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GENERAL INFORMATION

Coal Mine Fatal Accident 2006-18



Operator:	Long Branch Energy
Mine:	#18 Tunnel Mine
Accident Date:	February 1, 2006
Classification:	Fall of Rib
Location:	Dist. 4, Boone County, West Virginia
Mine Type:	Underground Coal Mine
Employment:	61
Production:	1,027 Tons/Day

ACCIDENT DESCRIPTION



At approximately 12:40 p.m. on Wednesday, February 1, 2006, a 46-year old roof bolting machine operator was fatally injured from a rib roll which occurred in the number five entry of the 4 Left Mains section.

As the roof bolting machine operator was preparing to drill a hole in the mine roof to install permanent roof support, a large portion of the right rib fell, pinning the victim. The rib material which fell from the right rib of the number five entry measured: 13 feet long, 7 to 16 inches thick and 40 inches tall. The material fell from the rib from a height of approximately seven feet. When the rib material began to fall, the victim was positioned approximately 30 inches from the coal rib.

ROOT CAUSE ANALYSIS

Causal Factor: The operator's procedures for controlling loose ribs did not ensure compliance with the approved roof control plan for protecting persons from hazards associated with falls of ribs. The practice of allowing loose rib material to fall prior to the installation of additional support resulted in twelve persons injured from rib rolls during the previous four year period. The current roof control plan required, "where loose ribs are encountered in active working areas, the loose rib will be removed or supported by the following methods: rib boards, metal straps, or plates, or timbers, or angled bolts, or mats or mesh."

Corrective Action: The roof control plan was revised to require the installation of rib bolts installed on four foot maximum spacing on cycle as each row of roof bolts is installed when the mining height is greater than six feet and the overburden thickness is 800 feet or greater. Rib bolts will also be installed when the overburden is less than 800 feet and barrier pillars larger than 1,200 square feet are present in the Campbell's Creek Seam mine above. Miners received training on the roof control plan to ensure that that rib control precautions are implemented.

ROOT CAUSE ANALYSIS cont'd.

Causal Factor: The approved roof control plan failed to address the increased overburden pressure which caused the severe rib control problems. The overburden depth of the active section was in excess of 1,100 feet. In addition, overmining in the No. 2 Gas seam concentrated the overburden stress on the active mining section.

Corrective Action: The roof control plan was revised to require the installation of rib bolts installed on four foot maximum spacing on cycle as each row of roof bolts is installed when the mining height is greater than six feet and the overburden thickness is 800 feet or greater. Rib bolts will also be installed when the overburden is less than 800 feet and barrier pillars larger than 1,200 square feet are present in the Campbell's Creek Seam mine above.

ROOT CAUSE ANALYSIS cont'd.

Causal Factor: The roof bolting equipment provided by the mine operator was not suitable for mining conditions. The procedures for using the 4 Left Mains section roof bolting machine positioned the roof bolting machine operator between the machine and the hazardous rib conditions.

Corrective Action: The mine operator removed the Fletcher Roof Ranger DDO-13 roof bolting machine from the active mining section and provided a Fletcher roof bolting machine model DDR-13-BC-F. This model of roof bolting machine allows roof and rib bolting from a protected position.

ENFORCEMENT ACTIONS

§104(d)(1) Citation No. 7168150 was issued to Long Branch Energy for a violation of 75.220(a)(1).

The approved roof control plan was not being complied with on the 4 Left Mains section. This condition resulted in a fatal accident on February 1, 2006 to a roof bolting machine operator. Loose, hazardous rib material was present on the active mining section at multiple locations which was allowed to fall prior to the installation of additional rib support. Timbers were not set to prevent exposure to the hazardous rib condition, but rather to limit the width of the mine entry after the hazardous rib material had fallen.

Prior to the fatal accident, the mine had experienced eleven additional injuries over a four year period due to falling rib material. Deteriorating and hazardous rib conditions were observed in all five entries and all cross-cuts from the last open crosscut to the active faces.

ENFORCEMENT ACTIONS, Cont'd.

§104(d)(1) Order, No. 7245853 was issued to Long Branch Energy for a violation of 75.362(a)(1).

The on-shift records revealed that hazardous ribs had been recorded with little or no corrective action taken to limit or prevent exposure to the hazardous rib conditions. The mine had operated with unusually hazardous rib conditions for a significant period of time. Mine management had discussed obtaining equipment to install rib bolts but had taken no action. The mine operator exhibited a high degree of negligence by allowing miners to be exposed to the hazardous rib conditions over an extended time period. The hazardous rib conditions were present across the entire active mining section. Despite the extensive presence of the hazardous rib conditions, loose rib material was not removed or supported in accordance with the approved roof control plan.

BEST PRACTICES

- Examine roof and ribs frequently during work assignments.
- Where needed, active rib supports (bolts) should be installed instead of passive roof supports (posts or jacks).
- Ensure that roof and rib control methods are adequate for the depth of cover and for the potential effects of any mines above or below active workings.
- Roof control plans should be frequently reviewed and revised to adjust for changing conditions.