




### INTERNAL REVIEW

#### Metro's Structure Inspections

In response to the internal review report for Metrorail's Traction Power Inspection and Maintenance dated May 25, 2017. QICO has coordinated with Operations and Engineering departments to develop three comprehensive CAPs. Each CAP outlines the findings, requirements and recommendations addressed, and a detailed action plan outlining responsible parties and specific actionable items.

### EXECUTIVE LEADERSHIP OF RESPONSIBLE PARTIES


#### Corrective Action Plan (CAP) Commitment

  
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Joseph Leader  
Chief Operating Officer (COO)

6/19/2017  
Date

### WMATA INTERNAL OVERSIGHT

#### Corrective Action Plan (CAP) Acknowledgement

  
\_\_\_\_\_  
Angel Peña  
Managing Director, Quality Assurance, Internal Compliance & Oversight (QICO)

06/19/17  
Date

  
\_\_\_\_\_  
Eric Christensen  
Chief, Internal Compliance (INCP)

6/19/17  
Date

  
\_\_\_\_\_  
Paul J. Wiedefeld  
General Manager & Chief Executive Officer (GM/CEO)

6/20/17  
Date



**CORRECTIVE ACTION PLAN**

**Purpose and Scope**

On May 25, 2017 QICO issued an internal review of Metrorail’s Traction Power Inspection and Maintenance. This Corrective Action Plan (CAP) has been developed to address the following finding and required actions per **QICO-TRPM-17-01**.

**QICO Finding**

**QICO Recommendation**

**F-TRPM-17-01:** The Traction Power Maintenance Control Policy does not outline technical training required for technicians or supervisors, according to grade or experience

- Clearly define specific training requirements and periodicities for each technician grade and develop methods of capturing on-the-job training in accordance with the Maintenance Control Policy.

**Required Action**

**QICO-TRPM-17-01:** Clearly define specific training requirements and periodicities for each technician grade and develop methods of capturing on-the-job training in accordance with the Maintenance Control Policy.

**(Risk Rating: Elevated)** ■

**Plan Description**

Operations Management Services (OPMS) and Traction Power Maintenance (TRPM) will finalize the training matrix that identifies requirements and periodicity for each mechanic level. OPMS and TRPM are working with a vendor to develop a new training program for power personnel, which incorporates On-the-Job Training (OJT) as part of the scope. A mentoring program was created in response to Federal Transit Administration Safety Management Inspection CAP R-2-16-d by OPMS contains an OJT log that addresses the need to document OJT activities by required competencies. TRPM will issue a department policy outlining these requirements.

**Business Impact – Budget/Cost Estimate**

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

**PLAN SCHEDULE**

Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
1	Training Matrix	Working with TRPM management to finalize a training matrix that identifies training requirements for each TRPM mechanic level.	Linda Stoffregen (OPMS)	06/12/17	08/14/17
2	On-the-Job Training	Finalize new TRPM training curriculum that includes OJT training.	Linda Stoffregen (OPMS)	06/12/17	12/11/17



PLAN SCHEDULE

Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
3	Policy and Instruction	Issue a TRPM Policy and Instruction detailing the OJT requirements and training matrix.	Michael Hass (TRPM)	06/12/17	12/11/17
4	Enterprise Learning Management Module Report	Report – New TRPM employees completed initial training on deliverable # 1.	Linda Stoffregen (OPMS)	10/09/17	12/11/17
5	QICO Verification Report	QICO will evaluate action items submitted to confirm there is reasonable evidence that the findings have been resolved and that this required action was effective, taking into account corresponding action item descriptions and performance measures.	QICO	12/11/17	01/08/18



\*In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

COMPLETION DOCUMENTATION

Performance Measures

- 100% completion of training matrix.
- 100% completion of TRPM Policy and Instruction detailing the on-the-job-training requirements.
- Completion of initial courses in new training curriculum by new employees.

RESPONSIBLE PARTIES

OPMS	Linda Stoffregen	
TRPM	Michael Hass	

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	
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CORRECTIVE ACTION PLAN

Purpose and Scope

On May 25, 2017 QICO issued an internal review of Metrorail’s Traction Power Inspection and Maintenance (TRPM). This Corrective Action Plan (CAP) has been developed to address the following finding and required actions per QICO-TRPM-17-02.

QICO Finding

QICO Recommendation

F-TRPM-17-02: Inconsistent logbook entries in traction power substations provides ineffective communication of work completed and ongoing.

- Incorporate requirements for the capture of logbook entries for power facilities into the maintenance control policy or other governing document.

F-TRPM-17-03: The Traction Power Maintenance Control Policy has not undergone annual review/revision, as required (Last revised May 2014).

- Ensure the Maintenance Control Policy is properly reviewed and updated in accordance with requirements set within the document.

F-TRPM-17-04: TRPM mechanics utilize O&M manuals in-place of PMI procedures to complete preventative maintenance on new equipment

- Clearly define the role of O&M manuals and PMI procedures for use in the preventative maintenance process.

F-TRPM-17-05: Traction power supervisors are not performing quality control checks as required in the Maintenance Control Policy

- Reinforce requirements to ensure supervisory quality control checks are completed as specified.

F-TRPM-17-06: Completed Preventative Maintenance (PM) forms do not always reference the applicable Work Order number, which is the link between the actual work performed and the electronic record in WMATA’s enterprise asset management system (Maximo).

- Implement a field to capture work order number in all preventative maintenance data sheets.

F-TRPM-17-07: TRPM corrective maintenance records, as identified in the enterprise asset management database (Maximo), indicate a backlog of open work orders in various statuses.

- Verify the current status of open work orders. Update the database to reflect current status. Implement supervisory controls to ensure accurate status of work orders.

F-TRPM-17-08: Electronic recordkeeping practices of maintenance activities lack consistent oversight and control.

- Ensure recordkeeping practices comply with Maintenance Control Policy, exploring the possibility of utilizing the enterprise asset management database (Maximo).

F-TRPM-17-09: Electrical facilities room inspection records are incomplete and inconsistent

- Implement clear instructions on AC & DC Electrical facility inspection data sheet, or within PMI procedure, instructing personnel on how to fill out checklists according to facility type, and establish clear practices for distribution.

Required Action

QICO-TRPM-17-02: Review and perform necessary revision to maintenance documentation, including the Maintenance Control Policy (MCP), and establish supervisory control to ensure compliance with updated requirements.

(Risk Rating: Elevated)



Plan Description

F-TRPM-17-02: Traction Power Maintenance (TRPM) will develop a Policy/Instruction (P/I) which will include requirements for standardized log book entries in TRPM maintained rooms. Employees will be trained on the new P/I.

F-TRPM-17-03: Traction Power Maintenance (TRPM) and Maintenance of Way Engineering (MOWE) have developed a scope of work for a consultant to develop the following documents: Inspection Procedures (1000 series), Preventive and Corrective Maintenance Procedures (1100 series), Traction Power System Integration Test and Inspection Procedures (1200 series), and Traction Power Standard Operation Procedures (2000 series). This document will replace the existing TRPM Maintenance Control Policy (MCP).

F-TRPM-17-04: Engineering and Architecture (ENGA) will develop Preventative Maintenance Instructions (PMIs) for all new equipment on WMATA's Silver Line. ENGA will be using the effort to develop new maintenance documentation in the coming months to update all PMIs for all traction power equipment throughout the entire Metrorail system.

F-TRPM-17-05: Review and perform necessary revision to maintenance documentation, including the MCP, and establish supervisory control to ensure compliance with updated requirements.

F-TRPM-17-06: Rail Services (RAIL) will review all inspection & preventative maintenance data sheets to determine an efficient way to link to the issued work order and establish a policy to implement the results of data sheet analysis. MOWE will review all forms/inspection sheets for field use and insert maximo work order number requirements for mechanics and supervisors to complete.

F-TRPM-17-07: TRPM will provide QICO with quarterly progress reports on the closing of backlogged open work orders.

F-TRPM-17-08: RAIL will analyze options to efficiently capture and store documentation of completed inspections/maintenance for Track and Structures (TRST), Traction Power Maintenance (TRPM), and Automatic Train Control Maintenance (ATCM). In parallel with the development of these documents, TRPM is currently upgrading Maximo to better capture, align and monitor assets. TRPM now requires all PM and inspection documentation to be uploaded to a shared drive for electronic storage. A P/I will be developed to ensure compliance.

F-TRPM-17-09: TRPM will create two (2) separate data sheets for AC/DC room inspections and provide training to employees on how to complete the new data sheets.

Business Impact – Budget/Cost Estimate

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

PLAN SCHEDULE

Actionable items		Description	Responsible Party	Estimated Start	Estimated Completion
1	Develop Policy/Instruction (P/I) for logbook entries in TRPM maintained rooms.	Create P/I standardizing log book entries in TRPM equipment rooms, documentation of P/I review, and acknowledgement by TRPM personnel.	Doojin Han (TRPM)	07/05/17	08/31/17
2	Implement Log Book Policy/Instruction (P/I)	Document training for TRPM personnel for the implementation of the logbook P/I. Compliance review of the logbook P&I will be outlined in the logbook P&I.	Doojin Han (TRPM)	09/01/17	12/06/17



## PLAN SCHEDULE

Actionable items		Description	Responsible Party	Estimated Start	Estimated Completion
3	Task Order	Issue Task Order to Consulting firm to develop required documents. Schedule deliverables per the SOW issued.	Moustapha Ouattara (MOWE)	04/21/17	10/23/17
4	Draft TRPM 1000 & 2000 Series documents	Provide copies of Inspection Procedures (1000 series), Preventive and Corrective Maintenance Procedures (1100 series), Traction Power System Integration test and Inspection Procedures (1200 series), Traction Power Standard Operation Procedures (2000 series).	Moustapha Ouattara (MOWE)	10/23/17	03/05/18
5	Approve TRPM 1000 & 2000 Series documents	Authorize Inspection Procedures (1000 series), Preventive and Corrective Maintenance Procedures (1100 series), Traction Power System Integration test and Inspection Procedures (1200 series), Traction Power Standard Operation Procedures (2000 series).	Moustapha Ouattara (MOWE)	03/05/18	05/01/18
6	Develop PMI Procedures	ENGA will develop PMI procedures for all new equipment and devices introduced on the Silver Line.	Ben Ghorban (ENGA)	06/15/17	11/28/17
7	Quality Control Check	Develop Policy/Instruction in accordance with OAP 100-20 for standardizing supervisor quality control checks and documentation of reviews and acknowledgements.	Doojin Han (TRPM)	06/01/17	09/27/17
8	Link Preventative Maintenance Data Sheets to work orders	Review inspection and preventative maintenance data sheets to determine the most efficient means of linking them to work orders issued through the Maximo system for Rail Maintenance groups.	Andrew Off (RAIL)	07/05/17	12/27/17
9	Amend inspection sheets/forms	Review current forms and inspection sheets and incorporate additional requirement for Maximo work order numbers to be added.	Moustapha Ouattara (MOWE)	06/15/17	09/18/17
10	Quarterly Progress Reports (2)	Quarterly report showing progress made closing out backlogged open work orders.	Doojin Han (TRPM)	06/01/17	12/28/17
10.1	Quarterly Progress Report-1	Quarterly report showing progress made closing out backlogged open work orders.-1	Doojin Han (TRPM)	06/01/17	09/20/17
10.2	Quarterly Progress Report-2	Quarterly report showing progress made closing out backlogged open work orders-2	Doojin Han (TRPM)	09/20/17	12/28/17
11	Policy/Instruction	Develop Policy/Instruction to document and standardize the various Maximo review processes currently in effect and implement positive controls for data integrity.	Doojin Han (TRPM)	06/01/17	12/28/17



PLAN SCHEDULE

Actionable items		Description	Responsible Party	Estimated Start	Estimated Completion
12	Develop Shared Drive for TRPM inspection and preventative maintenance reports.	Shared Drive access has been provided to all supervisors and area managers. All PM records are uploaded to the shared drive for management review.	Doojin Han (TRPM)	02/01/17	08/01/17
13	Develop Policy and Instruction.	Develop Policy/Instruction outlining the responsibilities of supervisors and management for the electronic submission and review of records.	Doojin Han (TRPM)	07/05/17	09/05/17
14	Review Options to Capture and Store Documentation	Analyze options to efficiently capture and store documentation of completed inspections/ maintenance for TRST, TRPM and ATCM.	Francesco Palmeri (RCMP)	07/05/17	12/28/17
15	Data sheets for AC/DC Room Inspections	Create two (2) separate data sheets for AC/DC room inspections (e.g. Tie Breaker substation, Traction Power substation).	Moustapha Ouattara (MOWE)	06/19/17	07/17/17
16	Safety/Tool Box Meeting	Handout sign-in sheets to maintenance personnel to acknowledge the implementation of new data sheets for AC/DC room inspections (e.g. Tie Breaker substation, Traction Power substation).	Doojin Han (TRPM)	07/17/17	08/21/17
17	QICO CAP Verification Report	QICO will evaluate action items submitted to confirm there is reasonable evidence that the findings have been resolved and that this required action was effective, taking into account corresponding action item descriptions and performance measures.	QICO	05/01/18	06/01/18

\*In the event of personnel or departmental changes, responsibilities for actionable items shall transfer to the new leadership.

COMPLETION DOCUMENTATION

Performance Measures

- Evidence of the standardization of logbook entries in TRPM equipment rooms, as established under actionable item #1.
- 95% of active, relevant personnel receive training as prescribed under actionable item #2.
- Evidence of executed task order to consulting firm as prescribed under actionable item #3.
- Final copy of TRPM 1000 & 2000 series documents as prescribed under actionable item #4 & #5.
- Final copies of developed PMI procedures for all new equipment and devices introduced on the Silver Line as prescribed under actionable item #6.
- Evidence of developed P/I for standardized supervisor quality control checks as prescribed under actionable item #7.
- Draft copies of data sheets with addition of work order field as prescribed under actionable item #9.
- Evidence of developed P/I to document and standardize the various Maximo review processes as prescribed under actionable item #11.
- Evidence of developed P/I outlining management responsibilities on electronic submission and review of records as prescribed under actionable item #13.
- Final copy of separate data sheets pertaining to AC/DC room inspection as prescribed under actionable item #15.



- 95% of active, relevant personnel receive training as prescribed under actionable item #16.

RESPONSIBLE PARTIES

MOWE	Moustapha Ouattara	<del>M. Ouattara</del>
DECO	Ben Ghorban	<del>Ben Ghorban</del>
TRPM	Doojin Han	<del>Doojin Han</del>
RCPM	Francesco Palmeri	<del>Palmeri, Francesco</del>

SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	<del>Andrew Off</del>
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**CORRECTIVE ACTION PLAN**

**Purpose and Scope**

On May 25, 2017 QICO issued an internal review of Metrorail’s Traction Power Inspection and Maintenance. This Corrective Action Plan (CAP) has been developed to address the following finding and required actions per **QICO-TRPM-17-03**.

**QICO Finding**

**QICO Recommendation**

<p><b>F-TRPM-17-10:</b> Lockout/Tagout procedure currently used by TRPM personnel has not been approved.</p>	<p>- Ensure new Lockout/Tagout (LOTO) procedure is formally approved for proper use in TRPM maintenance activities. The new LOTO procedure must conform to OSHA requirements per section 1910.147.</p>
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**Required Action**

**QICO-TRPM-17-03:** Ensure new Lock-Out-Tag-Out (LOTO) procedure is formally approved for proper use in TRPM maintenance activities. The new LOTO procedure must conform to OSHA requirements under section 1910.147.

(Risk Rating: High) ■

**Plan Description**

Traction Power Maintenance (TRPM) will develop a procedure with concurrence from the ROCC and approval from SAFE detailing the LOTO requirements. TRPM will issue a safety bulletin with regard to the LOTO procedures. As per OSHA 1910.147 personnel are required to be retrained when they are observed not performing LOTO in accordance to the standards

**Business Impact – Budget/Cost Estimate**

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

**PLAN SCHEDULE**

Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
1	Develop procedure detailing LOTO Procedure	Develop procedure detailing LOTO Procedure which complies with OSHA requirements under section 1910.147.	Michael Hass (TRPM)	07/05/17	09/18/17
2	LOTO Training	TRPM will re-train all employees on LOTO procedures.	Michael Hass (TRPM)	09/15/17	11/28/17



PLAN SCHEDULE

Actionable items		Description	Responsible Party*	Estimated Start	Estimated Completion
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	11/28/17	12/20/17

COMPLETION DOCUMENTATION

Performance Measures

- 100% completion of LOTO Procedure which complies with OSHA requirements under section 1910.147.
- 95% completion of active employees training on LOTO procedure

RESPONSIBLE PARTIES

TRPM	Michael Hass	<del>Michael Hass</del>
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SECOND LEVEL RESPONSIBILITY

AGM RAIL	Andrew Off	<del>Andrew Off</del>
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