



Internal Review Summary

Why QICO Performed This Review:

- This internal review is intended to provide Metro senior management with an assessment of the current methods and practices associated with the maintenance and operation of rail-borne equipment throughout the authority. The review will promote the actions needed to address areas of concern.
- The Office of Quality Assurance, Internal Compliance & Oversight (QICO) is independent from the functions it oversees, authorized by the Metro General Manager to conduct objective reviews with unrestricted access to all functions, records, assets and employees under its purview.

QICO's Methodology:

- Developed relevant review activities by identifying and assessing risks to quality of work, compliance with standards, records management and safety.
- Reviewed maintenance documentation, observed maintenance and inspection work while in-progress, and interviewed key personnel.
- Review findings and required actions are rated based on risk, which ranges on a scale from "Insignificant" to "High".

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

September 2017

Metrorail Car Track Equipment Maintenance (CTEM)

QICO's Review Results:

Key Takeaway: Increased engagement between CTEM, engineering, and maintenance groups will improve maintenance efficiency and reliability.

Wins and Areas for Improvement:

- ✓ CTEM facilities are documenting preventative and corrective maintenance using MAXIMO.
- ✓ CTEM maintains uniform practices to ensure parts are properly organized and labelled.
- ✓ Torque indicating tools and bench test equipment (BTE) are consistently calibrated.
- Car Maintenance (CMNT) documents lack sufficient detail to govern some CTEM-specific processes.
- CTEM performs some equipment modifications without involving Vehicle Engineering (CENV), potentially compromising reliability.
- Inconsistent communication of failure information results in additional diagnosis and troubleshooting for equipment repair.
- QICO observed shop cranes in CTEM spaces with expired inspection certifications, introducing concerns for shop personnel when operating equipment.
- Placement of emergency eyewash stations presents concerns.
- Shelf life considerations for parts and materials are inadequately monitored and controlled.

Required Actions:

- **QICO-CTE-17-01:** To ensure consistent and reliable work results, develop formal instructions to outline CTEM processes, including requirements for equipment modification, designating roles and responsibilities, manpower analysis, and for establishing quality control plans to ensure consistent application.
(Risk Rating: Moderate)
- **QICO-CTE-17-02:** To improve the communication of defects and efficiency of troubleshooting/repair, coordinate with customer maintenance groups to develop written procedures for reporting equipment failure, making necessary revisions to repair logs to include description fields.
(Risk Rating: Moderate)
- **QICO-CTE-17-03:** To provide a safe environment for work in CTEM shop areas, develop formal methods to ensure that all tools, equipment and documentation are accessible, up-to-date and in compliance with applicable inspection and calibration requirements.
(Risk Rating: Elevated)
- **QICO-CTE-17-04:** Develop tracking mechanisms to ensure materials and components with shelf life limitations or other expirations are used or replaced appropriately.
(Risk Rating: Low)