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WMSC Commissioner Brief: W-0111 – Serious Injury – Shaw-Howard U Station – April 12, 2021

Prepared for Washington Metrorail Safety Commission meeting on September 21, 2021

Safety event summary:

A Fire Protection Technician conducting standpipe flow and hydrostatic testing at Shaw-Howard U Station slipped and fell in an area that had filled with approximately six inches of water as the technician disassembled their equipment at the monster gauge. The technician broke their left foot.

The injury was not properly reported to the Rail Operations Control Center (ROCC) at the time of the event. Initially, the technician reported the injury to a supervisor but said they would try to walk it off. After returning to the field office, the technician informed a supervisor they would need medical treatment, documented the injury, and later drove themself to the hospital, where the fracture was diagnosed. The supervisor on the overnight shift did not report the injury to ROCC, and stated that they believed it did not need to be reported because the technician took themself to the hospital. A different Fire Protection Supervisor called the Rail Operations Information Center (ROIC) in the ROCC at 12:07 p.m. to report the broken foot, and stated that Plant Maintenance had already collected statements and other information from the technicians. The injury occurred at approximately 2 a.m., Metrorail's Safety Department learned of the injury at 12:48 p.m. from the ROIC specialist, and Metrorail notified the WMSC at 2:23 p.m.

The technician stated that, after disconnecting a hose valve with their foot, water filled the area, covering the top of the running rail, and the technician unknowingly stepped on the rail and slipped, twisting their ankle. A partner on scene corroborated this series of events.

The drains in the area are intended for low levels of rainwater runoff, not the large amount of water provided through a monster gauge that is part of the fire department standpipe system. According to the Metrorail preventive maintenance procedure checklist for this test, which Metrorail described later in the investigation as not having been issued and distributed to employees, a discharge hose should have been attached to the gauge to divert water away from the work location.

Third rail power was de-energized at the time of this event as part of the roadway worker protection in place for the work crew.

Following this event, Metrorail conducted a job hazard analysis for standpipe and hydrostatic testing. This analysis determined that additional training is required for Plant Maintenance technicians performing this work, including on additional forms and on National Fire Protection Association (NFPA) Standards 14, 25 and 130.

Metrorail had not completed the process of developing, distributing and providing training on checklists or similar test forms for this task. This training and reference information would help personnel ensure that the preventive maintenance work is carried out correctly, however it had not been communicated to personnel. Despite this lack of implementation and Metrorail management being unsure about the status of these documents, Metrorail had submitted the checklists to the WMSC prior to this event with a representation that the documents were completed and in-effect.

Probable Cause:

The probable cause of this event was Metrorail's insufficient work instructions and training to ensure that personnel have the knowledge and ability to do their jobs safely.

Corrective Actions:

Plant Maintenance developed a lessons learned document for individuals who conduct this testing to highlight the need to use a discharge hose to divert water from the monster valve away from a work location.

Plant Maintenance instructed management of injury reporting procedures and incident investigation requirements.

In relation to this and other safety events that were not properly identified, Metrorail's Safety Department sent a reminder to employees of the requirements to report accidents, incidents and near misses as soon as possible.

WMSC staff observations:

Metrorail did not notify the WMSC of this event within the required two-hour window.

Under a corrective action plan developed in response to the WMSC's October 20, 2020 finding related to the integrity of safety event investigations, Metrorail is required to provide initial and ongoing refresher training to ensure each Metrorail employee and all relevant contractors understand their roles and responsibilities as those relate to safety event investigations. Part of this training includes computer-based training related to investigation requirements.

Metrorail had developed drafts of some new checklists related to this event before the injury, but had not implemented these improvements. The checklists and instructions had been submitted to the WMSC approximately two weeks prior to this event as a portion of the evidence for a corrective action plan (CAP) closure request for FTA-RAIL-4-27-a which was a broad CAP related to preventive maintenance and inspection testing and conducting quality audit processes to ensure compliance with established maintenance and testing practices. However, Metrorail had not actually implemented these safety improvements or distributed this information regarding a test and maintenance checklist for standpipe and hydrostatic testing processes to employees. As a part of this investigation, Plant Maintenance and the Office of Emergency Management worked to finalize what Plant Maintenance then described, after submission to the WMSC, as draft checklists and procedures.

Staff recommendation: Adopt final report.

Washington Metro Area Transit Authority
Department of Safety and Environmental Management (SAFE)

FINAL REPORT OF INVESTIGATION A&I E21142

Date of Event:	04/12/2021
Type of Event:	Serious Injury
Incident Time:	02:00 hours
Location:	Shaw-Howard U Station
Time and How received by SAFE:	12:48 hours SAFE On-call Phone
WMSC Notification Time:	14:23 hours
Rail Vehicle:	None
Injuries:	Fractured left foot and torn ligament
Damage:	None
Emergency Responders:	Office of Plant Maintenance (PLNT)
SMS I/A Incident Number:	20210412#92755

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Abbreviations and Acronyms

AIMS	Advanced Information Management System
ARS	Audio Recording System
CM	Chain Marker
CAP	Corrective Action Plan
GOTRS	General Orders and Track Rights System
I/A	Incidents/Accidents
JHA	Job Hazard Analysis
MSRPH	Metrorail Safety Rules and Procedures Handbook
MOC	Maintenance Operations Control
NFPA	National Fire Protection Association
NOAA	National Oceanic and Atmospheric Administration
OEM	Office of Emergency Management
OJT	On-the-Job Training
PLNT	Office of Plant Maintenance
ROIC	Rail Operations Information Center
ROCC	Rail Operations Control Center
RWIC	Roadway Worker in Charge
SAFE	Department of Safety and Environmental Management
SMS	Safety Measurement System
WMATA	Washington Metropolitan Area Transit Authority
WMSC	Washington Metrorail Safety Commission

FINAL REPORT OF INVESTIGATION A&I E21142

Executive Summary

On Monday, April 12, 2021, at 12:48 hours, the Rail Operations Information Center (ROIC) notified the Department of Safety and Environmental Management SAFE that an Office of Plant Maintenance (PLNT) Fire Protection Technician Supervisor reported that a Fire Protection Technician had an injured their foot at Shaw-Howard U Station at 02:00 hours. The Fire Protection Technician subsequently self-transported to Anne Arundel Hospital after their shift for further medical evaluation. During ROIC's notification to SAFE, the ROIC Specialist did not note that the Fire Protection Technician suffered a left foot fracture.

Based on the system recording data, the Fire Protection Supervisor noted via phone to ROIC that the Midnight Fire Protection Supervisor did not report the event to ROCC. According to the healthcare professional at Anne Arundel Hospital, the Fire Protection Technician suffered a torn ligament and fractured bone in their left foot. The injured Fire Protection Technician did not request medical attention at the worksite. According to the incident report, the Fire Protection Technician noticed pain in their left foot area aggravated as they walked; however, they attempted to walk off the discomfort.

Upon returning to the field office, the Fire Protection Technician removed their safety boot and conducted a self-evaluation of their foot. The Fire Protection Technician observed that their foot was swollen and reported this issue to their supervisor. After filling out the appropriate paperwork [Incident Report], the Fire Protection Technician self-transported to the hospital. A Fire Protection Technician B (witness) echoed the same sequence of events.

According to the PLNT Fire Protection Technician AA's interview, the Fire Protection Technician worked overtime on April 12, 2021, and was tasked with conducting annual Standpipe flow and Hydrostatic testing of the standpipe system Shaw-Howard U Station at VE-04. After completing the test, the Fire Protection Technician walked approximately 500-700 feet to the monster gauge and began disassembling their equipment. The Fire Protection Technician reported their work area filled with approximately 6 inches of water, which subsequently created a low visibility condition preventing the Fire Protection Technician from surveying the roadway for hazards such as the track components.

As the water covered the head of the running rail at Shaw Howard U Station, the Fire Protection Technician unknowingly placed their foot on the running rail, subsequently losing their footing, consequently twisting, and fracturing their foot. The drains located in this area are for rainwater and not designed to accommodate massive quantities of water. The Monster gauge used during the testing should have had a discharge hose attached to divert water away from their work location for drain mitigation. As outlined in the Fire Protection System Inspection, Testing and Maintenance Checklist and Record of Completion Form Standpipe System PLNT PM-22-5500-02.

The General Orders and Track Rights System (GOTRS) shows a Piggyback crew of two with escort support working under a Supervisory Outage, with the RWIC holding a Red Tag Power Outage for the overall work area, conducting Fire Line Testing on the Tunnel Standpipe System Shaw-Howard U Station VE-04. The GOTRS request history indicates Fire Protection Technicians

performed testing to place the system back in service for Fire Life Safety Concerns. The Protected Chain Markers (CM) were as follows:

- Track 1 Actual Work Area: E038+00 E046+66 Protected Work Area: E033+00 E051+66
- Track 2 Actual Work Area: E038+00 E045+30 Protected Work Area: E033+00 E050+30
- Track 3 Actual Work Area: E036+51 E043+19 Protected Work Area: E036+27 E043+27

At 00:31 hours, a request to begin work is documented within GOTRS. At 00:36 hours, the Maintenance Operation Control (MOC) authorized the switch order. ROCC de-energized third rail power and notified the Roadway Worker in Charge (RWIC) at 01:26 hours. The work area was Hot Sticked at 01:27 hours, ROCC granted the RWIC permission to set up their work location at 01:27 hours, and the Fire Protection Technicians went to work at 01:37 hours.

A SAFE industrial hygienist conducted a JHA for Standpipe and Hydrostatic testing and determined the risk assessment code is moderate. Refer to Appendix C. The JHA further determined PLNT Technicians standpipe training should include National Fire Protection Association (NFPA) 25, 14, 130. Employees should use and be trained on the "Standpipe Acceptance Testing Report – Flow / Flush Test" form from the Office of the Fire Marshal and "Inspection, Testing, and Maintenance Checklist" for PLNT PM-22-5500-02. RWP training requires for testing on the roadway. PLNT PM-22-5500-02 and PLNT PM-22-5500-22 were submitted to the WMSC because of a previous CAP on March 25, 2021, for subsequent closure.

The probable cause of the serious injury at Shaw Howard U Station on April 12, 2021, was the absence of a Testing and Maintenance Checklist outlining the use of a discharge hose to divert water from a work location while conducting annual testing. While the processes and checklists that were developed for usage were submitted as part of a CAP Closure, management was unsure of their approval status on the date of the incident.

The absence of proper work instructions and insufficient training caused a standing water condition that prevented the Fire Protection Technician from surveying the trackbed for hazardous ground conditions such as track components. Consequently, driving the Fire Protection Technician to fracture the foot after unknowingly positioning their foot on the running rail while removing equipment from the roadway

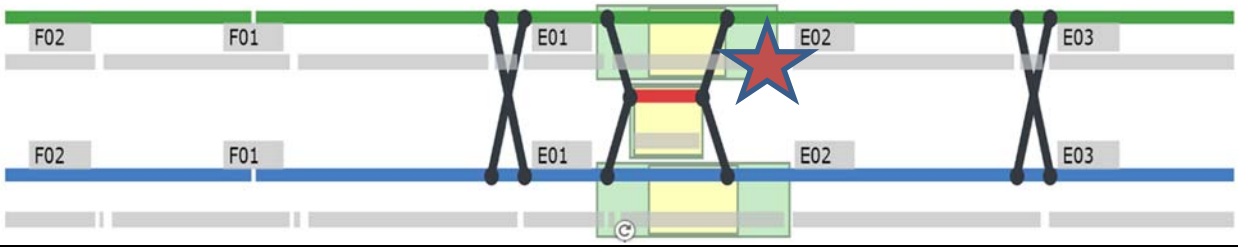
As a contributing factor to the event, the drainage system is not designed to accommodate significant amounts of water such as 500 GPM but engineered as runoff to divert rainwater. Further contributing to this event was the terrain and slope, which may have created a pooling situation slowing drainage in the area.

Incident Site

Shaw-Howard U Station, VE-04

Track 1 Actual Work Area: E038+00 E046+66 Protected Work Area: E033+00 E051+66
Track 2 Actual Work Area: E038+00 E045+30 Protected Work Area: E033+00 E050+30
Track 3 Actual Work Area: E036+51 E043+19 Protected Work Area: E036+27 E043+27

Field Sketch/Schematics



This sketch is not to scale

Purpose and Scope

The purpose of this incident investigation and candid self-evaluation is to collect and analyze available facts, determine the probable cause(s) of the incident, identify contributing factors, and make recommendations to prevent a recurrence.

Investigation Process and Methods

Upon receiving the serious injury notification of a PLNT Fire Protection Technician at Shaw-Howard U Station on April 12, 2021, SAFE launched an investigation into this event. SAFE team members worked with relevant Washington Metropolitan Area Transit Authority (WMATA) subject matter experts to review the incident's facts and data.

Investigation Methods

The investigative methodologies included the following:

- Formal Written Statement – SAFE reviewed two written statements uploaded within SMS as part of this investigation. The written statements included:
    - PLNT Fire Protection Technician
    - PLNT Fire Protection Technician (Witness)

- Formal Interview – SAFEconducted two interviews as part of this investigation. The interview included:
    - PLNT Fire Protection Technician

- Informal Interviews – Collected through conversations with individuals during the investigation to provide background and supporting information.
    - PLNT Assistant Superintendent

- Documentation Review – A collection of relevant work history information and process documentation contained in Metro systems of record. These records include:
    - Training Procedures & Records
    - Certification
    - The 30-Day work history review
    - Office of Plant Maintenance Incident Investigation Report
    - Metrorail Safety Rules and Procedures Handbook (MSRPH)
    - National Oceanic and Atmospheric Administration (NOAA)

- Rail Operations Information Center (ROIC) summary report review
- Pre-job Safety Briefing
- Incident Reports review
- Job Hazard Analysis (JHA)
- Standpipe and Hydrostatic Testing Working Instructions

- System Data Recording Review – A collection of information in Metro Data Recording Systems. This data includes:
  - Audio Recording System (ARS) playback [Phone Communications]
  - Advanced Information Management System (AIMS)
  - General Order and Track Rights System (GOTRS)

Investigation

On Monday, April 12, 2021, at 12:48 hours, the ROIC notified SAFE that a PLNT Fire Protection Technician Supervisor reported a technician injured their foot at Shaw-Howard U Station at 02:00 hours. The Fire Protection Techniciansubsequently self-transported to Anne Arundel Hospital after their shift for further medical evaluation. During their notification to SAFE, the ROIC Specialist did not note that the Fire Protection Technician suffered a left foot fracture. Since this incident occurred, the Incident Management Official (IMO) guidance and reference material maintained at the IMO desk includes a copy of the WMSC Program Standard's Event Notification Matrix. All IMO personnel received training on reporting and event classification using the Matrix.

Based on the system recording data, the Fire Protection Supervisor noted via phone to the ROIC Specialist at 12:07 hours that the Midnight Fire Protection Supervisor did not report the event to ROCC. After further medical evaluation from a healthcare professional at Anne Arundel Hospital, the medical professional determined the employee suffered a torn ligament and fractured bone in their left ankle. The injured Fire Protection Technician did not request medical attention before self-transporting.

According to the PLNT Fire Protection Technician AA's written statement, the Fire Protection Technician worked overtime on April 12, 2021, and was tasked with conducting flow testing of Shaw-Howard U Station's standpipe system VE-04. While attempting to pick up their equipment from out of the trackbed, their left foot slipped and "twisted up" underwater. The Fire Protection Technician noticed pain in their left foot area, causing pain to radiate while walking. A Fire Protection Technician B (witness) echoed the same sequence of events.

The GOTRS shows a piggyback crew of two with escort support working under a Supervisory Outage conducting Fire Line Testing on the Tunnel Standpipe System at Shaw-Howard U Station VE-04. The GOTRS request history indicates Fire Protection Technicians performed testing to place the system back in service for Fire Life Safety Concerns. The Protected CM were as follows:

- Track 1 Actual Work Area: E038+00 E046+66 Protected Work Area: E033+00 E051+66
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At 00:31 hours, a request to begin work is documented within GOTRS. At 00:36 hours, and Maintenance Operation Control (MOC) authorized the Switch order. ROCC de-energized Third rail Power, and ROCC notified the RWIC at 01:26 hours. The work area was Hot Stick at 01:27 hours.

ROCC granted the RWIC permission to set up their work location at 01:27 hours. The Fire Protection Technician went to work at 01:37 hours.

A SAFE industrial hygienist conducted a JHA for Standpipe and Hydrostatic testing and determined the risk assessment code is moderate. Refer to Appendix C. The JHA further determined PLNT Technician standpipe training should include NFPA 25, 14, 130. Employees should use and be trained on the "Standpipe Acceptance Testing Report – Flow / Flush Test" form from the Office of the Fire Marshal and "Inspection, Testing, and Maintenance Checklist" for PLNT PM-22-5500-02. RWP training is required for Standpipe testing on the roadway. PLNT PM-22-5500-02 and PLNT PM-22-5500-19 were submitted to the WMSC in support of CAP Closure for FTA-RAIL-4-27-a on March 25, 2021.

Chronological Event Timeline

A review of the Rail Operations Information Center (ROIC) ARS playback, i.e., phone communications, revealed the following:

Time	Description
12:07 hours	Fire Protection Supervisor: Last night, before I came into work this morning, it was reported to me that there was an injury that occurred on the tracks. The supervisor on duty, I do not think they said to OCC and got an incident number created for that injury. ROIC Specialist: Do you have the information? Fire Protection Supervisor: Yes? Name location track number and anything else you might need. ROIC Specialist: Why do they keep doing this? Fire Protection Supervisor: I do not know either. This guy had an injury last night and did not even call Operations Control Center (OCC) ROIC Specialist: Did they report it? Fire Protection Supervisor: Yes, we reported it and got all the statements, and while entering the paperwork, that should have been an incident report created. ROIC Specialist: That is what I am saying, no one called down here last night. Fire Protection Supervisor: Yes, you are correct; no one called OCC this morning. The ROIC specialist then asked the who, what, when, where, and why questions. Fire Protection Supervisor: This happened at 02:00 hours, at Shaw- Howard Station VE-04 in the tunnel near CM E1-045+00. The Fire Protection Supervisor provided the name and employee number to the ROIC specialist and stated tthe Fire Protection Technician fractured a bone in their left foot and self-transported to the hospital.

Time	Description
12:48 hours	ROIC Specialist: Notified SAFE that an employee injured their left foot at Shaw-Howard U Station at 02:00 hours. The PLNT Fire Protection Technician was not immediately transported; however, they self-transported to Anne Arundel after their shift. ** Note: SAFE did request a contact number to discuss the event in further detail with the PLNT department. The ROIC specialist provided the Fire Protection Supervisors number.

Note: Times above may vary from other system's timelines based on clock settings.

Advanced Information Management System (AIMS)

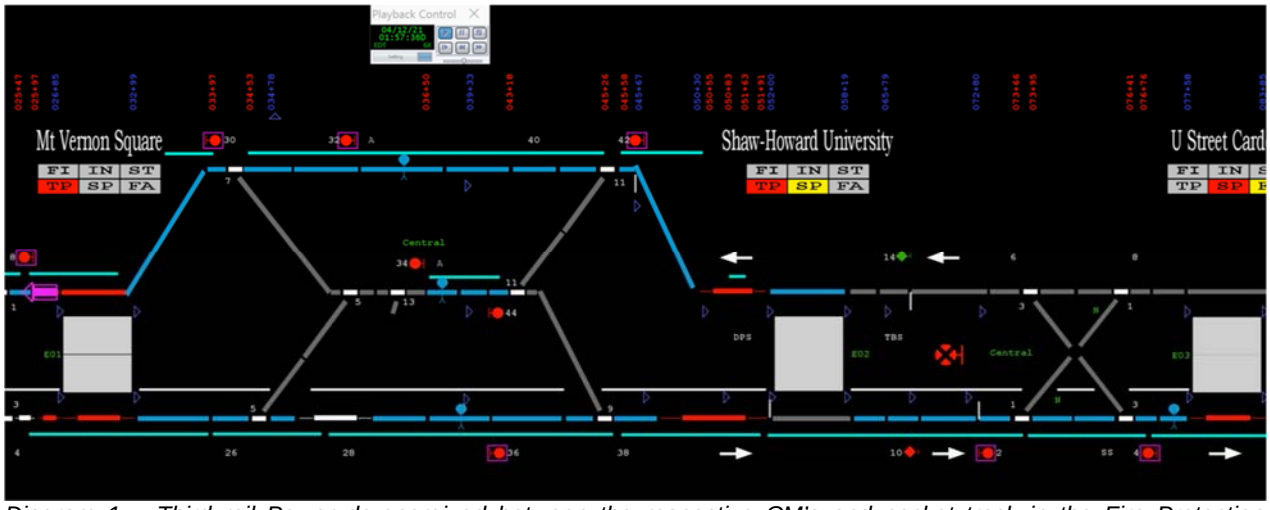


Diagram 1 – Third rail Power de-energized between the respective CM's and pocket track in the Fire Protection Technician work location.

The Office of Plant Maintenance Investigative Report

PLNT maintenance management interviewed the PLNT Fire Technician and Fire Technician Supervisor and reviewed the facts of the event and reported:

"On Monday, April 12, 2021, at approximately 02:00 hours. AA Fire Protection Technician injured themselves on the roadway on Track 1 CM: 45+00 at VE04 Vent Shaft Fireline in the area of Shaw Howard Metro Station. After conducting an annual fire line test involving Hydrostatic and Flow Test, the Fire Protection Technician disconnected the hose valve while their foot was positioned on running rail and slipped between water and concrete. This action caused the Fire Protection Technician's left ankle to twist and rollover. After immediately notifying, their supervisor, the Fire Technician asked the employee if medical attention was needed. The Fire Protection Technician stated they would try to walk it off.

The crew proceeded to leave the trackbed and return to CTF. Once they returned to the fire shop, The Fire Protection Technician removed their safety boot and noticed his ankle and foot were swollen. At that time, the Fire Protection Technician decided they needed to seek medical attention. The Fire Technician notified their supervisor "again," and they completed the injury paperwork. The Fire Protection Technician self-transported to Anne Arundel hospital.

After getting x-rays, it was determined that the injured technician's ankle was fractured. PLNT Management interviewed the shift supervisor and inquired why they did not transport the injured to the hospital. The PLNT Shift supervisor stated the Fire Protection Technician would transport themselves. PLNT Management re-instructed the PLNT shift supervisor to transport injured employees in the future. PLNT Management also conveyed that the PLNT Shift supervisor should undergo incident investigation training for injury and accidents."

Corrective actions for this incident will include Body Mechanics Training for the Fire Protection Technician. Refer to Appendix F.

Training

A Fire Protection Technician and Fire Protection Supervisor training history review revealed no record of body mechanics or job-specific related training, i.e., standpipe and hydrostatic testing.

Interview Findings

Based on the investigation launched into the Shaw Howard U Station Serious Injury event, SAFE conducted one interview via Microsoft teams, including the investigation team and members of the WMSC. This interview was completed within six days after the event and identified the following key findings associated with this event

The Fire Protection Technician stated that a pre-job safety briefing was conducted. The safety briefing covered hazards associated with the job, i.e., flashlight, watch your footing, and third rail. The Fire Protection Technician did receive a copy of the tunnel map showing respective equipment locations, emergency egress, and Chain Markers, except drainage areas.

The Fire Protection Technician noted they received OJT from experienced personnel; however, there was no documentation for reference. The Fire Protection Technician said this was the second to third-time water backed up at a drain location. When the Fire Protection Technician unhooked their equipment, they stepped on the running rail, subsequently slipping, and their foot rolled.

Human Factors

Fire Protection Technician

Evidence of fatigue

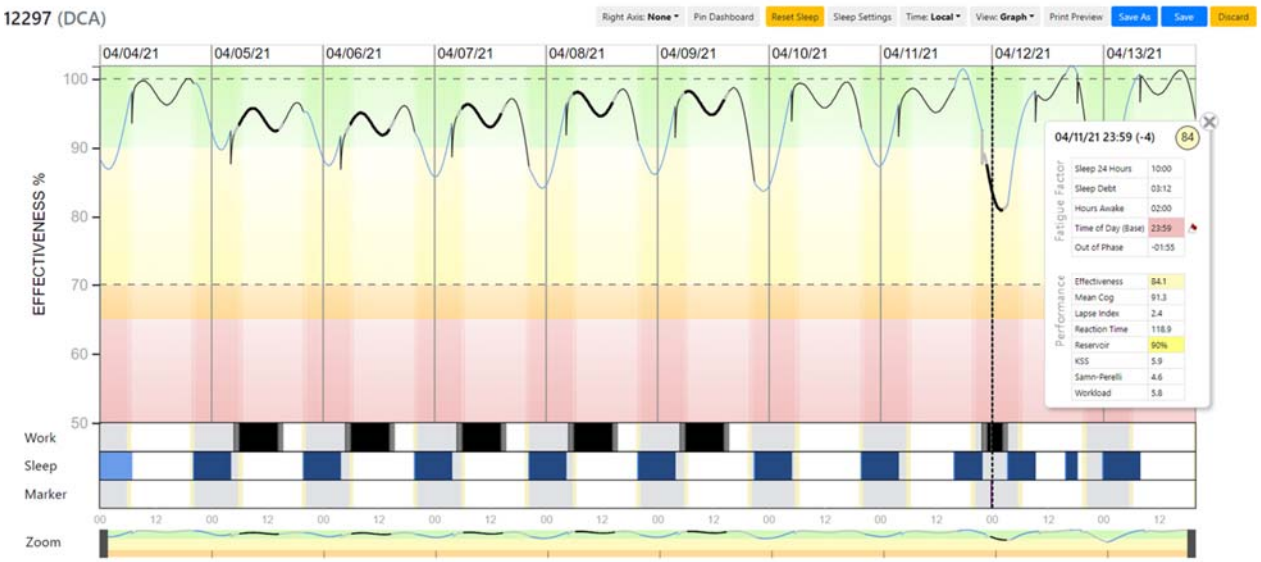
The incident data was evaluated for conditions at the time of the incident to distinguish whether evidence of fatigue was present. No evidence of fatigue was indicated by the available data. The Technician reported feeling Fully Alert at the time of the incident. The Fire Protection Technician reported experiencing no symptoms of fatigue in the time leading up to the incident.

Fatigue Risk:

The incident data was evaluated for fatigue risk factors. The risk of factors for fatigue was identified. The incident time of day (approximately 02:00 hours) suggests an increased risk of fatigue-related impairment. The Fire Protection Technician reported keeping a variable sleep schedule in the days leading up to the incident and worked evening shifts in the days leading up to the incident. The Fire Protection Technician was awake for 4 hours at the time of the incident.

The off-duty period preceding the incident was 55.5 hours long (i.e., over two days long, due to the employee's regular days off), which provides sufficient opportunity for adequate sleep before the incident shift. The Fire Protection Technician reported 6 hours of sleep in the evening leading up to the incident but a total of 10 hours of sleep in the 24-hours leading up to the incident. This was longer than the employee's reported usual workday sleep duration of 8 hours. The Fire Protection Technician reported no issues with sleep.

Since a fatigue risk factor was present, a biomathematical fatigue modeling application (SAFTE-FAST WebSFC) was used to further evaluate fatigue risk factors that may have been present in the employee's schedule. The analysis was based on the employee's work schedule, bed, and wake times from the day before the incident, and reported habitual sleep durations. The estimated performance effectiveness at the time of the incident was 84%. The analysis confirmed time of day, i.e., performance impacted by the time of circadian low, as contributing to an increased risk of impaired performance at the time of the incident.



Modeling analysis output shows estimated performance effectiveness for the period leading up to the incident, based on the Fire Protection Technician work and reported sleep schedule. Estimates were based on the employee's work schedule, bed, and wake times from the day before the incident and reported habitual sleep durations (6 hours of sleep in the evening leading up to the incident, a total of 10 hours of sleep on the 24 hours preceding the incident, and a habitual sleep duration of 9 hours). Bold portions of the modeled curve show work (in black) and sleep times (in blue). Effectiveness is shown on the vertical axis, with colored fields in the chart background signifying ranges of effectiveness scores, including high effectiveness (>90%) in green and low effectiveness (<65%) in red. Time is shown on the horizontal axis. Markers for work and sleep times are shown in the lanes above the time of day on the horizontal axis.

Post-Incident Toxicology Testing

At the time of this incident, the PLNT personnel involved was not removed from service for post-incident toxicology testing due to the late report of the serious injury event to ROCC and the need for post-accident medical attention. Under WMATA's current Drug and Alcohol Policy and Testing Program Policy Instruction 7.7.3/6 5.0.2 testing categories, *"Nothing in this P/I shall be construed to require the delay of necessary medical attention for the injured following an accident or to*

prohibit a covered employee from leaving the scene of an accident for the period necessary to obtain assistance in responding to the accident or to obtain necessary emergency medical."

Weather

At the time of the incident, National Oceanic and Atmospheric Administration (NOAA) recorded the temperature as 50°F and clear. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: NOAA – Location: Washington, DC.)

Findings

- The Fire Protection Technician was working inside the work area at the time of the incident.
- The Fire Protection Technician reportedly injured their left foot while picking up their tools [monster hose] from the roadway, subsequently slipping on a wet surface resulting in a left ankle fracture, which was originally reported as a foot injury.
- The MSRPH Treatment of Injuries under Section 4 Safety Rules does not specify notification for minor injuries to ROCC for subsequent notification to SAFE for WMSC Program Standard compliance.
- PLNT maintenance entered an SMS I/A in the system of records before the injured employee end of tour but failed to report the incident to ROCC.
- The terrain or slope created a pooling situation at Shaw Howard U Station, where the water drained slower from the area.
- The Fire Protection Technician did not use a discharge hose to direct water from the work location.
- Drain potentially clogged and unable to accommodate a heavy flow of water (500 GPM).
- At the time of the incident, the work instructions process was submitted for review for Standpipe and hydrostatic testing approval. PLNT is working with OEM to finalize these draft checklists.
- The Fire Protection Technician received OJT; however, there were no written instructions to follow.
- The Fire Protection Technician was working in standing water with no visibility to survey ground conditions.
- The Fire Protection Technician's typical shift is dayshift, however they did not work for the two days preceding the overtime work.
- The Fire Protection Technician was working overtime on the midnight shift at the time of the incident.
- The Fire Protection Technician was not a direct report of the midnight shift supervisor.
- PLNT senior management was unaware of procedures PLNT PM-22-5500-02 and PLNT PM-22-5500-22 were finalized and approved for staff usage.

Immediate Mitigation to Prevent Recurrence

- The injured Fire Protection Technician self-transported to Anne Arundel Hospital.
- SAFE industrial hygienist department conducted a JHA of Standpipe acceptance testing to evaluate the job functions work conditions.
- PLNT sent the injured Fire Protection Technician to body mechanics class upon return.

Probable Cause

The probable cause of the serious injury at Shaw Howard U Station on April 12, 2021, was the absence of a Testing and Maintenance Checklist outlining the use of a discharge hose to divert water from a work location while conducting annual testing. While the processes and checklists that were developed for usage were submitted as part of a CAP Closure, management was unsure of their approval status on the date of the incident.

The absence of proper work instructions and insufficient training caused a standing water condition that prevented the Fire Protection Technician from surveying the trackbed for hazardous ground conditions such as track components. Consequently, driving the Fire Protection Technician to fracture their ankle after unknowingly positioning their foot on the running rail while removing equipment on the roadway.

As a contributing factor to the event, the drainage system is not designed to accommodate significant amounts of water such as 500 GPM but engineered as runoff to divert rainwater. Further contributing to this event was the terrain and slope, which may have created a pooling situation slowing drainage in the area.

Recommendations/Corrective Actions

Corrective Action Code	Description	Responsible Party	Due Date
92752_SAFECAPS_PLNT_001	(CF-1) Develop a lessons learned for those that perform this function to ensure employees use a discharge hose to divert water from the monster hose at a work location	PLNT	3/25/2021
92752_SAFECAPS_PLNT_002	(RC-1) Develop a test and maintenance checklist that outlines standpipe and hydrostatic testing processes.	PLNT	3/25/2021
92752_SAFECAPS_PLNT_003	(CF1, CF3) Re-instruct management on injury reporting procedures and undergo incident and investigation training	PLNT	4/16/2021
92752_SAFECAPS_PLNT_004	(RC-1) Enroll the Fire Protection Technician in a body mechanics training course.	PLNT	6/12/21

Note that since this incident, SAFE published Safety Bulletin #21-04, “Rail Safety Event Reporting Requirements For All Personnel,” that was emailed to all WMATA personnel highlighting MSRPH General Rule 1.32: “Employees involved in, witnessing, or informed of an accident or incident, to include near misses, on the Metrorail system shall inform their supervisor, Transit Police, ROCC and/or other appropriate authority as soon as possible, and shall file written report.” The Bulletin also emphasized required reporting for major incident, including Serious Injuries as defined in the WMSC Program Standard.

Appendices

Appendix A – Interview Summaries

Fire Technician

WMATA employee with eight years of experience as a Fire Protection Technician and ten years of service in various roles such as medical compliance assistant.

The narrative below summarizes the interview with SAFE and represents the statements made by the involved individual. As such, times and details may present a conflict with the data contained in systems of record.

Based on the SAFE interview, the Fire Protection Technician is typically a dayshift employee. The Fire Technician worked overtime that night conducting Hydrostatic testing on the tunnel fire line standpipe system at Shaw-Howard U Station under Supervisory outage at VE-4. After completing the Hydrostatic testing on the tunnel standpipe, they began to walk down the track approximately 700 feet, the Fire Technician removed the "Monster" gauge open hose valve after reaching the acquired 200 psi on the line and 23 PSI at the gauge per NFPA to pass criteria. The Fire Technician reported Shaw Howard U Station tail track was filled with approximately 6 inches of water; no drains were located near the testing area at VE-4.

The Fire Protection Technician reported the head of the rail was covered with water in their work location due to the 500 gallons per minute testing pumped into the fire line. When the Fire Protection Technician unhooked their equipment, they stepped on the running rail, subsequently slipping, and their foot rolled. The Fire Protection Technician attempted to walk it off. When the Fire Protection arrived back at the field office, they removed their shoe and observed that their foot was swollen. The Supervisor and Fire Protection Technician filled out an incident report on the WMATA Witness or Employee Statement Form and generated a record in SMS Incidents/Accidents. The employee self-transported to the emergency room after their tour of duty. According to the medical professional, the Fire Protection Technician suffered a torn ligament causing two fractured bones in their left ankle.

The Fire Protection Technician stated that a pre-job safety briefing was conducted. The safety briefing covered hazards associated with the job, i.e., flashlight, watch your footing, and the third rail. The Fire Protection Technician did receive a copy of the tunnel map showing respective equipment locations, emergency egress, and Chain Markers, with the exception of drainage areas. The Fire Protection Technician noted they received OJT from experienced personnel; however, there was no documentation for reference. The Fire Protection Technician said this was the second or third-time water backed up at a drain location. When the Fire Protection Technician unhooked their equipment, they stepped on the running rail, subsequently slipping, and their foot rolled.

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202104106200	**Track Access:**	True
Dates Requested:	04/12/2021 00:30 to: 04/12/2021 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	0
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	[redacted]	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	SCI VE 4		

Location, Work Type and Description

Location:	Mainline
Non-Wayside Location Type:	
Request Type:	Regular
Charge Job Number:	
Contract Number:	
Maximo Work Order:	
Request Group:	No
Location Description:	
Request Description:	Testing Tunnel Standpipe System
Work Type:	Fire Line Testing
Meeting Location:	
PB Meeting Location:	
Tools and Equipment:	Hand Tools PPE
Equipment on Track:	

Track 1			Track 2			Track 3		
Actual Work Area:	E038+00	E046+66	**Actual Work Area:**	E038+00	E045+30	**Actual Work Area:**	E036+51	E043+19
Protected Work Area:	E033+00	E051+66	**Protected Work Area:**	E033+00	E050+30	**Protected Work Area:**	E036+27	E043+27

Hot Stick Info. Third Rail Gaps:

From	To	Track ID
E025+97	E033+97	1
E034+29	E035+09	1
E035+37	E051+35	1
E025+97	E033+97	2
E034+53	E050+30	2
E036+51	E043+19	3

Date & Time

As of 04/13/2021 16:30
1 of 4

Attachment 1 – Page 1 of 4.

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202104106200	**Track Access:**	True
Dates Requested:	04/12/2021 00:30 to: 04/12/2021 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	0
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	PLNT/BMSS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	SCI VE 4		

Start: 04/12/2021 00:30 **End:** 04/12/2021 04:00

Contacts

Entered by

[redacted]

Work:

Cell: [redacted] **Home:**

Requestor

[redacted]

Work: [redacted]

Cell: **Home:**

WMATA Manager

George Davis
gwdavis@wmata.com

Work: [redacted]

Cell: **Home:** [redacted]

Emergency Contact

[redacted]

Work: [redacted]

Cell: **Home:** [redacted]

Support

SUPPORT GROUP	Crew Size
PLNT	2

Request Change History

Date	Event
02/11/2021 03:43	Request was created.
03/26/2021 07:26	Request was edited. Field(s) changed: Location. Location: Track 1 Actual: E038+00 E053+00 Protected: E033+00 E058+00, Track 2 Actual: E038+00 E053+00 Protected: E033+00 E058+00, Track 3 Actual: E036+51 E043+19 Protected: E036+27 E043+27 to Track 1 Actual: E038+00 E046+66 Protected: E033+00 E051+66, Track 2 Actual: E038+00 E045+30 Protected: E033+00 E050+30, Track 3 Actual: E036+51 E043+19 Protected: E036+27 E043+27.
03/29/2021 14:17	Request status was changed to Approved
04/12/2021 01:46	Work Prep was completed.
04/12/2021 04:31	Request status was changed to Opened
04/12/2021 07:34	Request status was changed to Closed

Attachment 1 – Page 2 of 4.

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202104106200	**Track Access:**	True
Dates Requested:	04/12/2021 00:30 to: 04/12/2021 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	0
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	PLNT/BMSS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	SCI VE 4		

Request Group

Request Number	Description

Piggyback

Request Number	Order	Inherits Rights	Request Status	Piggyback Status	Track	Protected Area Start	Protected Area End
202103904331 E01 TPSS Upgrade Track Feeder Cables {TRPM}	SR	N/A	Closed	Agreed	1	E025+97	E051+66
202103904331 E01 TPSS Upgrade Track Feeder Cables {TRPM}	SR	N/A	Closed	Agreed	3	E036+27	E043+27
202103904331 E01 TPSS Upgrade Track Feeder Cables {TRPM}	SR	N/A	Closed	Agreed	2	E025+97	E050+30
202104106200 SCI VE 4	JR-0	Yes	Closed	Agreed	3	E036+27	E043+27
202104106200 SCI VE 4	JR-0	Yes	Closed	Agreed	2	E033+00	E050+30
202104106200 SCI VE 4	JR-0	Yes	Closed	Agreed	1	E033+00	E051+66

Piggyback History

Date	User	Event
03/26/2021 07:26	[redacted]	Piggyback with Senior Request 202103904331 was formed. Cause: Piggyback invitation was sent.

Red Tag information

Red Tag #: Request is not Red Tag.

Comments

By	On	Comment
Wayne Branch	2/10/2021 10:43:19 PM	Testing System to place back in service for Fire Life Safety concerns
By	**On**	**Comment**

GOTRS - GENERAL ORDERS & TRACK RIGHTS SYSTEM
Track Rights Request

Request Summary

Request Number:	202104106200	**Track Access:**	True
Dates Requested:	04/12/2021 00:30 to: 04/12/2021 04:00	**Clear In Ten:**	False
Request Status:	Closed	**Equipment on Track:**	0
Requestor:	[redacted]	**Allow Piggybacks:**	True
Requestor Organization:	PLNT/BMSS	**In Piggyback:**	Yes, Junior
Switch Order:		**Power Outage:**	Supervisory
Lock Out / Tag Out:		**Additional AC:**	
Request Title:	SCI VE 4		

Comments

[redacted]	3/26/2021 3:26:46 AM	Please accept my piggy so that we can test a fire life safety asset?

Close-Out Summary

As of 04/13/2021 16:30
4 of 4

Attachment 1 – Page 4 of 4

PLNT Fire Protection Technician

Witness or Employee Statement Form

Washington Metropolitan Area Transit Authority

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

Complete all Fields (Write *N/A* if field does not apply)

Involved Personnel (WMATA Employees and Contractors)

Name (Last Name, First Name, MI)	Witness?	D.O.B.	Employee ID	Union
[redacted]	○ Yes ◉ No	[redacted]	[redacted]	689

Phone Number	Job Title	Department/Division (Company)	Time asleep, before the incident?
[redacted]	Fire Tech AA	PLNT / BMSS	Fell Asleep 4:00 pm Wake up 10:00 pm
Last Day Worked (Prior to)	**Hours Worked (in last 24 hours)**	**Date/Time Shift Began**	Was this the sleep schedule for the last seven days, including days off? Yes ○ No ◉
04/09/2021		04/11/2021	
On Overtime? ◉ Yes ○ No	Personal Protective Equipment used (list) Yes Helmet,Safety Glasses,Safety Boots,gloves		How alert were you immediately prior to the incident? Fully Alert ◉ Moderately Alert ○ Drowsy ○ Fighting Sleep ○

Secondary Employment (Write *None* if employee does not have secondary employment)

Name of Secondary Employer		Work Hours
None	☐ Full Time ☐ Part Time	
Secondary Employer Full Address		
Date of Hire	Supervisor	Phone Number

Employee Injury Information (Complete for all involved People. If there is no injury, write *None* in Date of Injury)

Date of Injury	Time of Injury	Date/Time Injury Reported	Body Part(s) Injured:
04/12/2021	2:00 am	04/12/2021 2:00 AM	Left Foot/Ankle

Location (Address) where injury occurred (check one: ○ MD ○ VA ◉ DC)

E02 Shaw Howard Metro Station

Witness Information (Name, Phone Number, Email, address)

[redacted]

Did Another Person Cause this Injury? ○ Yes ◉ No	Name of Responsible Party
Responsible Party Insurance Carrier/Agent	Phone Number
Are you able to Continue Work? ○ Yes ◉ No	Name/Address of facility where you will seek treatment: Anne Arundel Medical Center
Doctor's Phone Number: [redacted]	Date you will see your doctor: 04/12/2021

Employee, please read before signing:

(1) This form is only to be used for Employees who are injured on the job.

(2) All persons having a workers' compensation claim that was caused by the act of another is required to have the written approval of the Authority before agreeing to or signing any settlement for the injuries or lost wages that were paid as part of the whole by the Authority or its insurer to the employee as workers' compensation benefits.

(3) Any Employee who willfully makes any materially false or misleading statements or representations for the purpose of obtaining any benefits under workers' compensation or leave provisions of the Authority may be subject to prosecution, disciplinary action up to and including dismissal and may adversely affect the employee's rights to workers' compensation benefits.

THIS IS TO CERTIFY THAT I HAVE READ THE ABOVE GUIDELINES AND UNDERSTAND THEM FULLY AND THE INFORMATION I HAVE PROVIDED IS TRUE AND CORRECT.

Employee Signature: [redacted] Date: 4/12/21

Original: RISK Copy: (1) SMS Incidents/Accidents (SAFE) (2) Employee File (3) Employee

Attachment 1 – Page 1 of 2

Witness or Employee Statement Form

Washington Metropolitan Area Transit Authority

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

Incident Information

Date	Incident Time	Date/Time Reported	Location
04/12/2021	2:00 am	04/12/2021	E02

Incident ID# (from OCC) – *Completed by Supervisor*	SMS Incidents/Accidents Report# *Completed by Supervisor*
8533808	

Involved Person or Witness (Non-WMATA Involved Person or Witness)

Name	Phone Number	E-Mail
[redacted]	[redacted]	[redacted]

Address [redacted]

What happened prior to the incident/accident?

I was performing a flow test of standpipe system VE-4 in the tunnel @ E-02.

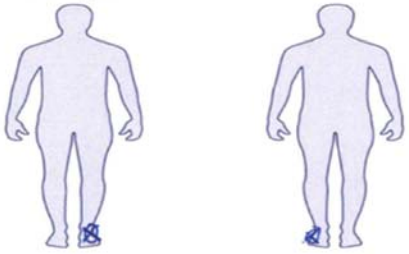
Describe the incident/accident

I was attempting to pick up my equipment from out of the track bed when my left foot slipped and twisted up under water.

What happened after the incident/accident?

I immediately noticed pain in my left foot/ankle area which caused me pain when I tried walking on it.

Please indicate the area of the injury by placing an X on the corresponding body parts below. To specify which side of the body is involved, please use "L" for left and "R" for right.



Customer/Witness Signature: [redacted] Date: 4/12/2021

Employees Turn Over to Complete

Attachment 1 – Page 2 of 2

Witness or Employee Statement Form
Washington Metropolitan Area Transit Authority

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

Complete all Fields (Write *N/A* if field does not apply)

Involved Personnel (WMATA Employees and Contractors)

Name (Last Name, First Name, MI)	Witness?	D.O.B.	Employee ID	Union
[redacted]	⊙Yes ○ No	[redacted]	[redacted]	689

Phone Number	Job Title	Department/Division (Company)	Time asleep, before the incident?
[redacted]	Fire Tech B	PLNT / BMSS	Fell Asleep 4:00 pm Wake up 10:00 am
Last Day Worked (Prior to)	**Hours Worked (in last 24 hours)**	**Date/Time Shift Began**	Was this the sleep schedule for the last seven days, including days off? Yes ○ No ⊙
04/09/2021	0	04/11/2021	
On Overtime? ⊙ Yes ○ No	Personal Protective Equipment used (list): Yes Helmet,Safety Glasses,Safety Boots,gloves		How alert were you immediately prior to the incident? Fully Alert ⊙ Moderately Alert ○ Drowsy ○ Fighting Sleep ○

Secondary Employment (Write *None* if employee does not have secondary employment)

Name of Secondary Employer		Work Hours
None	☐ Full Time ☐ Part Time	
Secondary Employer Full Address		
Date of Hire	Supervisor	Phone Number

Employee Injury Information (Complete for all involved People. If there is no injury, write *None* in Date of Injury)

Date of Injury	Time of Injury	Date/Time Injury Reported	Body Part(s) Injured:

Location (Address) where injury occurred (check one: ○ MD ○ VA ⊙ DC)

Witness Information (Name, Phone Number, Email, address)
[redacted]

Did Another Person Cause this Injury? ○ Yes ⊙ No	Name of Responsible Party
Responsible Party Insurance Carrier/Agent	Phone Number
Are you able to Continue Work? ○ Yes ⊙ No	Name/Address of facility where you will seek treatment
Doctor's Phone Number	Date you will see your doctor

Employee, please read before signing:

(1) This form is only to be used for Employees who are injured on the job.
(2) All persons having a workers' compensation claim that was caused by the act of another is required to have the written approval of the Authority before agreeing to or signing any settlement for the injuries or lost wages that were paid as part of the whole by the Authority or its insurer to the employee as workers' compensation benefits.
(3) Any Employee who willfully makes any materially false or misleading statements or representations for the purpose of obtaining any benefits under workers' compensation or leave provisions of the Authority may be subject to prosecution, disciplinary action up to and including dismissal and may adversely affect the employee's rights to workers' compensation benefits.

THIS IS TO CERTIFY THAT I HAVE READ THE ABOVE GUIDELINES AND UNDERSTAND THEM FULLY AND THE INFORMATION I HAVE PROVIDED IS TRUE AND CORRECT

Employee Signature: [redacted] Date: 4-12-2021

Original: RISK Copy: (1) SMS Incidents/Accidents (SAFE) (2) Employee File (3) Employee

Attachment 1 – Page 1 of 2

Witness or Employee Statement Form

Washington Metropolitan Area Transit Authority

TO BE COMPLETED AND DISTRIBUTED WITHIN 24 HOURS

Incident Information

Date	Incident Time	Date/Time Reported	Location
04/12/2021	2:00 am	04/12/2021	E02

Incident ID# (from OCC) – *Completed by Supervisor*	SMS Incidents/Accidents Report# *Completed by Supervisor*
8533808	

In [redacted] or Witness (Non-WMATA Involved Per [redacted] [redacted]

Name	Phone Number	E-Mail
[redacted]	[redacted]	[redacted]

Address [redacted]

What happened prior to the incident/accident?

I was performing a flow test of standpipe system VE-4 in the tunnel @ E-02.

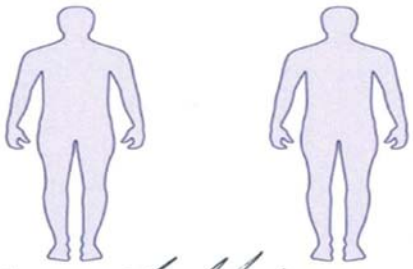
Describe the incident/accident

I witnessed my co-worker [redacted] twist his ankle while picking up equipment in the track bed.

What happened after the incident/accident?

My co-worker complained of pain in his left foot/ankle.

Please indicate the area of the injury by placing an X on the corresponding body parts below. To specify which side of the body is involved, please use "L" for left and "R" for right.



Customer/Witness Signature: [redacted] Date: 4-12-2021

Employees Turn Over to Complete

Appendix C – Job Hazard analysis

Activity/Work Task: Standpipe Testing		**Overall Risk Assessment Code:** *use highest code*	☐ Extremely High ☐ High ☒ **Moderate** ☐ Low			
Frequency/Duration: Each automatic system tested every 5 years. PLNT conducts testing weekly.	*Risk Assessment Code (RAC) Matrix*					
Date Prepared: May 1, 2021		*PROBABILITY*				
	SEVERITY	*Frequent*	*Likely*	*Occasional*	*Seldom*	*Unlikely*
Prepared by: SAFE	*Catastrophic*	*E*	*E*	*H*	*H*	*M*
	Critical	*E*	*H*	*H*	*M*	*L*
Reviewed by: SAFE	*Marginal*	*H*	*M*	*M*	*L*	*L*
	Negligible	*M*	*L*	*L*	*L*	*L*
Notes: Be aware of drain locations. Keep drains clear. Stop process if water is not draining. Remember water pressure increases underground.	*Review Each Hazard and Control and Determine RAC*					
	Probability is the likelihood to cause an incident or near miss			*RAC CHART*		
	Severity is the magnitude of the outcome			*E = Extremely High Risk*		
				H = High Risk		
	Identify the RAC as E, H, M or L for each Hazard			*M = Moderate Risk*		
				L = Low Risk		

Job Steps	Safety Hazards	Hazard Controls	RAC
• Verify static pressure on fire hydrant. • Attach fire hose from pump apparatus discharge connection(s) to the fire department connection. Confirm maximum allowable pressure. • Set up Hose Monster at the most remote valve location. • Slowly build up pressure until the correct pressure is reached. Follow flow test procedure on "Inspection, Testing and Maintenance Checklist" for PLNT PM-22-5500-02.	1. Over Pressurization 2. Struck/ Caught By	1. Use Hose Monster flow chart to verify PSI and GPM on gauges. 2. Tie down Hose Monster. Stand clear of hoses. Employee training must account for elevation changes (i.e. underground systems and above ground systems will all have different PSI than the fire department connection).	1. M 2. M
	3. Slips & trips [working surfaces]	3. Keep area free of debris. Provide adequate lighting. Wear slip resistant footwear. Use water discharge diversion devices when needed. Follow safe walking practices.	3. M
	4. Moving Vehicle	4. Wear a safety vest. Provide adequate lighting. Follow RWP procedures on the roadway.	4. M

Equipment to be Used	Competent or Qualified Persons Training	Inspection Requirements
Hand tools, water flow discharge diversion devices, pressure gauge, fire hoses, Hose Monster flow measuring device, pitot gauge, stopwatch, RWP PPE.	PLNT employee standpipe training should include NFPA 25, 14, 130. Employees should use and be trained on the "Standpipe Acceptance Testing Report – Flow / Flush Test" form from the Office of the Fire Marshal and "Inspection, Testing and Maintenance Checklist" for PLNT PM-22-5500-02. RWP training require for testing on the roadway.	NFPA 25 *Standard for the Inspection, Testing and Maintenance of Water-Based Fire Protection Systems.* NFPA 14 *Standard for the Installation of Standpipe and Hose Systems.* NFPA 130 *Standard for Fixed Guideway Transit and Passenger Rail Systems.*

Attachment 1 – Standpipe Job Hazard Analysis page 1 of 1

E02

WMATA ROADWAY JOB SAFETY BRIEFING FORM

DATE: 4-11-21 TRACK TIME ON/OFF: 0135/0300

RWIC NAME: [redacted] CALL#: 4011 EMPLOYEE #: 118062

RWIC's CELL PHONE NUM[redacted] RADIO OPS CHANNEL: 3

SAFETY RULE OF THE DAY: Watch your footing

WORK ASSIGNMENT: Fire Line Test DIRECTION OF TRAFFIC: INBOUND ☐ OUTBOUND ☐

RAIL LINE: A B C D (E) F G J K L N TRACK 1 X 2 X 3 X WORK LIMITS CHAIN MARKER(s): 45+00 - 45+50

PLACE OF SAFETY: catwalk / platform

TYPE OF PROTECTION(s): IT _____ ETO AUTHORITY _____ ETO LOCAL SIGNAL _____ AMF _____ FT _____

REQUEST FROM ROCC: BLOCK CALLS ☐ CANCEL AUTOMATIC SIGNALS ☐ PROHIBIT EXITS ☐

RED HOT SPOT(s) TYPE/LOCATION(s): ☐ RED HOT SPOT HAZARDS ☐ ETS/RADIO OUTAGE ☐

FOUL TIME PROTECTION CAN BE REQUESTED IN ALL WORK ZONE CONFIGURATIONS

POWER OUTAGE: LOCK OUT TAG OUT _____ RED TAG _____ SUPERVISORY X NO POWER OUTAGE _____

RED TAG NUMBER: _____ RED TAG HOLDER: [redacted]

WATCHMAN/LOOKOUT ASSIGNED: Yes____No____ WATCHMAN/LOOKOUT NAMES(s): _____

WATCHMAN/LOOKOUT EQUIPPED WITH AIR HORN AND WHISTLE **("W" Warning Disc required for fixed work zones):** ☐

WATCHMAN/LOOKOUT MUST BE PROPERLY SPACED AND HAVE SUFFICIENT SIGHTING DISTANCE TO PROVIDE AMPLE WARNING

ADVANCE MOBILE FLAGGER ASSIGNED: Yes____No____ ADVANCE MOBILE FLAGGER CALL #(s): _____

ADVANCE MOBILE FLAGGER EQUIPPED WITH AMBER LANTERNS/E-FLARES, ORANGE FLAG, AIR HORN, WHISTLE AND RADIO: ☐

PIGGY BACK CREW LEADER CALL #(s): 1246 PIGGY BACK WORKZONE CM(s): _____

PIGGY BACK WORK ASSIGNMENT: Cable Feeders

NUMBER OF RMM(s): Ø RMM OPERATIONS IN WORK ZONE: Ø

ALL ROADWAY WORKERS MUST EXERCISE GOOD JUDGEMENT AND CONSIDER THE FOLLOWING POTENTIAL HAZARDS AND PROCEDURES BEFORE ENTERING THE ROADWAY:

WEATHER CONDITIONS	☐	**TRIPPING HAZARDS / UNEVEN WALKING SURFACES**	☐
TRACK GRADE AND VISIBILITY	☐	**POOR LIGHTING / TUNNEL AND VENT SHAFT(S)**	☐
HAZARDS ASSOCIATED WITH RAIL VEHICLE MOVEMENT	☐	**TRAIN / CURVE SPEED(s)**	☐
WORK SITE CONDITIONS AND ACTIVITIES	☐	**ETS BOX(s) LOCATIONS**	☐
EMERGENCY PROCEDURES	☐	**EQUIPMENT AND TOOL SAFETY**	☐
ADJACENT TRACK PROTECTION	☐	**ROTATION AND RELIEF PROCEDURES**	☐

Rv. 3 WMATA Roadway Job Safety Briefing Form, Date: November 2018

Attachment 1 – Pre-job Safety Briefing page 1 of 2

WMATA ROADWAY JOB SAFETY BRIEFING FORM

ROADWAY WORKERS HAVE THE RIGHT AND RESPONSIBILITY TO INITIATE A GOOD FAITH CHALLENGE WHEN NECESSARY

Inspect PPE ☒ Inspect RWP Sticker ☒ Inspect Radio(s) Certification Due Date ☐ Perform Radio Check(s) ☐

ROADWAY WORKER ACKNOWLEDGEMENT

I understand and agree with all aspects of the Roadway Job Safety Briefing I just received. I feel I am adequately protected from any train movement or roadway hazards. I understand I have a responsibility to conduct myself in a safe manner at all times.

Roadway Worker Signature	Employee/Contractor ID #	Crew Leader(s) Signature/ID#		Radio Call #
[redacted]	0	[redacted]		[redacted]
	[redacted]			

RWIC COMMENTS: _____

RWIC SIGNATURE: [redacted] DATE/TIME: 4-12-21/0106

RELIEVING RWIC: _____ DATE/TIME: _____

GOOD FAITH CHALLENGE INFORMATION

EMPLOYEE(s) NAME:_____ EMPLOYEE(s)#_____ DATE/TIME_____

RWP ISSUE(s)_____ ISSUED RESOLVED: Yes___ No___

Rv. 3 WMATA Roadway Job Safety Briefing Form. Date: November 2018

Attachment 1 – Pre-job Safety Briefing page 2 of 2

April 26, 2021

To: [redacted]

From: [redacted]

Subject: Managerial Preliminary Report for [redacted] Injury 4-12-21

On Monday, April 12, 2021 at 0200 hrs. AA Fire Tech [redacted] injured himself on the roadway on Track 1 CM: 45+00 at VE04 Vent Shaft Fire line in the area of Shaw Howard Metro Station. The Fire Equipment Shop and Plumbing Shop were in the process of conducting an annual fire line test which involve a Hydro and Flow Test. All work has been completed. (WO# 16267228) While gathering up the equipment to vacate the track Mr. [redacted] turned around to disconnect the hose valve his foot was standing on the running real and slipped between water and concrete. That caused his left ankle to twist and roll over. He immediately notified his supervisor. His supervisor asked if he needed medical attention. Mr. [redacted] stated he would try and walk it off. The crew proceeded to leave the track bed and return to CTF. Once they returned to the fire shop Mr. [redacted] took off his safety boot and noticed his ankle and foot was swollen. At that time, he decided he needed to seek medical attention. He notified his supervisor again and they started to do the injury paperwork. Once the paperwork was complete, he transported himself to Anne Arundel hospital.

After getting x-rays it was determined that [redacted] had a fracture foot.

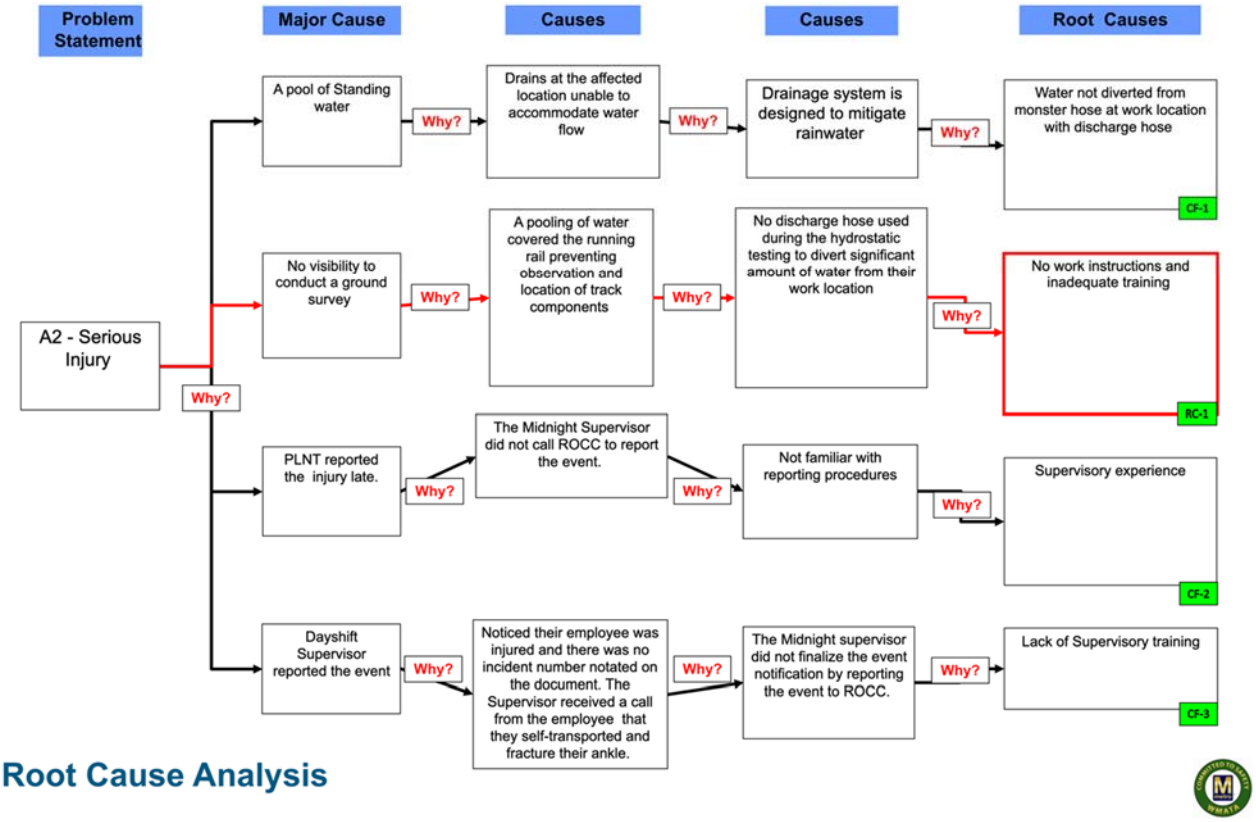
I interview [redacted] supervisor and asked him why he did not take Mr. [redacted] to seek medical attention. He stated Mr. [redacted] said he would take himself. I instructed his supervisor that the next time an injury happens he needs to transport the member to the hospital. I also need the supervisor to take more classes in reference to investigation to injury and accidents.

Corrective actions for this incident will include Body Mechanics Training for Mr [redacted] and it will be scheduled for [redacted] when he returns to for duty.

Washington Metropolitan Area Transit Authority

600 Fifth Street, NW
Washington, DC 20001

Appendix F – Root Cause Analysis



Attachment 1 – Root Cause Analysis page 1 of 1.