

# COAL FATAL

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

Coal Mine Health and Safety District A

REPORT OF FATAL COAL MINE (ELECTROCUTION) ACCIDENT  
BANNING NO. 4 MINE  
REPUBLIC STEEL CORPORATION  
NORTHERN COAL MINES DISTRICT  
WEST NEWTON, WESTMORELAND COUNTY, PENNSYLVANIA

August 10, 1970

by

Everett Turner  
Federal Coal Mine Inspection Supervisor

Ralph I. Krek  
Federal Coal Mine Inspector (Electrical)

William A. Dupree  
Federal Coal Mine Inspector

Originating Office - Bureau of Mines  
4800 Forbes Avenue, Pittsburgh, Pa. 15213  
T. J. McDonald, Acting District Manager  
Coal Mine Health and Safety District A

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#### INTRODUCTION

This report is based on an investigation made in accordance with the provisions of the Federal Coal Mine Health and Safety Act of 1969 (83 Stat. 742).

On Monday, August 10, 1970, at approximately 9:10 p.m., Thomas Kmetz, assistant mine foreman, was electrocuted when he contacted an exposed power conductor in an energized trailing cable for a 50-volt direct-current portable water pump in 4 north 7 west. He was 58 years of age and is survived by his widow and two dependent children. He had 35 years mining experience, the last 27 of which were as an assistant mine foreman at this mine. The Pittsburgh, Pennsylvania, office of the Bureau of Mines was notified of the accident by a company official about an hour after the accident, and an investigation was started the same day.

#### GENERAL INFORMATION

The Banning No. 4 mine is opened by three shafts and a slope into the Pittsburgh coalbed, which averages 96 inches in thickness in this area. Employment was provided for 301 persons, of whom 241 worked underground on 3 shifts a day, 5 days a week. The average daily production was 5,100 tons of coal.

Electric power, at 110, 220, 440, and 2,300 volts alternating current was used on the surface. Three-phase 4,160-volt power was transmitted underground to two working sections and reduced to 440 volts for operation of

continuous-mining machines. A rectifier located on the surface and three rectifiers underground supplied 550 volts direct-current power for the track-haulage system, pumps, and other electric face equipment. The conversion units were operated in parallel and polarity of the trolley wire was negative. Cutout switches were installed where required and lightning protection was provided for exposed power circuits leading underground.

In 4 north 7 west where the accident happened direct-current power was transmitted over 9 deep-section (400 MCM) trolley wire in parallel with 1,590 MCM aluminum feeder cable. The power conductors were supported by combination feeder cable and trolley-wire clamps attached to insulated hangers in the roof. The positive return circuit consisted of 60-pound well-bonded steel track in parallel with a 1,000 MCM copper cable.

The 3-conductor No. 14 round-type SO flame-resistant trailing cable involved in this accident supplied power to a Barrett, Haentjens and Company portable water pump. Connection to the power source was made by a phenolic insulated fuse case (Ohio Brass Company form 5 power tap) containing a renewable-type fuse having three 30-ampere 600-volt fuse links. The maximum fuse rating or circuit breaker instantaneous trip setting for this size conductor is 15 amperes and 50 amperes, respectively. The cable was supported on porcelain insulators throughout its length. An inspection of the trailing cable revealed that the sheath or outer jacket had been removed for a distance of 7-1/2 feet from the end to facilitate connection to the trolley feeder cable and return power conductor. The cable conductor attached to the power tap was exposed for 3-1/2 inches about 7 feet 3 inches from the tap end; however, it could not be established whether this condition existed prior to the accident. Temporary splices or other defects were not observed in the cable.

Tests disclosed that the pump was effectively frame grounded and was not defective. Voltage measurements from the trolley wire to earth at the accident location indicated full-line potential.

Information for this report was obtained from an investigation made at the scene of the accident and from statements made by Charles Petrosky, mechanic, who was the first to arrive at the scene. There was no eyewitness to the accident.

The investigating committee consisted of:

Republic Steel Corporation  
Northern Coal Mines District

J. Sabolek	Acting Mine Foreman
W. K. Catney	Safety Coordinator
R. Gaudiana	Mining Supervisor
P. J. Killius	General Maintenance Foreman
E. E. Filer	Safety Supervisor
C. Eichler	General Assistant Mine Foreman

Pennsylvania Department of Mines and Mineral Industries

Joseph Reggianni	State Deep Mine Inspector, 6th Bituminous District
S. A. Fredrick	State Deep Mine Inspector, 7th Bituminous District
John M. Jurcevich	Electrical Inspector

United Mine Workers of America

Harry Sprowls	Safety Committeeman, Local Union No. 9873
Andrew Gohosky	Safety Committeeman, Local Union No. 9873
H. Edwards	Safety Committeeman, Local Union No. 9873

United States Bureau of Mines

Everett Turner	Federal Coal Mine Inspection Supervisor
Ralph I. Krek	Federal Coal Mine Inspector (Electrical)
William A. Dupree	Federal Coal Mine Inspector

The last Federal inspection of this mine was made August 13, 1970.

DESCRIPTION OF ACCIDENT

On the day of the accident, Thomas Kmetz, assistant mine foreman, and the crew of 4 north 7 west entered the mine at 4 p.m. and arrived on the section shortly afterward. Mining operations were begun and reportedly they continued without incident prior to the accident.

Charles Petrosky, section mechanic, stated that at approximately 8:35 p.m. as he was walking outby the face in the track entry he encountered Kmetz walking out of a crosscut to the track entry near the nip station. Together they proceeded to walk outby toward the loading loop. Kmetz stopped at the oil-storage station while Petrosky continued on to the loading loop to secure some tools.

Before returning to the face area Petrosky stopped in a crosscut near the loading loop and ate a sandwich. Then about 9:15 p.m. he started walking toward the face and found Kmetz lying face down between the rib and track on the trolley-wire side. He noted that Kmetz's head was in contact with the rail and that an energized power conductor of the trailing cable for a portable pump was underneath his body. He yanked the positive power conductor from the trolley feeder cable and checked Kmetz's pulse. After

failing to detect any sign of life he went to the face area to summon help. Kmetz was placed on a stretcher and taken to the surface where he was pronounced dead by Doctor A. H. King at 9:50 p.m. The cause of death was attributed to electrical shock.

There were no eyewitnesses to the accident; however, it was the consensus of opinion of the writers and some of the investigating committee, based on physical conditions in the accident area and the position of the victim when found, that Kmetz, while attempting to remove the fused nip from the trolley feeder wire or to replace it on the wire and while standing on a large lump of coal and/or a 4-inch plastic pipeline, lost his balance, fell, and struck his head against the track rail. Apparently while falling, he pulled the power conductor under his body without dislodging the nip from the trolley feeder wire. As a consequence, he contacted an exposed section of the energized power conductor which resulted in a deep wound in the right side of his neck and chest.

The distance from the mine floor to the top of the guard boards measured 7 feet 4 inches and the nip had been placed over top the guard board on the trolley feeder wire. The mine floor was wet throughout the area.

#### CAUSE OF ACCIDENT

This accident happened because management failed to provide safe and adequate means to connect and disconnect the trailing cable to and from the power source (the trolley feeder wire which was more than 7 feet above the mine floor). The wet mine floor and tripping hazards (plastic pipeline and large lump of coal) could have been contributing factors. There is a possibility that the insulation for the power conductor was damaged prior to the accident and the conductor was bare where it touched the body, if so, this could have contributed to the seriousness of the accident.

#### RECOMMENDATIONS

Compliance with the following recommendations may prevent a similar occurrence in the future:

1. Management should provide a safe means of connecting and disconnecting power taps. Special precautions should be taken where wet conditions exist and tripping hazards should be removed.
2. Whenever the outer sheath of portable cables having conductors smaller than No. 6 AWG is removed to facilitate connection to power-supply circuits, well-insulated single conductors not smaller than No. 6 should be spliced to the ends, or each conductor should be provided with hose conduit.
3. A dual-element fuse rated at 15 amperes or a circuit breaker with an instantaneous trip setting of 50 amperes should be provided for the No. 14 AWG pump trailing cable.

ACKNOWLEDGMENT

The cooperation of officials and employees and United Mine Workers of America during this investigation is gratefully acknowledged.

Respectfully submitted,

/s/ Everett Turner

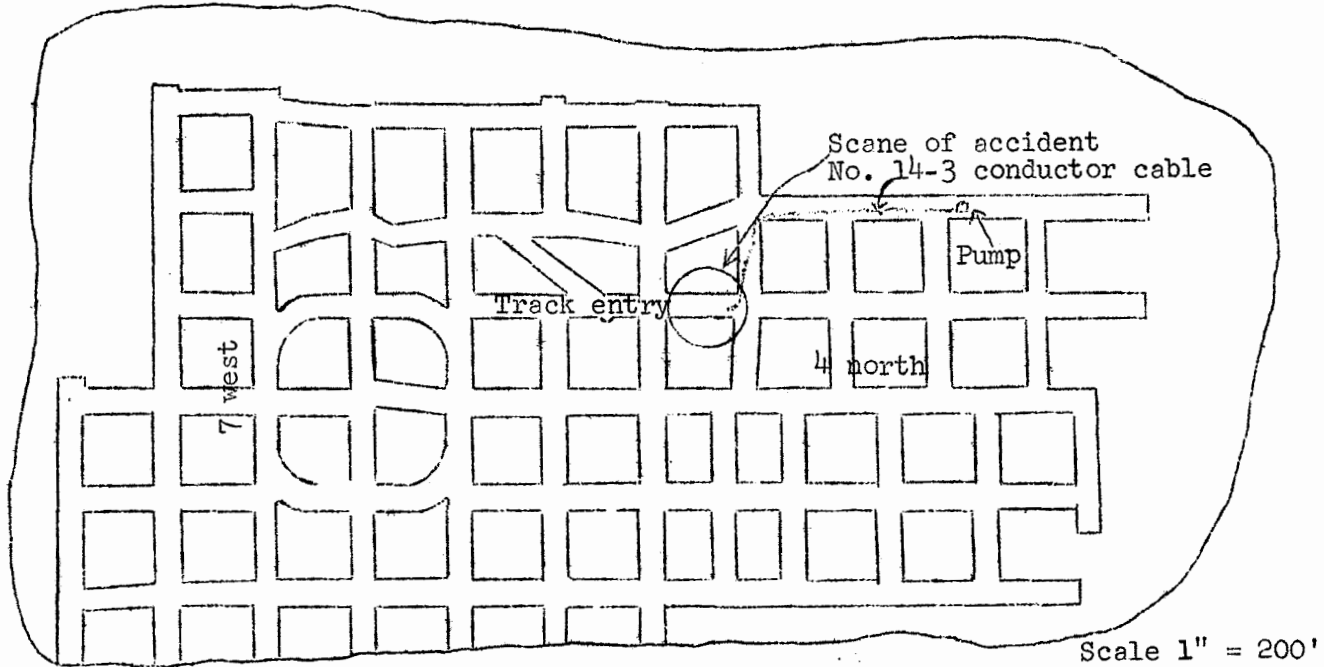
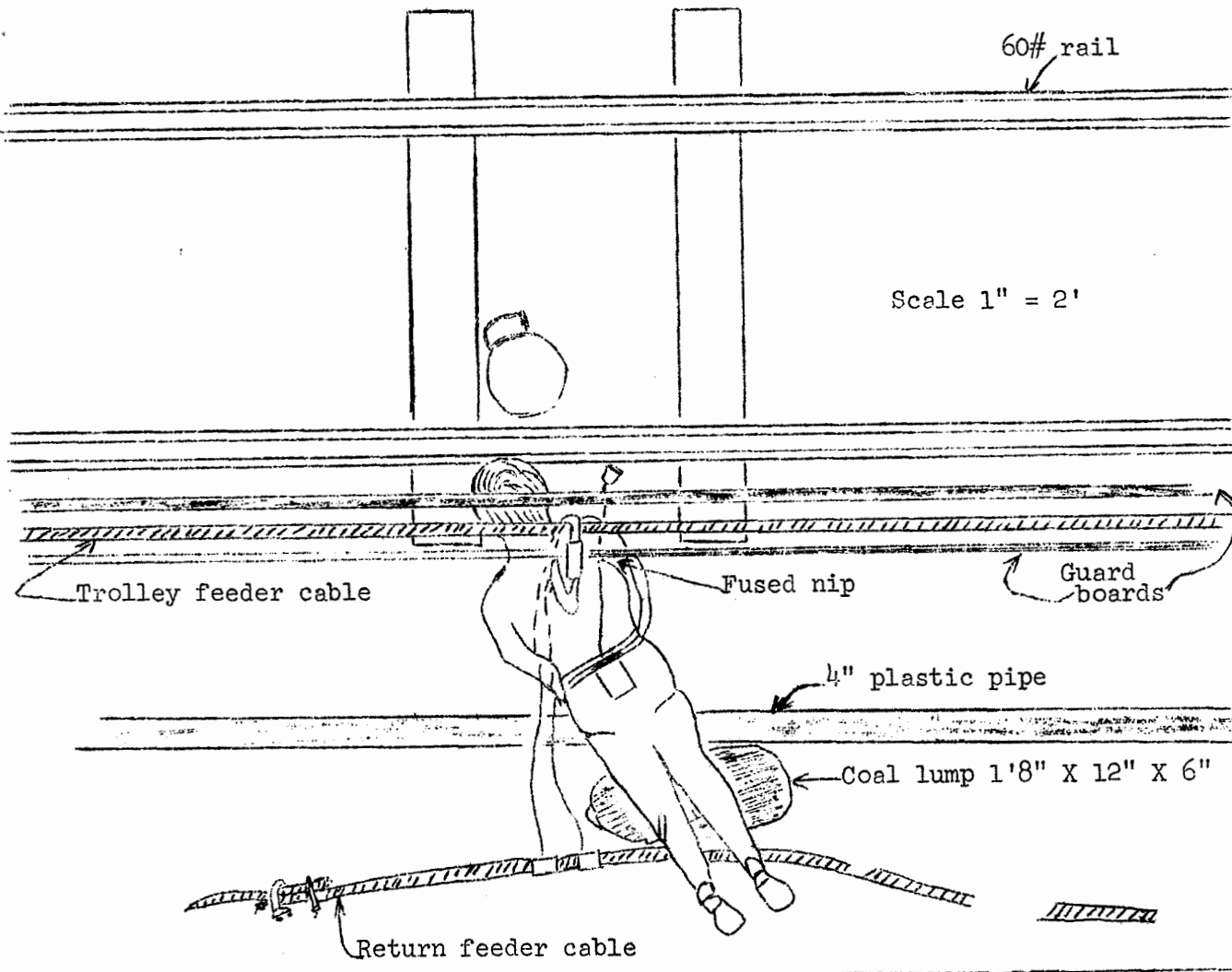
Everett Turner

/s/ Ralph I. Krek

Ralph I. Krek

/s/ William A. Dupree

William A. Dupree



Sketch of Scene of Fatal Coal Mine (Electrocution) Accident  
 Banning No. 4 Mine  
 Republic Steel Corporation, Northern Coal Mines District  
 West Newton, Westmoreland County, Pennsylvania  
 August 10, 1970