Washington Metropolitan Area Transit Authority

Board Action/Information Summary

○ Action ◉ Information	MEAD Number: 201789	Resolution: ○ Yes ◉ No

TITLE:

APTA Peer Review Preview

PRESENTATION SUMMARY:

The American Public Transit Association (APTA) in conjunction with the Department of Safety & Environmental Management (SAFE) will provide a preview of the APTA Peer Review of third rail power and infrastructure.

PURPOSE:

In advance of the completion of the final report, a representative of APTA will provide the board with an overview of the Peer Review of third rail power and infrastructure, requested by WMATA. Further, the public preview provides transparency to our stakeholders, employees and public in the Washington metropolitan area community.

DESCRIPTION:

WMATA continues to work towards strengthening the safety of the system for its employees and public.

Key Highlights:

• WMATA requested APTA Peer Review of third rail power and infrastructure as part of an independent assessment

• APTA Peer Review process is well established and utilizes highly experienced transit professional to perform function in a voluntarily capacity

• Peer Review objectives were mutually agreed upon with use of industry best practices as a standard

• APTA Peer Review report will be posted on WMATA's website upon release

Background and History:

As part of WMATA's commitment to safety, an APTA Peer Review was requested to specifically examine third rail power and infrastructure to assist in addressing ongoing maintenance issues. The review was conducted the week of July 24-29, 2016.

Discussion:

Mr. Charles Joseph, Director of Rail Programs and Peer Review Facilitator, will present a preview of the findings. The official report is pending.

FUNDING IMPACT:

Define current or potential funding impact, including source of reimbursable funds.	
Project Manager:	CSO - Pat Lavin
Project Department/Office:	SAFE

Information item only; no additional funding is required at this time.

TIMELINE:

Previous Actions	None
Anticipated actions after presentation	• Further review and incorporate APTA Peer Review recommnedations • Continue to strengthen safety culture

RECOMMENDATION:

To inform the Board's Safety Committee of the APTA Peer Review on third rail power and infrastructure.

WASHINGTON METROPOLITAN AREA TRANSIT AUTHORITY

A Peer Review of

Third Rail Power & Infrastructure

A Peer Review Provided by the American Public Transportation Association

(Provided through APTA's subsidiary, the North American Transit Services Association)

July 24 - 29, 2016

AMERICAN PUBLIC TRANSPORTATION ASSOCIATION

Peer Review Team

The peer review team consisted of experts in the field of third rail power and infrastructure from the following rail transit agencies:

Southeastern Pennsylvania Transit Authority (SEPTA)

Maryland Transit Administration, Baltimore (MTA)

Massachusetts Bay Transportation Authority (MBTA)

Chicago Transit Authority, (CTA)

Facilitated by the American Public Transportation Association (APTA)

Observations & Recommendations

1. **Traction Power Substation**

   Observations:

   a) Substations had debris and other equipment not relevant to the facility.

   Recommendations:

   a) Random inspections should be conducted by supervisors to verify standards are maintained.

Observations & Recommendations

2. Organization

Observation:

a) Organization charts appear to be ambiguous in depicting how responsibilities are delineated and managed.

b) Roles and responsibility for traction power personnel are unclear.

c) Staff commented that a formal training program existed in the past but appears it is not followed

Observations & Recommendations

2. Organization continued ….

Recommendation:

a) Establish clear lines of responsibility.
b) Review staffing levels between departments and correct where an imbalance exists.
c) Create positions that clearly provide ownership of specific areas: Traction Power Substation Maintainer, Electrician, Cable Maintainer and Bondsperson, etc.
d) Ensure that the technical capacity for each member of staff is commensurate with their duties and a formal training program is in place.
e) Commission a manpower study to better allocate personnel.

Observations & Recommendations

3. **Various departments are siloed**

   Observation: It appears that various departments are siloed resulting in communication issues (e.g. between engineering and maintenance departments and other inter-departments).

   Recommendation:

   a) WMATA should carry out a study to determine if this is a perception or whether it is real.
   b) Ensure that communication lines are clearly documented and where feasible, identify a point of contact for each department.

Observations & Recommendations

4. Corrosion Control Program

Observation: Currently corrosion testing is being done by corrosion testing consultants primarily at interlockings.

Recommendation:

a) In addition to testing at interlockings, testing should be performed system-wide across all mainline running rails and contact rails to identify defects that require immediate troubleshooting.
b) Baseline conditions should be established through system-wide testing and an appropriate interval should be established for ongoing repeat testing.
c) Prepare a program of work based on findings.

Observations & Recommendations

5. **Track Geometry Vehicle (TGV) & Thermal Imaging**

   Observation: WMATA has a TGV that adequately meets its needs. Third rail data is being used on a conditional basis. They also have a thermal camera mounted to the front of one revenue train.

   Recommendations:

   a) Placement of a thermal camera should be repositioned to the rear of the revenue train.
   b) Establish parameters for acceptable temperature using ANSI/NETA MTS standards.
   c) Where possible, configure and program real time information directly to traction power supervisors.

Observations & Recommendations

5. Track Geometry Vehicle (TGV) & Thermal Imaging continued ….

Recommendations:

d) Hand held thermal guns should be provided to supervisors.

e) Consider traction power personnel to ride in TGV.

f) Explore the options of auto flagging defects with thermal imaging.

Observations & Recommendations

6. **Third Rail Cover boards**

Observations: Visual observations of sample cover boards with regards to securement appear to be adequate.

Recommendations:

a) Verify that the boards are made of low smoke zero halogen materials in compliance with NFPA 130.

b) WMATA should review the securement design of these boards to enable easier inspection of the securement cotter pin located under the board.

c) Identify causal factors of cover boards failing and address them.

Observations & Recommendations

7. **Third rail**

   Observations:

   a) The orange boot design has been used extensively for many years at WMATA.
   b) When WMATA started operating 8-car trains in 2007, traction power substations and power cables were upgraded.

   Recommendations:

   a) Re-evaluate the orange boot design and consider alternative third rail termination points.
   b) Evaluate the merits of porcelain vs. composite insulators.
   c) Conduct a static lean test on troublesome curves for the new 7000 Series cars to verify there is adequate contact and pressure on the third rail.

Observations & Recommendations

8. State of good repair

Observations:

a) Staff are constantly in a catch-up mode.
b) Cable replacement is currently being done under ‘Safe Track’.

Recommendations:

a) Consider planned overtime for catch-up maintenance work to be performed.
b) Future capital programs should be systems based.
c) Examine current state of the substrate beneath the floating slabs to include drainage and isolation issues.

Observations & Recommendations

9. Asset Management System

Observations:

a) The asset management system is not configured correctly.
b) Different types of cables are not clearly defined.

Recommendations:

a) Ensure that the system for parent/child/task is setup correctly.
b) Ensure that MAXIMO (software application) is set up to identify down to the component level for each device in the system.

Observations & Recommendations

10. Third Rail Insulator Cleaning Practices

Observations:

It was noted that the insulators seemed to be excessively contaminated – both in the yard and on open deck areas.

Recommendations:

a) Perform an analysis of the deposits on the third rail insulator to determine their origin and identify remediation.

b) Develop and maintain an efficient and effective program to clean the insulators on a regular basis.

Observations & Recommendations

11. Rail Operations Control Center (ROCC)

Observation: Rail controllers have a high work load with responsibilities for train scheduling, control of traction power ON/OFF, FLS fan controls, RED TAG procedures, etc.

Recommendations:

a) A separate study should be conducted to determine optimum work load responsibilities.
b) This study should also do an analysis of potential benefits in other areas of efficiencies.
c) WMATA may want to consider giving power controllers the responsibility for switching traction power ON/OFF.
d) Regular controller should also be able to control power in an emergency.

Observations & Recommendations

12. Data collection

Observation: A large amount of data is being collected in several areas but it is unclear how it is analyzed and used.

Recommendation:

a) Develop a program for ensuring data collected is logged, tracked and meaningfully used.
b) Data collected needs to be expeditiously disseminated to the relevant departments.

Observations & Recommendations

13. Review comments

Observation: Review comments from end user and stake holders are not consistently solicited during capital project development.

Recommendation: Ensure that there is a robust formal process which requires comments on design reviews, procurements, and construction issues to be solicited, reviewed, documented and dispositioned.

Q&A