



Govt. of India
भारत सरकार
Ministry of Labour and Employment
श्रम एवं रोजगार मंत्रालय
Directorate General of Mines Safety
खान सुरक्षा महानिदेशालय



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सेवा में

खान मालिक, अभिकर्ता, और प्रबन्धक,
कोयला एवं धात्विक खान

Sub: Accidents due to failures of coal/ore handling plants in mines.

There had been number of accidents due to collapse of coal/ ore handling plants and their bunkers resulting in fatalities. It has been noticed that such incidences are on the rise. Two such cases were as follows,

- (1) In a mine while a gang of six persons, engaged in repair work in a coal handling plant, were trying to open a jammed chute gate with a chain block which had become weak and unsafe due to failure of welding. The bunker collapsed burying four of them to death beneath the coal and broken steel, the fifth received bodily injuries where-as the sixth escaped unhurt.
- (2) Recently in one of the mine while a chute operator was loading tippers by standing near the operating panel located below the bunker, the conical shape hopper of the bunker dislodged from the welded joints of the bunker and fell over the operator inflicting serious bodily injuries to which he succumbed instantaneously.

The enquiry into these fatal accidents revealed that:-

- 1) An old coal handling plant working in some other mine was shifted and re- installed,
- 2) The dismantling and installation works were carried out by contractors, who did not possess adequate facility and expertise,
- 3) The coal handling plant was not constructed on the basis of any drawing and not certified for its safe design and construction by any competent agency,
- 4) Quality of fillet weld was inferior to that normally designed for structures,
- 5) Improper welding had reduced the strength of joints,
- 6) The lesser width strips and non-uniform weld size without proper alignment between the connecting members reduced the strength of joints and structures,
- 7) Quality control and thorough inspections were inadequate,
- 8) The chute operator panel was provided below the bunker,

In order to avoid the repetition of such coal/ ore handling plant failures, it is suggested that:

The management of the mines should conduct a risk assessment process to identify any hazard that could influence the safety and health of workers while installing and maintenance of coal/ore handling plants and other heavy structural works. All hazards must be quickly identified and controlled using a risk ranking process.

It should be noted that hazard identification and risk assessment should not be considered to be a one off occurrence but should be done at regular intervals to ensure that the plans to cope with the identified hazards are pertained and up to date.

Further the following measures shall be under taken by the management:-

- 1) All coal/ore handling plants and other heavy structural works should be fabricated and installed on the basis of drawings certified by competent organization and each bunker should have adequate factor of safety,
- 2) The plants should be installed under proper supervision who have knowledge of norms of fabrication, welding and testing procedures,
- 3) After completion, its stability needs to be checked by an independent agency before it is commissioned. Completion certificate of the structure should be given jointly by Civil and Electrical & Mechanical departments of the company,
- 4) The bunker should not be allowed to accumulate load for a long time and should be emptied as early as possible,
- 5) The operating control panel of the chute shall be installed away from the structure and never located below the plant,
- 6) Only trucks/tippers having canopies covering the full cabin should be used for transportation of coal/ore,
- 7) In the event of jamming of gates, proper supports should be provided. This supports should be certified by the manager and engineer of the mine in writing to the subordinate officials before starting the repair work,
- 8) Competent agency should study the adequacy of design of Coal/ ore handling plants already installed and if required further strengthening of structure shall be carried out,
- 9) The daily, weekly and monthly examination protocol of plants and structures shall be framed and implemented within 3 months of issue of this circular,
- 10) The annual inspection programme of CHP must be carried out as per DG(Tech) Circular 2 of 1999.

In the interest of safety, the above recommendations along with risk assessment shall be implemented strictly to reduce the chances of accidents in coal/ore handling plants working in mines.

मुख्य खान सुरक्षा सिरीक्षक एवं विभागाध्यक्ष

नापाक सं० दिनांक

प्रतिश्रुति सूचनाएं

को उनके अख्तियारक अधिकारियों के बीच
रखे जायें हेतु प्रेषित ।

मुख्य खान सुरक्षा महानिदेशक