

RECOMMENDATION OF THE SIXTH CONFERENCE ON SAFETY IN MINES

(Held in New Delhi - 13th & 14th December, 1986)

- 1.0 The recommendations made by the earlier Conference on Safety in Mines should be fully implemented within a period of 1 year.

Item 2.1: Accidents due to falls of roof & sides

- 2.1.1 (i) Manager of every underground mine should formulate 'support plan' for support of roof, sides, back and hangwall in consultation with strata control cell where set up, CEMPDIL/any technical or research institution, ISO and Safety Committee. The 'Support Plan' should be in respect of the following:

- (a) workings within 9 metres of the working faces,
- (b) along tramming levels and especially at loading points,
- (c) along haulage roadways and especially at junctions,
- (d) at any other place(s) in the mine identify for support under Regulation 108 of the Coal Mines Regulations, 1957 and Regulation 112 of the Metalliferous Mines Regulations, 1961.

Local geological conditions, physio-mechanical properties of strata, method of work including mechanisation and past experience etc. may be taken into account while formulating such plan. For non-coal mines, nature of strata which in many cases is massive may be taken into consideration.

The plan should include:

- (a) type of supports e.g. safari supports, roof bolts, friction props, rigid props, or hydraulic props etc.
- (b) duties and responsibilities of Timbermen, Dressers, Sirdars/Mates, Overmen/ Foremen, Assistant Managers, Managers and Agents towards supply of material, erection and withdrawal of supports, inspection thereof and ensuring effectiveness of supports.

The 'Support Plan' should be submitted to DGMS for approval.

In case there is delay in formulation of such plan due to involvement of various agencies, interim plan should be prepared and submitted immediately. Pending approval, the plan should be implemented.

- 2.1.1 (ii) No person should be employed at any place which is not supported in accordance with the approved 'Support Plan'.
- 2.1.2 ISO should investigate each and every major incidence of roof and side fall even if it does not involve any casualty. Preventive steps against such

falls in future may be taken on the basis of those investigations.

- 2.1.3 Sufficient number of timbermen * dressers should be appointed taking into consideration absenteeism and leave within a period of 6 months.
- 2.1.4 Intensive practical training and retraining should be given to the persons engaged in support work such as timbermen and dressers etc. by experienced and qualified persons. This should be supplemented by organizing workshops at mine level at quarterly intervals preferably by NCSM.
- 2.1.5 No blasting in coal-off-the-solid should be done except with proper type of delay action detonators and proper explosives.

Item 2.2: Accidents due to dumpers and trucks in opencast mines

- 2.2.1 Adequate care should be exercised in selection and training of operators/drivers of dumpers and trucks and any other heavy earth moving machinery.
- 2.2.2 Adequate number of dumper operators and drivers of trucks and HEMM and also pitmen & dumpmen should be appointed keeping in view factors like absenteeism and leave etc. Work on overtime should be abolished.
- 2.2.3 Effective steps should be taken to prevent riding on dumpers and trucks by unauthorized persons. Further, adequate arrangements should be made for transport of machinery maintenance staff.
- 2.2.4 Dumpers, trucks and heavy earth moving machinery within mine premises should be equipped with audio-visual alarm within a period of 2 years to facilitate safe reversal.
- 2.2.5 Transport and loading operations, including those by contractors, should be supervised by competent persons. Where contractors are appointed for transport of mineral, examination of vehicles should be done by the mine management.

Item 2.3: Accidents due to fire in Oil Mines

- 2.3.1 Mine managements should examine and review all installations vis- à-vis the safe distance to be maintained and work out a time bound action plan for rectification within one year along with safety precautions to be taken in the interim period to minimize danger.
- 2.3.2 All fixed I.C. engines should be fitted with flame arrestors and air intake shut-off valve with remote control within one year.
- 2.3.3 Contingency plan for fire should be framed on priority basis. While doing so, due note of the possible size and duration of fire that may develop should be considered in framing the plan.
- 2.3.4 A study should be undertaken to determine the causes of fire than occurred in the last five years and the remedial measures to be taken within a period of one year.

Item 2.4: The Mine Environment with special reference to Air Borne dust and health of mine workers.

Mine Environment - Ventilation

- 2.4.1 Every effort should be made by mine managements to achieve the stipulated national standards with respect to mine environment in each mine. For this purpose, a ventilation scheme/plan should be prepared by the manager of each mine and a copy should be submitted to DGMS. No worker should be deployed at any place in any mine where these environmental standards are not met with.
- 2.4.2 Necessary facilities for monitoring the environmental parameters should be provided at mines. {This study material has exclusively been provided by mineportal.in }.Facilities of continuous type monitoring should be installed within three years in all degree III gassy coal mines and in such other mines having active underground fire or mines having serious problems of heat as identified by mutual discussions between mine management and the Directorate-General of Mines Safety.
- 2.4.3 Before adopting any new technology, the adverse effects, if any, of the same on the environmental parameters in mines and on the health of workers employed therein should be studied by a multi-disciplinary team to assess its adaptability to local conditions.

Air Borne Dust

2.4.4 An Expert Group consisting of a member each from mine management, research establishment/BGML/CEMPDIL and workers' representative having technical knowledge should be constituted by DGMS for laying down guidelines for conducting air borne dust surveys for different types of dust, specifying class of workings and periodicity of conducting such surveys for the sake of uniformity and comparison.

2.4.5 Air Borne dust surveys should be carried out on a regular basis so as to conduct/complete the survey in each mine as recommended by the Expert Group. The management should take suitable and necessary steps to control air borne dust. In addition to quantitative surveys, special attention should be paid to assess the chemical composition of air borne dust to ascertain its effect on the type of diseases caused by the dust.

Periodical Medical Examination of Workers

- 2.4.6 Initial medical examination of all workers employed in underground mines should be completed in next three years. Thereafter, periodical medical examination of such workers should be done at least once in 5 years.
- 2.4.7 Initial medical examination of all workers employed on surface and engaged in drilling, loading and at crushing and screening plants should be completed in next three years. Thereafter, the periodical medical examination of all such workers should be done at least once in 5 years.

- 2.4.8 In order to complete the medical examination of all entitled workers, the management should create suitable infrastructural facilities to meet the target specified above.
- 2.4.9 Categories of persons employed in oil mines requiring periodical medical examination should be identified by consultations between the management of oil mines and DGMS.
- 2.4.10 DGMS should arrange to get necessary notification issued for implementation of the above recommendations.

Item 2.5: Accuracy of Mine Plan

- 2.5.1 Mining companies should expeditiously implement in full the recommendations of the 5th Conference on Safety in Mines regarding preparation and maintenance of mine plans, induction of qualified surveyors in sufficient numbers etc.
- 2.5.2 Mining companies should evolve a suitable cadre structure for mine surveyors in order to attract and retain competent and qualified persons in survey discipline.
- 2.5.3 It is accepted that preparation of fresh plans after connecting mines to National Grid involves work which is not only huge in quantum but complex in nature. Surveyors posted at mines would not be in a position to carry out such surveys independently. A team of qualified surveyors should be appointed at area level (as existing in CIL) which could undertake such surveys in association with mine surveyors. Such a team should also conduct and carry out regular check surveys in order to check the accuracy of mine plans at various mines.
- 2.5.4 Mine managements should avail themselves of various specialist facilities provided at different institutions for upgradation of skill of mine surveyors. Suitable evaluation systems/tests should be conducted at the end of both short term (3-6 months) and long term courses (6-12 months) provided at such institutions for the grant of suitable certificates to the participants.

Item 2.6: Development of Human Resources for Prevention of Accidents.

- 2.6.1 Every worker should undergo appropriate training whenever there is change in his nature of job.
- 2.6.2 Every worker involved in an accident should undergo special and appropriate training before he is re-assigned work in the mine.
- 2.6.3 The existing training facilities and programmes should be made more comprehensive, useful and result oriented.
- 2.6.4 Suitable organisation for training of workmen's inspector and members of Pit Safety Committee should be created. Such an organisation should frame and conduct suitable and appropriate training programmes in order to help them to discharge their responsibilities in a proper manner.

2.6.5 Mining Companies should clearly identify the need for training of supervisors working in mines. Mine managements should preferably make use of the services and expertise developed in this regard by NCSM to supplement their own efforts in order to achieve the desired results in next few years.
