



भारत सरकार
Govt. of India
श्रम एवं रोजगार मंत्रालय
Ministry of Labour & Employment
खान सुरक्षा महादेशालय
Directorate-General of Mines Safety

DGMS(Tech) Circular No. 4 of 2006 Dated, 12th June, 2006

All Owner, Agent & Managers of Coal Mines

Sub: Firing of Shots in fire areas/in vicinity of hot strata in opencast coal mine

Firing of Shots in fire areas/in vicinity of hot strata is fraught with danger. Detailed precautionary measures while charging and firing shots in such areas had been recommended by DGMS (Tech.) circular no. 2 of 1985.

Recently, in a mechanized opencast coal mine, where extraction of developed pillars by deep hole blasting was being carried out, one of the shot holes left charged prematurely detonated after a lapse of two and half hours. Fortunately no person was involved as the holes were unstemmed and there was no one in the vicinity.

Inquiry into the incident revealed that the holes were drilled upto the roof of the seam in solid pillars and upto 2 m above the roof of the gallery. There was no system of measurement of temperature in the shotholes in coal or overburden. The holes were charged with SMS explosives, cast boosters and non electric shock tube with down-the-hole detonators and were allowed to sleep without stemming. The temperature of the strata along a radius of 20 m. of the prematurely detonated holes was subsequently measured and found to be around 1010 C. The heated condition in the particular hole resulted in premature detonation of down-the-hole detonator and subsequent firing of the charge.

Experience had shown that there may be occurrence of localized pockets of fire or heating in a developed seam which may remain undetected and create such dangerous situation. Thus while extracting developed pillars by opencast method in conjunction with deep hole blasting, following additional precautionary measures may be taken over and above the measures stipulated vide DGMS(Tech.) circular no.2 of 1985.

i. The blasting officer shall ensure accurate measurement of temperature at the bottom of the shotholes drilled in coal benches and in overburden benches immediately above the coal seam and other fiery areas to determine whether fire exists. The measurement shall be recorded in a bound paged book kept for the purpose. For this purpose the temperature shall be measured initially after completion of the hole and thereafter at least once every shift. No hole shall be charged if the temperature in the hole exceeds 80⁰ C.

ii. As a precaution against presence of pocket fires in coal benches in developed seams, overburden benches immediately above such coal seams and other fiery areas in the mine, the explosive charge shall be fired by detonator attached to the detonating cord at the surface and not within the shot hole.

iii. All explosives, cast boosters, detonators, detonating cord and shock tubes shall be subjected to proper testing in an approved laboratory in respect of temperature sensitivity, impact sensitivity for safe handling in mines. A certification to that effect shall be supplied for each batch.

iv. Sleeping of holes shall not be permitted in coal benches where fire or spontaneous heating has been detected and in overburden benches lying immediately above such seam and at all places where there is likelihood of fire or spontaneous heating.

v. No PETN/TNT based cast booster shall be used for initiating non-cap sensitive slurry/emulsion explosive in coal benches and overburden benches of a fiery coal seam.

Director General of Mines Safety