DC METRO ISSUES

Cause Map

NTSB recommends increased oversight

On September 30, 2015, the National Transportation Safety Board (NTSB) issued urgent safety recommendations calling for the Federal Railroad Administration to take over the task of overseeing the Washington, DC metro system. The NTSB has determined that the body presently charged with overseeing it (the Tri-State Oversight Committee) doesn't provide adequate independent safety oversight. Specifically, the Tri-State Oversight Committee doesn't have the regulatory power to issue orders or levy fines and lacks enforcement authority.

"The Department of Transportation is exploring all options to improve this record, including a range of approaches that will allow us to directly increase federal safety oversight of Metro."

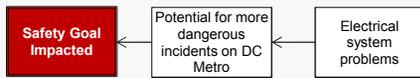**-Namrata Kolachalam, Transportation Department spokeswoman**

Basic Level Cause Map - Start with simple Why questions.

Basic Cause-and-Effect
Investigators found that some electrical connections are at risk of short circuiting because moisture and contaminants may get into them because they were improperly constructed and/or installed. The issues with the electrical components were not identified prior to this investigation, which raises more questions about the Metro's inspection and maintenance programs.

Basic Level Cause Map:
- **Safety Goal Impacted** ← Potential for more dangerous incidents on DC Metro ← Electrical system problems

Intermediate Cause Map - Add detail as information becomes available.

Legend:
- Effect
- Solution: / Cause / Evidence:

Intermediate Cause Map:
- **Safety Goal Impacted** ← Potential for more dangerous incidents on DC Metro
  - Issues with infrastructure (AND)
    - Electrical system problems
      - Potential for electrical short circuits
        - Potential for moisture or contaminants to enter critical components
          - Issues with installation of third rail power supplies (AND)
            - Sealing sleeves missing
              - Evidence: Sealing sleeves are designed to keep moisture and contaminants away from high-voltage conductors.
            - (AND)
            - Missing sleeves not identified ← Inadequate quality control after installations
          - Issues with construction of third rail power supplies (AND)
            - Water in the subway tunnels ← See same cause
      - (AND) Inadequate inspection of critical components
        - ? (AND)
        - Inadequate independent safety oversight ← See same cause
  - Inadequate ventilation (AND)
  - Inadequate staff training (AND)
  - Water in the subway tunnels
    - Water from rain (AND)
    - Leaks in tunnels
      - Plugging leaks requires significant resources (AND)
      - Necessary resources not available? ← Inadequate funding?
        - Evidence: Some Metro board members have estimated huge shortfalls in the future as more upgrades are needed in addition to pension and healthcare costs.
  - (AND) Inadequate independent safety oversight ← Agency charged with oversight lacks power to issue ← No regulatory or enforcement authority
    - Possible solution: Transition oversight to Federal Railroad Administration.
    - Evidence: Tri-State Oversight Committee (TOC) is currently responsible for overseeing Metro.

Damage from the arc incident that filled subway tunnels with smoke on January 12, 2015. One passenger died and 86 were sent to local hospitals for treatment.