CAI-2018-12

UNITED STATES
DEPARTMENT OF LABOR
MINE SAFETY AND HEALTH ADMINISTRATION

COAL MINE SAFETY AND HEALTH

REPORT OF INVESTIGATION

Surface Coal Mine Facility

Fatal Machinery Accident
November 29, 2018

WMPI
Waste Management & Processors Inc.
Gilberton, Schuylkill County, Pennsylvania
ID No. 36-07805

Accident Investigator

Thomas Leshko
Coal Mine Safety and Health Inspector

Jonathan Hall
Mechanical Engineer

Originating Office
Mine Safety and Health Administration
District 2
Paladin Professional Center
631 Excel Drive, Suite 100
Mount Pleasant, Pennsylvania 15666
Russell J. Riley, District Manager

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OVERVIEW

On Thursday, November 29, 2018, at approximately 1:05 p.m., George Ney, a 50-year-old mechanic with 29 years of mining experience, received a critical injury while examining the hydraulic system on a service truck. The hydraulic system had been modified earlier that day, causing excessive pressure to flow to a fitting that burst, propelling a temperature sensor into Ney's forehead. The victim died of his injuries on December 30, 2018.

The accident occurred because Ney and other miners were not trained in safe procedures for working on the hydraulic system.

GENERAL INFORMATION

Waste Management & Processors Inc. (WMPI) is a processing facility that processes anthracite coal for a cogeneration plant. The mine/facility has several anthracite coal refuse banks, owned and operated by WMPI located in Schuylkill County, Pennsylvania. The mine utilizes front end-loaders to load the refuse material into off-road trucks for transportation to its facility on the same site for processing. After processing, the coal is sold from this facility. The mine/facility employs approximately 50 miners working one production shift and one maintenance shift per day, five days a week. The mine/facility processes an average of 1,200 tons of coal daily.

The principal officers for the mine/facility at the time of the accident were:

John W. Rich Jr ..... President
Brian R. Rich ..... Vice President
Michael J. Rich ..... Treasurer
Robert M. Ryan ..... Secretary
David Morgan ..... Mine Superintendent

The previous regular (E01) safety and health inspection was completed on September 24, 2018. The non-fatal days lost (NFDL) incident rate for the mine/facility for 2017 was 2.71 compared to the national average of 2.54 for mine/facilities of this type.

DESCRIPTION OF ACCIDENT

On Thursday, November 29, 2018, at 6:00 a.m., George Ney (victim) and John Seasock, Mechanics, began their shift. They spent the morning performing maintenance on several mining vehicles. Then they went to a garage located at the facility to have lunch.

While in the garage, David Morgan, Mine Superintendent, modified the hydraulic system on the Ford F-550 service truck that he used at the mine. He removed the hydraulic hose reel and replaced it with a hose coupling connecting the hoses together. Morgan then removed the hydraulic oil cooler and plugged its lines with fittings. He started the truck to check for hydraulic leaks, checked the operation of a bed-mounted crane, and then turned off the truck.

After Ney finished his lunch, Morgan asked him if he knew anything about the hydraulics in the right rear compartment of the truck. Ney told Morgan to start the truck and he looked inside the hydraulic compartment. Morgan told Ney he was going to turn off the truck because exhaust fumes were accumulating where Ney was standing. Morgan heard a pop just before he turned off the truck. He walked to the rear of the truck and saw Ney laying on the floor with an injury above his right eye.

Seasock returned to the garage moments later and Morgan told him to call 911. The 911 operator asked Morgan and Seasock to remove the coveralls from Ney and stay with him until the ambulance arrived. An ambulance transported Ney to the Shenandoah, Pennsylvania baseball field, where he was transported by helicopter to Geisinger Medical Center in Danville, Pennsylvania. He remained there until he died on December 30, 2018.

INVESTIGATION OF THE ACCIDENT

On November 29, 2018, at 1:36 p.m., Morgan notified the Department of Labor (DOL) National Contact Center of the accident. The contact center notified Timothy Horton, District 2 Office Assistant. Patrick Boylan, Frackville Field Office Supervisor,

dispatched Thomas Leshko, Coal Mine Safety and Health Inspector/Accident Investigator, to the mine. Leshko arrived at the facility at approximately 2:05 p.m. and issued a 103(k) order to ensure the safety of all persons at the mine.

Mine Safety and Health Administration (MSHA) personnel conducted the accident investigation in conjunction with the Pennsylvania Bureau of Mine Safety (PA BMS) and company personnel. The investigators conducted interviews with miners and photographed the accident scene. Jonathan Hall, Mechanical Engineer with Technical Support, conducted an investigation of the hydraulic system on the truck on November 30, 2018. See Appendix A for a list of persons interviewed and those participating in the accident investigation.

DISCUSSION

Truck and Hydraulic Information

The service truck involved in the accident was a 2009 Ford F-550 purchased by the mine operator in September 2018. The truck was equipped with a power take off hydraulic pump, a Stellar 6620 crane, and outriggers. The truck also had a hose reel containing hydraulic hoses and a hydraulic cooling radiator, which were used for external hydraulic tools.

An "on-off" switch on a panel near the rear of the truck controlled whether hydraulic pressure was directed to the hose reel or the crane. The "on" position typically sent up to 200 psi to the reel while the "off" position sent up to 3,000 psi to the crane (see Appendix B). On the day of the accident, Morgan had modified the hydraulic system to direct 3,000 psi to the reel instead of the typical 200 psi when the switch was in the "on" position. He told investigators that he modified the hydraulic system to remove components that were not needed for operation of the crane.

The hydraulic reel circuit included a brass compression fitting that held a temperature sensor (see Appendix C). The fitting had a maximum rating of 800 psi which is significantly less than the 3,000 psi it was subjected to after Morgan modified the hydraulic system. Ney was examining this area at the time of the accident (see Appendix D).

Likely Scenario

Based on a review of the evidence, inspectors believe it is most likely that Ney turned the on-off switch partially to the "on" position while examining the hydraulic system at close range. This would have directed excessive pressure to the hydraulic reel, causing the temperature sensor to burst from the fitting and strike the victim in the head.

Once the victim was struck, the switch was released, causing it to move back to the "off" position. A small amount of hydraulic fluid was found after the accident. If the

switch remained in the "on" position after the victim was struck, hydraulic fluid would have continued to be pumped out of the fitting.

Training and Experience

George Ney had 29 years of mining experience at this mine. Ney's most recent annual refresher training was received on August 29, 2018. He had no task training on the Ford F-550 truck or the hydraulic system located on the truck. Task training should have included instruction in the safety and health aspects and safe work procedures of the hydraulic system. No course material, or operator's manual, was provided for training the miners to recognize and avoid hazards associated with the hydraulic system.

Morgan was also not trained in the hydraulic system. He was unaware of the effect of the changes he made to the hydraulic system. The mine operator should have ensured that Morgan, Ney, and Seasock were properly trained, and that the hydraulic system was depressurized, before Morgan modified the hydraulic system and asked Ney to work on it.

ROOT CAUSE ANALYSIS

MSHA conducted an analysis to identify the most basic cause or causes of the accident that were correctable through reasonable management controls. A root cause was identified that, if eliminated, would have either prevented the accident or mitigated its consequences.

Listed below is the root cause identified during the analysis and the corresponding corrective action that was implemented to prevent a recurrence.

1. Root Cause: The mine operator did not provide adequate task training on the hydraulic system on the truck before miners performed work on the hydraulic system.

   Corrective Action: The mine operator developed new task training incorporating best practices. The operator provided new task training to miners who maintain and/or repair hydraulic systems. This training included safe work procedures when working on hydraulic systems, with instruction to not pressurize hydraulic systems prior to the completion of repairs.

CONCLUSION

On Thursday, November 29, 2018, at approximately 1:05 p.m., George Ney, a 50-year-old mechanic with 29 years of mining experience received a critical injury while examining the hydraulic system on a service truck. The hydraulic system had been modified earlier that day, causing excessive pressure to flow to a fitting that burst, propelling a temperature sensor into his forehead. The victim died of his injuries on December 30, 2018.

The accident occurred because Ney and other miners were not trained in safe procedures for working on the hydraulic system.

_____ _____

Russell J. Riley
District Manager

Date

ENFORCEMENT ACTIONS

1. A Section 103(k) Order No. 8003838 was issued to Waste Management & Processors Inc., ID No. 36-07805.

   A serious accident occurred at the maintenance garage on November 29, 2018. This Order is being issued under Section 103(k) of the Federal Mine Safety and Health Act of 1977 to prevent destruction of any evidence which would assist in investigating the cause of the accident. This Order protects all activity related to the Ford F-550 service truck.

2. 104(a) Citation No. 8003856 was issued to Waste Management & Processors Inc for a violation of 30 CFR § 77.404(c).

   On November 29, 2018, at approximately 1:05 p.m., an accident occurred, fatally injuring one miner. The investigation revealed that the hydraulic system on the Ford F-550 service truck, VIN No. 1FDAW57R19EB22110, was not de-pressurized prior to the continuation of modifications. Hydraulic components had been removed from a hydraulic system which controlled a bed-mounted crane and other hydraulic tools. The hoses, leading to the removed components, had been re-connected or plugged. This caused a portion of the system to be over-pressurized and a temperature sensor burst from the line, became a projectile, and fatally injured a mechanic.

3. 104(d)(1) Citation No. 8003857 was issued to Waste Management & Processors Inc. for a violation of 30 CFR § 48.27(c).

   On November 29, 2018, at approximately 1:05 p.m., an accident occurred, fatally injuring one miner. The investigation revealed that two miners assigned to the new task of modifying components from the hydraulic system, on a Ford F-550 service truck, VIN No. 1FDAW57R19EB22110, were not instructed in the safety and health aspects and safe work procedures of the task. No course material, or operator's manual, was provided for training the miners to recognize and avoid hazards associated with the hydraulic system. The mine superintendent, who was one of the untrained miners, modified the hydraulic system without knowing the effect of the modification he performed. The superintendent then asked the other untrained miner to work on the modified hydraulic system.

Appendix A
Persons Participating in the Investigation
(Persons interviewed are indicated by a * next to their name)

Waste Management & Processors Inc.

David Morgan *.....Mine Superintendent
John Seasock *..... Mechanic

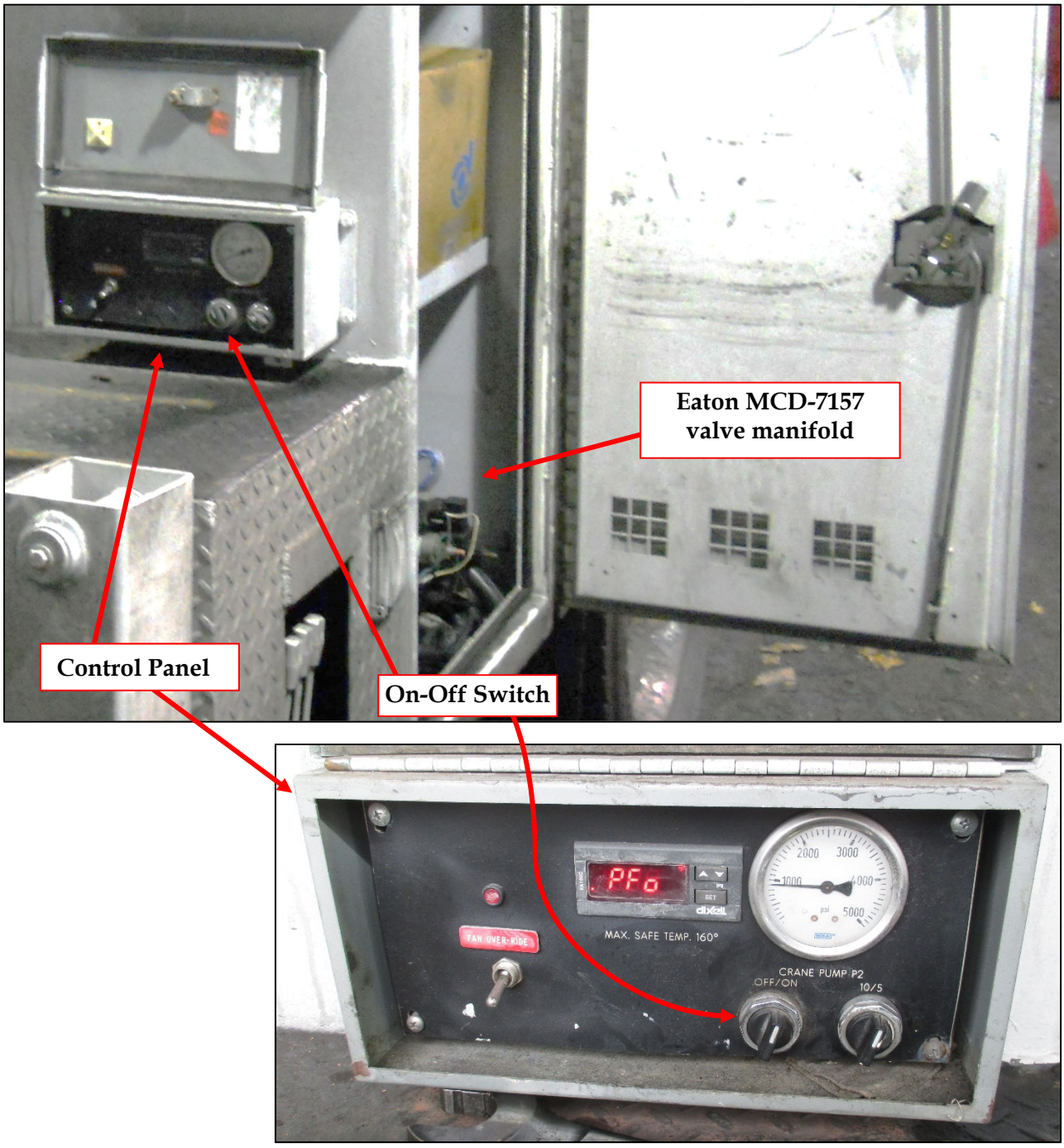
Pennsylvania Bureau of Mine Safety

Kenneth Dengler ..... Anthracite Underground Mine Inspector, Electrical
Terry Wolfgang ..... Anthracite Underground Mine Inspector
Troy Wolfgang.....Underground Chief of Anthracite Mining

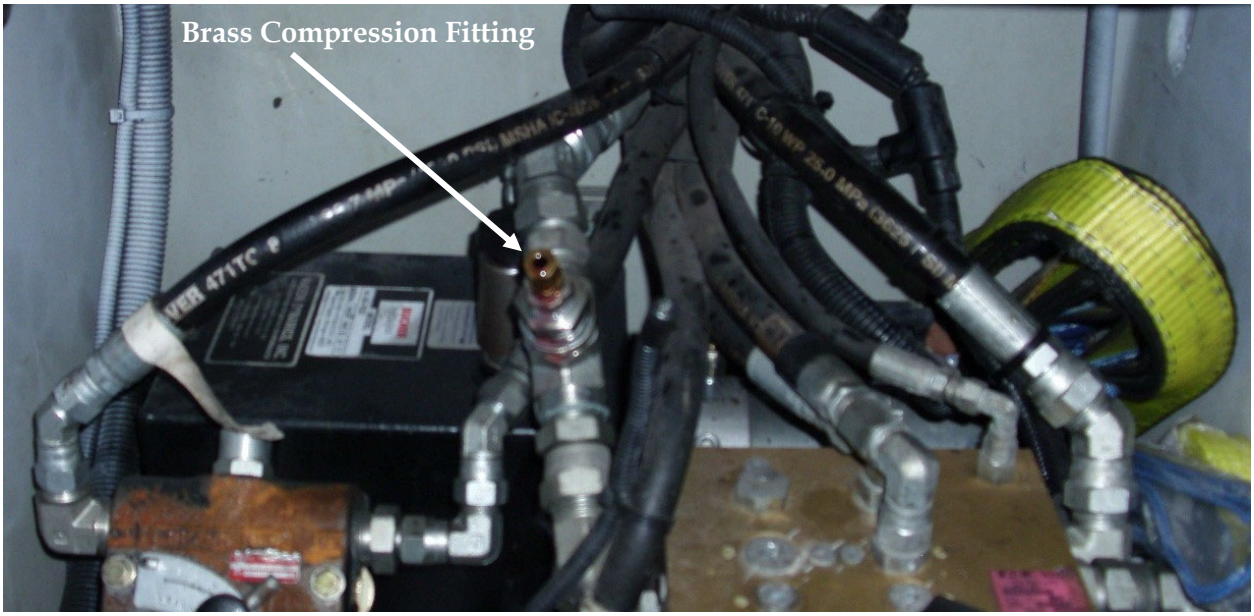
Mine Safety and Health Administration

Jonathan Hall, PE .....Mechanical Engineer, Technical Support
Thomas M. Leshko..... Coal Mine Safety and Health Inspector/Accident Investigator

Appendix B
Control Panel and On-Off Switch



Appendix C
Brass Compression Fitting



Appendix D
Eaton MCD-7157 Valve Manifold