

**FINAL REPORT OF INVESTIGATION A&I E18524**  
November 19, 2018  
Serious Injury

W-0025

*Adopted by the Washington Metrorail Safety Commission at its meeting on March 12, 2020.*

Washington Metrorail Safety Commission  
777 North Capitol Street, NE, Suite 402  
Washington, DC 20002



**FINAL REPORT OF INVESTIGATION A&I E18524**

**SMS 20181127#75867**

<b>Date of Event:</b>	11/19/2018
<b>Type of Event:</b>	Serious Injury
<b>Incident Time:</b>	16:10 hrs.
<b>Location:</b>	Branch Avenue Yard - Track F99/96
<b>Time and How received by SAFE:</b>	23:55 hrs., CTEM Personnel notified SAFE via Email
<b>Safety Officer Response:</b>	None
<b>Time of Safety Officer Arrival:</b>	N/A
<b>Time of Safety Officer Departure:</b>	N/A
<b>Rail Vehicle:</b>	N/A
<b>Injuries:</b>	2 <sup>nd</sup> Degree Burn to Left Hand and Wrist
<b>Damage:</b>	N/A
<b>Emergency Responders:</b>	Car and Track Equipment Maintenance (CTEM) Supervisor

**Executive Summary**

On November 19, 2018 at approximately 16:10 hrs., a Car and Track Equipment Maintenance (CTEM) employee at Branch Avenue Yard, Track F99/96, suffered second degree burns to the hand and wrist after spraying the mist from an aerosol can onto a low voltage battery connector that was being handled by the injured employee. The injured employee was transported to MedStar Washington Hospital Center by the Supervisor for treatment with non-life-threatening injuries. No further damage was reported to the low voltage battery connector or any component within the vicinity of the incident.

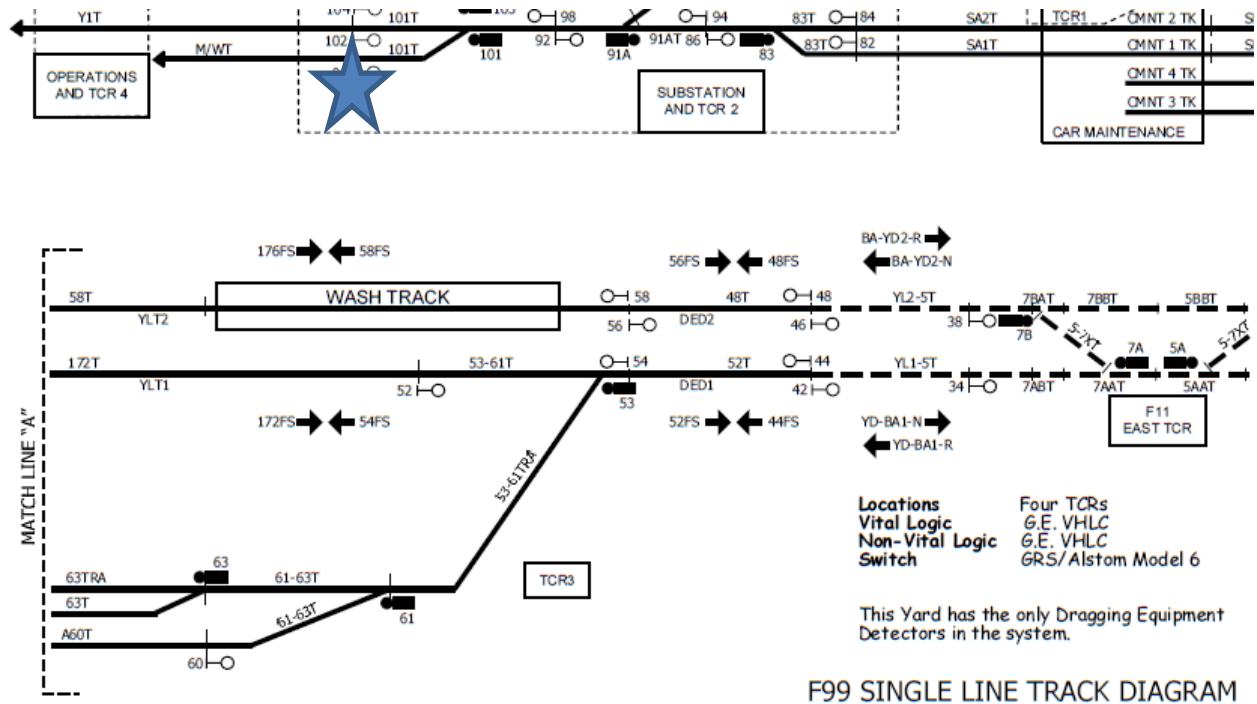
**Notification**

<b>Title</b>	<b>Time</b>	<b>Comment:</b>
<b>FTA</b>	12:39 hrs. 11/20	FWSO Email Notification
<b>TOC</b>	12:39 hrs. 11/20	FWSO Email Notification

## Incident Site

Branch Ave Yard – Storage Track F99/96

## Field Sketch/Schematics



## Investigation

On November 19, 2018 at approximately 16:10 hrs., a Car Track Equipment Maintenance (CTEM) employee was assigned to repair a propulsion issue with Prime Mover(PM)-65 in the Branch Avenue Yard, Track F99/96. The employee reported receiving second degree burns to his left hand and wrist. The employee was cleaning an electrical solenoid with a product known as "No-Clean Flux Remover" (WMATA Stock Number 061000512). While the employee was cleaning the solenoid, the spray ignited within the work space. After ignition, the employee's hand and coat sleeve caught on fire. The employee put the flame out by rubbing his hand and arm onto the track ballast and suffered burns to the left hand and left wrist. The employee was wearing safety glasses and WMATA issued yellow jacket, however the employee was not wearing all the required Personal Protective Equipment (PPE) as required by the Safety Data Sheet (SDS) for the product being use. The employee was transported to MedStar Washington Hospital Center by the Supervisor for treatment and was discharged on 11/19/2018 at 19:13 hrs. There was no damage caused to the equipment.

**NOTE:** The No-Clean Flux Remover product has an approved SDS. It was submitted as a cleaner/degreaser for use in the electronics shops. It is an extremely flammable product. The product should be used in a well-ventilated area and local exhaust is recommended. PPE requirements include Chemical Resistant Gloves and Safety Glasses.

### **Human Factors**

Employee's 30-day work history was reviewed, and it was determined that work history was within the WMATA guidelines listed on the Fatigue Risk Management Policy 10.6 and Hours of Service Limitations for Prevention of Fatigue Policy 10.7.

The Post Incident Drug Test results did not indicate a violation of WMATA's Drug and Alcohol policy 7.7.7/5

### **Weather**

At the time of the incident, the temperature was 40° F, and clear. SAFE has concluded that weather was not a contributing factor in this incident. (Source: National Oceanic Atmospheric Administration (NOAA) for Suitland, MD).

### **Conclusion**

Based on the salient facts, SAFE has concluded that the incident was a result of human error. The employee suffered burns to his left hand due to multiple factors. The chemical SDS 13789, No-Clean Flux Remover was not properly followed pertaining to hazards and PPE requirements. The employee was not wearing the chemical resistant gloves listed in the PPE section of the SDS. The SDS calls out that the product is extremely flammable and should not be used around any potential ignition sources. This warning is also indicated clearly on the can with the fire hazard diamond. The circuit was energized during the repair which arced causing the ignition of the chemical used. The employee has received re-instruction training during the CTEM Safety Stand Down for the preventable incident.

Considering all the facts gathered from this investigation, SAFE has no further concerns regarding this incident and recommends E18524 for closure.

### **Corrective actions**

1. CTEM shall take the appropriate action deemed necessary to support prevention of repeated fire incident:
  - a. **CTEM performed a CTEM-wide Safety Stand Down to discuss the incident, the associated hazards and required PPE, and review of the product SDS.**

## Photos

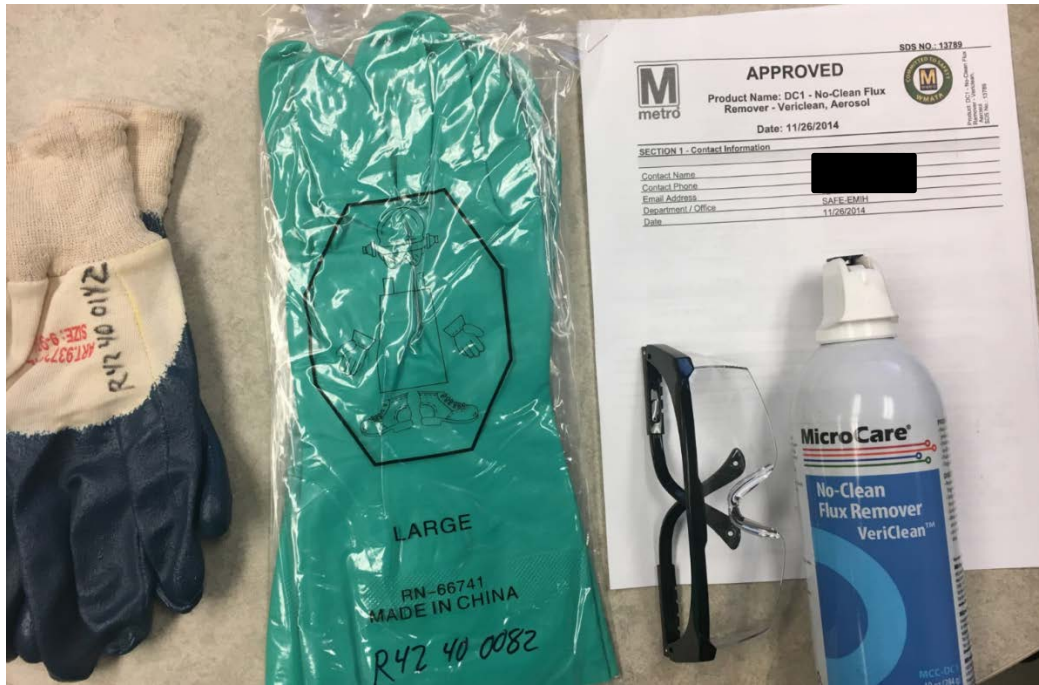


Photo 1 – Depicting required PPE and SDS for DC1-No-Clean Flux Remover