

To  
The Owners, Agents and Managers  
of all coalmines.

**Sub: Recommendations of Bagdigi Court of inquiry**

The Court of inquiry appointed under section 24 of the Mines Act, 1952 to enquire into the causes and circumstances attending the accident that occurred in Bagdigi Colliery of M/s. Bharat Coking Coal Limited on 2<sup>nd</sup> February, 2001 causing loss of 29 lives due to inundation, have made the following recommendations.

**I. Dewatering of old workings :**

By experience, it is learnt that danger from inundation arises due to existing source of water adjoining a mine. The old workings of mines get gradually filled in with water, particularly if they are on dip side and in absence of dewatering, accumulation of water in these old workings considerably increases the volume of water therein. Though the water of such mines is sometimes stored for the purpose of controlling fire or even for the purpose of domestic supply, such accumulated water bodies are definitely potential danger to the dip side workings further down below. Furthermore, the exact extent of these old workings is always doubtful. It is, therefore, necessary that no water should be allowed to accumulate in the old workings of any mine. If water is required to be stored for specific purpose, prior permission from the DGMS should be obtained, who may prescribe safety measures for storing of water as well as the quantity of water that may be stored.

**II. Application of latest geophysical methods for providing the barrier/partings:**

It has been seen that connection between adjoining old water logged workings and current workings ultimately takes place due to eating away of the prescribed coal barrier between the two. Application of Regulation 127 of the Coal Mines Regulation, 1957, arises only when partings between such workings become less than 60 m. The proving of barrier or parting by actual survey is arduous and time taking, while proving the same by means of long bore holes, drilled by Safety Boring Machines, requires special machines, skilled operators and adequate arrangement at the Colliery. Latest Geo-physical methods of proving the barrier/partings have been developed recently and successfully tried by CMRI, Dhanbad and NIRM, KGF. One of these new Geo-physical methods is based on ground penetration radar system and it has been seen that the method yields near accurate results and is able to give thickness of barrier within an accuracy of few metres. This new method should be applied in cases where the present workings have reached the cautionary zone of 120 m. as per Water Danger Plan.

**III. Discontinuance of the practice of having both Agent and Manager for single mine :**

The practice of having both Agent and Manager for a single mine should be discontinued and thus the status of the Mine Manager should be restored. An Agent may be appointed for controlling 2/3 mines and not a single mine. Promotions may be granted to the Manager to higher grade, but his designation should continue to remain as Manager as is the practice in Nationalized Banks where a Manager of a big branch may be in the same scale as a Regional Manager of the Area. This would ensure the requisite authority and respectability of the post of Mine Manager.

#### **IV. Vesting of executive power and greater authority to the internal safety organisation (ISO) as per the management structure of Coal India Ltd.**

There is an Internal Safety Organisation (ISO) in each subsidiary company of CIL under the charge of Executive Director (Safety and Rescue). The organisation was constituted for the purpose of internal safety and as an internal watch-dog for the mines in respect of safety matters. It appears, however, that this organisation does not have any real and effective powers. It does not require greater emphasis to understand that for ensuring requisite safety measures there has to be a regular and thorough inspection of the workings from the safety point of view. The DGMS has stated that they are unable to carry out general inspection of the individual mines, even once in two years on account of acute shortage of inspecting officers. Therefore, if thorough inspection of the mines is carried out by the ISO at least once in a year and a detailed report of inspection is submitted promptly, the Mine officials will be expected to; rectify the short-comings promptly as pointed out in the reports. With greater authority and executive power vested in ISO, it can ensure prompt compliance of the recommendations given in its inspection reports and non-compliance of the recommendations would attract adverse ratings against the mines officials in their respective Annual Confidential Rolls.

#### **V. Joint Survey and Periodical Check Survey**

It has been observed that joint surveys are not conducted properly and there have been occasions where the Manager and Surveyors of the adjoining mines merely endorse their signatures on the joint survey plans prepared not by actual survey, but by comparing field books of other mines. The Area Survey Officer should be entrusted with specific duty to supervise joint survey and he should certify that joint survey was actually carried out and joint survey plan was prepared only after conducting joint survey.

Recommendations by conducting sample check surveys of every operational mine have been given from time to time in the recommendations of the Safety Conferences and Tripartite Safety Committee Meetings and Circulars in this context have also been issued by the DGMS. Need to conduct check surveys particularly in respect of workings which have water logged bodies in its adjoining areas is highly essential. This would ensure that the development of the mine is being correctly made according to the stipulation in the projection plan. Failure to conduct check survey in the instant case had caused failure to detect the extent of deviation, which the workings had undergone. It is, therefore, necessary to conduct Check Surveys of the workings at regular intervals, particularly where the mines where the workings have reached within 120 m. of any adjoining mine which may contain water or any other liquid and no work should proceed without completion of a check survey and subsequent order in writing by the Manager/Agent to that effect.

In addition, a special team should be constituted in the area only for conducting check survey who should not be entrusted with any other non-statutory job.

#### **VI. Improvement in Surveying Organisation on Mine level :**

As per the management structure of the BCCL, a Surveyor though appointed for a particular mine, is under the control and authority of the Manager and under the superior control of the agent. It has come to light that superior officers tend to play dominant role side-lining Surveyors who, in fact, are deprived of a free hand in the performance of their duties. The Surveyors are not provided with the requisite survey machines and other facilities and more often than not, they are constrained to perform non-statutory jobs. The Surveyors are thus rendered ineffective and are unable to perform their duties with

sincerity. It is therefore suggested that authorized surveyors should not be given non-statutory jobs as far as possible. The Manager of the Mine should countersign plan prepared after being sure of the accuracy of the survey by checking field books, calculation etc. The Manager may be assisted by Assistant Manager (Survey) appointed on the lines of Ventilation Officer, Safety Officer etc. to help the Manager and to ensure that survey works are being actually conducted.

#### **VII. INSTALLATION OF V-NOTCH: for recording seepage of water :**

Abnormal increase of the seepage of water is a definite indication of probable danger from inundation. It is recommended therefore that for measuring the quantity of increase in seepage of water, V-Notch should be installed in roadways leading to faces within 120 m. of water-logged workings. This would promptly indicate any abnormal increase in the seepage with the progress of faces. The recordings and the results obtained from the apparatus should be maintained in a bound paged book counter signed by the Manager.

#### **VIII. GREATER CONSTRUCTIVE ROLE OF TRADE UNIONS :**

The involvement and role of trade unions in the industry in general and the coal industry in particular, is basically for ensuring the safety of workers and protection of their rights. It is their responsibility to see that adequate protective measures are taken by the management for the safety of lives of workers at places of work. In respect of mines, a provision has been made for posting a Workman Inspector for every mine, such Inspector being primarily the representative of the labour union. The workman Inspector claimed to have regularly inspected the workings of the 7<sup>th</sup> seam for the purpose of verifying safety measures. Yet, it transpired that he was not conscious at all of the conditions prevailing in the workings, and consequently had never noticed any defect in the workings. Even the trade unions had never pointed out the glaring defects in the workings of the 7<sup>th</sup> seam even though the workers had repeated complained about the abnormal increase in seepage of water. It also appears that though occasional meetings of Pit Safety Committee used to be organized and recommendations used to be given by the representative of trade union in respect of safety measures, yet no sincere efforts were made to see that the recommendations were implemented by the management. Had, such steps been taken promptly, the management would have been compelled to take prompt protective measures and the tragedy would have been avoided. It is, therefore, felt that trade unions should show a greater degree of concern and play a more constructive role in sincerely and honestly pointing out defects in safety measures and their rectification.

Proper implementation of these recommendations can bring about definite improvement in the safety standard in the mines.

You are, therefore, requested to take suitable steps to implement the abovementioned recommendation of the Bagdigi Court of Enquiry in all mines under your control.

( Ravindra Sharma)  
Director-General of Mines Safety.