UNDERGROUND CENTRAL BLAST SYSTEM ELECTRIC ON NONELECTRIC

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ABSTRACT

In the fall of 1988, The Cannon mine decided to investigate a central blasting system based on conventional electric blasting detonators being used to initiate rounds primed with Nonel detonators. The advantages of this hybrid detonator system were viewed as being safety and cost effectiveness. A study was done reviewing the safety aspects of utilizing a permanent blasting line installed throughout the main haulage drifts to a central blasting station located at the mine portal. The study addressed the following potential safety hazards: radio frequency induced current, stray current from both electrical utilities and transmission lines, galvanic and electrostatic sources of extraneous current.

Calculations were made to evaluate the electrical requirements of the system in view of the variable number of blasts being made at any one time and the variety of locations requiring blasting.

Cost vs benefit evaluations were made and a project is currently underway to convert the mine to central blasting. This paper reviews the safety and electrical studies made to support the Cannon mine in this program.