May 28, 2021

QICO 2021

CYQ1 REVIEWS

Washington Metropolitan Area Transit Authority
WMATA

Internal Safety Review

1. *Rail Operations Oversight, Supervision & Fitness for Duty*
2. *Office of Plant Maintenance (PLNT)*

Quality Assurance, Internal Compliance & Oversight (QICO)
Promoting Transparency, Accountability and Public Confidence

TABLE OF CONTENTS

CY21 Q1 COMPREHENSIVE INTERNAL SAFETY REVIEW SUMMARY 4

INTERNAL SAFETY REVIEW SUMMARY 5

1.1 FUNCTIONAL OVERVIEW AND STRUCTURE 6

Rail Station & Train Operations 6

Organizational Structure and Background 7

1.2 REVIEW SCOPE 8

Documentation Review 8

Personnel Discussions 10

Station Manager Kiosk Assessments 10

1.3 WHAT WORKED WELL (WINS) 11

W-RSTO-21-01 11

1.4 ITEMS RESOLVED DURING REVIEW 12

R-RSTO-21-01 12

1.5 AREAS FOR IMPROVEMENT 14

FS-RSTO-21-01 14

FS-RSTO-21-02 16

FS-RSTO-21-03 17

FS-RSTO-21-04 18

FS-RSTO-21-05 19

1.6 SUMMARY OF REQUIRED ACTIONS 20

QICO-RSTO-20-01 20

QICO-RSTO-20-02 20

QICO-RSTO-20-03 20

QICO-RSTO-20-04 20

QICO-RSTO-20-05 21

INTERNAL SAFETY REVIEW SUMMARY 22

2.1 FUNCTIONAL OVERVIEW AND STRUCTURE 23

Office of Plant Maintenance (PLNT) 23

Organizational Structure and Background 24

2.2 REVIEW SCOPE 25

Documentation Review 25

Personnel Discussions 25

Field Assessments 25

2.3 WHAT WORKED WELL (WINS) 26

W-PLNT-21-01 26

W-PLNT-21-02 26

2.4 AREAS FOR IMPROVEMENT 27
FS-PLNT-21-01 27
FS-PLNT-21-02 28
FS-PLNT-21-03 29
FS-PLNT-21-04 30
FS-PLNT-21-05 30
2.5 SUMMARY OF REQUIRED ACTIONS 31
QICO-PLNT-21-01 31
QICO-PLNT-21-02 31
QICO-PLNT-21-03 31
QICO-PLNT-21-04 31
INTERNAL CORRECTIVE AND PREVENTIVE ACTIONS (iCAPAs) 32
RSTO iCAPAs 33
PLNT iCAPAs 50
SUPPLEMENTAL MATERIALS 64
APPENDIX A: SYSTEM SAFETY MEASURES 65
APPENDIX B: RISK ASSESSMENT 66
APPENDIX C: TECHNICAL TERMINOLOGY 68

WHAT WE DO

What is QICO?

The Office of Quality Assurance, Internal Compliance & Oversight (QICO) is an internal management function that partners with other departments to provide an objective review. Authorized by the General Manager as outlined in the Quality Management System Plan (QMSP).

Why QICO Performed These Reviews?

These internal safety reviews are intended to provide Metro senior management with an assessment of the following areas:

- Rail Operations Oversight, Supervision & Fitness for Duty
- Plant Maintenance

QICO's Methodology:

- Develop relevant review activities by identifying and assessing any risks to align with the QMSP 15 Core Standards.
- Compliance with the WMATA System Safety Program Plan (SSPP) is assessed through internal safety reviews.
- Review documentation, observe processes and interview key personnel.
- Review findings and required actions are rated based on level of risk, which ranges on a scale from "Insignificant" to "High"

Note: An itemized internal Corrective and Preventive Action (iCAPA) is developed for each required action to achieve effective and measurable resolution of identified concerns. To check the status of iCAPA implementation go to: wmata.com/initiatives/transparency/

Internal Safety Review

WHAT WE FOUND | CY21Q1 INTERNAL SAFETY REVIEWS

May 2021

1. Rail Operations Oversight, Supervision & Fitness for Duty

Wins:

✓ Consistent application of the spot-check process promotes adequate coverage of all station managers, operators, and passenger facilities.

Action Areas Identified During Review:

- Monitoring the impact of fatigue on incidents, accidents, and service delivery will promote employee and customer safety.
- Completing required train operator fitness for duty evaluations provides assurance that employees are in satisfactory condition to perform their assignments and present themselves as public representatives for Metro.
- Meaningful supervisory oversight of interlocking operators will increase safety, efficiency, and accountability of dispatch and yard operations.
- A process governing creation, closure, and quality of incident/accident reports will promote accountability and improve the capture of critical safety data.
- Current and controlled policies, procedures, and standards provide clear direction and result in more consistent process control.

2. Plant Maintenance

Wins:

✓ PLNT has developed a process to engage employees in safety meetings which informs them of identified hazards and enforces safe work practices.

✓ PLNT developed an effective communication plan to promote employees' awareness of status updates of established governing documents.

Action Areas Identified During Review:

- Performing inspections, maintenance and repairs on station pylons in accordance with governing documents would promote safe, efficient and effective work functions.
- Performing routine Supervisor Quality Control (QC) compliance checks as defined in Facilities, Systems, and Vertical Transportation (FSVT's) process and frequency would verify PLNT operations meet standards and safety measures.
- Availability and enforcement of proper Personal Protective Equipment (PPE) and required tools to perform maintenance tasks reduces safety risks and improves work performance.
- Reviewing and updating governing documents within the required periodicity optimizes applicability and incorporates changes in a timely manner.
- The accurate tracking of corrective maintenance work orders in Maximo would improve planning and efficiency of maintenance and repairs.

WHAT WE WILL DO MOVING FORWARD

Key Takeaways

1. *Enhancement of the supervisory oversight program to be inclusive of all employees and activities will continue to promote safe and consistent management of personnel.*

- Revise the current oversight program to be inclusive of all RSTO activities.
- For details on committed actions, see the following iCAPAs:
  - QICO-RSTO-21-01
  - QICO-RSTO-21-02
  - QICO-RSTO-21-03
  - QICO-RSTO-21-04
  - QICO-RSTO-21-05

Key Takeaways

2. *Utilization of available data with efficient maintenance strategies and Quality Control (QC) compliance enhances overall efficiency, reduces maintenance efforts and promotes safety.*

- Enforce implementation of quality control compliance checks to include operation, PPE, tools and equipment.
- For details on committed actions, see the following iCAPAs:
  - QICO-PLNT-21-01
  - QICO-PLNT-21-02
  - QICO-PLNT-21-03
  - QICO-PLNT-21-04

INTERNAL SAFETY REVIEW SUMMARY December 2020

(1) Rail Operations Oversight, Supervision & Fitness for Duty

Key Takeaway:
Enhancement of the supervisory oversight program to be inclusive of all employees and activities will continue to promote safe and consistent management of personnel.

What is QICO?
- The Office of Quality Assurance, Internal Compliance & Oversight (QICO) is an internal management function that partners with other departments to provide an objective review. QICO and the internal review process are authorized by the General Manager as outlined in the Quality Management System Plan (QMSP).

Why QICO Performed This Review:
- This internal safety review is intended to provide Metro senior management with an assessment of Rail Operations Oversight, Supervision & Fitness for Duty compliance with federal regulations and WMATA's System Safety Program Plan (SSPP), and promote the actions needed to address any concerns.

QICO's Methodology:
- Develop relevant review activities by identifying and assessing any risks to align with Policies, Procedures & Standards; Training, Certification & Compliance; Hazard Management; and Safety.
- Review documentation, observe processes, and interview key personnel.
- Findings and required actions are assigned a risk rating, on a scale from "Insignificant" to "High".

Wins:
- ✓ Consistent application of the spot-check process promotes adequate coverage of all station managers, operators, and passenger facilities.

Items Resolved During Review:
- ✪ Station managers must consistently demonstrate awareness of station Area of Refuge (AOR) or Area of Rescue Assistance (AORA) for their assigned work location.

Areas for Improvement:
- Monitoring the impact of fatigue on incidents, accidents, and service delivery will promote employee and customer safety.
- Completing required train operator fitness for duty evaluations provides assurance that employees are in satisfactory condition to perform their assignments and present themselves as public representatives for Metro.
- Meaningful supervisory oversight of interlocking operators will increase safety, efficiency, and accountability of dispatch and yard operations.
- A process governing creation, closure, and quality of incident/accident reports will promote accountability and improve the capture of critical safety data.
- Current and controlled policies, procedures, and standards provide clear direction and result in more consistent process control.

Required Actions:
- **QICO-RSTO-21-01:** Implement controls to monitor and mitigate the impact of fatigue. (Overall Risk – High)
- **QICO-RSTO-21-02:** Enhance fitness for duty evaluation requirements and improve compliance with existing requirements. (Overall Risk – Elevated)
- **QICO-RSTO-21-03:** Revise the current oversight program to be inclusive of all RSTO activities. (Overall Risk – Moderate)
- **QICO-RSTO-21-04**: Implement a documented process that ensures accurate collection, recording and reporting of all incident/accident data. (Overall Risk-Moderate)
- **QICO-RSTO-21-05:** Implement a process that ensures RSTO personnel are aware and have access to the latest policies and procedures. (Overall Risk – Moderate)

Note: An itemized internal Corrective and Preventive Action (iCAPA) is developed for each required action to achieve effective and measurable resolution of identified concerns. To check the status of iCAPA implementation go to https://www.wmata.com/initiatives/transparency

1.1 FUNCTIONAL OVERVIEW AND STRUCTURE

Rail Station & Train Operations

WMATA's System Safety Program Plan (SSPP) establishes the requirements for systematically identifying, evaluating, and minimizing safety risks throughout all elements of the Metrorail, Metrobus, and Metro Access systems in accordance with 49 CFR Part 659 and other applicable federal and regional requirements.

The Rail Station and Train Operations Branch (RSTO) of the Office of Rail Transportation (RTRA) is responsible for providing front-line rail transportation and station support services to Metrorail passengers. This unit manages the line functions of train and station operations of the rail system and is organized by rail divisions. There are nine (9) rail divisions managed by rail superintendents and assistant superintendents for each division. All division units are codependent and require constant coordination to ensure effective operation of the railroad. Current operating divisions are as follows:

BL YL Alexandria	RD Glenmont	OR SV New Carrollton
GR Branch Ave.	GR YL Greenbelt	RD Shady Grove
RD Brentwood	BL SV Largo	OR SV West Falls Church

The line directors of RSTO directly and indirectly supervise more than 1,250 employees, to include superintendents and assistant superintendents, depot clerks, rail operations supervisors, interlocking (yard tower) operators, station managers, and train operators. RSTO carries out operations over Metro's 106 miles of track, 91 rail stations, 10 rail yards and tail tracks, and terminals. RSTO is also responsible for responding to incidents/accidents, developing service alternatives to facilitate unplanned disruptions, special events, and scheduled maintenance, as well as supervising and enforcing all safety policies and programs as these have direct impact on Metrorail operations. Staffing statistics as of October 2020 follow, including the mean time served in their respective role:

Train Operator 661 Mean: 5.04 years	Rail Operations Supervisor 102 Mean: 6.18 years	Assistant Superintendent 8 Mean: 2.49 years
Station Manager 543 Mean: 5.17 years	Interlocking (Yard Tower) Operator 35 Mean: 5.12 years	Superintendent 9 Mean: 6.56 years
Test Train Operator 4 Mean: 3.75 years	Depot Clerk 38 Mean: 7.57 years	Line Director 3 Mean: 1.27 years

The objective of this Internal Safety Review (ISR) is to internally validate the management of rail operations and service delivery performed under the purview of RSTO comply with WMATA's 2018 SSPP.

The SSPP defines 21 specific safety management elements, of which nine (9) are identified as applicable for the scope of this review:

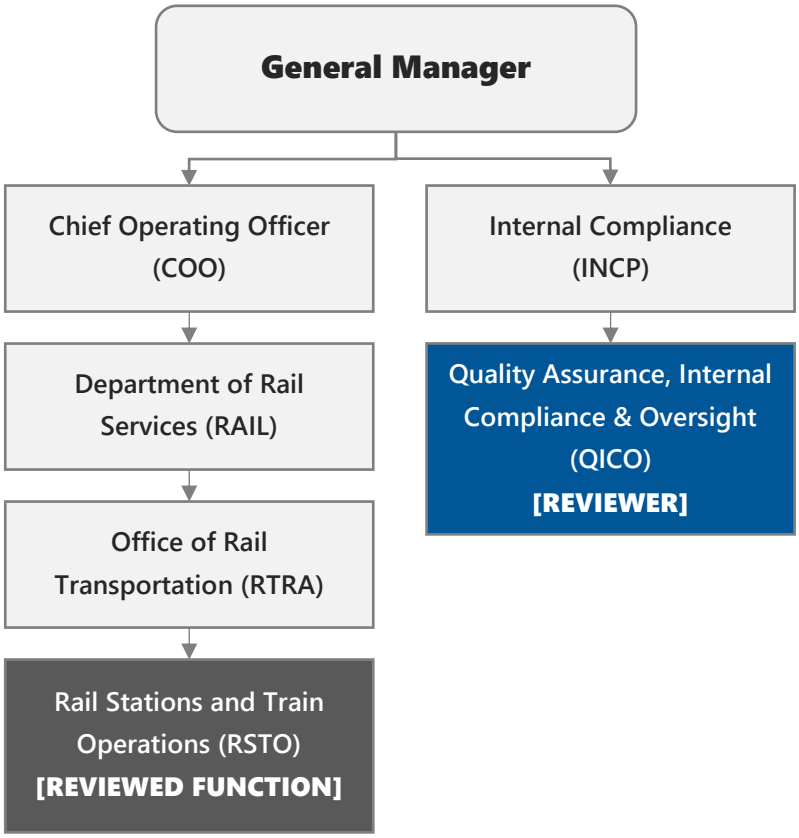
Element 3 - Overview of Management Process
Element 5 - Implementation Activities and Responsibilities
Element 6 - Hazard Management Process
Element 9 - Safety Data Collection
Element 10 - Accident Investigation
Element 13 - Rules Compliance
Element 14 - Facilities and Equipment Inspections
Element 16 - Training and Certification for Employees and Contractors *(See note below)*
Element 18 - Compliance with Local, State and Federal Requirements

- *Note- QICO is currently conducting a concurrent Internal Safety Review of Operations Management Services (OPMS), with a focus on training.*

Organizational Structure and Background

Within WMATA, the department of RSTO reports to the Chief Operating Officer (COO) through the Office of Rail Transportation (RTRA) and the Department of Rail Services (RAIL). As shown in the organization chart, QICO is independent of this function, reporting to the General Manager through Internal Compliance (INCP).

The objective of the RSTO Internal Safety Review (ISR) is to internally validate management support of rail operations performed under the purview of RSTO are in compliance with WMATA's SSPP.



1.2 REVIEW SCOPE

Documentation Review

- WMATA Documents:
  - WMATA System Safety Program Plan (SSPP), January 2018
  - Metro Safety Rules and Procedures Handbook (MSRPH), Rev. E, August 2020
  - WMATA position description of Line Director, Superintendent, Rail Supervisor, Station Manager, Train Operator, Interlocking Operator, and Depot Clerk
  - Fatigue Risk Management Policy/Instruction (P/I) 10.6/1 (2020), issued during this review
  - Fatigue Risk Management P/I 10.7/1 (2015)
  - Human Resources HR-TA-P01-01, Competitive Recruitment Policy
- RTRA Documents:
  - RTRA organizational chart
  - RTRA Operation Personnel Notice, July 22, 2020
  - RTRA QA/QC Group Internal Audit Report-Yard Pre-Trip Inspection (81 items) July 2019 - September 2020
  - RTRA QA/QC 2019 audit Plan
  - RTRA QA/QC 2020 audit Plan
  - Supervisor certification list
  - Train operator certification list
  - RTRA lesson learned, Alexandria Yard, Nos. 2020-001 & 2020-002
  - RTRA Weekly Key Performance Indicator (KPI) Report August 9, 2020 – August 15, 2020
  - Operations Administrative Procedure (OAP) 101-12 Document Control Procedures- June 2013
  - OAP 201-05 Procedures for Issuing Work Assignments to Train Operators- 2013
  - OAP 501-16 RTRA Utility Program Rev 1, Feb 5, 2012
  - SOP 401-02 RTRA Utility Program Rev 2.0, June 1, 2020 (draft)
- SAFE Documents:
  - Work Instruction (WI) 400-WI-001 Performing Rail Station Inspection Rev 0, 1/27/2020
  - WI 400-WI-002 Performing Rail Yard Inspection Rev 0, 1/27/2020
  - Standard Operating Procedure (SOP) 800-05 Conducting Field Inspections Rev 0, 6/17/2019
  - SAFE Accident Response Step-by-Step Guide, v2.1
  - 3rd Quarter Performance Monitoring Schedule 2020
- Rail Operations Quality Training (ROQT) Training Documents:
  - ROQT Training Matrix 2020
  - ROS Incidents and Emergencies, Rail Supervisor Initial program
  - The Rail Supervisor Profession, Rail Supervisor Initial program
  - WMATA Depot Clerk Learner Manual
  - Interlocking Operator Introduction Course Participant Manual, December 1, 2018
  - Interlocking Operator Role and Responsibilities Participant Manual November 7, 2016
  - Rail Operations Quality Training Line Platform Instructor (LPI) Student Yard Evaluation form
- RSTO Documents:
  - Local Safety Committee (LSC) Meeting Minutes, 6 Brentwood, 3 Greenbelt, 2 West Falls Church, 2 Branch Ave., 3 each Alexandria, Glenmont, New Carrollton/Largo
  - Train Operations Guide and Procedural Checklists Rev. 4, November 2019
  - Quarterly Rail Operations Supervisor Observation Form, 2/26/2020 & 3/3/2020
  - Monthly Rail Supervisor (Terminal Operations) Observation Form, 2/24/2020 & 3/5/2020
  - Monthly Interlocking Operator Observation Form, 2/27/2020

- Rail Supervisor Daily Activity Report (RSDAR) mobile application report 08/25/2020
- RSDAR Weekly Unsatisfactory Station Spot Check Observation by Divisions 8/2/2020 – 8/8/2020
- RSDAR Weekly Unsatisfactory Train Spot Check Observation by Divisions 8/2/2020 – 8/8/2020
- Metrorail Stations Standard Operating Procedures Handbook (MSSOPH) Rev. 0, September 2015
- Stations SOP #55 and #1.5.2.7.2
- Permanent Order (PO) S-15-01/SSOP #22 – 4/10/2015
- PO S-18-01/ SSOP #64, 12/3/2018
- PO S-16-01/SSOP #31, 12/23/2016
- PO S-15-02/SSOP #31, 10/20/2015
- Train Operator Employee Spot Check Score Card
- Metrorail Station Checklist Rev 51.612, 12/18
- Radio Tracking Sheet Rev. 51.149, 7/15
- Daily Elevator Condition Log Rev. 50.432, 10/01
- Station Manager Hourly Checklist Rev. 50.589, 09/05
- Memorandum: Discipline Administration Program for Operating Employees
- C99 (Alexandria) Supervisory Tower Report
- SOP 102-01 Removing Employee from Service Rev. January 10, 2020
- SOP 202-01 Rail Supervisor Daily Activity Report and Compliance Checks Rev. 003, May 9, 2020
- SOP 401-01 Rail Supervisor Daily Activity Report and Compliance Checks Management Review Procedures Rev. 001, December 2018
- SOP 502-01 Rail Supervisor Proficiency Train Operations Rev May 9, 2020

- Data Analysis:
  - Metro Safety Measurement System (SMS_M) database queries
  - PeopleSoft Enterprise Learning Management (ELM) database queries
  - RSDAR Data Analysis Breakdown
  - RSDAR Data dump for April/May/June of 2020
  - Five years Maximo incident tickets, RTRA responsibility Code
  - Station manager RSDAR spot checks Sep 2018 – Feb 2020
  - Train Operator RSDAR spot checks Sep 2018 – Feb 2020
- RSTO related Corrective Action Plan (CAP) reviews (status = Open, Closed):
  - FTA-Rail-1-4-a (C)
  - FTA-Rail-1-6-a (C)
  - FTA-Rail-1-6-b (C)
  - FTA-Rail-2-17-c (C)
  - FTA-Rail-2-18-a (C)
  - FTA-Rail-2-18-b (C)
  - FTA-Rail-2-21-b (C)
  - FTA-Rail-2-22-a (C)
  - FTA-RED-16-002-A (C)
  - FTA-RED-16-002-B (C)
  - FTA-RED-16-004-A (O)
  - FTA-VSC-16-001 (C)
  - FTA-VSC-16-002 (C)
  - FTA-VSC-16-003 (C)
  - FTA-VSC-16-004 (C)
  - FTA-VSC-16-005 (C)
  - FTA-VSC-16-006 (C)
  - NTSB R-16-20 (O)
  - NTSB R-16-21 (C)
  - NTSB R-16-25 (O)
  - QICO-ADA-17-02 (C)
  - QICO-RTRA-17-01 (C)
  - QICO-RTRA-17-02 (C)
  - QICO-RTRA-17-03 (O)
  - QICO-RSM-17-01 (O)
  - QICO-RSM-17-02 (C)
  - QICO-RSM-17-03 (C)
  - QICO-TOR-17-01 (C)
  - QICO-TOR-17-02 (O)
  - TOC-COL-15-001 (C)
  - TOC-EVC-15-002 (C)
  - TOC-OTR-15-010 (C)
  - TOC-OTR-15-013 (C)
  - TOC-RED-15-001 (C)
  - TOC-RED-15-002 (C)
  - TOC-RED-15-004 (C)
  - TOC-RED-15-006 (C)
  - TOC-RWP-15-006 (C)
  - TOC-RWP-15-007 (C)
  - WMSC-19-C0008 (C)
  - WMSC-19-C0009 (C)
  - WMSC-19-C0010 (C)
  - WMSC-19-C0011 (C)
  - WMSC-19-C0012 (C)
  - WMSC-19-C0015 (O)
  - WMSC-19-C0016 (O)
  - WMSC-19-C0017 (O)
  - WMSC-19-C0019 (O)

Personnel Discussions

- Two (2) RSTO Rail Line Operations Director
- One (1) ROQT Director of Rail Training & Instruction
- One (1) RTRA Operations Support Manager
- One (1) SAFE Performance Monitoring Manager
- Three (3) RSTO Field Operations Superintendents
- Two (2) RSTO Field Operations Assistant Superintendents
- Nine (9) RSTO Rail Operations Supervisors
- Five (5) RSTO Depot Clerks
- 45 RSTO Station Managers
- 33 RSTO Train Operators
- Six (6) RSTO Interlocking Operators

Station Manager Kiosk Assessments

- Archives-Navy Memorial
- Ballston-MU
- Branch Avenue
- Capitol South
- Cheverly
- College Park-UMD
- Deanwood
- East Falls Church
- Fort Totten
- Gallery Place-Chinatown (3 kiosks)
- Glenmont
- Greenbelt
- Grovesnor
- Judiciary Square
- L'Enfant Plaza (3 kiosks)
- Landover
- Largo Town Center
- McLean
- Metro Center
- Minnesota Avenue
- Mt. Vernon Square-Convention Ctr
- National Airport (2 kiosks)
- Navy Yard-Ballpark (2 kiosks)
- New Carrollton
- NoMa-Gallaudet
- Potomac Avenue
- Prince Georges Plaza
- Rockville
- Rosslyn (2 kiosks)
- Shady Grove
- Southern Avenue
- Stadium-Armory
- Twinbrook
- Union Station
- West Falls Church
- West Hyattsville
- Wheaton

1.3 WHAT WORKED WELL (WINS)

Wins are categorized by the System Safety Measures and rated by the Risk Assessment

W-RSTO-21-01 Regulations & Oversight **Reduces Training & Compliance Risk** **Owner – RSTO**

✓ **Consistent application of the spot-check process promotes adequate coverage of all station managers, operators, and passenger facilities.**

Discussion

- RSTO supervisors use the RSDAR application pre-installed on their Metro-issued mobile device to record evaluations of the primary job tasks performed by frontline employees through compliance spot checks.
- Per SSPP 13.5: Supervisors are required to verify that employees perform their assigned duties in compliance with the MSRPH, BSEPH, OAPs, and other procedures and instructions.
- The following SOPs have been created to govern the implementation of the RSDAR spot check program:
    - SOP 202-01: Rail Supervisor Daily Activity Report and Compliance Checks.
    - SOP 401-01: RSDAR Management Review Procedures.
- QICO analyzed 18 months' of RSDAR data, September 2018 through February 2020. To better reflect typical RTRA operations, this data was requested prior to COVID-19 service adjustments that took effect March 2020.
- SOP 202-01 requires that each train operator and station manager receive an RSDAR spot check at least once every 18 months.
    - Of 571 train operators active during this time frame, 560 had received the required spot check oversight for a compliance rate of 98%.
    - Of 511 station managers active during this time frame, 498 had received the required spot check oversight for a compliance rate of 97.5%
    - Some train operators and station managers did not receive any checks because they were on extended medical leave or assigned to work not subject to RSDAR oversight, such as rail yard work, startup/testing work, or temporarily filling an interim supervisory position.
- The RSDAR spot check program includes several categories of observations that can be completed for either station managers or train operators. Per SOP 202-01, a supervisor is required to complete at least three of the available eight categories per spot-check.

Train Operators		Station Managers	
- Train Announcements	- Manual Operations	- Welcomes Customers	- Station Logs
- Station Stopping	- Uniform Appearance	- Engages Customers	- Carries Station Radio
- Door Operations	- Personal Protection Equipment	- Demonstrates WMATA Expertise	- Kiosk Condition
- Headway Adherence	- Radio Communications	- Uniform Appearance	- Routine Duties

- The RSDAR data analyzed shows an even distribution of spot check categories during the 18-month period.
- SOP 401-01 states that division superintendents and assistant superintendents are responsible for reviews of RSDAR reports and initiation of corrective actions. Through interviews and document reviews, assessors concluded that this function is being satisfactorily maintained.
- RSTO stated that the RSDAR oversight program is currently being reviewed for possible improvements in the areas of employee coverage, analysis of trouble employees, or possible wide-spread emerging issues.
- A comprehensive spot-check program that is evenly applied, readily traceable, and inclusive of required corrective actions result in consistent outcomes. RSTO utilization of data generated by this program will highlight areas for improvement in oversight and training.

1.4 ITEMS RESOLVED DURING REVIEW

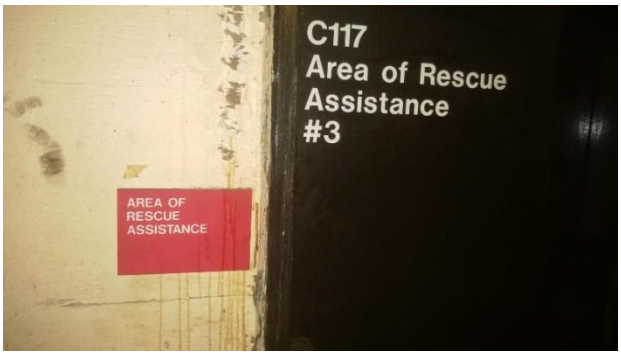
Items resolved are categorized by System Safety Measures

R-RSTO-21-01 Emergency Management Reduces Safety Risk Owner – RSTO

Station managers must consistently demonstrate awareness of station Area of Refuge (AOR) or Area of Rescue Assistance (AORA) for their assigned work location.

Discussion

- A Metrorail area of refuge is a designated location where, in the event of an emergency, people who are unable to immediately evacuate the facility can shelter-in-place until assistance arrives.
- 22 out of 91 Metrorail stations are equipped with some variation of an area of refuge.
- Per SSPP 14.3: Rail stations are inspected by the station manager in accordance with Metrorail Station Standard Operations Procedure # 1. Deficiencies are reported to ROCC and MOC and entered in the station's maintenance log.
- Per MSRPH SOP # 54, 54.4.3: Station Managers must inspect the AOR room daily and ensure that the room is empty and report any issues to MOC. Station Managers shall document findings on the RTRA Station Inspection Checklist.



Typical below-grade AORA entrance

Typical platform-level AORA

- QICO conducted station assessments in 2017 as part of the Americans with Disabilities Act (ADA) Internal Review. At that time, there was significant confusion among station managers as to their knowledge of AORs and their responsibilities for inspections.
- As an Internal Corrective and Preventive Action (iCAPA) deliverable action, QICO provided a suggestion of placing a visual indicator (decal) within each station kiosk to indicate if that station contained or did not contain an AOR. RTRA rejected this suggestion, electing instead to post a list of stations that contain an AOR on the internal Station Manager DIRECT intranet site.
- During field assessments for this Internal Safety Review, assessors found 12 out of 45 (26%) station managers lacked knowledge of the location or actual presence of Areas of Refuge (AOR) within their assigned stations, as well as any required inspections. Station manager responses to the Review checklist question, "Does the SM know if this station has an Area of Refuge and how to access it" include:
    - "I'm not sure if this location has an AOR." (PG Plaza, West Hyattsville)
    - "I'm not sure whether this station has an area of refuge. Maybe it's on the other side of the station, but I've never been there." (Metro Center)
    - "There is a refuge area between this station [Union Station] and the next station [Judiciary Square], past the end gates, on the tracks." Interviewee did not know if there is a room or an exit and had never been there. (Union Station)
- During interviews and field assessments, assessors found station managers were unable to consistently locate the AOR information posted on the Station Manager DIRECT intranet site. This creates a potential safety hazard for passengers self-evacuating to an AOR in an emergency situation.

- This compliance information was shared with RSTO and RTRA on 11/16/2020 who took immediate actions:
  - RTRA reiterated SOP #54 on Station Manager DIRECT and refresher training is on-going.
  - RTRA committed to working with PLNT to have placards added to kiosks at stations with AOR.
  - RTRA notes supervisors verify station condition checklist (includes AOR checks) completion and documents these verifications in RSDAR. QICO agrees no issues were found with AOR rooms.
- Station manager awareness of actual AOR locations and inspection routines that include supervisory oversight will ensure ready availability and access in the event of an emergency.

1.5 AREAS FOR IMPROVEMENT

Findings are categorized by System Safety Measures and rated by the Risk Assessment

FS-RSTO-21-01 Safe Work Standards **Policies, Procedures & Standards – High (5, 4)** **Owner – RSTO**

- **Monitoring the impact of fatigue on incidents, accidents, and service delivery will promote employee and customer safety.**

Discussion

- According to a study conducted by the U.S. Department of Transportation and published in the report *Monitoring Engineer Fatigue* (December 2019), "degraded performance due to fatigue is a significant contributor to major accidents in the rail industry, with engineers missing wayside signals, having reduced situational awareness, or falling asleep while operating the train."
- Per SSPP 5.6 WMATA's Fatigue Risk Management System (FRMS) comprises several policies and initiatives, each designed to reduce the likelihood and impact of fatigue impairment.
- Per Metro's Hours of Service Policy 10.6/1 (2020), no employee may be on duty more than 12 hours, consecutively or aggregately, in any given duty tour. For employees who have period(s) of interim release, the duty tour must not exceed 12 hours. Additionally, a period of 10 hours must elapse between shifts. (Section 5.00 Policies and Procedures).
    - Although this policy has been approved, it has not been fully implemented yet. As noted within the policy's exception section - *Management will make a reasonable attempt to reduce and monitor schedule-related fatigue risk while working with the unions to negotiate the conditions required for full implementation of this P/I.*
    - WMSC issued CAP WMSC-19-C0008- "Metrorail must develop and implement an effective hours of service policy as part of an overall fatigue management program" to address WMATA's updating its fatigue policy.
    - Policy 10.6/1 was submitted to WMSC in August 2020 to close this required action, but the CAP remains open as WMATA is awaiting feedback from the WMSC.
- Through interviews with RSTO management, it was stated that hours of service are monitored through the automated timekeeping system, Trapeze. Daily run assignments are entered and any potential conflicts with the hours-of-service rules are flagged. The depot clerks will then rearrange these runs to avoid the potential violations. The individual run manifests are then generated by Trapeze. In the event that a work assignment runs over the allotted time (example: unplanned rail line delays), a supervisor signature is required to verify.
- RSTO, through Trapeze, produces weekly reports detailing employee violations for each division and distributes to the division management, who are responsible for taking corrective actions and documenting the outcome in personnel files.
- RSTO does not have a documented process for monitoring and analysis of fatigue risk management (FRM) data, use of fatigue data collected post-incident, or analysis of hours worked leading up to an incident. As a result, there are no performance goals or targets set to drive improvement.
- SAFE provided FRM data (specific to RSTO) for February 2020. Due to COVID-19 and related serviced adjustments, this historic data was selected to more accurately represent typical operations. Consequently, this data is generated under the metrics of the now-superseded 2015 Hours of Service Policy 10.7/1. 6,517 violations were documented that month as follows:
    - Exceeding Workday Duration: 837
    - Exceeding Shift Service: 2350
    - Exceeding Release Period: 1613
    - Exceeding Consecutive Days: 1717
- In the absence of an internal RSTO documented process to measure and analyze fatigue policy violations, it is challenging to understand the significance of these numbers and subsequently manage them through appropriate corrective actions (example, some may be very minor such as exceeding workday duration by as little as one minute).
- Current collective bargaining agreement language and operational impacts arising from events such as unplanned service adjustments contribute to unavoidable hours-of-service policy violations.

- QICO reviewed a sampling of 25 incident/accident reports, 16 of which would require fatigue-related data collection. These would include station overruns (SO), improper coupling (IC), excessive speed (ES), and employee injury (EI). Missing or incomplete fatigue information was found in the following reports:
    - 20200801#88303 (SO)
    - 20200806#88351 (IC)
    - 20200808#88369 (SO)
    - 20200809#88373 (SO)
    - 20200810#88385 (SO)
    - 20200812#88423 (SO)
    - 20200814#88437 (IC)
    - 20200814#88441 (EI)
    - 20200819#88489 (EI)
    - 20200819#88482 (ES)
    - 20200821#88506 (SO)
    - 20200821#88513 (SO)
    - 2020825#88566 (SO)
    - 20200909#88889 (SO)
    - 20200911#88930 (SO)
    - 20200914#88985 (ES)
- 16 of 16 incidents lacked information on operator's sleep history and alertness leading up to the incident.
    - Per discussion with RTRA, fatigue information is not required for station overruns where the station could still be serviced under normal door operations. This was the case for 7 of the 10 (SO) incidents. However, the criteria for when fatigue information is required is not formally documented.
    - Per discussion with RTRA, two of the incidents had fatigue information appearing only in attachments to the incident record, instead of coded directly into the data field. This approach to data collection may preclude some incidents from included when using enterprise data analytics tools.
- A documented process that provides a comprehensive framework for continuous, structured fatigue data collection, analysis, and goals will allow RSTO and RTRA to determine appropriate corrective action and planning based on objective data.

- **Completing required train operator fitness for duty evaluations provides assurance that employees are in satisfactory condition to perform their assignments and present themselves as public representatives for Metro.**

Discussion

- Train operators are required to present themselves to the depot clerk to receive their work assignments. They must be deemed "fit for duty" before the clerk will issue a radio and the run manifest.
- Per SSPP 13.5: supervisors are required to verify that employees perform their assigned duties in compliance with the MSRPH, BSEPH, OAPs, and other procedures and instructions.
- Per MSRPH 1.14: Employees shall report to their designated locations at the designated times, in fit condition, and equipped to begin work.
- The Department of Rail Services (RAIL) implements fitness for duty via OAP 201-05, Procedures for Issuing Work Assignments to Train Operators. Per section 6.2.1, "Upon the arrival of each operator to the depot office, verify that the operator meets all fitness for duty requirements."
- This OAP details the requirements of the division depot clerk to evaluate train operators, determining if they are fit for duty prior to issuing their work assignment (manifest). The OAP lists six specific criteria for evaluation, to include proper uniform and equipment, no indications of being under the influence of drugs or alcohol, no indications of abnormal behaviors, no indications of being tired or exhausted, and has met the proper rest period between shifts.
- As noted in FS-RSTO-20-01, RSTO recorded 6,517 Hours of Service Policy violations in the last month of available data (February 2020).
- The unanimous interview response from RSTO superintendents, supervisors, and depot clerks indicated a lack of awareness of the existence of this OAP.
- While conducting depot clerk interviews, the assessors noted:
    - Depot clerks are physically separated from the operators by a window (this was the case even prior to the onset of the COVID-19 public health emergency). At times, these windows may be covered with posted notices and bulletins, reducing the area available to depot clerks for observing an operator's appearance and disposition.
    - There is a small vent in the window to allow for speaking but may not be adequate to evaluate for presence of odor related to alcohol or other adulterants.
    - At the Largo division, the operator side of the window is sited in a poorly lit hallway, which is not conducive to deport clerks having an adequate view of operators.
    - Depot clerks stated that they have not had any specific training related to "fitness for duty".
    - Additionally, fitness for duty checks are not specifically documented.
- Per OAP 201-05 section 3.2: The assistant superintendent shall ensure that all rail supervisors and depot clerks have received and remain current with their "WMATA Drug and Alcohol Reasonable Suspicion" (course HCDARST) and "Fatigue Awareness" (course HCFATIGAWAR) training.
- Analysis of ELM records from 1/2017 through 11/2020 provided the following information:
    - As of 10/16/2020, there were 38 active rail depot clerks:
        - 30 (79%) had completed the class "Drug and Alcohol Reasonable Suspicion".
        - 1 (2%) clerk had completed the class "Fatigue Awareness"
    - As of 10/16/2020, there were 102 active rail operations supervisors:
        - 90 (88%) had completed the class "Drug and Alcohol Reasonable Suspicion".
        - 6 (5%) had completed the class "Fatigue Awareness".
    - This compliance data was shared with RSTO on 11/16/2020; RSTO management subsequently took immediate action and achieved 100% completion of the "Drug and Alcohol Reasonable Suspicion" class for both depot clerks and rail operations supervisors as of 12/1/2020.
    - The Fatigue Awareness course is undergoing revision and is not currently being offered as of the date of this report. The course revision falls outside the responsibility of RSTO.
- Through interviews with ROQT, assessors noted that neither class is included as part of routine refresher training.
- Establishing training requirements for Drug and Alcohol Reasonable Suspicion and Fatigue Awareness for depot clerks and rail operations supervisors will ensure compliance to current procedures.

FS-RSTO-21-02 Application & Fulfillment **Training & Compliance – Elevated (4, 3)** **Owner – RSTO**

- An update to the fitness-for-duty OAP is underway as of the date of this report (last revised 12/2013), including development of an associated work instruction, new documentation requirements, and virtual learning for depot clerks.
- The train operator fitness for duty evaluation is a critical step to assuring passenger safety while riding Metrorail. Depot clerks provide an important initial operator evaluation, reducing the potential for safety hazards. This can only be achieved through enforcement of the existing OAP, recordkeeping, and establishing training requirements.

FS-RSTO-21-03 Regulations & Oversight **Training & Compliance – Moderate (3, 3)** **Owner – RSTO**

- **Meaningful supervisory oversight of interlocking operators will increase safety, efficiency, and accountability of dispatch and yard operations.**

Discussion

- Interlocking operators are responsible for the morning and evening train put-in for service, maintaining gap trains to replace bad order trains removed from mainline, and safe movement of personnel, trains, and rail borne maintenance-of-way equipment in rail yards and shops.
- Overnight interlocking operators are additionally responsible for clearing all maintenance-of-way equipment, allowing infrastructure maintenance groups to safely perform their duties and later preparing the mainline for the start of passenger revenue service.
- Per SSPP 13.5: Supervisors are required to verify that employees perform their assigned duties in compliance with the MSRPH, BSEPH, OAPs, and other procedures and instructions.
- According to interviews with interlocking operators at various divisions, there is a lack of consistent and meaningful supervisory presence in rail yard towers during day and evening shifts.
    - A supervisor is assigned to provide direct oversight of interlocking operators at each rail yard during the overnight shift exclusively (Largo does not use an interlocking operator but does have a terminal supervisor assigned on all shifts).
    - Tower supervisors conduct bi-monthly meetings with interlocking operators, attend monthly tower supervisor meetings, and rail operations supervisor meetings at each division.
    - Additional oversight is currently facilitated through daily pre-shift check-ins, monthly documented two-hour visits by superintendents, and QA/QC team audits of radio audio.
    - These requirements are currently documented in division managers' performance management plan objectives.
- Discussions with RSTO management indicate that personnel availability is the main restricting factor in providing dedicated supervisory oversight in rail yards, and that positioning supervisors to support mainline passenger operations provides the greatest overall value at the current staffing level.
- While a supervisor may occasionally visit an interlocking operator during day or evening shifts, their oversight is not routine nor part of any structured supervisory plan. Superintendents and assistant superintendents routinely monitor radio communications between interlocking operators and yard train operators. During interviews with QICO, interlocking operators stated that at times they do not see a supervisor for days and in some occasions, weeks.
- Currently, RSDAR is not configured to include interlocking operator spot checks. Therefore, any interlocking operator oversight performed by supervisors cannot be recorded in RSDAR, precluding analysis and potential corrective actions generated from these checks.
- The Washington Metrorail Safety Commission (WMSC) safety incident report W-0046 cited "lack of oversight of an interlocking operator distracted by watching a video" as one of four probable causes leading to the collision between a 3000-series train and a work unit in the Alexandria yard on February 10, 2020.
- Standardized oversight of interlocking operators across all shifts will promote increased safety, procedural compliance, transparency, and highlight potential areas for improvement.

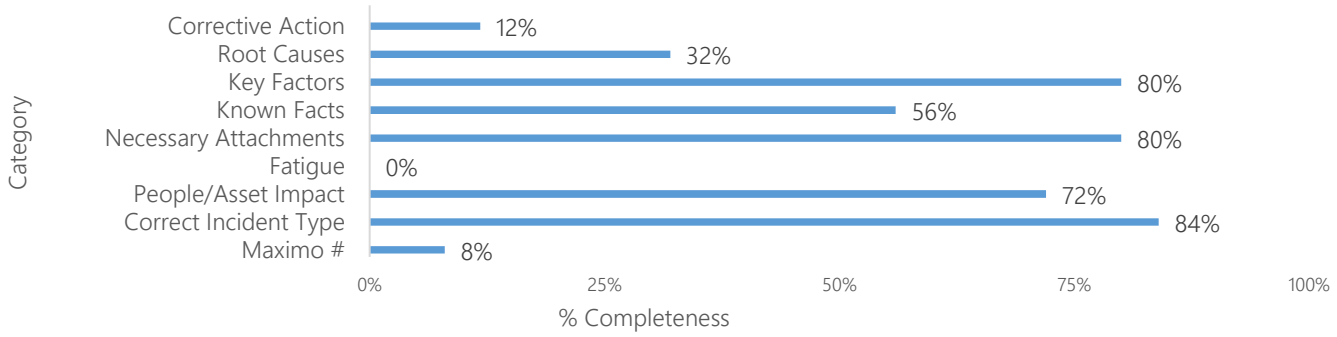
FS-RSTO-21-04 Assets & Activities	Hazard Management – Moderate (2, 5)	Owner – RSTO

- **A process governing creation, closure, and quality of incident/accident reports will promote accountability and improve the capture of critical safety data.**

Discussion

- When an incident/accident occurs, details surrounding the event are entered into a central Metro incident/accident repository, the Safety Measurement System (SMS_M).
- SSPP Section 9.1: SMS_M is the application used by Metro to enter and manage all safety-related data, including incident and accident reports. SMS_M integrates the data from other Metro enterprise applications, ensuring that SAFE has access to the safety-related data of all Metro departments.
- This repository allows both the affected department and SAFE to analyze data and circumstances surrounding incidents/accidents and take appropriate corrective actions.
- In the absence of an RSTO documented procedure, SAFE's Accident Response Step-by-Step Guide V2.1 recommends:
    - Within 48 hours, supervisors complete all required data fields and add attachments such as photos and witness statements.
    - Within seven days, management is to gather additional documentation, determine immediate and root causes, identify corrective action(s), and update the accident/incident information.
    - Within two weeks, the superintendent or assistant superintendent develops a corrective action plan to address the root cause(s) and close out the report.
- RSTO does not currently have a policy or procedure to detail the department's specific requirements and individual responsibilities for recording incident/accident data into SMS_M.
- After review of the available fields within SMS_M, QICO selected a list of applicable fields to utilize in performing an assessment of SMS_M incidents/accidents. QICO reviewed a sampling of 25 incident/accident reports from August 1, 2020 through September 15, 2020 for completeness and found overall accuracy, a composite of the elements in the chart below, at 47%. (Only the applicable categories were assessed per individual incident/accident)

Figure 3: RSTO SMS Completeness



    - The corrective action field identifies what actions were taken as a result of the root cause analysis. The corrective action and root cause field completeness was at 12% and 32%, respectively.
    - The fatigue category represents hours of sleep prior to the incident/accident. This is an important way to determine if fatigue was a contributing factor. None of the assessed samples were complete.
    - The average completeness and accuracy of all assessed fields was 47%.
- A documented RSTO SMS_M process will promote increased data accuracy and subsequently improve the overall quality of safety event investigations.

FS-RSTO-21-05 Configuration Management Policies, Procedures & Standards Risk - Moderate (2, 5) Owner – RSTO

- **Current and controlled policies, procedures, and standards provide clear direction and result in more consistent process control.**

Discussion

- Maintaining controlled policies and procedures is essential for predictable outcomes and continued safe work practices. Additionally, employees must be able to readily access this information.
- Per SSPP Section 5.5, Safety Responsibilities and Tasks Matrix: Exhibit 5-1 lists the SSPP sections and other pertinent documents that describe safety related responsibilities performed by the appropriate department/office.
- Per RTRA OAP 101-12 Document Control dated 06/12/2013, section 6.5.2, "all controlled documentation that contains procedural information shall be reviewed on at least an annual basis to determine if revisions are necessary." Section 6.5.5 states "all obsolete controlled documentation shall be archived and removed from hard copy locations to prevent unintended use by RTRA personnel."
- All Metrorail personnel must abide by the rail safety rules as outlined in the Metro Safety Rules and Procedures Handbook (MSRPH).
    - During the course of this review, the MSRPH underwent revision.
    - Station Manager DIRECT contained MSRPH revision date 11/03/2016 at start of the assessment. When the MSRPH was updated (Rev. 08/28/2020), the superseded MSRPH link was removed from Station Manager DIRECT, while the current version located on the RTRA homepage was updated accordingly.
    - During field interviews QICO found that train operators and station managers interviewed were not aware of this latest release and were not clear on how to access this new version of the MSRPH online.
    - Through interviews and field assessments, QICO noted no clear communication was provided to RSTO personnel that the MSRPH had been updated.
- The Metro Station SOP Handbook (MSSOPH) is a collection of established policies and procedures for station managers. The MSSOPH last review date was August 2015. The MSSOPH is undergoing revision as of the date of this report as part of a broader effort to update RSTO documentation.
- MSSOPH Rev 0 – 8/10/2015 was found to contain outdated and missing documents, including:
    - PO S-16-01 (SSOP #31) Use of Restrooms in Metrorail Passenger Stations.
    - PO S-18-01 (SSOP #64) Metrorail Station Checklist Procedure.
    - PO S-15-01 (SSOP #22) Persons Authorized Free Transportation Privilege on Metrorail.
    - SSOP #55 Station Emergency Cabinet Usage is superseded.
    - SSOP #46 Station Closing Procedures (46.5.1.9 Station Manager's Station Closing Checklist) and SSOP#58 (Station Manager Binders, 58.5.2 Station Manager's Station Closing Checklist/Station Condition Checklist) are no longer applicable. These were superseded by release of SSOP #64 as explained above.
- Both the MSRPH and the MSSOPH are available in electronic format (RTRA intranet page).
- During interviews and field assessments, assessors found that hard copies of these manuals are no longer required to be available at all kiosks as they are available through the RTRA intranet site. Additionally, 10 out of 45 (22%) station managers were not adept on how to access the MSRPH and MSSOPH through Station Manager Direct or the RTRA webpages.
- Field assessors noted on August 27th an inoperable kiosk computer at Landover, which had an open repair ticket that was five months old. In this case, crucial tools required for station managers to safely and effectively carry out their responsibilities such as the MSRPH are inaccessible. QICO reached out to RTRA management that same day to determine the status of the repair ticket. During a follow up assessment for an unrelated purpose on October 20th, a QICO assessor noted that the computer had been replaced.
- A documented process governing the creation, dissemination, and control of processes and procedures applicable to RSTO will ensure personnel have access to the most current information, leading to increased safety and more consistent outcomes.

1.6 SUMMARY OF REQUIRED ACTIONS

QICO-RSTO-20-01 **Action Owner – RSTO** **Overall Risk – High** (Average Score)

Required Action: Implement controls to monitor and mitigate the impact of fatigue.

Applicable Findings

- **FS-RSTO-20-01: Monitoring the impact of fatigue on incidents, accidents, and service delivery will promote employee and customer safety.**
  - **Measure:** Safe Work Standards **Risk:** High (5, 4)

QICO-RSTO-20-02 **Action Owner – RSTO** **Overall Risk – Elevated** (Average Score)

Required Action: Enhance fitness for duty evaluation requirements and improve compliance with existing requirements.

Applicable Findings

- **FS-RSTO-20-02: Completing required train operator fitness for duty evaluations provides assurance that employees are in satisfactory condition to perform their assignments and present themselves as public representatives for Metro.**
  - **Measure:** Job Safety **Risk:** Elevated (4, 3)

QICO-RSTO-20-03 **Action Owner – RSTO/RTRA** **Overall Risk – Moderate** (Average Score)

Required Action: Revise the current oversight program to be inclusive of all RSTO activities.

Applicable Findings

- **FS-RSTO-20-03: Meaningful supervisory oversight of interlocking operators will increase safety, efficiency, and accountability of dispatch and yard operations.**
  - **Measure:** Regulations & Oversight **Risk:** Moderate (3, 3)

QICO-RSTO-20-04 **Action Owner – RSTO** **Overall Risk – Moderate** (Average Score)

Required Action: Implement a documented process that ensures accurate collection, recording, and reporting of all incident/accident data.

Applicable Findings

- **FS-RSTO-20-04: A process governing creation, closure, and quality of incident/accident reports will promote accountability and improve the capture of critical safety data.**
  - **Measure:** Assets and Activities **Risk:** Moderate (2, 5)

QICO-RSTO-20-05	Action Owner – RSTO	Overall Risk – Moderate (Average Score)

Required Action: Implement a process that ensures RSTO personnel are aware and have access to the latest policies and procedures.

Applicable Findings

- **FS-RSTO-20-05: Current and controlled policies, procedures, and standards provide clear direction and result in more consistent processes.**
  - **Measure:** Configuration Management **Risk:** Moderate (2, 5)

Internal Corrective and Preventive Actions (iCAPAs) are designated to address each Required Action listed above.

What is QICO?

- The Office of Quality Assurance, Internal Compliance & Oversight (QICO) is an internal management function that partners with other departments to provide an objective review. QICO and the internal review process are authorized by the General Manager as outlined in the Quality Management System Plan (QMSP).

Why QICO Performed This Review:

- This internal safety review is intended to provide Metro senior management with an assessment of the Office of Plant Maintenance (PLNT) compliance with federal regulations and WMATA's System Safety Program Plan (SSPP), and promote the actions needed to address any concerns.

QICO's Methodology:

- Develop relevant review activities by identifying and assessing any risks to align with Policies, Procedures & Standards; Training, Certification & Compliance; Hazard Management; and Safety.
- Review documentation, observe processes, and interview key personnel.
- Findings and required actions are assigned a risk rating, which ranges on a scale from "Insignificant" to "High".

INTERNAL SAFETY REVIEW SUMMARY December 2020

(2) Office of Plant Maintenance (PLNT)

Key Takeaway:

Utilization of available data with efficient maintenance strategies and Quality Control (QC) compliance enhances overall efficiency, reduces maintenance efforts and promotes safety.

Wins:

- ✓ PLNT has developed a process to engage employees in safety meetings which informs them of identified hazards and enforces safe work practices.
- ✓ PLNT developed an effective communication plan to promote employees' awareness of status updates of established governing documents.

Areas for Improvement:

- Performing inspections, maintenance and repairs on station pylons in accordance with governing documents would promote safe, efficient and effective work functions.
- Performing routine Supervisor Quality Control (QC) compliance checks as defined in Facilities, Systems, and Vertical Transportation (FSVT's) process and frequency would verify PLNT operations meet standards and safety measures.
- Availability and enforcement of proper Personal Protective Equipment (PPE) and required tools to perform maintenance tasks reduces safety risks and improves work performance.
- Reviewing and updating governing documents within the required periodicity optimizes applicability and incorporates changes in a timely manner.
- The accurate tracking of corrective maintenance work orders in Maximo would improve planning and efficiency of maintenance and repairs.

Required Actions:

- **QICO-PLNT-21-01:** Develop and implement processes to reduce safety hazards and promote a safe work environment.
- **QICO-PLNT-21-02:** Enforce implementation of quality control compliance checks to include operation, PPE, tools and equipment.
- **QICO-PLNT-21-03:** Revise governing documentation in accordance with the required revision periodicity and update the Master Document Control Log regularly to track document expiration dates.
- **QICO-PLNT-21-04:** Develop a process to account for the creation of each Maximo work order, enforce prioritization and reduce the risk of duplicates.

Note: An itemized internal Corrective and Preventive Action (iCAPA) is developed for each required action to achieve effective and measurable resolution of identified concerns. To check the status of iCAPA implementation go to https://www.wmata.com/initiatives/transparency

2.1 FUNCTIONAL OVERVIEW AND STRUCTURE

Office of Plant Maintenance (PLNT)

The Office of Plant Maintenance (PLNT) is responsible for managing and maintaining Washington Metropolitan Area Transit Authority (WMATA) facilities and mechanical equipment systems in support of Metrorail and Metrobus operations. PLNT performs services at 91 rail stations, 48 non-revenue facilities, 28 parking garages, 252 surface parking lots, and 213 traction power sub-stations.

QICO's Internal Safety Review (ISR) of the Office of PLNT included an assessment of the following five (5) branches:

- PLNT Administration (ADMN)
- Building Maintenance and Support Shops (BMSS)
- Grounds Maintenance & Custodial Services (GMAC)
- Construction Maintenance and Station Rehabilitation (CMSR), and
- Equipment Maintenance (EQMT).

PLNT roles and responsibilities include:

- Maintenance of mechanical equipment systems in rail stations, bus garages, rail yards, and administrative offices
- Performance of minor building restorations and renovations
- Repair of non-structural concrete and asphalt paving
- Maintenance of quarry tiles in rail stations
- Fabrication and installation of signs in the Metrorail system
- Providing custodial services at parking and bus garages, rail shops, towers, terminals, administrative field offices, bus loops and shelters
- Performance of system-wide landscaping services
- Management of a variety of maintenance service contracts
- Coordination and response to severe weather conditions such as snow removal, ice control, etc.

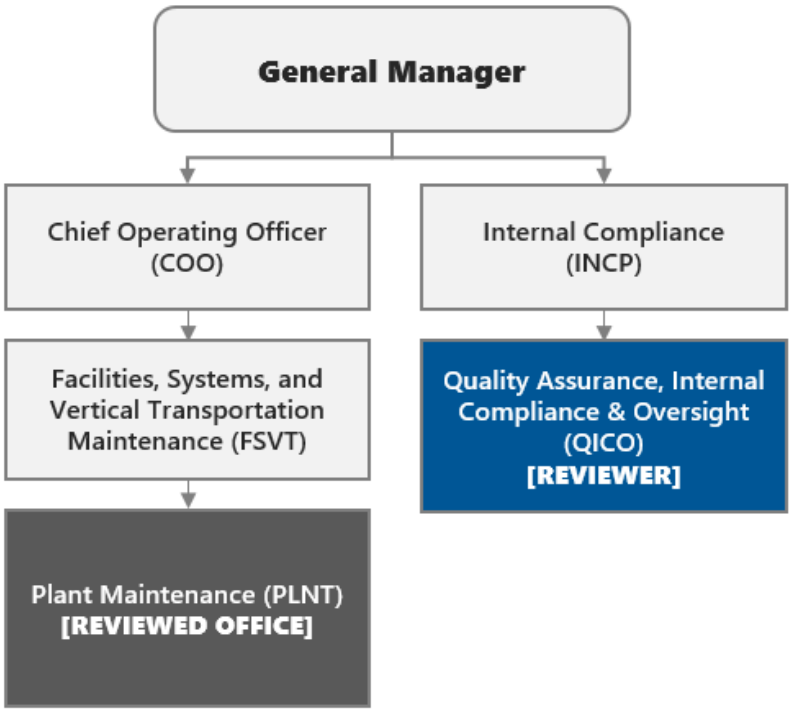
The objective of the PLNT ISR is to evaluate the safety of routine operations, maintenance activities, working conditions, and training in accordance with WMATA's System Safety Program Plan (SSPP). The SSPP is the Authority-wide safety plan created by the Department of Safety & Environmental Management (SAFE) in accordance with Federal Transit Administration (FTA) guidelines (49 CFR 673), until the Public Transportation Agency Safety Plan (PTASP) took effect on 11/22/2020. The SSPP outlines WMATA's approach to satisfy the 21-required system safety Elements to maintain a safe, reliable and effective transit system.

Out of the 21 SSPP Elements, PLNT was assessed based upon the following 10 applicable Elements:

- Hazard Management Program (Element 6)
- Safety Data Acquisition (Element 9)
- Accident/Incident Notification, Investigation and Reporting (Element 10)
- Rules and Procedures Compliance and Review (Element 13)
- Facilities and Equipment Inspections (Element 14)
- Training Certification Review/Audit (Element 16)
- Configuration Management (Element 17)
- Local, State and Federal Requirements (Element 18)
- Hazardous Materials (Element 19)
- Procurement (Element 21)

Organizational Structure and Background

Within WMATA, the Office of Plant Maintenance (PLNT) reports to the Chief Operating Officer (COO) through Facilities, Systems, and Vertical Transportation (FSVT). As shown in the organization chart, QICO is independent of this function, reporting to the General Manager through Internal Compliance (INCP).



2.2 REVIEW SCOPE

Documentation Review

- WMATA System Safety Program Plan (SSPP), (1/2018)
- PLNT Organization Chart, (11/2020)
- Standard Operating Procedure (SOP) 109-01, Rev. 02 – SOP Preparation and Revision, (11/1/2018)
- SOP 109-02, Rev. 02 – Document Control, (7/27/2019)
- SOP 209-02, Rev. 03 – Access to Safety Data Sheets, (2/1/2019)
- SOP 209-06, Rev. 02 – Engaging Employees in Safety Meetings, (12/15/2018)
- SOP 209-07, Rev. 08 – Prioritizing and Documenting Maintenance Work, (2/13/2020)
- SOP 509-02, Rev. 03 – Licensing Certifications and Required Training, (11/1/2018)
- PLNT Maintenance Management Plan, (8/11/2020)
- Metrorail Safety Rules and Procedures Handbook (MSRPH), (5/29/2020)
- WMATA Quality Management System Plan (QMSP), Rev. 1.3 (8/2018)
- WMATA Dry Standpipe Test Procedure, (11/15/2015)
- Departmental Safety Committee Meeting Minutes, (12/2019, 1/2020, 2/2020, 8/2020, 9/2020 and 10/2020)
- Drainage Pumping Stations (DPS) Preventive Maintenance Manual PM-22-5200, (5/1/2019)
- Tunnel Fan System Preventive Maintenance PM-22-5100, (5/9/2018)
- Work Instruction (WI) 209-01 – Emergency Egress Hatch Inspection, (5/1/2016)
- WI 209-14 – Monthly and Annual Fire Extinguisher Inspections, (11/22/2017)
- WI 209-18 – Documenting Quality Controls Audits Performed by PLNT Supervisors, (7/30/2018)
- WI 209-24 – Lock-out/Tag-out (LOTO) of Electrical Energy for Maintenance of Tunnel Fans, (4/19/2019)
- Forms 209-1575 and 209-1584 – Under Platform Exhaust (UPE) Preventive Maintenance checklists, (7/1/2015)
- WI 209-Pylon – Inspection and Testing of Station Platform Pylon Supports and Anchorages, (9/20/2017)
- Form 109-03 – Master Document Control Log, (10/2020)
- Fire Shop Responsibilities, (7/12/2018)
- Preventive Maintenance (PM) Records of July, August and September 2020 of the following: Drainage Pumping Stations (DPS), Deluge Systems, Emergency Response Kit, Custodial Supervisor Inspections, Tunnel Fans, and Emergency Egress Inspection
- Quality Control (QC) Reports including Maximo work orders numbers of the months of January, February, March and October 2020
- Six (6) Incidents Reports
- Five (5) Purchase Orders
- Training records of twenty (20) random PLNT employees
- SAFE Environmental Standard Operating Procedures (ESOPs), (9/30/2019)
- SAFE Accident Response Step-by-Step Guide V2.1
- FSVT OAP 100-01-04, Rev. 04 Supervisory Inspections of Work Performed in FSVT (9/21/2020)
- SOP 208-07 Rev. 03 TRST Structures Inspection Procedure (3/11/2020)
- SOP 100-23 Structural Asset Inspection and Maintenance Division of Responsibility (6/26/2020)

Personnel Discussions

- Assistant Director of PLNT (12/4/2020)
- Superintendent of Equipment Maintenance (EQMT) (12/4/2020)
- Superintendent of Building Maintenance and Support Shops (BMSS) (12/7/2020)
- Program Manager Capital Programs (12/22/2020)

Field Assessments

- PLNT Fire shop and CMSR shop at Carmen Turner Facility (CTF) (11/6/2020)
- Fan Shaft FA05 and Vent Shaft VA07 (11/19/2020)
- Fan Shaft FA10, Vent Shafts VA15 and VA16 (11/23/2020)
- Fan Shaft FD03 (11/24/2020)
- Fan Shaft FA03 (12/1/2020)
- E02 Shaw-Howard U Station Under Platform Exhaust (UPE) Fan 1 OB (12/8/2020
- D08 Stadium Armory UPE OB (12/10/2020)

2.3 WHAT WORKED WELL (WINS)

Wins are categorized by the System Safety Measures and rated by the Risk Assessment

W-PLNT-21-01 Safety Management **Reduces Safety Risk** **Owner – PLNT**

✓ **PLNT has developed a process to engage employees in safety meetings which informs them of identified hazards and enforces safe work practices.**

Discussion

PLNT SOP 209-06 Rev. 02 – Engaging Employees in Safety Meetings (12/15/2018), establishes a process of safe work practices for personnel. Employees are required to document hazards on job sites and unsafe conditions that may affect an employee's ability to perform work in a safe manner. These hazards are reported to the supervisors and if the issues cannot be resolved at the supervisor level, they are elevated and discussed during the Department Safety Committee (DSC) monthly meeting.

QICO reviewed six (6) samples of accident/incident investigations which includes:

- Incident/accident information that contains date, location, employee(s) involved, photos and detailed description
- Witness or employee statement form
- Investigation interview of employee(s) involved
- Findings, root causes, corrective actions and mitigation plan
- Incident/accident closeout
- Initial incident report, findings and close out report are entered in the Safety Measurement System (SMS) incidents/accidents section

In addition to the required monthly DSC meeting, PLNT supervisors conduct additional daily and monthly meetings to discuss any safety conditions observed by the technicians. The purpose of these meetings is to discuss current safety conditions and work environment and resolve any safety issues.

While the daily safety meetings are part of the tool box meetings, the monthly meetings have an agenda, minutes, attendance sheet and open forum for staff discussions regarding safety practices and concerns. QICO randomly sampled and reviewed seven (7) of the PLNT monthly safety meetings records corresponding to 2020, which were satisfactory and included all the items mentioned above.

W-PLNT-21-02 Work Measurement **Reduces Safety Risk** **Owner – PLNT**

✓ **PLNT developed an effective communication plan to promote employees' awareness of status updates of established governing documents.**

Discussion

PLNT SOP 109-02 Rev. 02 – Document Control (7/27/2019), outlines a process to maintain PLNT governing documentation on its intranet webpage. This includes internal policies, procedures, work instructions, master revision document lists, equipment manuals, checklist templates and all other form templates.
In addition to the above SOP, PLNT has developed and implemented a communication plan where employees are notified by memorandum or email of new or revised procedures and checklists. The communication includes the start date for the implementation of the new or revised document, highlights of changes, and a reminder that all current procedures and checklists are posted to the PLNT website. The communication plan conveys information of the latest controlled documents and reduces the risk of utilizing obsolete documents. This was validated by QICO during interviews and discussions with PLNT personnel.

2.4 AREAS FOR IMPROVEMENT

Findings are categorized by System Safety Measures and rated by the Risk Assessment

FS-PLNT-21-01 Occupational Safety & Health **Safety – Elevated (4, 3)** **Owner – PLNT**

- **Performing inspections, maintenance and repairs on station pylons in accordance with governing documents would promote safe, efficient and effective work functions.**

Discussion

SSPP Element 14: In July 2017, a PLNT employee was injured while removing signage affixed to a platform pylon at Braddock Rd Station (Figures 1, 2 and 3). At the request of PLNT, ENGA evaluated the cause of the failure and developed a push test procedure to determine the stability of station pylons. As a result, a pilot test was conducted on the pylons at Branch Avenue. Based on the pilot test and input provided by ENGA, PLNT developed Work Instruction "PLNT WI 209-Pylon (9/20/2017), Inspection and Testing of Station Platform Pylon Supports and Anchorages" to serve as a guide to inspect station platform pylons in the system.

Figure 1: Braddock Rd Station Pylon

Figure 2: Failed Pylon at the Middle of Platform

Figure 3: Severe Corrosion at the Bottom Base of Pylon

- QICO requested records of completed pylon inspections performed by PLNT at any location; however, no records were provided to QICO as of 12/28/2020.
- During interviews and discussions with PLNT personnel, QICO noted that PLNT was aware of the existence of the station platform pylon work instructions, however, PLNT personnel indicated that they do not perform any station pylon inspections. It was further stated that for any issues with pylons, PLNT performs corrective maintenance if reported by other WMATA groups such as ADA, SAFE or QICO.
- PLNT Form 109-03 Master Document Control Log (10/2020), provides a list of current Policies, SOPs, WIs, and Forms with the latest approval date and document number. However, WI 209-Pylon is not included in the control log.
- In addition, during the field assessment conducted by QICO on November 6, 2020, at the PLNT Construction Maintenance and Station Rehabilitation (CMSR) shop at CTF, personnel were repairing station pylon without following any documented work instruction or process. Employees were relying on peer-to-peer knowledge sharing to perform work activities and learn the process through repetition.

- **Performing routine Supervisor Quality Control (QC) compliance checks as defined in Facilities, Systems, and Vertical Transportation (FSVT's) process and frequency would verify PLNT operations meet standards and safety measures.**

Discussion

SSPP Element 13: Quality Control (QC) checks are important to verify that PLNT employees are following SOPs, WIs, keeping track of maintenance activities to validate the desired results. In addition, QC checks are required to demonstrate that the job is performed according to the applicable Occupational Safety and Health Administration (OSHA) regulations and WMATA safety standards.

According to PLNT SOP 209-07, Rev. 08- Prioritizing and Documenting Maintenance Work (2/13/2020), PLNT supervisors are required to perform QC checks on site for two (2) work orders per week to validate good quality work was performed.

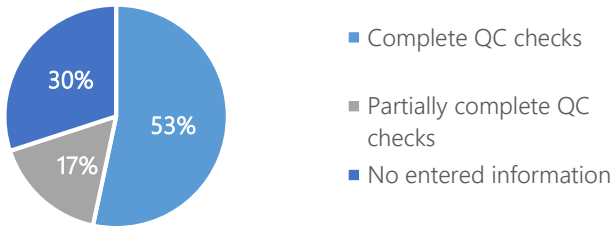
WI 209-18 Documenting Quality Controls Audits Performed by PLNT Supervisors (7/30/2018), states that PLNT supervisors must enter the following information for each work order for which a QC inspection was conducted:

- Payroll number in labor actuals
- Date of QC inspection
- Amount of time expended
- Enter a brief description of the work performed in the memo section ("Supervisor QC Inspection")

While evaluating the sampled QC reports, QICO noted the following:

- FSVT OAP 100-01-04, Rev. 04 Supervisory Inspections of Work Performed requires supervisors to perform a minimum of two (2) inspections of completed work or work orders per week, or eight (8) per month. However, OAP 200-01-04 does not include a second level of QC process to validate the QC was done effectively by supervisors.
- QICO selected 30 random work orders to validate 100% compliance with the QC audits according to the WI 209-18 procedure and observed:
  - 53% (16) of the QC checks were completed according to the work instruction
  - 17% (5) were partially completed (missing fields)
  - 30% (9) had no entered information (Figure 4)

Figure 4: Percentage of QC Procedure Compliance



Additionally, PLNT has an overall QC compliance goal of 90% per week in accordance with PLNT Work Order QC Count Report. This goal was not achieved in the first quarter of 2020 and in October 2020, where the Key Performance Indicator (KPI) is to complete two (2) weekly QC checks per supervisor. QICO's review of PLNT weekly Work Order QC Count Reports indicates the following results:

Month/year	Weekly Percentage Compliance				
	Week 1	Week 2	Week 3	Week 4	Week 5
January 2020	82%	76%	68%	80%	
February 2020	76%	80%	81%	77%	
March 2020	83%	80%	63%*	67%*	58%*
October 2020	66%	63%	65%	73%	
November 2020	71%	66%	69%	63%	69%
December 2020	70%	58%	67%	64%	

*Results of the last three weeks of March were affected due COVID-19.

FS-PLNT-21-02 Safety Management **Safety – Moderate (3, 3)** **Owner – PLNT**

In addition, a second level QC check to review supervisors' completion is important to improve KPI compliance.

FS-PLNT-21-03 Job Safety **Safety – Moderate (3, 3)** **Owner – PLNT**

- **Availability and enforcement of proper Personal Protective Equipment (PPE) and required tools to perform maintenance tasks reduces safety risks and improves work performance.**

Discussion

SSPP Element 18: Tunnel Fan System Preventive Maintenance PM-22-5100 (5/9/2018), lists the equipment, materials, instruments and PPE including hearing protection required to perform the PM. There are some locations in the system where access to the tunnel fan or vent shaft requires additional PPE such as the safety harness for fall protection. PM-22-5100 does not include fall protection equipment as an element of the required PPE.

- During PLNT field assessment performed on November 23, 2020, QICO noted that PLNT personnel did not have the required digital thermometer to verify the tunnel temperature is within ±5 ˚F of the reading control panel Human Machine Interface (HMI) in accordance with PM-22-5100. Without this verification the technician cannot confirm the proper operation of the fan.
- On November 24, 2020, QICO conducted a field assessment of the tunnel fans PM at Fan shaft FD03 (between Smithsonian and L'Enfant Plaza) and noted that employees did not have the required safety vests during the maintenance work (Figure 5).

Figure 5: PLNT personnel were not wearing safety vests

FS-PLNT-21-04 Safe Work Standards **Service Delivery – Moderate (3, 3)** **Owner – PLNT**

- **Reviewing and updating governing documents within the required periodicity optimizes applicability and incorporates changes in a timely manner.**

Discussion

SSPP Element 17: PLNT SOP 109-01 Rev. 02 SOP Preparation and Revision (11/1/2018), requires that PLNT SOPs are reviewed every two years. However, during the assessment of PLNT documents, QICO noted that the following SOPs have not been reviewed as of 1/6/2021:

- SOP 109-01, Rev. 02 – SOP Preparation and Revision, last reviewed (11/1/2018), review due 11/1/2020, past due 2 months
- SOP 109-02 Rev. 02 Document Control, last reviewed 7/27/2017, review due 7/27/2019, past due 18 months
- SOP 209-04 Rev. 02 Control of General Access Keys, last reviewed 7/20/2017, review due 7/20/2019, past due 18 months
- SOP 209-06, Rev. 02 – Engaging Employees in Safety Meetings, last reviewed (12/15/2018), review due 12/15/2020 past due 1 month
- SOP 509-02, Rev. 03 – Licensing Certifications and Required Training, last reviewed (11/1/2018), review due 11/1/2020 past due 2 months
- PLNT Form 109-03 Master Document Control Log (10/2020), includes all PLNT's Policies, SOPs, WIs, Forms and checklists, indicates that SOPs 109-02 and 209-04 are currently under review.

During the document review, QICO also noted the existence of two inconsistent revisions of WI 209-18 Documenting Quality Controls Audits Performed by PLNT Supervisors. One standalone revision on PLNT website has a revision date of 7/30/2018, and another revision that is attached to SOP 209-07 Rev. 08 Prioritizing and Documenting Maintenance Work (2/13/2020), has a revision date of 3/30/2018.

FS-PLNT-21-05 Work Measurement **Service Delivery – Low (2, 3)** **Owner – PLNT**

- **The accurate tracking of corrective maintenance work orders in Maximo would improve planning and efficiency of maintenance and repairs.**

Discussion

SSPP Element 13: PLNT Maintenance Management Plan (8/11/2020), in the Deferral of Maintenance section (Corrective and Life Cycle) states that corrective maintenance activities must be prioritized and completed as resources become available, and associated hazards must be mitigated.

- During the PLNT field assessment performed on December 1, 2020, QICO identified the existence of three (3) duplicate Maximo work orders associated with the same field observation of clogged drains and ponding water at shaft entrance of FA03 Fan Shaft.
- The details of the Maximo work orders are the following:

Work Order	Description	Status	Date Created
14297935	A03 - FA3 Tunnel fan shaft drain is clogged has water intrusion - collecting near hatch	APPR	5/23/2018
15928926	A03 - Tunnel fan FA3, standing water in the fan shaft (please check before the 15th)	APPR	10/8/2020
16016126	A03, FA3 fan shaft floor drains clogged	APPR	11/25/2020

  - These work orders were created between May 2018 and November 2020. As of December 22, 2020, all the above work orders remain open and the issue has yet to be fixed.
- SOP 209-07, Rev. 08 Prioritizing and Documenting Maintenance Work, (2/13/2020), does not include controls to limit the creation of duplicate work orders.

2.5 SUMMARY OF REQUIRED ACTIONS

QICO-PLNT-21-01 **Action Owner – PLNT** **Overall Risk –** Elevated (Average Score)

Required Action: Develop and implement processes to reduce safety hazards and promote a safe work environment.

Applicable Findings

- **FS-PLNT-21-01: Performing inspections, maintenance and repairs on station pylons in accordance with governing documents would promote safe, efficient and effective work functions.**
  - **Measure:** Occupational Safety & Health **Risk:** Safety – Elevated (4,3)

QICO-PLNT-21-02 **Action Owner – PLNT** **Overall Risk –** Moderate (Average Score)

Required Action: Enforce implementation of quality control compliance checks to include operation, PPE, tools and equipment.

Applicable Findings

- **FS-PLNT-21-02: Performing routine Supervisor Quality Control (QC) compliance checks as defined in Facilities, Systems, and Vertical Transportation (FSVT's) process and frequency would verify PLNT operations meet standards and safety measures.**
  - **Measure:** Safety Management **Risk:** Safety – Moderate (3,3)
- **FS-PLNT-21-03: Availability and enforcement of proper Personal Protective Equipment (PPE) and required tools to perform maintenance tasks reduces safety risks and improves work performance.**
  - **Measure:** Job Safety **Risk:** Safety – Moderate (3,3)

QICO-PLNT-21-03 **Action Owner – PLNT** **Overall Risk –** Moderate (Average Score)

Required Action: Revise governing documentation in accordance with the required revision periodicity and update the Master Document Control Log regularly to track document expiration dates.

Applicable Findings

- **FS-PLNT-21-04: Reviewing and updating governing documents within the required periodicity optimizes applicability and incorporates changes in a timely manner.**
  - **Measure:** Safe Work Standards **Risk:** Service Delivery – Moderate (3,3)

QICO-PLNT-21-04 **Action Owner – PLNT** **Overall Risk –** Low (Average Score)

Required Action: Develop a process to account for the creation of each Maximo work order, enforce prioritization and reduce the risk of duplicates.

Applicable Findings

- **FS-PLNT-21-05: The accurate tracking of corrective maintenance work orders in Maximo would improve planning and efficiency of maintenance and repairs.**
  - **Measure:** Work Measurement **Risk:** Service Delivery – Low (2,3)

Internal Corrective and Preventive Actions (iCAPAs) are designated to address each Required Action listed above.

INTERNAL CORRECTIVE AND PREVENTIVE ACTIONS (iCAPAs)

RSTO iCAPAs

Internal Safety Review

In response to the internal safety review report regarding Rail Operations Oversight, Supervision & Fitness for Duty, the Office of Rail Transportation and the Office of Quality Assurance, Internal Compliance & Oversight (QICO) have coordinated the development of five (5) iCAPAs. The iCAPAs have been developed to address required actions and the associated findings.

EXECUTIVE LEADERSHIP COMMITMENT

RESPONSIBLE PARTIES

Joseph Leader [redacted]

Joseph Leader *Date*
Executive Vice President & Chief Operating Officer

INTERNAL OVERSIGHT

Hakim Davis [redacted]

Hakim Davis *Date*
Vice President, Quality Assurance, Internal Compliance & Oversight (QICO)

Eric L. Christensen [redacted]

Eric Christensen *Date*
Executive Vice President, Internal Compliance (INCP)

[redacted] 4/26/21

Paul J. Wiedefeld *Date*
General Manager & Chief Executive Officer (GM/CEO)

PURPOSE AND SCOPE

On December 23, 2020, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Rail Operations Oversight, Supervision & Fitness for Duty Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-RSTO-21-01**.

FINDING

Monitoring the impact of fatigue on incidents, accidents, and service delivery will promote employee and customer safety.

REQUIRED ACTION

QICO-RSTO-21-01	***Rail Stations & Train Operations (RSTO)***	*Risk:* High	

Implement controls to monitor and mitigate the impact of fatigue.

Measure: Safe Work Standards *Risk Category:* Safety *(5,4)*

ACTION PLAN OVERVIEW

RTRA will create a work instruction addressing the monitoring and impact of fatigue related incidents; RTRA will submit the work instruction; RTRA will create a virtual training program based on the work instruction created in Actionable Item #1. This training will be provided to RTRA division management and line directors. Refresher training intervals will be established; and RTRA will submit evidence of training.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Create Work Instruction	RTRA will create and submit an approved work instruction addressing the monitoring and impact of fatigue related incidents.	**Brandye Rogers (RTRA) Eunice Maize (RTRA)**	04/30/21	07/07/21
2.	Develop & Deliver Training	RTRA will create and submit a virtual training program based on the work instruction created in Actionable Item #1. This training will be delivered to RTRA division management and line directors. The training program will also identify the frequency required.	**Brandye Rogers (RTRA) Eunice Maize (RTRA)**	07/07/21	01/12/22
3.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	01/12/22	02/11/22

PERFORMANCE MEASURES

Evidence that 95% of active personnel completed the virtual training as per Actionable Item #2.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

RTRA	Brandye Rogers	[redacted] (Signature/Date)
RTRA	Eunice Maize	[redacted] (Signature/Date)

SECOND-LEVEL RESPONSIBILITY

RTRA	Shanita Wilkinson	[redacted] (Signature/Date)
RAIL	Michael Hass	[redacted] (Signature/Date)
COO	Joseph Leader	[redacted] (Signature/Date)

PURPOSE AND SCOPE

On December 23, 2020, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Rail Operations Oversight, Supervision & Fitness for Duty Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address the associated finding and required action for **QICO-RSTO-21-02**.

FINDING

Completing required train operator fitness for duty evaluations provides assurance that employees are in satisfactory condition to perform their assignments and present themselves as public representatives for Metro.

REQUIRED ACTION

QICO-RSTO-21-02	***Rail Stations & Train Operations (RSTO)***	*Risk:* Elevated	

Enhance fitness for duty evaluation requirements and improve compliance with existing requirements.

Measure: Job Safety *Risk Category:* Safety *(4,3)*

ACTION PLAN OVERVIEW

RTRA will change the current OAP 201-05 to an SOP to include specific depot clerk responsibilities, as well as training for fatigue awareness, fitness for duty, and drug and alcohol reasonable suspicion. RTRA will submit the SOP; RTRA will update and submit the current Depot Clerk training manual for both new hire and refresher training; RTRA will conduct training; and RTRA will submit evidence that 95% of active Depot Clerks have been trained on new SOP.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Revise OAP 201-05	RTRA will change the current OAP 201-05 to an SOP to include specific depot clerk responsibilities, as well as training for fatigue awareness, fitness for duty, and drug and alcohol reasonable suspicion. RTRA will submit the revised OAP.	**Ronald Lewis (RTRA)**	05/03/21	07/28/21
2.	Develop & Deliver Training	RTRA will submit the revised Depot Clerk Training Manual for both new hire and refresher training. The training program will also identify the frequency required.	**Kirk Mitchell (RTRA)**	07/28/21	01/26/22
3.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	01/26/22	02/25/22

PERFORMANCE MEASURES

Evidence that 95% of active personnel completed the training program as per Actionable Item #2.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

RTRA	Ronald Lewis	[redacted] (Signature/Date)
RTRA	Kirk Mitchell	[redacted] (Signature/Date)

SECOND-LEVEL RESPONSIBILITY

RTRA	Shanita Wilkinson	[redacted] (Signature/Date)
RAIL	Michael Hass	[redacted] (Signature/Date)
COO	Joseph Leader	[redacted] (Signature/Date)

PURPOSE AND SCOPE

On December 23, 2020, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Rail Operations Oversight, Supervision & Fitness for Duty Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-RSTO-21-03**.

FINDING

Meaningful supervisory oversight of interlocking operators will increase safety, efficiency, and accountability of dispatch and yard operations.

REQUIRED ACTION

QICO-RSTO-21-03	***Rail Stations & Train Operations (RSTO)***	*Risk:* Moderate	

Revise the current oversight program to be inclusive of all RSTO activities.

Measure: Regulations & Oversight *Risk Category:* Safety *(3,3)*

ACTION PLAN OVERVIEW

RTRA will create and submit a spot check SOP inclusive of interlocking operators; Rail Operations Quality Training (ROQT) will update initial supervisor training and refresher training; ROQT will submit the revised training curriculum; ROQT will provide evidence that 95% of active supervisors have acknowledged and been trained on the new SOP.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Create Spot Check Program	RTRA will create and submit a spot check SOP inclusive of interlocking operators.	**Ronald Lewis (RTRA)**	07/01/21	09/29/21
2.	Develop & Deliver Training	ROQT will revise the initial and refresher supervisor training and incorporate the spot check SOP as per Actionable Item #1. This training will be delivered to RTRA supervisors.	**Paul Bumbry (ROQT) Supporting Office: Myron Vines (RTRA)**	09/30/21	06/01/22
3.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, considering the actionable item descriptions and performance measures.	**QICO**	06/01/22	07/01/22

PERFORMANCE MEASURES

RTRA will provide three consecutive months of interlocking operator spot check reports as per Actionable Item #1.

Evidence that 95% of active personnel complete the refresher supervisor training as per Actionable Item #2.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

RTRA	Ronald Lewis	[redacted] (Signature/Date)
ROQT	Paul Bumbry	[redacted] (Signature/Date)

SUPPORTING ROLE ACKNOWLEDGEMENT

RTRA	Myron Vines	[redacted] (Signature/Date)

SECOND-LEVEL RESPONSIBILITY

RTRA	Shanita Wilkinson	[redacted] (Signature/Date)
OPMS	Linda Stoffregen	[redacted] (Signature/Date)
RAIL	Michael Hass	[redacted] (Signature/Date)
COO	Joseph Leader	[redacted] (Signature/Date)

PURPOSE AND SCOPE

On December 23, 2020, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Rail Operations Oversight, Supervision & Fitness for Duty Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-RSTO-21-04**.

FINDING

A process governing creation, closure, and quality of incident/accident reports will promote accountability and improve the capture of critical safety data.

REQUIRED ACTION

QICO-RSTO-21-04	***Rail Stations & Train Operations (RSTO)***	*Risk:* Moderate	

Implement a documented process that ensures accurate collection, recording, and reporting of all incident/accident data

Measure: Assets and Activities *Risk Category:* Safety *(2,5)*

ACTION PLAN OVERVIEW

RTRA will develop and submit a documented process governing creation, closure, and quality of incidents in the SMS system; RTRA will provide SMS incident process training to all division management; and RTRA will provide evidence of SMS incident process training. QICO will perform a spot check of SMS to verify implementation and compliance with the new SMS process.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Develop SMS Incident Process	RTRA will develop and submit a documented process governing creation, closure, and quality of incidents in the SMS system.	**Allison King (RTRA) Supporting Office[4]: Michael White (SAFE)**	05/01/21	06/30/21
2.	Deliver SMS Incident Process Training	RTRA will provide SMS incident process training to all division management based on the document created as per Actionable Item #1.	**Andrea Bell (RTRA)**	07/01/21	10/27/21
3.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, considering the actionable item descriptions and performance measures.	**QICO**	10/27/21	11/26/21

PERFORMANCE MEASURES

Evidence that 95% of active personnel completed the SMS incident process training as per Actionable Item #2.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

RTRA	Allison King	[redacted] (Signature/Date)
RTRA	Andrea Bell	[redacted] (Signature/Date)

SUPPORTING ROLE ACKNOWLEDGEMENT

SAFE	Michael White	[redacted] (Signature/Date)

SECOND-LEVEL RESPONSIBILITY

RTRA	Shanita Wilkinson	[redacted] (Signature/Date)
RAIL	Michael Hass	[redacted] (Signature/Date)
SAFE	Theresa Impastato	[redacted] (Signature/Date)
COO	Joseph Leader	[redacted] (Signature/Date)

PURPOSE AND SCOPE

On December 23, 2020, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Rail Operations Oversight, Supervision & Fitness for Duty Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-RSTO-21-05**.

FINDING

Current and controlled policies, procedures, and standards provide clear direction and result in more consistent processes.

REQUIRED ACTION

QICO-RSTO-21-05	***Rail Stations & Train Operations (RSTO)***	*Risk:* Moderate	

Implement a process that ensures RSTO personnel are aware and have access to the latest policies and procedures.

Measure: Configuration Management *Risk Category:* Safety *(2,5)*

ACTION PLAN OVERVIEW

The Office of Rail Transportation (RTRA) will create and submit a documented process that establishes a master document log and defines roles and responsibilities for maintaining this log. The log will be used to manage documents requiring archiving, updating, and revision. In addition, RTRA will create a documented process for updating/distributing governing documents to applicable personnel.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Master Document Process	RTRA will create and submit a documented process that establishes a master document log and defines roles and responsibilities for maintaining this log. The log will be used to manage documents requiring archiving, updating, and revising.	**Brandye Rogers (RTRA) Eunice Maize (RTRA)**	06/01/21	09/29/21
2.	Distribution and Updating Process	RTRA will create and submit a documented process for updating/distributing governing documents to applicable personnel.	**Brandye Rogers (RTRA) Eunice Maize (RTRA)**	09/29/21	12/08/21
3.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, considering the actionable item descriptions and performance measures.	**QICO**	12/08/21	01/07/22

PERFORMANCE MEASURES

N/A

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

RTRA	Brandye Rogers	[redacted] (Signature/Date)
RTRA	Eunice Maize	[redacted] (Signature/Date)

SECOND-LEVEL RESPONSIBILITY

RTRA	Shanita Wilkinson	[redacted] (Signature/Date)
RAIL	Michael Hass	[redacted] (Signature/Date)
COO	Joseph Leader	[redacted] (Signature/Date)

PLNT iCAPAs

Internal Safety Review

In response to the Internal Safety Review report regarding the Office of Plant Maintenance, the Office of Quality Assurance Internal Compliance & Oversight (QICO) has coordinated the development of four (4) iCAPAs. The iCAPAs have been developed to address required actions and the associated findings.

EXECUTIVE LEADERSHIP COMMITMENT

RESPONSIBLE PARTIES

Joseph Leader [redacted]

Joe Leader *Date*
Executive Vice President & Chief Operating Officer

INTERNAL OVERSIGHT

Hakim Davis [redacted] 4/20/21

Hakim Davis *Date*
Vice President, Quality Assurance, Internal Compliance & Oversight (QICO)

Eric L. Christensen [redacted] 4/20/21

Eric Christensen *Date*
Executive Vice President, Internal Compliance (INCP)

[redacted] 4/20/21

Paul J. Wiedefeld *Date*
General Manager & Chief Executive Officer (GM/CEO)

PURPOSE AND SCOPE

On January 29, 2021, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Office of Plant Maintenance (PLNT) Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-PLNT-21-01**.

FINDING

Performing inspections, maintenance and repairs on station pylons in accordance with governing documents would promote safe, efficient and effective work functions.

REQUIRED ACTION

QICO-PLNT-21-01	***Office of Plant Maintenance (PLNT)***	*Risk*: Elevated	

Develop and implement processes to reduce safety hazards and promote a safe work environment.

Measure: Facilities and Equipment Inspections *Risk Category: Safety (4,3)*

ACTION PLAN OVERVIEW

PLNT will submit a problem statement to ENGA to define the periodicity to perform station pylon inspections. In addition, PLNT will update the work instruction adding the frequency for inspecting pylons and will conduct inspections.

Business Impact – Budget/Cost Estimate: Operating

New/Expanded Initiative or Process – A new initiative needs to be created or a current process/procedure needs to be substantially expanded to address the Required Action(s). Additional resources will be required to address these initiatives.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Submit Problem Statement	PLNT will provide a problem statement to ENGA for guidance on inspection procedures and periodicity for platform pylons. PLNT will submit the problem statement document.	**Darlene Bright (PLNT)**	04/07/21	05/12/21
2.	Updated Work Instructions (WI)	PLNT will update and submit PLNT WI 209-(XX) Pylon Inspection and Testing of Station Platform Pylon Supports and Anchorages to include ENGA's guidance.	**Darlene Bright (PLNT)**	04/07/21	01/26/22
3.	Station Pylon Inspections Schedule	PLNT will submit a schedule to include creating an asset and inspection schedule for all stations/pylons.	**Darlene Bright (PLNT)**	01/26/22	03/30/22
4.	Station Pylon Inspections	PLNT will conduct the pylon inspections in accordance with the revised WI referenced in Actionable Item #2. PLNT will submit completed pylon inspection checklists for five stations.	**Darlene Bright (PLNT)**	03/30/22	12/07/22
5.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	12/07/22	01/11/23

PERFORMANCE MEASURES

N/A

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.
[2] Est Start – Estimated Start Date.
[3] Est End – Estimated Completion Date.
[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

PLNT	Darlene Bright	[redacted]
		(Signature/Date)
PLNT	Dwayne Lloyd	[redacted]
		(Signature/Date)

SECOND-LEVEL RESPONSIBILITY

FSVT	Rodolfo Bitar	[redacted]
		(Signature/Date)

THIRD-LEVEL RESPONSIBILITY

BPDV	Lisa Woodruff	[redacted]
		(Signature/Date)

PURPOSE AND SCOPE

On January 29, 2021, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Office of Plant Maintenance (PLNT) Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated findings and required action for **QICO-PLNT-21-02**.

FINDINGS

FS-PLNT-21-02: Performing routine Supervisor Quality Control (QC) compliance checks as defined in Facilities, Systems, and Vertical Transportation (FSVT's) process and frequency would verify PLNT operations meet standards and safety measures.

FS-PLNT-21-03: Availability and enforcement of proper Personal Protective Equipment (PPE) and required tools to perform maintenance tasks reduces safety risks and improves work performance.

REQUIRED ACTION

QICO-PLNT-21-02	***Office of Plant Maintenance (PLNT)***	*Risk:* Moderate	

Enforce implementation of quality control compliance checks to include operation, PPE, tools and equipment.

Measure: Rules Compliance / Local, State, and Federal Requirements *Risk Category: Safety (3,3)*

ACTION PLAN OVERVIEW

PLNT will enforce supervisors to conduct QC checks and document the process in Maximo in accordance with the established work instruction. In addition, PLNT will enforce compliance with PPE and required equipment through conducting monthly safety meetings.

Business Impact – Budget/Cost Estimate: Operating

Process Execution – A current process/procedure exists that meets the Required Action(s), but needs to be executed. This type of initiative does not need additional resources.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Supervisor Quality Control (QC) Checks	PLNT supervisors will conduct QC checks and record the process in Maximo according to the instructions of work instruction (WI) 209-18. PLNT will submit three months of supervisor QC checks.	**Darlene Bright (PLNT)**	06/07/21	08/11/21
2.	Personal Protective Equipment (PPE) and Maintenance Equipment	PLNT management will ensure that PLNT field employees have all required PPE and maintenance equipment through an acknowledgement memorandum. PLNT will submit the acknowledgement memorandums.	**Darlene Bright (PLNT)**	04/07/21	01/12/22
3.	PPE and Equipment Verification	PLNT will submit three months supervisor QC checks to verify PPE and maintenance equipment.	**Darlene Bright (PLNT)**	04/07/21	01/12/22
4.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	01/12/22	02/16/22

PERFORMANCE MEASURES

Provide acknowledgement of PPE and equipment memorandum by 95% of active PLNT field employees as per Actionable Item #2.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.
[2] Est Start – Estimated Start Date.
[3] Est End – Estimated Completion Date.
[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

PLNT	Darlene Bright	[redacted]
		(Signature/Date)
PLNT	Dwayne Lloyd	[redacted]
		(Signature/Date)

SECOND-LEVEL RESPONSIBILITY

FSVT	Rodolfo Bitar	[redacted]
		(Signature/Date)

THIRD-LEVEL RESPONSIBILITY

BPDV	Lisa Woodruff	[redacted]
		(Signature/Date)

PURPOSE AND SCOPE

On January 29, 2021, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Office of Plant Maintenance (PLNT) Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-PLNT-21-03**.

FINDING

Reviewing and updating governing documents within the required periodicity optimizes applicability and incorporates changes in a timely manner.

REQUIRED ACTION

QICO-PLNT-21-03	***Office of Plant Maintenance (PLNT)***	*Risk:* Moderate	

Revise governing documentation in accordance with the required revision periodicity and update the Master Document Control Log regularly to track document expiration dates.

Measure: Configuration Management and Control *Risk Category: Service Delivery (3,3)*

ACTION PLAN OVERVIEW

PLNT will revise outdated documents in accordance with the required revision frequency and update the Master Document Control Log.

Business Impact – Budget/Cost Estimate: Operating

Process Execution – A current process/procedure exists that meets the Required Action(s), but needs to be executed. This type of initiative does not need additional resources.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Update Master Document Control Log	PLNT will update the outdated documents and upload them to the Master Document Control Log with revised documents. PLNT will submit a memorandum listing all the documents requiring an update and provide a link to the document repository for verification.	**Darlene Bright (PLNT)**	04/07/21	12/22/21
2.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	12/22/21	01/21/22

PERFORMANCE MEASURES

N/A

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

PLNT	Darlene Bright	[redacted]
		(Signature/Date)
PLNT	Dwayne Lloyd	[redacted]
		(Signature/Date)

SECOND-LEVEL RESPONSIBILITY

FSVT	Rodolfo Bitar	[redacted]
		(Signature/Date)

THIRD-LEVEL RESPONSIBILITY

BPDV	Lisa Woodruff	[redacted]
		(Signature/Date)

PURPOSE AND SCOPE

On January 29, 2021, the Office of Quality Assurance, Internal Compliance & Oversight (QICO) issued the Office of Plant Maintenance (PLNT) Internal Safety Review report. This internal Corrective and Preventive Action (iCAPA) is developed to address associated finding and required action for **QICO-PLNT-21-04**.

FINDING

The accurate tracking of corrective maintenance work orders in Maximo would improve planning and efficiency of maintenance and repairs.

REQUIRED ACTION

QICO-PLNT-21-04	***Office of Plant Maintenance (PLNT)***	*Risk:* Low	

Develop a process to account for the creation of each Maximo work order, enforce prioritization and reduce the risk of duplicates.

Measure: Rules Compliance *Risk Category: Service Delivery (2,3)*

ACTION PLAN OVERVIEW

PLNT will create a documented process to validate Maximo work orders, manage duplicates and perform timely status updates.

Business Impact – Budget/Cost Estimate: Operating

Process Improvement – A current process/procedure needs to be optimized to address the Required Action(s). This type of initiative does not need additional resources because current manpower will be used to improve the process.

Actionable Items		Description	Responsible Party[1]	Est Start[2]	Est End[3]
1.	Manage Maximo Work Orders Process	PLNT will create and submit a documented process to validate Maximo work orders, manage duplicates and perform timely status updates.	**Darlene Bright (PLNT)**	04/07/21	08/25/21
2.	QICO CAP Verification Report	QICO will evaluate actionable items submitted to confirm there is reasonable evidence that the findings and this required action have been resolved, taking into account the actionable item descriptions and performance measures.	**QICO**	08/25/21	09/29/21

PERFORMANCE MEASURES

Provide acknowledgement of its distribution and familiarization from 95% of active PLNT supervisors as per Actionable Item #1.

[1] In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

[2] Est Start – Estimated Start Date.

[3] Est End – Estimated Completion Date.

[4] Offices designated as supporting roles provide subject matter expertise to responsible parties during action development and are not directly responsible for delivery of actionable items listed above.

RESPONSIBLE PARTIES

PLNT	Darlene Bright	[redacted]
		(Signature/Date)
PLNT	Dwayne Lloyd	[redacted]
		(Signature/Date)

SECOND-LEVEL RESPONSIBILITY

FSVT	Rodolfo Bitar	[redacted]
		(Signature/Date)

THIRD-LEVEL RESPONSIBILITY

BPDV	Lisa Woodruff	[redacted]
		(Signature/Date)

SUPPLEMENTAL MATERIALS

APPENDIX A: SYSTEM SAFETY MEASURES

Policies, Procedures & Standards (SSPP Elements 1-5, 12, 13, 15 & 17)

- ***Safe Work Standards:*** *The existence and effectiveness of department policies, procedures, manuals, work instructions, safety and security practices, and other safety and security requirements that define department safe work practices.*
- ***Work Measurement:*** *The existence and effectiveness of operational safety goals and sound management routines to achieve these goals.*
- ***Configuration Management:*** *The existence and effectiveness of processes, tools, and techniques to manage changes to a system to achieve intended outcomes.*
- ***Safety Management:*** *The existence and effectiveness of supervision strategy to ensure personnel are adequately equipped to perform work safely and qualified to perform work to standard.*

Training, Certification & Compliance (SSPP Elements 16, 18, 20 & 21)

- ***Application & Fulfillment:*** *Adherence to existing/adopted policies, procedures, and standards; including applicable engineering or other technical requirements that specify material and/or workmanship standards.*
- ***Job Safety:*** *Adherence to safety requirements, including enterprise-wide standards (e.g. MSRPH) or those specific to a particular type of work (e.g. PPE).*
- ***Safety Training & Certification:*** *The existence and effectiveness of a training strategy to ensure personnel are adequately qualified to perform work.*
- ***Regulations & Oversight:*** *Adherence to requirements, guidelines, and recommendations from external/regulatory authorities and internal oversight functions, including items issued for corrective and preventive actions.*

Hazard Management (SSPP Elements 6, 10, 11 & 19)

- ***Data Assurance:*** *Assessing the existence of a hazardous condition that has been identified.*
- ***Assets and Activities:*** *The performance of gathering all data, conducting interviews & field inspections to determine the risk level and prioritize hazardous conditions and focus available resources on the most serious hazards requiring resolution.*
- ***Document Control:*** *Assessing the effectiveness of hazard tracking and documentation of all systems to mitigate and prevent reoccurrence.*

Safety (SSPP Elements 7, 8, 9 & 14)

- ***Managing Safety in System Modification:*** *Evaluating and assuring that a proposed modification does not adversely affect the system, vehicle, equipment or facility previously certified under the System Safety & Security process.*
- ***Emergency Management:*** *Assessing the management of operational emergencies and preparedness to maintain and continue safe operation under such conditions.*
- ***Occupational Safety & Health:*** *Validating the development of Safety programs and the administration of training to required personnel to assure safe and healthful working conditions for employees and contractors.*

APPENDIX B: RISK ASSESSMENT

Risk Assessment Methodology

Risk is defined as an uncertain event or condition that, if it occurs, has a positive or negative effect on the organization's objectives and operations (both threats and opportunities). It is assessed on the combination of the probability of occurrence of risk and the severity of the risk. Risk management is an attempt to answer the following questions:

- What can go wrong? – The Risk
- How bad are the consequences? – The Impact
- How often does/will it happen? – The Probability of Occurrence
- Is the risk acceptable? – The Risk Treatment, Remediation

Categories of Risk

- ***Service Delivery*** – A broad range of risks with direct or indirect impact on daily transit and/or business operations. The risk of direct or indirect losses or other negative effects due to inadequate or failed internal business or transit operations, or from external events that impair internal processes, people, or systems.
- ***Financial*** – The risk to achievement of the Authority's mission arising from an inability to manage credit, debt and financial leverage, and other financial resources. Financial risk would also include risk arising from adverse movements in market rates or the Authority's inability to meet its obligations.
- ***Legal & Compliance*** – Risks arising from a failure to comply with applicable laws and regulations and a failure to detect and report activities that are not compliant with statutory, regulatory, or internal policy requirements. Failure to comply with prescribed guidelines and established practices. This would also include a lack of awareness or ignorance of the relevant standards, guidelines or regulations.
- ***Safety*** - The risk of achievement of the Authority's mission arising from failures to prevent hazards that may cause harm to human, equipment, or the environment. This would also include risk arising from the Authority's inability to comply with safety-related legal or regulatory standards.
- ***Strategic*** – Risks arising from failure to achieve strategic or tactical objectives, an adverse business decision, or a lack of strategic direction and leadership. This would also include the ineffective implementation of the strategic plans, a lack of business strategies developed to achieve goals, and inadequate resources deployed against the achievement of those goals. Strategic risks can be affected by changes in the political environment such as changes in administration and resulting changes in strategic priorities. Strategic risks can also be triggered by actions of key stakeholders such as the Tri-Jurisdictional law makers or the Federal Transit Administration (FTA).
- ***Technology*** – The risk of unexpected losses from inadequate systems, breaches in information technology security, and inadequate business continuity planning. This would also include risks to the achievement of the Authority's mission arising from the inability of networks, security, and technologies to meet Metro's evolving needs.
- ***Reputation*** – The risk to the achievement of the Authority's mission arising from negative internal or external stakeholder opinion. Reputation risk affects the Authority's ability to establish new and/or sustain existing relationships.

Risk Assessment Process

The following risk matrix is used to assess risks within the universe of review areas. The universe (see Table 1) is comprised of the potential range of all review activities and review business units (or departments) that fall within QICO's scope and oversight authority. These business units consist of programs, processes, assets and people which together contribute to the fulfilment of the departments' strategic goals (Goal 1 - Build Safety Culture; Goal 2 - Deliver Quality Service; Goal 3 - Improve Regional Mobility; and Goal 4 - Ensure Fiscal Stability).

Risks are assessed based on the significance of their impact (see horizontal axis in Figure 1) and the probability of occurrence (see vertical axis in Figure 1). The probability ratings are rated on a scale of 1 (minimum) to 5 (maximum) and are driven by the metrics shown on the next page. The impacts ratings are also rated on a scale of 1 (minimum) to 5 (maximum) and are driven by the category of risks, which are then aligned on the metrics shown on the next page.

Each finding is given a severity rating of Insignificant, Low, Moderate, Elevated or High. All areas with Elevated/High ratings are considered to be high risk to the organization's objectives; and need to be mitigated/reduced in severity at the earliest. The risk ratings to the findings are provided as "Type of Risk" followed by "Severity Rating (Impact, Probability)" (e.g. a finding with *"Elevated (4,3)"* would mean a 'significant (4)' impact along with a 'possible (3)' probability of occurrence).

APPENDIX B: RISK ASSESSMENT

Risk Assessment Matrix

Probability of Occurrence	Negligible (1)	Minor (2)	Moderate (3)	Significant (4)	Major (5)
Almost Certain (5)	Low	Moderate	Elevated	High	High
Likely (4)	Low	Low	Moderate	Elevated	High
Possible (3)	Low	Low	Moderate	Elevated	Elevated
Unlikely (2)	Insignificant	Low	Low	Moderate	Moderate
Rare (1)	Insignificant	Insignificant	Low	Moderate	Moderate
Probability / Impact	Potential Impact of Risk				

Risk Scale Definitions

Insignificant	Reasonable assumption that this risk will not occur and unlikely to cause the activity to fail to meet part of its objective.
Low	Reasonable assumption that this risk will likely not occur & may cause a failure of the business process to meet part of its objectives.
Moderate	Reasonable assumption that this risk may occur & may cause a failure of the business process to meet a significant part of its objectives.
Elevated	Reasonable assumption that this risk will likely occur & likely to cause a failure of the business process to meet a significant part of its objectives.
High	Reasonable assumption that this will occur & will cause a failure of the business process to meet its objectives or cause objective failure in other activities.

Potential Impact

(1) Negligible – Unlikely to cause the activity to fail to meet part of its objectives.

(2) Minor – May cause a failure of the business process to meet part of its objectives, which may expose Metro to minor financial losses, less- effective or efficient operations, some non- compliance with laws and regulations, waste of resources, etc.

(3) Moderate – May cause a failure of the business process to meet a significant part of its objectives, or negatively impact the objectives of other activities, which may expose Metro to moderate financial losses, reductions to or ineffectiveness of operations, non- compliance with laws and regulations, sizable waste of resources, etc.

(4) Significant – Likely to cause a failure of the business process to meet a significant part of its objectives, or negatively impact the objectives of other activities, which may expose Metro to significant financial losses, reductions to or ineffectiveness of operations, non- compliance with laws and regulations, sizable waste of resources, etc.

(5) Major – Will cause a failure of the business process to meet its objectives, or cause objective failure in other activities, which may cause or expose Metro to major financial losses, interruptions in operations, failure to comply with laws and regulations, major waste of resources, failure to achieve stated goals, etc.

Probability of Occurrence

(1) Rare – Reasonable assumption that this risk will not occur

(2) Unlikely – Reasonable assumption that this risk will likely not occur

(3) Possible – Reasonable assumption that this risk may occur

(4) Likely – Reasonable assumption that this risk will likely occur

(5) Almost Certain – Reasonable assumption that this will occur

APPENDIX C: TECHNICAL TERMINOLOGY

DESCRIPTION	
- **Digital Thermometer:** Temperature-sensing instruments that are easily portable and a convenient digital display.	
- **Safety Vest:** Personal protective equipment (PPE) that is designed to have high visibility and reflectivity, where low visibility may be a safety issue. A safety vest wearer is easily detected, which can help other parties avoid colliding with the individual.	
- **Station Pylon:** Tall metal structure which contains station names. At outdoor stations, the pylons carry four light globes and in underground stations pylons also provide indirect lighting.	
- **Tunnel Fan:** Provides ventilation to remove the heat generated by the trains and other electrical equipment. Tunnel fans are also used for smoke emergencies to pull the smoke out of the tunnel.	
- **Under Platform Exhaust (UPE) Fan:** The main purpose of UPE fans is to clear tunnels of diesel fumes spewed by heavy equipment during track maintenance. The fans are usually idle, except for emergencies.	
- **Area of Rescue/Refuge:** A Metrorail area of refuge is a designated location where, in the event of an emergency, people who are unable to immediately evacuate the facility can shelter-in-place until assistance arrives. 22 of 91 Metrorail stations are equipped with some variation of an area of refuge.	
- **Interlocking Operator:** An employee responsible for coordinating train movements and the activities of train operators engaged in rail yard operations work; and for the safe and efficient dispatching of rail cars from the rail yard in compliance with the Authorities rules and regulations. Also known as Tower Operator.	

DESCRIPTION

- **Trapeze:** A software application system used for scheduling, route optimization, dispatching, and staffing management used primarily in public transportation applications.

- **SMS$_M$:** Safety Measurement System. This application software suite is used for the collection, analysis, and record retention of safety-related data, to include incident/accident, fatigue risk management (FRM), and hazard management data.

Additional Terms

- **ELM:** Enterprise Learning Management (ELM) is the learning Management System used by Metro Employees, Managers, Instructors and Administrators to manage learning throughout the entire Metro organization. ELM integrates with PeopleSoft Human Capital Management (HCM) to import personal and organization data.
- **KPI:** Key Performance Indicator (KPI) is a measurable value used for each WMATA department to measure success based on specific business goals and targets.