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DGMS/TECHNICAL CIRCULAR No. 1 of 2005 Dt. 03/01/2005

To

The Owners, Agents and Managers of All Coal Mines & Oil Mines.

Sub.: Electric Motors with Aluminium Die Cast Rotors.

While interacting with the manufactures of electric motors it has come to the notice of this Directorate that now a days with advancement of technology electric motors are being manufactured with Aluminum Die Cast Rotors. The alu-minium Dia Cast Rotors are housed in a steel enclosers both for flameproof and non-flameproof motors. The use of electirc motor with Aluminium Die Cast Rotor may not cause any danger so long the rotor is inside the steel structure of the motor but if the Aluminium Die Cast Rotor is dismantled. Assembled or exposed to explosive gas atmospheres this may cause danger due to incendive sparking.

It is therefore, required to take adequate precaution and not to dismatle, assemble or expose the Aluminium Die Cast Rotor of a motor in the explosive gas atmosphere in underground coal mines & hazardous areas in oil mines to prevent incentives sparking.

Sd/-

Director General of Mines Safety

DGMS TECHNICAL CIRCULAR NO. 2 of 27/1/2005

To

All Owners, Agents and Managers of Mines

Subject.: Use of mobile phones and two way radio transmitters during charging of explosives and infilling stations.

There can be substantial risk of premature firing of detonators and explosives from transmitted radio frequency (RF) energy and precautions are necessary-against it. The common source of hazardous radio frequency (RF) transmission includes, interalia. mobile citizen band (CB) or side hand radio transmitters, VHF (FM.) radio transmission, VHF cellular telephones and radar transmitters. In our country cellular telephones are widely being used, including the mine sites. It has been observed that even during charging and preparation of explosives in opencast workings cellular telephones and two-way transmitters are used for communication. There is, therefore, risk of accidental firing of explosives with serious consequences.

Similar type of risk - exists while using cellular telephones and two-way transmitters in fuel oil filling stations in the mines.

Therefore, in the interest of safety, I request you to restrict the use of cellular phones and two-way transmitters while handling the explosives including preparing and charging of the same and in fuel filling stations in the mines under your control.

Sd/-

Director-General of Mines Safety

DGMS (Tech) Circular No. 03 of 2005 Dt. 04/03/2005

To

Owners, Agents & Managers of All belowground Mines

Sub.: Use and maintenance of Cap lamps.

The statute requires that every person employed belowground shall be provided with a light or lamp adequate to enable him to perform his duties in a proper and thorough manner. Accordingly the mining companies are providing cap lamps to each worker employed in belowground workings.

Some of the recent inspections of the cap. Lamp rooms had shown serious shortcomings in the upkeep and a maintenance of such lamps in the following area :

A. 102 type Static Charger –

1. The Charging Volt meters (0-7.5 V.D.C.) were found defective.
2. A separate earthing-system is required for the cap lamp room, and the all the metallic body of the charger is required to earthed. However, most of the cap lamp rooms did not have this system.
3. The required output voltage for charging (5.1 V) was not available in most of the transformers/charges as many were old and require overhauling.
4. The cap lamp room staff did not adjust the charging voltage to take care of the voltage fluctuation.

B. 102 type charging frame –

Most of the charging frames were more than 25 years old and required replacement due to the following defects.

1. Wooden planks were damaged.
2. charge indicator meters were out of order. In many cases the meters did not show any reading at all.
3. Charging contacts were worn-out.

C. Cap lamp

1. In most of the cap lamp, rooms the cap lamps were not provided with original fuse made of silver Wire. In some cases it was observed that locally made fuses and ordinary copper wires were used as fuse is very dangerous as the silver wire fuse is the main safety feature of the Cap, Lamp assembly.
2. The Length of, the cable was less, than 1 .5 meter making it extremely difficult to use while working;

3. Due to shortage of the -lamps some of the lamps were being issued in two shifts in a day without proper / charging which is against the recommendations of the manufacturer.
4. Proper sealing at three places as" ,per manufacturer's recommendation (Head Piece Moulding, Lock Pin. Lock clamp & Bush assembly and securing nut), which is an important safety feature was not being provided.
5. Regular inspection of the Cap lamp rooms were not being carried out by the controlling officers.
6. Spare parts in sufficient quantity and of standard quality were not available in the lamp rooms.

D. Cap lamp room staff

1. It was observed that within 2/3 years most of the trained cap lamp incharge/fitters will retire from service. It is needless to say that the new staff should be developed and trained to replace them, for which the, manufacturer can organise training on maintenance/' testing and issue certificate to trained staff.

E. Lamp Cabin Most of the lamp cabins were in a bad shape, particularly in terms of Sufficiency of light and ventilation and equipped with Inadequate tools/testing devices for maintenance.

Cap lamps are the vital equipment for the persons working below ground. Proper maintenance arid charging at a proper voltage of the same will definitely enhance the life of the lamp and safety of the persona working belowground. The matter is brought to your notice so that adequate corrective measures can be taken and availability of lamps is ensured in the mine for use of the persons working belowground mines.

Sd/-
Director General of Mines Safety

DGMS (LEGIS) CIRCULAR NO. 1 Dt.19/01/2005

To,

The Owners, Agents and Managers of all mines.

Sub.: Re-constitution of Appellate Medical Board under Rule 29K of Mines Rules, 1955.

This is to inform that the Government of India, Ministry Of Labour and Employment has reconstituted the Appellate Medical Board under Rule 29K of the Mines Rules, 1955 vide S.O. 2500 dated 28th September, 2004 published in Gazette of India, Part II, section 3, Sub-section (ii) No. 40, New Delhi, September 26 - October 2, 2004.

The above mentioned notification is reproduced below for the Information of all concerned.

Government of India / Bharat Sarkar Ministry of Labour and Employment/ Shram aur Rozgar Mantralaya New Delhi, dated 28.09,2004

S.O. 2500 in pursuance of the Rule 29K of the Mines Rules, 1955, the Central Government hereby makes the following amendments in the notification of the Government of India, Ministry of Labour, S.O. No. 628 (E) dated 24th June, 1987, namely:-

In the said notification for serial number (ii) and (iii) and entries relating thereto, the following serial numbers and the entries shall be substituted namely :-

Dr. C.S. Gupta, Member Dy. Chief Medical Officer (Appointed under Clause (Radiology), (b) of Rule 29K) Regional Hospital Patherkhera, Western Coalfields Ltd. Patherkhera, District Betui, Madhya Pradesh. Dr. A. K. Chakraverty, Member Medical Superintendent (Appointed under clause Koyla Bhawan, (c) of Rule 29K) Bharat Coking Coal Ltd, Koyla Nager, Dhanbad—826005 Jharkhand

(No. S-65025/V03-ISH-II)
C. A .BHASKARAN,
Director

DGMS (Tech) Circular No. 04 of 2005 Dt. 18/05/2005

To.

Owners, Agents & Managers of All belowground Coal Mines.

Sub. : Recommendations of Godavarikhani No. 7(LEP) Court of Inquiry.

The Court of Inquiry appointed under Section 24 of the Mines Act 1952 to inquire into the causes and circumstances attending the accident that occurred in Godavarikhani No. 7 (LEP) Colliery of M/s Singareni Collieries Co. Ltd on 16th June, 2003 causing loss of 17 lives due to inundation, had made, inter-alia, the following, recommendation.

1. As it is not possible to check the efficacy of stowing once the month of a gallery or month of a district is filled with sand, it is essential to device a system to ensure proper effective stowing and fix the accountability. It is recommended the Asst. manager and Overman, apart from the surveyor, should record the actual amount of void filled up together with the efficacy of stowing. When stowing in a district is completed, the Asst. Manager and Manager should certify in writing the actual status of stowing in the district. The volume of sand stowed in should invariably be recorded at the time of closing the District.
2. Before starting a new district, clearance from the Internal Safety Organization must be taken in writing by the local mine management.
3. Detailed planning for production in different districts must be done at corporate level and projections given should not be altered at the mine level.
4. Owner must monitor important safety functions including stowing in district at regular intervals.
5. Safety in mines is very complex phenomenon and support from the highest quarter is needed for implementation of safety measures in the mines. If the person with the maximum power does not have the highest responsibility for safety, there is always a possibility of miscued stress on the production. Some times at the cost of safety. So it is recommended that the chief Executive of the company should be nominated as the owner under section 76 of the Mines Act, 1952.
6. Key personnel in the mines like agents, managers and surveyors, who have a strong being on the safety in mine, should not be transferred frequently. Before positing such key personnel the diligence should be undertaken to ascertain the suitability of the persons for the post, so that, they do not have to be transferred after a short time except on rare occasions.

7. During our deliberations we were of the view that information technology could be used for efficiency, increasing production and also mine safety. But we are of the view that this is altogether a different subject, although we are convinced that information technology can be used for mine safety, but it needs a detail study and experts need to be grafted into a study team, which could study the subject. Singarenti Collieries are being operated by adopting the old age methods of mining almost 100 years and there are not significant changes either in management or in mining. Information technology is being used successfully in every field. Therefore we have not doubt in our mind that if proper information technology is used, mine would be much safer.”

Proper implementation of this recommendation can bring about definite improvement in the safety standards in the mines, especially against the/danger of inundation. You are requested to take suitable steps to implement the above-mentioned recommendations of the Codavarikhani No. 7 (LEP) Court of Inquiry in all mines under your control.

Sd/-

Director General of Mines Safety

DGMS (Tech) Cir No. 05 of 2005, Dt. 21/06/2005

To

All Owners/Agents/Managers of all mines.

Sub: Use of approved type of fuel in Velox - GL 7 and GL 50 Safety lamps

Velox - GL 7 and GL 50 flame safety lamps manufactured by M/s J K Dey and Sons have been approved by DGMS for detection and measurement of inflammable gas and deficiency of oxygen in mine atmosphere, One of the conditions of approval is that no fuel other than ESSO Solvent BP 1425 or its equivalent or motor spirit shall be used in the lamp.

It has been observed in most of the mines kerosene oil is being used as fuel in the lamp leading into poor flame which can lead to error in detection of gas. With use of ESSO Solvent BP 1425, or it's equivalent or motor spirit, instead of kerosene:

- (i) a steady flame is observed;
- (ii) testing flame can be easily seen;
- (iii) length of flame varies sharply with varying percentage of inflammable gas; and
- (iv) as the fuel is highly volatile with low flash point and less viscosity the relighting mechanism of GL 7 lamp works smoothly,

Use of kerosene oil as fuel also causes the cotton absorbent inside the oil vessel of flames safety lamp to solidify within a year or so making it inactive to absorb any further oil which results in spillage of oil, low duration of flame and improper formation of testing flame. A steady flame is not formed and the flame gets extinguished with slight jerk, the oil vessel becomes hot, and the gas cap may not be formed at all,

A study was also carried out in CMRI, Dhanbad with three types of fuel namely ESSO solvent 1425, petrol and kerosene. The report also confirms that the length of the blue flame in different percentage of inflammable gas is least when kerosene is used.

Therefore may I request all concerned not to use any fuel other than ESSO Solvent BP 1425 or it's equivalent or motor spirit in the Velox - GL 7 and GL 50 Safety lamps for effective functioning of the flame safety lamps in mines.
Yours-faithfully

Sd/-

Director General of Mines Safety

DGMS(Tech) Circular No. 6 Dt. 08/082005

To,

The Owner Agent and Manager Of all the Mines and Oil Fields.

Subject.: System of earthing in Power Supply System For Underground Mines and Oil Fields.

You were aware that Rule 116(1) of the Indian Electricity Rules, 1956 amended in the following manner.

"In the interest of safety, appropriate equipment shall be suitable placed in the mines for automatically disconnecting supply to any part of the system where a fault including an earth fault occurs Fault current shall not be more than 750 milliamps in 550/1100 volt systems for under ground/oil fields an 50 amps in 3.3 KV/ 6.6 KV system in open cast mines. The magnitude of the earth fault current shall be limited to these specified values by employing suitably designed, restricted neutral system of power supply.

The matter had been brought to the notice of all concerned through DGMS (Tech) Circular No. 9 dated 20.09.2001.

From time to time doubts has been raised about the applicability of this Rule to installations with voltage other than 550V and places of its applicability. This is to clarify that the Rule 116(1) of the Indian Electricity Rules, 1956 is applicable to all electrical installations of medium voltage and 1100 voltage used in underground mines and hazardous areas of oil mines as denned in Regulation 74 of the Oil Mines Regulations 1984.

Sd./-
D.G.M.S.

NATIONAL SAFETY AWARDS (MINES)

1.0 Introduction:

During the post independence era, mineral industry in India has achieved tremendous growth and also imbibed latest mining technologies. Alongwith this growth, there has also been corresponding awareness of the need to protect the health and lives of workers. The Constitution of India casts an obligation on all of us to ensure just and humane conditions of work. To give due recognition to outstanding safety performance at national level, Ministry of Labour, Govt. of India instituted National Safety Awards (Mines) in 1983 for the contest year 1982. Thereafter every year on the basis of outstanding performance National Safety Awards(Mines) is given to various mines.

2.0 Scope :

The scheme is applicable to all mines which come under the purview of the Mines Act, 1952. Such mines have been classified into 7 groups as given in Table No. 1.

SI. No.	Type of Mines
	Coal mines - Belowground with difficult mining conditions
	Coal mines - Belowground (others)
	Coal mines – Opencast
	Metal Mines-Mechanised Opencast
	Metal Mines- Manual Opencast
	Metal Mines - Belowground
	Oil Mines

Note: A belowground coal mine operational for at least six months during the contest year is considered to have difficult mining conditions if its working depth is 300 metres or more OR it satisfies at least two of the following conditions: (1) working degree III gassy seam; (2) having longwall face(s) worked for at least six months; (3) having mechanised development/depillaring workings ; (4) having depillaring workings with thickness of extraction greater than or equal to 3.6 metres; (5) working seam(s) having a gradient of 1 in 3 or steeper. A mine having both belowground and opencast workings is treated as belowground mine if the output from belowground workings is 50% or more of the total output. Otherwise it is treated as opencast mine. A mine is considered as mechanised opencast if the output from all opencast workings is 50% or more of the total output during the contest year and the output from mechanised faces is 50% or more of the total output from opencast workings.

3.0 Schemes :

Among different indices available, the following two have been accepted as indicators of safety ; performance:

- Longest accident free period (LAPP) in terms of manshifts worked during three consecutive years ending with the contest year.
- Lowest injury frequency rate (LIFR) during three consecutive years ending with the contest year.

It is expected that every mine shall endeavour to improve its safety performance. A bad mine has a high injury frequency rate. After obtaining a breakthrough, its next attempt should be to achieve longest accident free period in terms of manshifts worked.

Note:

- Injury frequency rate is computed as the total of the number of persons killed per 1 lakh manshifts multiplied by 50 and the number of persons seriously injured per 1 lakh manshifts. In case several mines achieve the same lowest injury frequency rate, the mine that worked largest number of manshifts during the last three years ending with the contest year is declared winner.
- Due to speedy mechanisation in opencast coal mines, some mechanised opencast mines having lower manshifts are not getting prizes in spite of good safety performance. To take care of this, for opencast coal mines two more prizes (one WINNER and one RUNNER) are given on the basis of lowest injury frequency rates per million cubic metre of output.
- For scheme-2 (i.e. LIFR), the manual opencast metalliferous mines (i.e. Type-5) are divided into two subgroups based on manshifts worked; the first subgroup consisting of the mines with manshifts worked greater than 0.5 lakh during the contest year and the second subgroup comprising the mines with manshifts worked less than or equal to 0.5 lakh.
- From the contest year 1999 the system of one mine one prize is being introduced. If a mine is eligible for a 1st prize in one scheme and 2nd prize in another scheme it will be given the 1st prize only.

4.0 Awards Committee :

4.1 Composition :

The awards committee is constituted by the Ministry of Labour with Director General of Mines Safety as its Chairman, eight representatives of mine managements, eight representatives of trade unions and an officer of DGMS as its Member-Secretary.

4.2 Functions of the Committee :

=> To scrutinise and adjudge applications received for awards.

- => To require further particulars or to defer consideration of application for further investigation.
- => To depute any person to inspect the records of any contesting mine.
- => The committee may reduce number of awards or decide not to give an award to any mine in a contest group(s) for any reason it may consider fit.

5.0 Mode of operation :

An advertisement is released through DAVP in English, Hindi and other regional languages inviting applications in prescribed proforma for National Safety Awards (Mines), fee of Rs.100/- per application is charged through a crossed IPO drawn in favour of the Administrative Officer / D.D.O., DGMS and payable at Dhanbad Post Office. The prescribed application form is jointly signed by the mine manager and a workers' representative.

6.0 Scrutiny of Applications :

Data furnished by contesting mines for the contest year are scrutinised at the Headquarter of DGMS. Such particulars are also verified by the officers of DGMS during their inspections of such mines. The list of award winning mines is finalised with approval of the members of the National. Safety Awards (Mines) Committee.

A total of 32 National Safety Awards (Mines) for the contest year will be given away by the Honourable President / Vice President of India at New Delhi.

SAFETY MONITORING IN COAL INDIA LIMITED

Safety in coal mines of Coal India Limited is monitored by the following bodies part from DGMS and the Internal Safety Organizations of CIL and its subsidiary companies.

1. **Workmen's Inspector:** Safety status of each and every mine is monitored by representatives of the workmen, one each from Mining, Electrical and Mechanical discipline through inspections, the reports of which and status of compliance of recommendations are forwarded to the local DGMS office.
2. **Safety Committee at Mine Level:** The Safety Committee at mine level also monitors the safety status at each mine every month through inspection followed by a meeting for review of safety status of the mine. This committee consists of representatives of workmen and management.
3. **Area Level Bipartite/Tripartite Safety Committee:** The Area level committee comprising representatives of workmen and management monitors the safety performance of the Area bi-annually. Often representatives of DGMS also participate.
4. **Subsidiary Level Tripartite Safety Committee:** Tripartite safety level committee functions at subsidiary company level and consists of representatives of workmen, DGMS and management for review and monitoring of safety measures. This body meets bi-annually.
5. **Coal India Safety Board:** This headed by the Chairman, CIL with workers representatives, Director (T), CIL, Director (P), CIL, CMDs of subsidiary companies, the DGMS, a representative of the Ministry of Coal as member and Executive Director (Safety & Rescue) CIL as Member Secretary. The Board reviews the safety status of CIL bi-annually, formulates policies and gives guidelines for improving safety standards.
6. **Standing Committee on Safety in Mines:** The safety situation of the coal mines is also reviewed by the standing committee on safety in coal mines chaired by the Minister of Coal.

In addition, the Ministry of Labour/DGMS, where representatives of Trade Unions, Management, Educational/research institutions and Ministry of Coal participate, holds National Conference on Safety in Mines. This conference is held every 3 or 4 years.

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