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WMSC Commissioner Brief: W-0045 – Serious Injury at Vienna Station May 1, 2020

Prepared for Washington Metrorail Safety Commission meeting on September 22, 2020

Safety event summary:

A Metrorail contractor working on inappropriately constructed scaffolding in an enclosed area with toxic fumes fell and suffered a broken collar bone at Vienna Station on May 1, 2020 before 9:30 p.m. The contractor was wearing a respirator.

Metrorail had not inspected the scaffolding or ventilation setup.

The contractor was working on paint removal and grinding near the entry gate to the pedestrian bridge over Interstate 66 that connects to the north side of the station.

The crew began work around 8 p.m. There were no witnesses to the injury, but another contractor found the injured contractor on the ground unconscious around 9:30 p.m. and asked a supervisor to call 911.

The work crew removed the injured contractor's respirator and unzipped their outer garments. The injured contractor regained consciousness and was removed from the work area prior to the arrival of paramedics.

An inspection of the area where the contractor was injured showed that the scaffolding did not comply with multiple OSHA requirements. The inspection also identified other OSHA violations regarding ventilation and exhaust controls in the enclosed work area.

It is most likely that the contractor was standing on a scaffolding support arm in order to reach a higher part of the wall. Based on the contractor's injuries, during the fall the contractor's face struck the upper metal decking of the scaffolding and the contractor's right side struck an adjacent support beam, in addition to injuries suffered upon hitting the ground.

Metrorail's Safety Department was notified of this event via email approximately one hour after the injured contractor was discovered.

Probable Cause:

Scaffolding that was not safely constructed and a lack of ventilation are among the contributing factors to this event. Metrorail did not effectively oversee its contractor work areas to ensure that proper safety procedures and safeguards were in place.

Corrective Actions:

Metrorail said its contractor would evaluate its work plans to ensure they are adequate and that the contractor would inspect work areas for proper access and safeguards.

WMSC staff observations:

Metrorail did not confirm that proper OSHA-compliant procedures and safeguards were in place for work that was occurring on Metrorail property. Corrective actions should extend beyond this particular contractor to reduce the risk that a similar incident could occur anywhere on Metrorail property in the future.

Metrorail could also have learned more about the event if SAFE had been able to interview the injured contractor.

Staff recommendation: Adopt final report.

FINAL REPORT OF INVESTIGATION A&I E20181

SMS 20200504#87457

Date of Event:	5/1/2020
Type of Event:	Serious Injury (Minor) requiring Transport
Incident Time:	21:30 hrs.
Location:	Vienna Station
Time and How received by SAFE:	22:33 hrs. – SAFE via email
WMSC Notification Time:	23:16 hrs. – Email
Responding Safety Officers:	WMATA SAFE: No WMSC: No Other: No
Rail Vehicle:	None
Injuries:	Broken collarbone
Damage:	None
Emergency Responders:	Ambulance

Executive Summary

On Friday, May 1, 2020, at 22:33 hrs., the Rail Operations Information Center (ROIC) notified SAFE that at approximately 21:30 hrs., an injury occurred at Vienna Station involving a contractor requiring transport for medical attention. While performing his duties, the contractor fainted and fell off the scaffold, approximately three (3) feet from the ground. The contractor was transported to Inova Fairfax Hospital for further medical evaluation. Upon further investigation, it was revealed the contractor sustained a broken collarbone.

Additionally, the injured contractor was working in an enclosed area and wearing a respirator at the time of the accident. The contractor apparently fainted due to toxic fumes in their work space. Local exhaust ventilation or exhaust fans were not used for this work assignment to ensure personnel were protected from dust, fumes, vapors, or gases in the work area. The enclosed work space also contained scaffolding that was dangerously constructed and failed to meet OSHA Construction Standards. Portions of the working levels were noticeably not fully planked and were erected without the supervision or direction of a competent qualified person. Furthermore, actions taken after the contractor was found unconscious were not justified for the situation. Personnel at the work site removed the contractor mask inside the location where the incident occurred.

Upon completion of an analysis of data collected from systems of records and inspection of the affected area, SAFE concludes appropriate work procedures were not adhered to

on the job site. The scaffold platform on all working levels were noticed not fully planked and were erected without the supervision or direction of a competent qualified person. There were no local exhaust ventilation or exhaust fans available to ensure the required protection by maintaining a volume and velocity of exhaust air sufficient to gather dust, fumes, vapors, or gases to prevent their in the work area.

As a result of its investigation, SAFE makes the following safety recommendation:
Contractor with SAFE Construction Safety support, will evaluate the work plan to ensure it is adequate for the operation and being executed in the field.
Contractor with SAFE Construction Safety support, will inspect work areas for proper access and safeguards before allowing work to commence.

Incident Site

Vienna/Fairfax – GMU Station

Field Sketch/Schematics

N/A

Investigation

The subcontractor employee had been with the company for approximately three months. The injured contractor was performing cleaning operations on the north entry gate at Vienna Station. According to a witness statement, contract employees were performing paint removal and grinding operations. The shift started at 20:00 hrs., and the injured contractor gained access to the inside of the enclosed workspace. The work area contained scaffolding components to assist employees in reaching higher parts of the wall. The injured contractor was wearing a respirator while working on a high wall area using a scaffolding approximately three (3) feet above the ground.

At approximately 21:30 hrs., another contract employee working in the same location noticed the injured employee lying on the ground unconscious but did not witness the fall. This employee informed the Site Inspector of the situation and requested the supervisor to call 911. Personnel at the work site removed the injured employee's respirator and unzipped his outer garments. The injured employee re-gained consciousness and was removed from the enclosed work area. Paramedics arrived on scene at approximately 21:45 hrs., and transported the injured contractor to the Inova Fairfax Hospital. The ambulance departed at approximately 21:55 hrs.

SAFE Construction personnel performed an inspection of the work location and concluded is most probable the injured contractor was using the scaffolding support arm to stand on to assist in reaching a higher part of the wall. While standing on the beam, the injured contractor lost consciousness, and while falling, the right side of their face came in contact with the upper metal decking of the scaffolding. The injured contractor had a noticeable cut underneath his right eye. Additionally, the right side of the middle torso also contacted the support beam adjacent to them as they fell. The Prime Contractor's report states the employee received a fractured collar bone as the result of the fall.

Findings

Scaffold deficiencies

- Scaffold platform on all working levels were noticed not fully planked or decked between the front uprights, not in compliance with OSHA 1926.451(b)(1) and 1926.451(b)(1)(i)
- End plank of scaffold were only cleated or restrained by hooks at one end, not in compliance with OSHA 1926.451(b)(4)
- Scaffolds ends were observed extended over its support more than 12 inches, not in compliance with OSHA 1926.451.(b)(5)(i)
- Scaffold platforms were more than 2 feet above a point of access without a portable ladder, hook-on ladder or attachable ladder, not in compliance with OSHA 1926.451(e)(1) and 1926.451(e)(2)
- Scaffolds and scaffold components were not inspected for visible defects by a competent person before the start of work shift, not in compliance with OSHA 1926.451(f)(3)

- Scaffolds were erected, moved, dismantled, or altered without the supervision or direction of a competent person qualified in scaffold erection, not in compliance with OSHA 1926.451(f)(7)

Ventilation-Engineering controls deficiencies

- In the encapsulated work area, the probability of hazardous substances such as dust, fumes, mists, vapors, or gases exist or where produced in the course of activity, and no ventilation or engineering control methods were noticed, not in compliance with OSHA 1926.57(a)
- No local exhaust ventilation was noticed to prevent dispersion into the air of dust, fumes, mists, vapors, and gases in concentrations, causing harmful exposure to the employees, not in compliance with OSHA 1926.57(b)
- No exhaust fans, jets, ducts, hoods, separators, and all necessary appurtenances, including refuse receptacles, were noticed designed, constructed, maintained and operated as to ensure the required protection by maintaining a volume and velocity of exhaust air sufficient to gather dust, fumes, vapors, or gases to prevent their dispersion in harmful quantities into the atmosphere in the encapsulated work area, not in compliance with OSHA 1926.57(c).

Weather

At the time of the incident, the temperature was 58°F, Humidity 84% and Wind ENE 5.595 mph. SAFE has concluded that weather was not a contributing factor in this incident (Weather source: National Oceanic Atmospheric Administration (NOAA) – Location: Fairfax, VA.)

Human Factors

The injured contractor employee was not available for a SAFE interview before the due date for this report. Numerous attempts have been made to contact the employee with negative results.

Conclusion

Based on salient facts as part of this investigation and photographs of the affected area, SAFE concludes appropriate work procedures were not adhered to on the job site. The scaffold platform on all working levels were noticed not fully planked and were erected without the supervision or direction of a competent qualified person. There were no local exhaust ventilation or exhaust fans available to ensure the required protection by maintaining a volume and velocity of exhaust air sufficient to gather dust, fumes, vapors, or gases to prevent their in the work area. In addition, action taken by contractors after the incident occurred were questionable. Removal of the respirator within the enclosed work space is not the best practice for this type of event. The personnel assisting should have moved the unconscious contractor to a clear location away from the incident prior

to removal of the respirator. The contractor was not available for an interview to discuss to cause of fainting while performing work tasks.

Immediate Mitigation to Prevent Recurrence

- The worksite was closed until the contractor can correct all discrepancies found during SAFE Construction post-incident site inspection.
- Contractor corrected all scaffolding and ventilation-Engineering Control discrepancies as required by OSHA.

Corrective Actions

1. Contractor with SAFE Construction Safety support, will evaluate the work plan to ensure it is adequate for the operation and being executed in the field.
2. Contractor with SAFE Construction Safety support, will inspect work areas for proper access and safeguards before allowing work to commence.

Photos

Photo 1 – Access point to enclosed work area

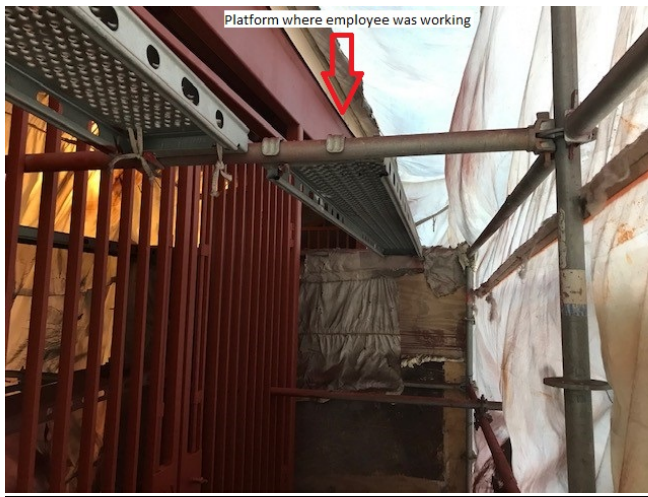

Photo 2 – Approximate area where injured contractor was standing before falling.

Photo 3 – Scaffolding platform area.