Washington Metrorail Safety Commission (WMSC)
Finding that requires WMATA Metrorail to propose Corrective Action Plans (CAPs)
December 20, 2019

Overview: The WMSC is issuing a new Finding to address safety issues that the WMSC has recently identified. The WMSC Program Standard requires WMATA Metrorail to propose corresponding Corrective Action Plans (CAPs) and submit them to the WMSC for approval within 30 days of receipt of this notice.

Background: On Tuesday, December 10, 2019, at approximately 0834, the operator of southbound Red Line Train No. 118 contacted a controller at the Rail Operations Control Center (ROCC) and reported observing "sparks" near Chain Marker A1-267+00 to A1-268+00 on approach to Tenleytown station on Track 1. The ROCC controller relayed this information to the operator of the next southbound train to encounter that area (Train No. 130) and asked for a "good track inspection." The operator of Train No. 130 subsequently reported seeing a "fire" burning "under the third rail."

At approximately 0838, the ROCC controller directed the operator of Train No. 130 to "make good announcements, key down, and reverse ends." The controller initiated Standard Operating Procedure (SOP) No. 1A, *Command, Control and Coordination of Emergencies on the Rail System*, and the controller also dispatched two WMATA supervisors to the scene, as required by the SOP. The controller's directive to "reverse ends" required the train operator to leave the operating compartment, walk to the other end of the train, enter the operating compartment at the other end of the train, and prepare to move the train in the opposite direction.

After reversing (moving to the operating compartment at the opposite end of the train), the operator of Train No. 130 reported tripping the environmental (EV) circuit breaker and reported still hearing the EV system running. The ROCC controller then directed the operator to move Train No. 130 northbound to the next station, Friendship Heights. The operator then reported being unable to move the train. The ROCC controller instructed the operator to bypass certain systems, which eventually permitted the train operator to move the train toward Friendship Heights station but the train was limited to a speed of 2 mph.

Train No. 130 arrived at Friendship Heights station at approximately 0929 and -- more than 50 minutes after the train operator reported seeing a fire -- customers were offloaded. The troubleshooting activity and the resulting 2 mph speed greatly increased the time required for the train to reach Friendship Heights station to offload.
Once Train No. 130 reached Friendship Heights station, ROCC personnel deenergized third rail power in the affected area to permit firefighting operations. Third rail power was subsequently re-energized while District of Columbia Fire and Emergency Medical Service Department (FEMS) personnel were still on the tracks.

The investigation of this incident is ongoing; however, the WMSC has learned that the atmosphere in the ROCC during this emergency was confused and chaotic with frequent yelling by personnel and conflicting instructions. This incident raises several issues that warrant immediate attention before the investigation is completed. For example, the occupants of Train No. 130 remained in proximity to the fire for an undue period of time. The operator of Train No. 130 likely tripped a circuit breaker that inadvertently led to the propulsion difficulty. The operator, in hearing the EV system still running, missed an indication that the wrong circuit breaker had been tripped. When made aware that the operator could hear the EV system running, the controller also missed this indication. Regardless, the controller could have used a checklist available in the ROCC to troubleshoot the difficulty moving Train No. 130. The WMSC was subsequently told that ROCC staff does not use checklists during rush hour. Had the checklist been used, it likely would have resulted in quick restoration of normal propulsion and may have also prompted notice that the EV circuit breaker was never tripped. Had the train moved at normal speed, the customers on the train would have spent less time in proximity to the fire, and this delay also slowed the onset of firefighting operations, which require third rail power to be deenergized.

As another example of an issue that warrants immediate attention, first responders were present on the track when third rail power was restored, exposing the first responders to an electrical hazard. After the operator of Train No. 130 confirmed the fire, the controller immediately began to implement written emergency response procedures; however, a supervisor removed and replaced that controller during the emergency. The WMSC has learned that the atmosphere in the ROCC during this emergency was confused and chaotic with frequent yelling by personnel and with conflicting instructions provided to controllers. There was no handoff briefing from the controller who was removed to the incoming controller who was later directed to restore third rail power. That incoming controller restored power, as directed, without the knowledge that firefighters were in the tunnel. The chaotic atmosphere in the ROCC during the emergency and the abrupt replacement of controller likely contributed to this lack of awareness.

The issues noted above are very similar to some of the issues that were addressed by the National Transportation Safety Board (NTSB) in its final report of the L'Enfant Plaza station electrical arcing and smoke accident that involved a fatality on January 12, 2015. In that report, a ROCC controller is quoted describing the situation inside the ROCC during that event, saying the "right hand did not know what the left hand was doing." That controller said that during the L'Enfant Plaza event, "…it was people deep, people on the phone. People running around, people asking questions. There is a certain amount of calm that for me works better in chaos than a bunch of chaos trying to undo chaos."

The issues are also similar to issues identified in June 2015, when the FTA issued a Safety Management Inspection (SMI) report that called out several items requiring correction at the ROCC. For example, the SMI report notes that FTA inspectors observed ROCC supervisors requesting information from controllers by "yelling down to their location." The FTA noted that this practice "contributes to the overall noise and disruptive atmosphere in the ROCC" that had

contributed to “errors or miscommunication” resulting in “trains being directed into work zones, through red signals, or where power was unintentionally restored in a work zone.”

The FTA SMI report, which refers to ROCC controllers as Rail Traffic Controllers or RTCs, notes that:

> “[T]he lack of written checklists and commitment to their use means that WMATA as an agency does not fully direct the daily administration of the information used by RTCs to guide the system. Interviews with technicians in Car Maintenance, for example, indicated that vehicle trouble-shooting information provided to train operators by RTCs was often incorrect, and that consistent use of a trouble-shooting checklist would greatly enhance performance of this critical function.”

The are many similarities between the fatal 2015 L’Enfant Plaza electrical arcing and smoke accident and the events of December 10, 2019. And there are many echoes of the FTA’s SMI findings in the events of December 10, 2019. In sum, concerns raised by the NTSB and the FTA regarding the discipline within the ROCC and the ROCC’s handling of emergencies are still valid and must be addressed. Accordingly, the WMSC now issues a new Finding to WMATA.

Finding: Dysfunction in the ROCC during unplanned events and emergencies that includes yelling, conflicting instructions, and the failure to use checklists detracts from the ROCC’s ability to manage the rail system appropriately and effectively.

> **Metrorail must propose a corrective action that addresses the following:** Eliminate the dangerous dysfunction within the ROCC by taking actions that include, but are not limited to, requiring and allowing controllers to follow written protocols and checklists, improving communication and workflow, and avoiding oversaturating controllers and distracting them with conflicting instructions.

WMSC Action: Although the investigation of the December 10 event is ongoing, and the WMSC may take additional action as more information becomes available, we are now notifying you of an immediate change to our oversight of the ROCC. The WMSC has today tasked one of its technical specialists to begin conducting ROCC observations and inspections on a full-time (one FTE) basis, beginning immediately.