection of ATC Apparatus and Systems, revised 8/26/14
- ATC-2000, System Integrity Maintenance Practices, rev 1, 6/3/13
- ATC-3000, Preventive Maintenance Instructions and Technical Procedures Manual, revised 8/21/14
- CENV EMI-OAP 200-6 Engineering Modification Instruction, 1/21/10
- SIRP System Infrastructure Rehabilitation Program - Project Management Plan, 9/7/12, Rev 4
- ISRP Quality Management System Plan, Rev 2
- CENI Organizational Charts, 2014
- CENI/CONS Project Implementation Manual – Policies and Procedures
  - PIM Policy 01-Introduction 3/21/13
  - PIM Policy 03-Contractor Responsibility 4/3/13
  - PIM Policy 05-Pre-construction Responsibility 4/8/13
  - PIM Policy 06-Contract Administration 4/8/13
  - PIM Policy 07-Monitoring Schedule & Progress 3/22/13
  - PIM Policy 08-Monitoring Quality Control 7/11/13
  - PIM Policy 09-Safety Monitoring 7/30/13
  - PIM Policy 10-Administration of Payments 7/11/13
  - PIM Policy 11-Administration of Changes & Claims 7/11/13
  - PIM Policy 12-Contract Completion 7/30/13
  - PIM Procedure 203 Project Implementation Contract Controls 2/5/13
  - PIM Procedure 204 Project Kickoff meeting 2/5/13
  - PIM Procedure 205 Professional services scope of work 8/21/13
  - PIM Procedure 206 Approval to release contract documents for solicitation 9/28/12
  - PIM Procedure 207 Configuration Management for CENI Design Criteria Spec 4/25/13
  - PIM Procedure 302 Certified payrolls 2/14/13
  - PIM Procedure 401 Verification of Utility Work form 2/5/13

- PIM Procedure 404 Design Control Board 12/3/12
- PIM Procedure 405 Complaint Procedures 2/5/13
- PIM Procedure 407 Interface of WMATA contractors 2/5/13
- PIM Procedure 408 Receipt of Court papers 2/5/13
- PIM Procedure 409 Utility Damage avoidance 2/5/13
- PIM Procedure 501 Constructability review 1/15/13
- PIM Procedure 502 Early Action letter 2/19/13
- PIM Procedure 503 Pre-construction meetings 2/19/13
- PIM Procedure 504 Real Estate 2/19/13
- PIM Procedure 601 Contract File System 10/18/12
- PIM Procedure 602 Contract Correspondence Systems 10/18/12
- PIM Procedure 603 Contract Drawing Control 8/21/13
- PIM Procedure 604 Review of Contractor Submittals 8/21/13
- PIM Procedure 605 As-built Drawing Control 8/21/13
- PIM Procedure 606 Progress meetings 4/24/13
- PIM Procedure 615 Job Order Contracting Program 10/8/13
- PIM Procedure 616 PMSS Appendix A 9/3/13
- PIM Procedure 616 WMATA PMSS Procure User Guide 9/4/13
- PIM Procedure 701 Schedule Approval Monitoring 3/11/13
- PIM Procedure 702 Periodic Progress Review (PRR) meetings 3/11/13
- PIM Procedure 804 Deviations 8/21/13
- PIM Procedure 806 Field Inspection 6/12/12
- PIM Procedure 807 Deficiency List 10/9/13
- PIM Procedure 810 Periodic Quality Monitoring meeting 8/16/12
- PIM Procedure 812 Corrective Action 9/30/13
- PIM Procedure 905 Safety & Security Certification 4/24/13
- PIM Procedure 1008 Partial Payment flow chart 2/14/13
- PIM Procedure 1008 Partial Payment Authorization 2/14/13
- PIM Procedure 1101 Part A Changes or Claims processing 8/27/13
- PIM Procedure 1101 Part B Changes or Claims processing 9/19/13
- PIM Procedure 1101 Part C Changes or Claims processing 9/19/13
- PIM Procedure 1105 Differing Site Conditions 9/25/13
- PIM Procedure 1107 Time Materials work 9/25/13
- PIM Procedure 1201 Physical Completion 11/13/13
- PIM Procedure 1202 Appendix A Contract Closeout checklist
- PIM Procedure 1203 Fiscal Completion 11/27/13
- CENI Directives and Procedures Log 11/27/13
- CENI Project Quality Assurance Plan reviews for 11 projects (FY 11-14)
- CENI peer Review Reports for 27 projects (FY 11-14)
- Construction Inspector's Manual, August 2012
- 2014 Peer Review and Contractor Audit Schedule
- MWAA DCMP project audit reports (FY 11-14)



- Section 01115 - Safety & Environmental Certification, 7/2013
- ATC EMI 210505 documentation
- Track Tie Fire Arcing Insulators Report, 8/15/12
- Design Build Contract Specifications Template, 7/2013
- WMATA Manual of Design Criteria for Maintaining and Continued Operation of Facilities and Systems, February 2014
- Roadway Job Safety Briefing Forms - completed examples
- Roadway Safety Compliance Checklists - completed examples
- CENI 3/31/15 response to 6/20/12 ISSA report finding requiring life-cycle planning for infrastructure elements
- CENI 2/27/15 memo implementing PIM procedure 403 - Stage 3 Construction - Procedure Problem Statements
- CENI 3/25/15 response to 6/20/12 ISSA report finding through development & implementation of Procedure 905 (Safety & Security Certification)
- CENI Directive 039 - Safety Training Requirements effective 7/24/15 responding to 6/20/12 ISSA report finding.
- CENI - 3/13/14 continuity of operations exercise - After Action Report
- WMATA SAFE Internal Safety & Security Audit Report - CENI 6/24/14
- EMI for B01-Gallery Place Platform Traffic Release Pushbutton , 3/26/13
- EMI for B05-Brookland Platform Traffic Release Pushbutton , 5/23/12
- Engineering Modification Instruction Policy & Procedure, 12/17/15 (draft)
- Environmental Management Policy Manual, July 2013
- Environmental Standard Operating Procedure
  - ESOP 4 - Hazardous Materials Storage
  - ESOP 8 - Hazardous Waste Labeling
  - ESOP 9 - Hazardous Waste Disposal
- EMS & Hazardous Materials Operations
- Procurement Procedures Manual, December 2012
- Metro Maintenance & Materials Policy & Procedure Manual, Aug 2011
- Instruction Handbook for Contract Files Assembly and Documentation, June 1993
- Procurement Continuity of Operations Plan, October 2011
- Policy/Instruction 10.2/2, Safety Committees, 8/2/11
- SAFE Report of Walk-through Safety Inspection of MSF 400, 10/23/12
- Coordinated Safety Program & Reporting Procedures, 07/01
- WMATA Medical/EAP Office Guidelines for Referrals for Reasonable Suspicion D&A Test
- Policy/Instruction - Background Screenings on Metro Contractors
- Policy/Instruction - Metro Employee Identification Cards
- Procedure 113-19, Supplier Shipping & Delivery Requirements, 6/19/12

- Adjacent Construction Project Manual, Rev 5a, 9/21/15 - Office of Joint Development & Adjacent Construction
- WMATA Joint Development Policies & Guidelines, 7/25/13
- Revised JDAC Org Chart 3-14-16
- Facility Inspection Procedures (requires revision for SCES)
- SRML Facility Inspection Report form (requires revision for SCES)
- SRML Monthly Storeroom Inspection form (requires revision for SCES)
- CENI EMI Log - ATCS & Power
- TSFA EMI Log, 2012-2016
- COMM EMI log 2014-2015
- ATCS EMI-210522-F99 Wash Track Warning System, 2/4/16
- PWR EMI-220287 Negative return system at Glenmont Yard (B98), 1/15/16
- TIES EMI 41-0138, 7/24/13 B99 Brentwood Yard - restraining rail curve #1 EMI
- COMM EMI 2015-022, 11/2/15 COMM EMI Call for Aid Intercom Rollover reprogramming
- CENV New Wheel Profile Implementation EMI Documents, 2013-2014
- PI 4.15/0 Real Estate Coordination, 8/8/08
- 2015 SCRC meeting attendance - 11 meetings
- Sample SCRC Voting Records for Silver Line SSC
- Approved CENV ETPs & EMIs 3/2/16
- 5K DBFM EMI & ETP, 2015 – 2016
- 5K Cab Heater EMI & ETP, 2015
- 1K LVPS EMI & ETP, 2015
- CMNT EMI Campaign Status Report, 3/21/2016
- CENV SOP 1 - Engineering Modification Instruction
- CENV SOP 3 - Engineering Test Plan (ETP)
- Sample Completed CENV PAFs (Parts Action Forms) 2013-2015
- Largo Water Treatment Facility - Safety Certification Documentation
- Contracting Officer and Authority Representative Delegation, 4/7/16 (2007-2016)
- Conformed Contract - Vertical Turning and Milling Machine, 8/15/13
- RFP - Prime Mover Mounted Flash Butt Welding Services, February 2013
- RFP - Elevators Rehabilitation, 10/4/13
- WMATA Brentwood Rail Yard Facility Fire/Life Safety Assessment - Final Draft Report, 11/29/11
- Service Level Agreement - SCES, 4/22/13
- Office of Supply Chain Enterprise Services - Metro Maintenance and Materials Policy and Procedure Manual, April 2013
- CENV SOPs 1-7, 9, 11-12, 15, 17, 19
- Contract Operating Procedure - Coordinating Roles/Responsibilities of the Contracting Officer and the Contracting Officer Representative, October 2014
- Contracting Officer's Technical Representative Certification Training List, 3/10/16

- Procurement Procedures Manual Supplement - Contracting Officer's Technical Representative Guide, Understanding the COTR's Role, Duties and Responsibilities, June 2012
- Outdated/Obsolete Documents Provided
  - WMATA System Safety Program Plan, January 2013
  - Procurement Procedures Manual, December 2012
  - Metro Maintenance & Materials Policy & Procedure Manual, Aug 2011
  - Procurement Procedures Manual Supplement - Simplified Acquisition Handbook, Sept 2011
  - Instruction Handbook for Contract Files Assembly and Documentation, June 1993
  - CENI Change Control Review Board Final 9/26/11
  - Environmental Management Policy, 10/12/99
  - Environmental Management Policy Manual, 12/18/02
  - Construction Safety & Environmental Manual, 8/5/02
  - PI 4.7/1 Permits & Easements on WMATA Property, 11/27/01
  - PI 4.6/0 Design & Construction of Metrorail Facilities by Others, 12/11/91
  - PI 4.4/0 Adjacent Construction and Joint Development Coordination, 9/4/91