

MINISTRY OF LABOUR AND EMPLOYMENT**NOTIFICATION**

New Delhi, the 30th September, 2021

S.O. 4195(E).—Whereas the Central Government in exercise of the powers conferred by sub-section (1) of section 24 of the Mines Act, 1952 (35 of 1952) (hereinafter referred to as the said Act), had appointed a Court of Inquiry, *vide* notification number S.O. 2927 (E), dated the 13th August, 2019, to hold an inquiry into the causes and circumstances attending the accident which occurred on 29th December, 2016 at Rajmahal Opencast Mines of M/s. Eastern Coal Fields Limited in District Godda of Jharkhand State and to make recommendations, if any, for further safety steps or remedial measures required to be taken;

And whereas, the said Court of Inquiry has submitted its report on 12th August, 2020 and forwarded the same to the Central Government for further necessary action;

And whereas, section 27 of the said Act, *inter alia*, empowers the Central Government to publish the report submitted by a Court of Inquiry under section 24 to be published at such time and in such manner as it may think fit;

Now, therefore, in exercise of the powers conferred by section 27 of the said Act, the Central Government hereby publishes the aforesaid report of the Court of Inquiry as APPENDIX to this notification.

[F. No. N-11012/3/2016-ISH.II],

KALPANA RAJSINGHOT, Jt. Secy.

APPENDIX

**RASHMI VERMA COURT OF INQUIRY**

**Ministry of Labour and Employment
Government of India**

**Report of
Court of Inquiry
into the Accident
dated 29th December, 2016
at
Rajmahal Opencast Mine
of M/s Eastern Coalfields Limited**

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CHAPTER – I INTRODUCTION

1.1.0 Constitution of Court of Inquiry:

- 1.1.1 An accident occurred in Rajmahal Opencast Mines of M/s Eastern Coalfields Limited in District Godda of Jharkhand State on 29th December, 2016 causing loss of twenty three lives. A list containing names of victims with their date of birth (as per affidavits submitted by M/s ECL & Contractor) is given at Annexure-I.
- 1.1.2 The Hon'ble High Court of Jharkhand at Ranchi in Writ Petition No. 66 of 2017 (Md. Sarfaraj Vs. State of Jharkhand and others) while disposing of the case vide its order dated 5th April, 2019 held that "However, scope for a Court of inquiry to examine the causes and circumstances attending the accident is much wider and if any further safety steps or remedial measures are required to be taken, the Court of inquiry can make recommendations in that regard. In such circumstances, Central Government should consider appointing a Court of inquiry for the purpose aforesaid as contemplated in Section 24 of the Mines Act, 1952".
- 1.1.3 The Central Government opined that a formal inquiry into the causes and the circumstances attending the accident and to make recommendations, if any, for further safety steps or remedial measures required to be taken, ought to be held. Therefore, in exercise of the powers conferred by Sub-Section (1) of Section 24 of the Mines Act, 1952 (35 of 1952) the Central Government constituted a Court of Inquiry appointing Smt. Rashmi Verma, Former Secretary to the Government of India, as Chairperson to hold such inquiry and present a report within a period of three months vide Gazette Notification No. S.O. 2927 (E) dated the 13th August, 2019. The Central Government also appointed (1) Shri Akhter Javed Usmanee representative of Hind Mazdoor Sabha and (2) Shri Ravindra Sharma, Ex-Chief Inspector of Mines and DGMS as Assessors to the Court of Inquiry.
- 1.1.4 Shri Venkanna Banothu, Dy. Director of Mines Safety, DGMS, Head Quarter (HQ), Dhanbad was appointed as Member Secretary to the Court of Inquiry vide Government of India, Ministry of Labour and Employment letter No. N-11012/3/2016-ISH-II dated 14.08.2019.
- 1.1.5 The period of inquiry and presentation of report was extended from 13th November, 2019 to 12th February, 2020 by the Govt. of India, Ministry of Labour and Employment vide Gazette Notification No. S.O. 4081 (E) dated 13th November, 2019.
- 1.1.6 The period of inquiry was further extended for a period of three months from 13th February, 2020 to 12th May, 2020 by the Govt. of India, Ministry of Labour and Employment vide Gazette Notification No. S.O. 740 (E) dated 17th February, 2020.
- 1.1.7 The period of inquiry was once again extended for a period of three months from 13th May, 2020 to 12th August, 2020 by the Govt. of India, Ministry of Labour and Employment vide Gazette Notification No. S.O. 1679 (E) dated 28th May, 2020.
- Copies of Government Gazette Notifications and appointment letter of Member Secretary are at Annexure-II.

1.2.0 Proceedings:

- 1.2.1 The Court first met in New Delhi, on 16.09.2019. In this meeting it was decided to:-
- (i) issue public notice in local papers inviting submission of affidavits by interested parties within a period of 30 days from the date of publication of the notice.

(ii) hold sittings of the Court in Kunustoria Area of M/s Eastern Coalfields Limited in Paschim Burdhaman district of West Bengal State.

(iii) inspect the site of accident on a suitable date.

1.2.2 The public notice mentioned in preceding paragraph was published in local newspapers, details of which are given below:

Sl. No.	Name of newspaper	Edition	Language	Date of publication
1.	Prabhat Khabar	Deogar	Hindi	02.10.2019
2.	Hindustan	Ranchi	Hindi	02.10.2019
3.	Prabhat Khabar	Kolkata	Hindi	02.10.2019
4.	Hindustan Times	Ranchi	English	02.10.2019
5.	The Times of India	Kolkata	English	02.10.2019
6.	The Statesman	Kolkata	English	02.10.2019

The public notice was also uploaded on DGMS website. A copy of public notice is enclosed at Annexure-III.

1.2.3 The Court in its meeting on 11.11.2019 formulated Code of Court procedure which was uploaded on DGMS website for information of all concerned. A copy of Court procedure is enclosed at Annexure-IV.

1.3.0 Inspection:

1.3.1 Smt. Rashmi Verma, the Chairperson, Court of Inquiry accompanied by Shri Akhter Javed Usmanee and Shri Ravindra Sharma, Assessors inspected the site of accident of Rajmahal Opencast Mine on 22.10.2019. Shri D.K. Nayak, General Manager (In-Charge) of Rajmahal Opencast Mine and other officers and staff of the M/s Eastern Coalfields Limited and Shri D.K. Sahu, Dy. Director General of Mines Safety and other officials of DGMS were present during the inspection. Later, Shri D.K. Nayak made a power point presentation about workings and management of Rajmahal Opencast Mine before the Court.

1.4.0 Affidavits:

1.4.1 In all 16 (sixteen) affidavits were received by the Court within the prescribed date. All affidavits were accepted by the Court. The Court decided to call them in person to depose before the Court in support of their written affidavits. Fifteen (15) of them deposed on oath before the Court. One (01) did not turn up for deposition. Names of persons who submitted affidavits with their dates of deposition in the Court is enclosed at Annexure-V.

1.4.2 An affidavit from Shri N.G.Arun, General Secretary, Rashtriya Colliery Mazdoor Sangh (INTUC) was also received on 13.02.2020. Since the last date of receipt of affidavit was 08.11.2019 and it was received almost three months late, the Court decided not to accept this affidavit.

1.5.0 The Court decided to also summon witnesses other than those who had submitted affidavits, for deposition. In all, thirty five (35) witnesses deposed before the Court spread over a number of days. The parties who had submitted the affidavits were allowed to cross-examine the witnesses apart from their cross-examination by the Court. A list of all deponents with dates of their deposition and cross examination is enclosed at Annexure-VI.

1.6.0 The Chairperson directed the Member Secretary to upload copies of affidavits and important documents received by the Court on DGMS website to enable all interested parties to have access to them. The same were uploaded on the DGMS website. The Court also directed Member Secretary to display the Plan and Sections of the site of accident in the Court for inspection. Accordingly, the Plan and sections were exhibited on 30.01.2020.

1.7.0 On 02.02.2020 the Court examined relevant documents including Plan and Sections of the site of accident submitted to the Court.

1.8.0 On 12.02.2020 the Chairperson, Court of Inquiry ordered all witnesses on affidavits, to submit their observations regarding causes and circumstances of the accident along with their recommendations/steps to prevent such accidents in future, if any, to the Court in writing by 31st March, 2020.

- 1.9.0 Further proceedings of the Court could not be held due to outbreak of COVID-19. In view of uncertainty created due to outbreak of COVID-19 and imposition of continuous lockdown, the Court decided on 03rd May, 2020 to close the proceedings of the Court, since thirty five (35) main witnesses and fifteen (15) witnesses on affidavits had already deposed before the Court. Witnesses on affidavits were informed accordingly on 04.05.2020.
- 1.10.0 The Court decided to extend the submission of observations by witnesses on affidavits upto 20th May 2020 which was further extended upto 30th May 2020 on request of one of the witnesses on affidavit. All witnesses on affidavit were informed accordingly.
- 1.11.0 Observations of eleven (11) witnesses on affidavit were received [nine (09) received within specified period, one (01) received on 31st May 2020 and one (01) draft Report from Shri B.P.Singh received on 09th June 2020]. Shri Singh requested for further time which was allowed. He submitted his final Report on 01.07.2020. The list of witnesses on affidavit who submitted their written observations is at Annexure-VII.
- 1.12.0 S/Shri Akhter Javed Usmanee and Ravindra Sharma, Assessors to the Court submitted their observations separately to the Chairperson of the Court. The observations of Assessors are at Annexure-VIII.

CHAPTER-II

GENERAL INFORMATION ABOUT THE MINE

2.1.0 Location:

2.1.1 Rajmahal Opencast Mine is located in Godda District of Jharkhand State between latitudes 25^o1'12" N & 25^o3'15" N and longitudes 87^o21'0" E & 87^o24'0" E. The mine is easily accessible, being connected by Deoghar/Dumka-Godda-Sahabganj PWD metal road which passes along the western fringe of the mine. Pirpainti Railway Station on Burdwan-Sahebganj-Bhagalpur loop line of Eastern Railway lies at about 30 Km from the mine.

2.1.2 The mine lies at a distance of about 230 Km from Sitarampur (West Bengal), the Zonal/Regional office of DGMS and at about 235 Km from Sanctoria (West Bengal), the Headquarter of M/s Eastern Coalfields Limited (M/s ECL).

2.1.3 The topography of the area consists of gently undulating surface, 70 to 100m above mean sea level, with the highest point, Lalmatia Hill, lying in the Northern part of the mine at a height of about 204m above mean sea level. Location Plan of Rajmahal Opencast Mine is enclosed at Annexure-IX.

2.2.0 Climate:

2.2.1 The area has a mild to moderate and tropical to subtropical climate with temperatures varying between 8^oC in winter and 40^oC in summer. June to September is the period of monsoon, with average yearly rainfall of 1153mm.

2.3.0 Geology:

2.3.1 Rajmahal Opencast Mine lies within Lalmatia Exploration Block, which covers an area of about 15 Sq.Km.

2.3.2 Eight coal horizons of Barakar formations have been identified in the block. The seams, in ascending order are Seams I, II (Bottom), II (Top), III, IV, IX, X and XI. The seams II (Bottom), II (Top) and III merge and split within the area to form various combinations. These seams are also highly interbanded in nature. More than 95% of the reserves in the block occur in seams II (Bottom), II (Top) and III with their various combinations.

2.3.3 All seams in-crop in the area under a thick alluvium cover of 15m to 35m and dip gently (usually 2^o to 3^o) due East. Higher dip upto 10^o is, however, also noticed in the vicinity of structural disturbances particularly in the area lying south of fault F-8.

2.3.4 Sequence of coal seams:

Sequence of coal seams with their thickness and parting (as per High Powered Committee Report) is given below:-

Seam	Parting	Thickness Range (m)
XII		01.27-02.10
	Parting	11.05-16.09
XI		01.75-05.74

	Parting	07.29-20.31
X		01.77-05.91
	Parting	03.85-21.93
IX		02.97-07.00
	Parting	02.97-09.70
VIII		00.68-02.99
	Parting	43.27-53.69
VII		00.56-03.28
	Parting	10.91-27.80
VI		00.40-04.20
	Parting	09.15-27.68
V		00.36-02.97
	Parting	11.40-41.50
IV		00.32-02.57
	Parting	00.00-10.88
III		1.35-17.87
	Parting	00.00-44.70
III & II Comb		
III & II Top Comb		
II Comb		
II (Top)		1.47-17.10
	Parting	00.00-26.52
II (Bot)		10.96-26.53
	Parting	13.04-33.66
I		02.00-09.54

2.3.5 Geological disturbances:

2.3.5.1 Seventeen (17) normal faults have been postulated within the block. Among these, five southward hading faults, namely Faults F1, 6, 8, 11 and 15 are of major magnitude. As borne by the interpretation, the southern half of the block appears to be structurally more complex.

2.3.5.2 The description of the faults (as per High Powered Committee Report) are shown below:

Sl. No.	Fault	Throw	Remarks
1.	F-1	20-40m towards South	Partly marks Northern limit of the block
2.	F-2	Up to 25m towards South	Trending to die out towards East. Partly marks Northern limit of the block.
3.	F-2A	5-15m towards South	
4.	F-3	0-10m towards North	Dies out towards East & West
5.	F-4	0-5m towards SW	Dies out towards SE
6.	F-5	5-10m towards North	Throw reduces towards West
7.	F-6	10-40m towards SW	Throw reduces towards West
8.	F-7	0-10m towards NE	Dies out towards SE

9.	F-8	5-160m towards SSW	The strike of the strata is generally NE-SW with 2-3 ⁰ dip towards East on the Northern side of the fault. On the southern side of the fault the strike is NW-SE with 5-10 ⁰ dip towards East.
10.	F-9	5-10m towards North	
11.	F-10	25m towards South	
12.	F-11	14-35m towards South	
13.	F-12	10-20m towards SW	
14.	F-13	30-70m towards South	
15.	F-14	10-20m towards SW	
16.	F-15	10-20m towards North	Block boundary in the South
17.	F-16	10-20m towards NW	

2.3.6 Coal reserves:

2.3.6.1 The mineable coal reserves as on 01.04.2008 had been estimated as 251.10 MT requiring 504.81 M.Cu.m of OB removal at an average stripping ratio of 2.01 Cu.m/tonne. These reserves included 14 MT of coal from the Deep Mining Zone.

2.4.0 Method of work:

2.4.1 **Background of the Project:** Project Report for Rajmahal Opencast Mine was originally sanctioned in August, 1980 for a rated capacity of 5 MT/annum. It was subsequently expanded to a rated capacity of 10.5 MT/annum in the year 1985 and rated capacity of 17.0 MT/annum in the year 2009.

2.4.2 As per approved Project Report, floor of the seam II (bottom) forms the base of the quarry.

2.4.3 Dahernangi Patch of Rajmahal Opencast Mine was being worked by opencast method deploying Heavy Earth Moving Machineries (HEMM). Permission under Regulation 98 of the Coal Mines Regulations, 1957 (CMR, 1957) to form high benches in coal was not obtained from Directorate General of Mines Safety (DGMS). Permission granted by DGMS vide their letter No. S4/03/26/006/II.B(87)/1182 dated 08.04.1987 which was modified vide letter No. S3/010367/II-B/98(1)(3) & 100(1)/1638 dated 05.07.2012 was related to Lalmatia Patch and was not automatically applicable to Dahernangi Patch.

2.4.4 On the day of accident operation in Rajmahal Opencast Mine was being carried out at three patches, namely:

- (i) **Rajmahal Coal Mining Project Ltd. (RCML):** At this patch removal of overburden and extraction of coal was being done contractually by M/s RCML, Kolkata, West Bengal.
- (ii) **Departmental (M/s ECL Patch):** At this patch removal of overburden and extraction of coal was being done departmentally by M/s ECL.
- (iii) **M/s Mahalaxmi Infra Contract Private Limited and M/s NKAS Services Private Limited (MIPL-NKAS JV):** This patch (known as 20M patch as also Daharnangi Patch) was divided into two zones by a 60m throw fault running East-West. In area on the northern side of fault (up throw side), coal had earlier been extracted by the year 2007 and face could not move further due to presence of a 60m fault towards south side. As per High Powered Committee (HPCC) Report, the created void was used as a sump for some time and later on it was filled with overburden dump. The height of dump above floor of the de-coaled area on the day of accident was about 146m. Maximum filling had been done in the year 2012 (43.4m) and year 2016 (57.6m). On the day of accident, re-handling of dump was being done to facilitate safe extraction of coal and overburden on south side of the fault. On south side of the fault (known as Deep Mining Zone) extraction of coal and also removal of in-situ overburden was being done. Operations at all three places i.e. re-handling of overburden dump on the north side and extraction of coal and removal of overburden by blasting on south side of the fault were being done by M/s MIPL-NKAS JV (Contractor) deploying 2m³ capacity hydraulic excavators and 20 tonner tippers. On an average about 1700 tonnes of coal, 22000m³ of in-situ overburden and 25000m³ of overburden dump re-handling were being done daily. Operations were being done in three eight hourly shifts, first shift commencing at 8.00 AM.

2.5.0 Agreement with Contractor:

2.5.1 An agreement was signed between M/s ECL management and the Contractor for operations in 20M/Dahernangi Patch, which was later modified from time to time. Salient points of the agreement are given below:-

- (i) The Contractor must ensure that all workings are made as per provisions of the Mines Act and Regulations and bye-laws made thereunder and shall be responsible to ensure safety of workmen under him.
- (ii) The Contractor shall employ adequate supervisors for ensuring safety.
- (iii) The Contractor shall ensure that no workman is engaged without training as per Vocational Training Rules.
- (iv) The Contractor shall be liable under Workmen's Compensation Act for compensation arising out of injury/ death.
- (v) Engineer In-charge shall be responsible for supervising and administering the contract.
- (vi) Project officer of the colliery shall control all operations related to the contract.

2.6.0 Management:

2.6.1 M/s Eastern Coalfields Limited (M/s ECL) is a Govt. of India Public Sector Undertaking and is one of the subsidiaries of M/s Coal India Limited (M/s CIL).

2.6.2 M/s CIL, headed by the Chairman, is governed by a Board of Directors. It has an Internal Safety Department, headed by Executive Director (ED), Safety who reports directly to the Chairman. The ED (Safety) is assisted by senior level officers including General Manager (Safety). On the day of the accident i.e. on 29.12.2016, Shri Sutirtha Bhattacharya was the Chairman and Shri Chandra Bhusan Sood was ED (Safety).

2.6.3 Management at Corporate level:

2.6.3.1 The headquarters of M/s ECL is located at Sanctoria in District of Paschim Bardhaman (West Bengal). Its operation is managed by the Functional Directors. On the day of the accident Shri R.R. Mishra was holding the post of the Chairman cum Managing Director (CMD). He was assisted by four Directors viz. Director Technical (Operations), Director Technical (Planning and Project), Director (Finance) and Director (Personnel) in day to day administration and planning. Shri B.N. Shukla, Director Technical (Operations) was nominated as 'Owner' of Rajmahal Opencast Mine under Section 76 of the Mines Act, 1952. He was assisted by an Internal Safety Organization (ISO) for advice on matters related to safety in mines. On the day of the accident the ISO was headed by Shri Sushanta Banerjee. He was assisted by a team of senior officers of different disciplines to look after the safety of mines under M/s ECL.

2.6.4 Mine Management:

2.6.4.1 For the purpose of administration, mines of M/s ECL were divided into Areas. Rajmahal Opencast Mine fell under Rajmahal Area. General Manager (In-charge) was the head at the mine level who was assisted by General Manager (Operations), Manager, Area Safety Officer, Finance Executives, Planning Executives, Engineer (E&M), Engineer (Excavation) etc. Besides statutory personnel such as Safety Officer, Assistant Managers, Blasting Officers, Survey Officers, Overmen, Mining Sirdars, Surveyors, Shotfirers etc. were employed for supervision of various operations in the mine. On the day of the accident Shri S.K. Singh was Chief General Manager (In-charge)/Deemed Agent, Shri D.K. Nayak was General Manager (Operations)/Agent and Shri Pramod Kumar was Manager of the mine.

2.6.4.2 Names of other officers/subordinate supervisory staff reporting to the Manager and relevant to the accident that occurred at Dahernangi Patch on 29.12.2016 are given below.

- (i) Shri S.P. Burnwal, Safety Officer
- (ii) Shri Dilip Roy, Assistant Manager, Overall In-charge of the mine
- (iii) Shri Vijay Kumar, Assistant Manager, In-charge of Dahernangi Patch
- (iv) Shri Ranjit Kumar Singh, Assistant Manager, Overall In-charge, Second Shift.
- (v) Shri Sujay Kumar, Overman, Second Shift of Dahernangi Patch
- (vi) Shri Md. Ejaj Hussain Ansari, Mining Sirdar, Second shift of Dahernangi Patch (Overburden)
- (vii) Shri Hem Narayan Yadav, Mining Sirdar, Second shift of Dahernangi Patch (Coal)

- 2.6.5 At Dahernangi Patch where this accident occurred, operations were being carried out by Contractor MIPL-NKAS (JV). The name of the Contractor was Shri Vinesh Shivjee Dholu. The Contractor had appointed three supervisors namely Lallu Khan (one of the victims), Shri Rajesh Patel and Shri Krishna Kant Upadhyay for general supervision of contractual work at Dahernangi Patch. In addition, he had also appointed site in-charges in every shift at all the three places i.e. coal bench, OB in-situ bench and OB dump bench. Supervision by them was in addition to the statutory inspections made by M/s ECL management.

CHAPTER III

OCUURRENCE OF ACCIDENT

- 3.1.0 The Court visited the site of accident after a lapse of about three years from the date of occurrence of the accident. Therefore, facts enumerated below are based on the deposition of witnesses during proceedings of the Court.
- 3.1.1 Operations in the 2nd Shift (02.00PM to 10.00PM) of 29.12.2016 at Dahernangi Patch of Rajmahal Opencast Mine commenced at two places viz. (i) removal of overburden dump in Kaveri Sump area by deploying five excavators, twenty five tippers, one dozer and one grader (ii) extraction of coal in Deep Mining Zone by deploying one excavator and twenty five tippers.
- 3.1.2 All production related operations at Dahernangi Patch were being conducted through Contractor namely M/s MIPL-NKAS(JV).
- 3.1.3 Operations of coal loading was stopped after about two hours in view of non availability of blasted coal. Operations in overburden dump only were being conducted around the time of the accident.
- 3.1.4 During the operations in overburden dump, at about 07.00PM on 29.12.2016 a violent sound (boom) was heard followed by collapse of in-situ overburden, coal benches and slide of overburden dump. The slide, about 600m X 110m (4.31 M cu.m) in size (as per Report of HPC) was so sudden that it did not give any time to the workers deployed in the area to escape and consequently, 23 persons along with HEMMs got buried beneath the fallen materials.

CHAPTER IV

RESCUE AND RECOVERY

- 4.1.1 Shri Hem Narayan Yadav, Mining Sirdar who was present near the accident site was the first to inform the Control Room about the fall of side/accident. The person in the Control Room informed Shri V.K. Singh, Assistant Manager and In-Charge of the Shift who in turn informed Shri Pramod Kumar, Manager of the Mine.
- 4.1.2 After raising alarm S/Shri Hem Narayan Yadav and Mahendra Mal tried to escape but fell down and got injured. They were rescued by their co-workers and shifted to Area Hospital.
- 4.1.3 S/Shri Krishna Goswami, Jeep Driver and Raj Kumar, Excavator Operator employed by the Contractor were partially buried under the fallen debris. They were rescued by the Contractor's men.
- 4.1.4 All concerned Departments/Authorities such as Regional/Zonal Offices of DGMS, Sitarampur, Headquarters of M/s Eastern Coalfields Limited, Sanctoria, Mines Rescue Station, Sitarampur and District Administration, Godda were informed about the accident by Shri S.K.Singh, the then General Manager (In-charge) of the Mine.
- 4.1.5 Shri S.K. Singh along with senior officials of the mine rushed to the accident site but could not reach the actual spot as a large crowd had already assembled there making it difficult for them to move forward and inspect the accident site.
- 4.1.6 An Emergency Control Room was established thereafter at the mine and the process of rescue and recovery was started immediately.
- 4.1.7 The Contractor i.e. M/s MIPL-NKAS (Joint Venture) submitted to the management a list of 23 persons who were most likely entrapped in the debris as they were found missing in addition to a list of equipments (12 Tippers, 06 Excavators and 01 Dozer), which had got buried beneath the fall.
- 4.1.8 Rescue/Recovery operations were carried out continuously till suspended on 05.01.2017 after observing movement of strata at the site. Rescue/Recovery operations were re-started from 13.01.2017 after preparation of an Action Plan vetted by ISO, Members of Expert Committee and approved by DGMS for removal of debris from the affected overburden dump.

- 4.1.9 Only 18 bodies could be recovered by 05.01.2017 i.e. before the suspension of operations. Three more bodies were recovered later on. However, bodies of two workers could not be recovered.

CHAPTER V

INSPECTION OF THE MINE BY THE COURT

- 5.1.1 Smt. Rashmi Verma, the Hon'ble Chairperson of the Court of Inquiry accompanied by Shri Akhter Javed Usmanee and Shri Ravindra Sharma, Assessors went to Rajmahal Opencast Mine on 22.10.2019 and inspected the site of accident at about 04.00PM. Officials of DGMS and M/s Eastern Coalfields Limited were present during the inspection. Report of inspection along with names and designations of persons accompanying the Court is given at Annexure- X.
- 5.1.2 Since the accident had occurred on 29th December, 2016 about three years prior to the inspection by the Court, the site of accident had got disturbed due to the rescue/recovery operations conducted by the mine management.
- 5.1.3 Shri D.K. Nayak, General Manager (In-Charge) of Rajmahal Opencast Mine, showed the accident site and explained, in detail, about the occurrence of the accident with the help of the 'accident site Plan' prepared by the management immediately after the accident.
- 5.1.4 At the time of inspection no work was going on at the accident site.
- 5.1.5 Shri D.K. Nayak also informed that the dump had been formed on the upthrow side of fault after complete extraction of coal and on the date of accident, coal was being extracted on the downthrow side of fault.
- 5.1.6 The Court directed the mine management to submit the copies of the proposals along with plans submitted by them to DGMS for obtaining various permissions connected with mining operations to be carried out under the Coal Mines Regulations, 1957 in the area where accident occurred along with copies of the permission letters obtained from DGMS.
- 5.1.7 After inspection of the site of accident, a meeting was held in the Guest House of Rajmahal Project of M/s ECL. Names and designations of the persons present in the meeting are at Annexure-XI.
- 5.1.8 Shri D.K. Nayak, General Manager (In-Charge) of Rajmahal Opencast Mine explained, in detail, the workings of the Rajmahal Opencast Mine with the help of a power point presentation.
- 5.1.9 With a view to understand the causes and circumstances of the accident, the Court asked Shri Nayak to submit the following documents to the Member Secretary, Rajmahal Court of Inquiry:
- (i) Management structure of the mine specifying responsibility and accountability of every person as required under Regulation 8A of the Coal Mines Regulations, 1957.
 - (ii) Dates of submission and approval of initial Project Report and expansion proposals thereof along with their copies & period of formation of overburden dumps on the up throw side of the fault that led to this accident.
 - (iii) Report of the High Powered Committee constituted by Ministry of Coal to enquire into this accident.
 - (iv) Initial/Periodical Medical Examination & Vocational Training details of the deceased persons in the accident.
 - (v) Photographs taken by the management immediately after the accident.
 - (vi) List of DGMS seizures.
 - (vii) Workmen's Inspector Reports of the year 2016.

All the above mentioned documents were received in the Court of Inquiry.

CHAPTER VI

EVIDENCE PRESENTED BEFORE THE COURT

6.1.0 Summary of DGMS Report:

- 6.1.1 Shri Rahul Guha, the then Director General of Mines Safety, constituted an Inquiry Committee consisting of following officers of DGMS to enquire into the causes and circumstances leading to the accident that occurred at Rajmahal Opencast Mine of M/s ECL on 29.12.2016.
- (i) Shri Utpal Saha, the then DDG, EZ, Sitarampur - Chairman

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|-------|---|----------|
| (ii) | Shri Niranjana Sharma, the then Director | - Member |
| (iii) | Md. Niyazi, the then Dy. Director | - Member |
| (iv) | Shri Sudhir Bhaisare, the then Dy. Director (Mech.) | - Member |
| (v) | Shri Inumula Satyanaraya, the then Dy. Director (Hq.) | - Member |
- 6.1.2 The Committee submitted its Report on 10.02.2017. The Report was approved by Shri Rahul Guha, the then Director General of Mines Safety on 13.02.2017.

6.1.3 **Salient points of the Report are given below:**

- (i) As many as three parallel fault planes, had intersected the operational area in close vicinity thereby dividing the area into small blocks/wedges.
- (ii) Seams II and III on upthrow side of the fault were extracted in past without leaving any barrier against the fault planes viz. F-8 and F-10. Huge overburden was dumped in the excavated area. This dump was exerting its dead weight over the excavated area. The dead weight was also exerting lateral pressure on thin barrier in coal/in-situ overburden maintained against the dump on downthrow side.
- (iii) With advancement of in-situ overburden and coal benches towards north direction, the width of barrier against dump got reduced.
- (iv) Regular deep hole blasting to the tune of 1500-6700 kg. per round of blast in the area and large scale deployment of HEMMs and their movements at the top benches in overburden dump situated over the in-situ overburden benches were causing disturbance in the strata.
- (v) Operations mentioned at sl.no. (i), (ii) and (iv) above exerted tremendous pressure and disturbed the equilibrium of underlying strata triggering sudden failure of in-situ overburden and coal benches existing along and between fault planes. This was followed by instantaneous slide of overburden dump which resulted in engulfing of all men and machineries working in the area by debris.
- (vi) Though prominent cracks were being formed for the six months preceding the accident, no action was taken by the management to manage the situation in a scientific manner.
- (vii) Even monitoring of cracks and sliding of overburden were being done by the mine management in a very crude manner.
- (viii) Neither the reports of contractual agency regarding formation of cracks were given any cognizance nor the Report of the Committee (ref. no. ECL/Safety/Rajmahal OB dump/135 dated 06.09.2016) was implemented in totality.
- (ix) Special care while operating in the vicinity of geologically disturbed area as stipulated in DGMS permission letter was not taken by the management.
- (x) Sides in overburden/coal were not adequately benched/sloped.
- (xi) Scientific study was not undertaken prior to operation in the area.
- (xii) Study of Plans prepared post accident revealed that initially failure occurred along a plane and subsequently along a cantilinear path.
- (xiii) **Conclusion:** While contractual workers and machineries were deployed to form benches in coal, in-situ overburden and OB dump, dead weight of OB dump, vibration induced by deep hole blasting and movements of HEMMs caused violent failure of coal, in-situ overburden benches and OB dump in Dahernangi Patch of Rajmahal Opencast Mine followed by instant sliding of OB dump in an area of 720m x 366m burying 23 workers and 18 HEMMs.
- (xiv) Sixteen persons of M/s ECL including Shri B.N. Shukla, the then Director Technical/ 'Nominated Owner' were held responsible for the accident.
- (xv) Shri R.R. Mishra, the then CMD, M/s ECL was not held responsible since he did not come within the purview of the Mines Act, 1952. The Contractor and his supervisory staff were also not held responsible for this accident.
- (xvi) **Recommendations:**
 - (a) In-pit dumping in Opencast Project over coal bearing area should be avoided.
 - (b) Geologically disturbed area should be mined only under scientific guidance.
 - (c) Continuous monitoring of strata behavior should be done with available technology.

- (d) In big mining projects any deviation while execution of actual Plan should be taken up with due regards to safety.
- (e) All inspections in opencast mines made by DGMS officers should be of a type called General Inspection.

6.2.0 Summary of High Powered Committee Report:

6.2.1 The Chairman, M/s Coal India Limited (M/s CIL), constituted a High Powered Committee to carry out in depth analysis of the accident that occurred at Rajmahal Opencast Mine of M/s ECL on 29th December, 2016. The Committee comprised of following persons:

- (i) Shri Shekhar Sharan, the then CMD, Central Mine Planning and Design Institute Limited (CMPDIL) - Chairman
- (ii) Shri P.K. Sinha, the then Director (Technical/ P&P), M/s South Eastern Coalfields Limited (M/s SECL) - Member
- (iii) Dr. Phalguni Sen, the then Professor, Indian Institute of Technology (Indian School of Mines) (IIT(ISM)) - Member
- (iv) Dr. V.K. Singh, the then Scientist, Central Institute of Mining and Fuel research (CIMFR), Dhanbad - Member
- (v) Prof. I. Roy, the then Professor, Birla Institute of Technology (BIT), Mesra - Member

6.2.2 The Committee submitted its Report which was accepted by M/s CIL. The salient points of the Report are given below:

(i) Causes of the accident:

- (a) The accident was caused due to failure of highwall (batter) slope, most likely along the fault planes. Yielding of pit slope resulted into failure of overlying dump.
- (b) The failure of pit slope before the dump could be manifested from the fact that the pit benches were observed to have bodily shifted towards southern highwall. It was found during their visit that there was no cover of dump material on lower moved benches. Had the dump failed first, all pit benches would have been covered with dump material. Further, it was also gathered from the statements taken by the Committee that a 'bang' sound was heard just before the slide which indicated the failure of in-situ strata.
- (c) The volume of slid overburden dump and batter was estimated to be 4.31 million cu.m. and span of collapse was about 600m. The volume was calculated from the survey data conducted before and after the collapse.
- (d) Extension of workings towards north side resulted in reduction of width of batter against the fault zone which yielded at lower level due to dead weight of 140m high dump alongwith 100m high pit slope standing at steep slope angle. The steeper mining at intermediate and lower level increased stress at the toe of standing pit slope. It activated movement in the pit slope mass and also activated the movement along fault plane. Once any movement is activated due to steeper slopes at intermediate and/or lower levels, water percolation also increases through the micro fractures of the in-situ slope mass. It leads to high hydrostatic pressure and causes fracture to the lower steeply slope mass, resulting in failure of overhanging upper slope mass also. Failure of batter wall might also have been triggered due to blasting in coal and in-situ overburden adjacent to the batter.

(ii) Human Failure:

- (a) **Non-compliance of safety provisions:** Stipulations of DGMS and other statutory provisions regarding formation of proper benches from top downwards and provisions regarding special precautions to be taken while working near fault planes were not complied with. Dump and pit benches were not formed systematically. Benches were of varying height and width not adhering to the basic principles of dump in open pit mining.
- (b) **Supervision:** Dahernangi Patch was mostly supervised by contractual supervisors who were not competent as per the CMR, 1957.
- (c) **Inspection:** Inspections by statutory personnel of the mine and Internal Safety Organisation (ISO) lacked quality and objectivity. Even maintenance of inspection records was not proper.

No member of ISO ever highlighted about impending dangers from 140m high overburden dump immediately below which extraction of coal was being carried out.

- (d) **Safety Audit:** Safety Audit of the mine was carried out during April, 2015 and also during March, 2016. In neither of the audit reports any impending danger due to excessive height of benches and danger or failure of overburden slope was mentioned.
- (e) **Safety Committee/Workmen's Inspectors:** In spite of incidences of slope/dump failures, issues of slope stability were not discussed in Safety Committee Meetings. The matter was also not reported by Workmen's Inspectors.
- (f) **Inspection by DGMS:** Excessive height and high angle of slope of dump were not recorded in the violation book by DGMS officials in recent past i.e. prior to the occurrence of the accident.
- (g) **Overlooking worrying signs of danger:** There had been small scale dump failures prior to the accident. First time, cracks were observed in overburden dump on 4th January, 2016 which was followed by small scale failure. The second failure was on 9th August, 2016. Further crack was observed on 6th December, 2016 followed by small scale failure. Concerned officials including ISO, Safety Committee Members and Workmen's Inspectors did not take them seriously. Circumstances necessitated a rigorous and advance level of monitoring of the dump slopes. When the work of coal extraction was suspended due to falling of overburden material in Deep Mining Zone at about 4.30PM on 29.12.2016, management should have taken decision to suspend the re-handling operations in the overburden dump also.
- (h) **Non-provision of Instrumentation for real time monitoring:** Mechanism for real time round the clock monitoring of slope was not available at the mine. Even the records of monitoring of cracks by conventional method, adopted in the mine, were not properly maintained.
- (i) **Lapses during Conceptualization and Planning:** Deep Mining Zone Patch was constrained by presence of fault/shear zone under surcharge load of about 140m high internal dump. Both impediments required careful planning supported by detailed geotechnical investigations and intensive monitoring of bench movement of highwall/batterwall. However, no appropriate scientific study appears to have been taken prior to the accident.

(iii) Recommendations:

- (a) In large opencast projects there should be a geo-technical cell for slope monitoring and a detailed scientific study should be done for adopting an appropriate method of working.
- (b) While creating an internal dump dip side of which is proposed to be extracted in future, extra precautions in respect of slope study should be taken by carrying out a scientific study from an expert agency. The dump should be regularly surveyed to update accurate dump geometry.
- (c) Risk Management Plan should be prepared and reviewed.
- (d) Safety audit guidelines should be prepared as per international guidelines. Awareness of contractual workers should be enhanced through regular interaction and training programmes.
- (e) Vetting of all coal projects by ISO in respect to mines safety must be made mandatory.
- (f) The resident geologist should conduct field mapping to see existence of un-detected faults/weak planes.
- (g) In case of multiple fault planes bench design should be such that they do not strike parallel to fault planes.
- (h) A system of classification for dump slopes in Indian geo-mining conditions should be developed.

6.3.0 Summary of observations of witnesses who deposed before the Court on affidavits:

6.3.1 Shri J.N.Singh, Individual:

Causes & circumstances:

- (i) The main reason for the accident was the unknown faults and weak zones near the working patch coupled with absence of scientific study and non installation of slope stability monitoring system.
- (ii) The in-situ bench failed first which resulted into the fall of OB dump lying above.

- (iii) No individual can be held responsible. The entire system and practices followed were to be blamed and need to be overhauled.
- (iv) The contract signed between the M/s ECL and Contractor rendered the Manager a “Non-entity”.
- (v) Major responsibility of the accident may not be attributed to Shri R.R. Mishra, the then CMD.
- (vi) S/Shri S.K. Singh, the then Chief General Manager and Pramod Kumar, the then Manager were also not responsible for the accident.

Recommendations:

- (i) The rank of the Manager must be higher than any other official of the mine.
- (ii) Mine planners must have adequate knowledge and experience.
- (iii) Scientific study on stability of slope should be carried out by expert agencies.
- (iv) There should be provision for installation of slope stability monitoring system in large opencast mine.
- (v) Responsibility of safety should rest with the Manager and statutory officials under him and not on Contractor.
- (vi) DGMS should be held responsible for not enforcing the safety norms to be followed by the mine operators.
- (vii) Safety Audit of mines should be done by an external agency.
- (viii) Geological data should be verified by geophysical methods.
- (ix) Degree level engineering syllabus should have adequate coverage on geology and introductory course of geophysics.
- (x) A paper on Method of Workings should be introduced in the examination for the First Class Manager Certificate of Competency.
- (xi) A trauma centre in each subsidiary of CIL should be established.

6.3.2 Md. Younush Ansari, Dy. Treasurer and Shri R.K.Sharma, Honorary General Secretary, Indian Mine Manager’s Association:

Causes & circumstances:

- (i) A number of unidentified faults/slips existed in Deep Mining Zone. Their attitude was such that they intersected the batter on the downside of the fault F-8 forming a potential failure block. This supplemented by a load of 140m high dump caused the failure of batter.
- (ii) The failure of batter resulted into failure of dump.
- (iii) Slide protection device was not available in the mine.
- (iv) Role of management was not clearly defined in the contract agreement.
- (v) The role of DGMS should be proactive.
- (vi) The role of ISO from the level of Workmen’s Inspector, Safety Committee, Area and Corporate Safety Committee should be more proactive.

6.3.3 Shri G.B. Nagpure, Asst. General Secretary, INMF (INTUC):

Causes & circumstances: Accident was caused due to combined failures on the part of management, Contractor and DGMS officials in complying with the safety provisions provided under the Act. It could have been averted if following steps had been taken:

- (i) Scientific study done before commencement of operation.
- (ii) Sides of OB/Coal benches were properly sloped
- (iii) Corrective measures were taken after incidences of collapse on 09.08.2016 and 23.12.2016.
- (iv) Parameters of controlled blasting were followed.
- (v) Proper care was taken to handle known faults.
- (vi) Dump height beyond permissible limit was not created.
- (vii) Workings in coal, in-situ OB and OB dump were not done at the same time.

Recommendations:

- (i) Nominees/ legal heirs of all 23 deceased Contractor workers may be paid:
 - (a) An amount of Rs. 1, 12,800/- against life cover scheme (if not already paid).
 - (b) Monthly pension under CMPS-1998.
 - (c) A lump sum ex-gratia of Rs. 15 lakhs in addition to amount paid under Workmen's Compensation Act, 1923.
- (ii) One dependent from each family may be employed to sustain livelihood.

6.3.4 Shri B.P. Singh, Vice President & Shri Jitendra Kumar Singh, Secretary, All India Mining Personnel Association (AIMPA):**Causes & circumstances:**

- (i) Huge OB dump, about 147m high, created since 2007 onwards without formation of benches was exerting dead weight on the strata. The dump was created in general mining zone over floor of seam II after excavation of OB and Coal on north side (upthrow) of fault F-8.
- (ii) On south side of fault F-8, known as Deep Mining Zone/Dahernangi Patch or 20MT patch coal and OB were being excavated from south to north, i.e. from dip to rise. During course of excavation the crest of the pit became closer to fault F-8/dump. The barrier between toe of huge OB dump and crest of the pit became thin and weak and therefore, failed. Hidden small faults and slips may also have contributed to some extent.
- (iii) Heavy blasting on 28.12.2016 created several cracks in the thin batter and triggered the failure.
- (iv) During planning of the project position of faults was not ascertained. Four number of additional faults with throw varying from 10m to 20m were deciphered during recovery work near the site of failure. These faults were not shown on the Plan. The known fault F-8 was found to have shifted towards north for a distance varying from 0 to 70m.
- (v) Non-procurement of slope monitoring radar for real time monitoring of strata movement and non sanctioning of scientific study, though repeatedly sought by the management, also played an important role in the accident.
- (vi) Officers of DGMS, 'Owner' of the outsourcing company, Shri R.R. Mishra, the then CMD and Shri B.N. Shukla, the then Director (Technical) were responsible for the accident. S/Shri D.K. Nayak, Agent, S.K. Singh, deemed Agent and Pramod Kumar, Manager were not responsible for the accident.

Recommendations:

- (i) Duties of Inspectors should be prescribed in Regulations made under the Mines Act, 1952.
- (ii) CMD/CEO of the company should be nominated as 'Owner' of the Mines under the Mines Act, 1952.
- (iii) Qualified and experienced mining engineers should be selected as CMD and they should be posted for at least five years.
- (iv) Position of Manager should be elevated so that he fulfils the duties and responsibilities required under Section 17 of the Mines Act, 1952.
- (v) "Disaster" should be defined and Section 24 of the Mines Act, 1952 should be amended for compulsory investigation of all disasters under the Mines Act, 1952.
- (vi) Head of ISO should be of the rank just below the rank of CMD.
- (vii) Trade Union leaders/ office bearers of Association also must bear responsibilities for implementation of safety laws.

6.3.5 Shri Sheo Pujan Thakur & others representing Coal Mines Officers Association of India (CMOAI), ECL Branch:-**Causes & circumstances:**

- (i) A number of unidentified faults detected during recovery after the accident might have triggered the slide of in-situ rock which resulted into slide of OB dump. The attitude of unidentified faults was such that these intersected the batter on down throw side.

- (ii) Shifting of fault plane may be the main reason of the slide.
- (iii) Shri R.R. Mishra, the then CMD and Shri B.N. Shukla, the then Director (Technical) visited the place of accident but they did not point out any problem related to safety.
- (iv) No official of DGMS ever pointed out about dangers from dump.
- (v) Neither any Workmen's Inspector nor Safety Committee pointed about any danger from the dump.
- (vi) Neither DGMS officials directed the management to conduct scientific study for stability of slope nor M/s ECL Headquarters approved mine management's proposal moved in 2013 and 2016 in this regard.
- (vii) No danger was apprehended by any external or internal safety agency.
- (viii) It is also failure at planning stage. Attitude of the fault was not verified by Geologists.
- (ix) Coal shifted ahead of in-situ OB rock followed by broken batter which was again followed by dead weight of OB dump.
- (x) The Contractor was very negligent in maintaining safe and disciplined work culture.

Recommendations:

- (i) DGMS should modify conditions of permission as per demand of time and technology. The role of DGMS should be proactive.
- (ii) The coverage of term 'Owner' and 'Agent' should be deliberated in respect of public sector mines and 'Contractor'.
- (iii) Status of Manager should be maintained as per spirit of the Statute.

6.3.6 Shri P.N. Mishra, General Secretary, Indian National Mine Official and Supervisory Staff Association (INMOSSA):-

Causes & circumstances:

- (i) Shri R.R. Mishra, the then CMD of M/s ECL visited the mine on 26.12.2016 just three days prior to the accident. Before approving the proposal for removing OB dump in the Board he had studied the notes regarding formation of cracks/danger in OB dump and hence he was aware of the danger but still did not take appropriate action.
- (ii) Shri B.N. Shukla, then Director (Technical) did not take action for sanction of scientific study and did not provide instrumentations for fore-warning.
- (iii) Shri Sushanta Banerjee, the then Head of ISO failed to implement the recommendations of the Committee constituted after incidence of slide on 09.08.2016 regarding instrumentation for monitoring of the movement of the dump.
- (iv) Contract document signed between the then General Manager (CMC) and the Contractor is responsible for allowing the Contractor to work according to his capacity of judgement and not giving due regard to safety by-passing the Manager.
- (v) Since Shri S.K. Singh, the then Chief General Manager had duly apprised the head of safety, he cannot be held responsible. However, as Engineer In-charge he cannot absolve himself of the responsibility of failing to assess the correctness of advice received.
- (vi) Since officers higher in hierarchy were aware of the dangers and still failed to provide instruments for monitoring the movement of the strata, the Manager, Assistant Managers, Overmen and Mining Sirdars are not responsible.
- (vii) DGMS officers are responsible for their incompetency and negligence of duties.
- (viii) As 'Deemed Agent', the Contractor failed to comply with the safety laws.

Recommendations:

- (i) Provisions of instrumentation in opencast mine for movement of dump may be stipulated in Statute.
- (ii) ISO may be headed by the seniormost Executive Director of the company.
- (iii) The provisions of the Mines Rules regarding composition of Safety Committee may be amended to include members having technical background.

6.3.7 Shri Sujit Bhattacharjee, Vice President, CMSI, CITU:

Causes & circumstances:

- (i) Very eminent mining engineers led Rajmahal Opencast Mine, but they could not dare to start Deep Mining Zone after completion of mining operations upto upthrow side of 60m throw fault as they considered it dangerous due to:
 - (a) existence of fault
 - (b) huge water percolation
 - (c) expectation of more geological disturbances.
- (ii) The M/s ECL management had not planned earlier to work in this patch.
- (iii) The proposal mooted in 2014 for approval by the M/s ECL Board was not routed through ISO for vetting. It was a system failure of corporate management. The proposal was not even sent to CMPDIL for necessary technical scrutiny and vetting.
- (iv) Operations from dip to rise was technically an unsafe practice and in contravention of the permission letter from DGMS.
- (v) Removal of thick coal seam resting on a high gradient floor from the dipmost boundary side of the approved Dahernangi Patch and approaching towards the fault plane on the rise side having unconsolidated dead load of OB dump on a slurry base followed by heavy blasting and movement of heavy earth moving machineries with high water flow along floor of coal resulted into failure of in-situ OB and coal at the downthrow side of 60m throw fault. Benches were simply separated from the fault plane and slipped to the dipmost boundary of the patch.
- (vi) Mining operations in disturbed zone as mentioned above was being continued without scientific investigation.
- (vii) DGMS officials during inspection of Dahernangi Patch since 2015 could not point out contraventions of unsafe practices.
- (viii) Operation of re-handling was not started from top downwards as envisaged by the Committee headed by the ISO representatives and no scientific study Report obtained by the mine management.
- (ix) After sliding of benches on 09.08.2016, the ISO recommended clearing of crack zone of OB dump prior to starting extraction of OB and coal below. However, extraction of coal and removal of in-situ OB continued without clearing the crack zone.
- (x) Re-handling job of OB for 17 lakh cubic meters was being done by the Contractor without any work order.

6.3.8 Shri Arvind Pandey, Area Secretary, CMC affiliated to HMS:**Causes & circumstances:**

- (i) The accident was caused due to high overburden dump.
- (ii) Scientific study and installation of slope study radar could have averted the accident.
- (iii) Accident was not caused in one day. It was caused due to negligence being committed for several years. Planners of the project are also equally responsible.
- (iv) Officers of DGMS also remained silent though the height of dump had been increasing.

6.3.9 Md. Ali Hussain Ansari, Individual:**Causes & circumstances:**

- (i) Accident on 29.12.2016 was not sudden. It was caused due to negligence being committed for several years.
- (ii) M/s ECL tried to put the onus of responsibility for safety on the Contractor through wrong agreement. This created confusion between the mine management and the Contractor regarding implementation of safety.
- (iii) The Contractor agreed to take the responsibility for ensuring safety in the mine under the contractual agreement as otherwise he would not have been awarded the 'Contract'.

6.3.10 Shri Ahmad Ansari, Area President, CMC affiliated to HMS:**Causes & circumstances:**

- (i) Accident was not sudden. It was caused due to negligence being committed for several years.
- (ii) 'Owners' of the company had been changing frequently. There were three Directors (Technical) during 2016. On 04.01.2016 when the first slide occurred Shri Ramchandra Reddy was 'Owner', on 09.08.2016 when the second slide occurred Shri K.C. Patra was 'Owner' and on 29.12.2016 when the accident occurred Shri B.N. Shukla was 'Owner'.
- (iii) DGMS is also equally responsible.
- (iv) Scientific study and installation of slope radar could have prevented the accident. In 2013 proposal for purchase of three slope radars was moved but the Board did not sanction.

6.3.11 Shri B.P.Singh, Individual:

Causes and circumstances leading to the accident:

- (i) **Omission at Planning stage:** The area lying on the dip side of fault planes F-8, F-10 was geologically disturbed. That's why it was not included initially in the Project Report on ground that no sufficient data was available about the condition of seams and overburden rocks. Later on, the proposal for extraction of this area was prepared by CMPDIL without due consideration of prevailing geological disturbances.
- (ii) **Role of aquifers and its effects:** The area was not only geologically disturbed but strata were also hydraulically charged due to presence of aquifers. Aquifers not only weaken the strata and impart additional hydrostatic load but also lubricate the faults and bedding planes leading to premature failures. Earlier CMPDIL after making investigations had recommended for advanced dewatering arrangements but this aspect was not given due importance while working the dip side area.
- (iii) **Old dumping in Kavery sump containing water and sludge:** The strata was already charged with aquifers and 125m high dump was formed on watery sludge and silt. Both factors were, therefore, causing very high stresses not only on the fault plane and on to the batter benches of coal and sandstone left against such faults towards dip side but also lubricating the fault planes as well as bedding planes between sandstone and coal seams.
- (iv) **Deepening of the dip side workings:** Workings on the dip side had reached to a depth of 123 to 127m from top of the OB benches. Deepening of workings towards dip side of the fault plane without due consideration of the barrier to be left against the fault plane was another cause.
- (v) **Reduction of barrier/batter against fault plane:** Extension of workings towards the fault reduced the width of coal and OB benches supporting the fault with 30° hade towards dip side to a distance varying from 34 to 117m. This was another cause of the accident.
- (vi) **Increasing dump height by over dumping on rise side pit:** Though OB dumping in Kaveri Sump was being done since 2011, but dumping in the year 2016 was the highest and it increased the dump height by another 57.6m. This was another factor which contributed to loading on the dip side workings leading to failure of benches and OB dump simultaneously.
- (vii) **Effects of blasting:** Heavy blasting within 85m and upto 45m off the fault planes using upto 5218 kgs. of explosives had virtually got the strata detached from the fault planes due to its high ground vibration level, releasing it free and conducive to slide along its inclined base at an angle of 8 to 10° down.
- (viii) **Dip of strata and hade of the fault:** Increased dip of the strata near the fault plane contributed to unstable dump floor. The unfavorable hade of the fault also contributed to failure.
- (ix) **Development of cracks in OB benches prior to the accident:**
 - (a) There were incidences of cracks in dump benches/dump failure on the 4th/5th January, 2016, 9th August, 2016 and during period from 23rd to 27th Dec, 2016, but impending dangers could not be visualized by any one in line from bottom to the top management.
 - (b) In the second shift of 29.12.2016, a side fall occurred in in-situ OB and there were some movements in coal benches due to which men and machineries from coal and in-situ OB faces were withdrawn but re-handling of overburden dump continued which indicates an error of judgement.

Recommendations:

- (i) **Geotechnical investigation/Scientific study in opencast mines:** In large opencast mines, a scientific study based on a detailed geotechnical and hydro-geological investigations should be conducted at planning and execution stages by multi disciplinary group of scientists.

- (ii) **Research and Development on bench and slope stability in opencast mines:** Strata monitoring including dump monitoring for deeper opencast mines and dumps of more than 60m height should be made mandatory to provide real time information about the loads and strains on benches and dumps.
- (iii) **Scientific studies and investigation and third party monitoring:** Recommendations on scientific investigation, risk assessment and safety management studies should be monitored by an independent third party who should be paid by an independent agency not connected with the mining company.
- (iv) **National Committee on opencast mining:** A National Committee on opencast mining should be constituted to see that the opencast mines are properly designed, operated and maintained as per the approved Project Report and their schedule.
- (v) **Digital Occupational Safety and Health (OSH) observatory:** A digital OSH observatory should be made at national as well as regional level where in digital records of all the accidents, disasters, health issues, status of mines and their risk levels in digital forms should be maintained.
- (vi) **Mine Digitalization and Emergency Action Plan:** For quick access to affected persons in times of emergencies a provision under Regulation 37 (5) (c) of the Coal Mines Regulations, 2017 for belowground mine has already been made. This may be amended to include opencast mines also.

6.3.12 **Shri Ashok Kumar Sharma, Individual:**

- (i) Various Court of Inquiries in past have recommended for enhancement of authority of the Manager in the mine to enable him fulfil obligations entrusted upon him by the Mines Act, 1952, but this recommendation has not been implemented so far.
- (ii) Gurudas Gupta Committee on safety had recommended for holding the CMDs of the companies accountable for the status of safety in the mine, but this recommendation also has not been implemented.
- (iii) DGMS and Union representatives taking part in the Bi-partite/ Tri-partite Committees on Safety should also be made accountable.

6.3.13 **Shri Shiv Kant Pandey, Colliery Mazdoor Congress:**

- (i) The Inquiry Report of DGMS and of HPC are based on theory and imagination. He requested the Court for re-inspection of the mine to arrive at correct cause of the accident.
- (ii) Social security of workers who were victims of the accident was zero. Their dependents were paid an amount of Rs. 5 lakhs each by M/s ECL and the Contractor.
- (iii) The Court of Inquiry constituted to enquire into causes and circumstances in respect of the accident that occurred in Anjani Hill mines in the year 2010 awarded an ex-gratia payment of Rs. 15 lakhs to dependents of each worker who died in the accident.
- (iv) He requested the Court to make recommendations for payment of Rs. 25 lakhs to dependents of each worker who died in the accident that occurred in Rajmahal Opencast Mine on 29.12.2016 as social security.

6.3.14 **Shri Randir Prasad Singh, President, RCMS, ECL Regional Committee:**

- (i) He requested the Court for re-inspection of the mine to arrive at correct cause of the accident.
- (ii) The amount of compensation received by dependents of workers who died in the accident that occurred in Rajmahal Opencast Mine on 29.12.2016 was quite less. He requested the Court to recommend for payment of maximum amount possible.

6.3.15 **Shri Narendra Kumar Singh, President, Akhil Bharatiya Khadan Majdoor Sabha:**

- (i) On watching the Court proceedings, he was under impression that everybody was trying to save his own skin and nobody wanted to arrive at the root cause of the accident.
- (ii) A Workshop was organised by Shri Lakshmi Narayana of DGMS before the occurrence of the accident. In the Workshop five hazards were identified. Sliding of slope was one of them. The Workshop was only theoretical. If the mine had been inspected after the Workshop, this accident would have been averted.
- (iii) Enquiries into disasters that occurred at Jayant OCP and Shasthi OCP had observed that there was lack of infrastructure for monitoring of slope study. This aspect was not given due importance and SSR in Rajmahal Opencast Mine was not installed.

- (iv) In Umarer OCP non-marking of faults on the Geological Plan had caused disaster. Here in Rajmahal OCP also un-reliable Geological Plan caused the accident.
- (v) Neither Management nor DGMS took action to see that safety was given due regard while working.
- (vi) None of the institutions like ISO and Internal Audit informed about dangerous conditions prevailing in the mine.

6.3.1.1 Summary of deposition of witnesses:

6.4.1 Shri R. Subramanian, Chief Inspector of Mines (CIM)/Director General of Mines Safety (Officiating), Directorate General of Mines Safety (DGMS):

- (i) He was not a party to any of happenings related to this accident except that he was holding the records.
- (ii) He placed the Report of Inquiry of DGMS in the Court.
- (iii) After the accident DGMS issued circulars to the mine management for effective slope monitoring in opencast mines.
- (iv) Concept of Safety Management Plan was floated in the year 2000 through the 09th Conference on Safety in Mines. Initially, it was advisory and with coming into force of the Coal Mines Regulations, 2017, it is now mandatory.

6.4.2 Shri Rahul Guha, the then Director General of Mines Safety, DGMS:

- (i) He was DG and CIM on 29.12.2016, when this accident occurred.
- (ii) He had constituted a Committee followed by a sub-Committee to enquire into the accident. Actually the Inquiry was conducted by Shri U. Saha, the then DDG, Eastern Zone, other members only assisted him.
- (iii) Immediate cause of the accident was non-withdrawal of persons after stoppage of work in the area from 23rd to 26/27th December and taking adhoc decisions to combat risks from dump without proper planning/scientific study was systemic failure.
- (iv) Contractor and his supervisors were not held responsible since statutory personnel supervising the operations were appointed by the mine management.
- (v) Reporting and designing of Inquiry Report of DGMS required improvement.

6.4.3 Shri P.K. Sarkar, the then DDG, HQ, DGMS:

- (i) He neither had any role in the finalization of Inquiry Report of DGMS nor did he approve it.
- (ii) After the accident, he inspected Rajmahal Opencast Mine on 31st December, 2016 and instructed in writing regarding procedure to be followed during rescue and recovery operations to avoid any further mishap.
- (iii) Primary responsibility for safety in mining operations lies with the management of the mine. An officer of DGMS is at fault if he does not act even after danger comes to his knowledge.

6.4.4 Shri Utpal Saha, the then Deputy Director General of Mines Safety, DGMS, Eastern Zone, Sitarampur:

- (i) Statutory Inquiry was conducted under his Chairmanship and said that whatever was in the Inquiry Report, was his statement.
- (ii) Permission from DGMS for forming benches in OB dump was not obtained by the management.
- (iii) In-situ overburden and coal benches failed due to the dead weight of overburden dump plus the operations due to heavy blasting and movement of machineries. All three were main factors.
- (iv) He requested the Hon'ble Court to ponder about the role of planning department of ECL/CMPDIL for working in geologically disturbed area/beneath overburden dump.

6.4.5 Shri Niranjana Sharma, the then Director of Mines Safety, Sitarampur Region No.3, Eastern Zone, Sitarampur, DGMS:

- (i) On 10.08.2016, he inspected the Plan in survey office of Rajmahal Opencast Mine and on 11.08.2016, he inspected Dahernangi Patch where re-handling of dump was being done. Coal and in-situ OB (partially) benches were waterlogged. He did not observe any slide which had occurred on 09.08.2016 in the dump benches.

- (ii) The file regarding grant of permission in 1987 was not traceable in the office of DGMS and hence Plan enclosed with the application for permission was not available.
- (iii) Overburden dump was found adequately benched during his inspection on 11.08.2016.
- (iv) On 11.08.2016, periphery of dump had crossed the projection of fault on ground level. It had reached the limitation of workings on the south side. Toe of the dump was up to the edge of in-situ overburden bench.
- (v) To a pointed question whether inconsistency between analysis of evidence and conclusion of cause in DGMS Inquiry Report was due to negligence, he replied “to some extent”.
- (vi) Workmen’s Inspector and Safety Committee, two eyes of safety in mine, had become defunct.
- (vii) Small slides occurred due to rain but cracks in the in-situ strata and coal occurred due to pressure exerted by continuous blasting in the rib against the fault plane. Pressure was also exerted by overburden dump. These pressures triggered ejection of thin barrier against OB dump/the fault.

6.4.6 Shri V. Lakshmi Narayana, the then Director of Mines Safety, Eastern Zone, Sitarampur:

- (i) On 26th and 27th September, 2016, he had conducted a Workshop on Safety Management Plan i.e. method of its preparation and evaluation of risk assessment etc. in Rajmahal Opencast Mine as per directive of DGMS (HQ) under DGMS (Tech.) Circular No. 5 of 2016.
- (ii) In the Workshop, five principal hazards including dump failure were identified.
- (iii) Purpose of this Workshop was to guide the mine management, workers’ representatives and supervisors on formulation of Safety Management Plan.
- (iv) He did not inspect Dahernangi Patch where this accident occurred on 29.12.2016.

6.4.7 Shri Niyazi, the then Deputy Director of Mines Safety, Sitarampur Region No.3, Eastern Zone, Sitarampur, DGMS:

- (i) During 2016, he did not inspect the area where this accident had occurred.
- (ii) Plan (enclosure to the permission letter of DGMS dated 1987) showing the area for which permission was granted was not available with DGMS.
- (iii) Real time monitoring of dump slope as required by DGMS circular was not installed at Rajmahal Opencast Mine.
- (iv) After discussion in the DGMS Inquiry Committee, it was decided that since CMD of M/s ECL did not come within the purview of the Mines Act, 1952, he should not be held responsible.

6.4.8 Shri Gorakh Singh, the then Surveyor of DGMS:

- (i) He was Surveyor (Hq.) in DGMS on the day of accident. He was one of the members of the Committee constituted by Sri R. Guha, the then DG, for preparation of the Plan and Sections of the accident site.
- (ii) After the accident, he surveyed the area and plotted the Plan and drew Sections based on actual survey. Other details on the Plan were marked from the data taken from the mine (which existed before the accident).

6.4.9 Shri Shekhar Saran, the Chairman, High Powered Committee/the then Chairman, CMPDIL, Ranchi:

- (i) When in the year 2009, seventeen million tonnes capacity mine project was approved, then additional area on southern side of the fault was annexed on cost consideration (favourable coal/OB ratio) even though the area was geologically highly disturbed.
- (ii) Dump was created over a waterbody which had its own risk. Creation of 146m high dump must have made tremendous impact on the barrier against fault on the south side. The previous management, as precautionary measures, had left around 150 to 250m thick barrier on the southern side against the fault plane. Presence of confluence of two faults F8/F9 just below the dump/waterbody had the potential to trigger land slide.
- (iii) In 2011, CIMFR after studying the stability of slope and OB benches had recommended that since old Sump (Kaveri Sump) existing on upthrow side of the fault was full of silt which had tendency to flow, a safe barrier against the fault and sump was necessary.
- (iv) Extension of work towards the fault triggered the slide.
- (v) It was a systemic failure. Failure took place at various levels.

6.4.10 Dr. Phalguni Sen, former Professor, IIT (ISM), Member of High Powered Committee:

- (i) DGMS officers who inspected the mine and CMD and Director (Technical) of M/s ECL who inspected the mine were equally responsible. It is not the man, it is the system that works.
- (ii) Slope stability Radar cannot prevent failures but monitors movement of strata and provides enough time for withdrawal of men and machineries.
- (iii) This accident was in form of slope failure. Geological discontinuity, shear strength and slope geometry play important part in slope failure.
- (iv) Dump created in one go and created one after another at interval of 2 to 3 years have different effect. Contact between different layers of dump are weak planes.
- (v) Disturbances caused by movement of dumpers might also have initiated the failure.
- (vi) Effect of blasting was not considered because no blasting was done in the area on the day of accident.
- (vii) It was a complex phenomenon, very difficult to pin point whether the lower portion failed first causing the upper portion to come down or upper portion failed first causing movement in lower portion.
- (viii) Slope geometry was high. Dump geometry was also quite high. Authority must have seen some instability. That is why they were reducing the height of dump.
- (ix) If vertical load cannot be transmitted on one side this will have a tendency to press the other side and the vertical stress may get converted into horizontal stress.

6.4.11 Shri R.R. Mishra, the then Chairman cum Managing Director, M/s Eastern Coalfields Limited:

- (i) He takes part in the management, control, supervision and direction of the company.
- (ii) To a pointed question whether after approving the proposal in the Board meeting on 30.11.2016 to remove the danger from the dump, he inquired about the implementation status of this decision during his visit on 26.12.2016, his reply was "I did not ask".
- (iii) He could not say as to who was responsible for this accident.

6.4.12 Shri B.N. Shukla, the then Director (Technical) Operation, M/s Eastern Coalfields Limited/ 'Nominated Owner' of Rajmahal Opencast Mine:

- (i) The company has an ISO. The company has a Bipartite Safety Board, having representatives from all Unions and meetings are held every month. The Safety Board inspected Rajmahal Opencast Mine on 21.10.2016. Safety Committee and Workmen's Inspector function at mine level. Safety Audit of Rajmahal was done on 30.03.2016. Area level Tripartite Safety Committee meetings are held to discuss matters of safety. None of them brought to his knowledge the danger/violation existing at Rajmahal Opencast Mine.
- (ii) There was no provision in DGMS permission letter regarding scientific study.
- (iii) GM (Safety) was reporting to him daily. He did not get any information from him regarding high benches at Rajmahal Opencast Mine.
- (iv) He did not find anything un-usual during his inspections of Rajmahal Opencast Mine on 26.11.2016 and 26.12.2016.
- (v) He was satisfied with the measures taken by the mine management on implementation of the decisions approved by the Board in the meeting held on 30.11.2016.
- (vi) Action on scientific study, proposed by the management, was under process.
- (vii) No dumping was done in Kaveri Sump during his tenure as Director (Technical).
- (viii) First in-situ solid mass failed/moved horizontally for about 150 to 250m and then overburden dump fell down in the created gap. The accident was not caused by overburden dump. Failure of in-situ strata was not due to dump pressure. It might be due to horizontal stress. It is a matter of investigation.

6.4.13 Shri Sanjay Kumar Singh, the then Chief General Manager, Rajmahal Opencast Mine:

- (i) He joined Rajmahal Opencast Mine in the month of July, 2016.
- (ii) Height of OB dump was about 140 to 147m. No dumping was done during his tenure.
- (iii) He did not apply undue pressure on Contractor for production.

- (iv) His last inspection of Dahernangi Patch was on 26.12.2016 when he accompanied the then CMD and the then Director (Technical).
- (v) There was dual supervision on workers of Contractors. This system was prevalent in all mines of M/s ECL where Contractors were deployed.
- (vi) Excavation on the rise side of fault was done upto 2007. After excavation in-pit dumping was done.
- (vii) There were aquifers in faulted zone.
- (viii) Water seepage might have caused collapse of strata.

6.4.14 Shri Akhilesh Pandey, the then General Manager, Rajmahal Opencast Mine:

- (i) Dumping in Kavery Sump was started in the year 2007.
- (ii) He had initiated the proposal for re-handling of 13.44 million cu.m. of OB dump and scientific study after incidence of crack in January, 2016.
- (iii) While dumping, benches were not formed.
- (iv) Working from dip to rise was followed due to presence of aquifers.
- (v) He would have left a barrier of 150-200m against fault, if workings were made from rise to dip.

6.4.15 Shri Sushanta Banerjee, the then General Manager (Safety), M/s ECL:

- (i) On 16.08.2016, he was given additional Charge of General Manager (Safety) in addition to General Manager (Rescue Services).
- (ii) He was authorised to act as 'Deemed Agent' in respect of responsibilities of General Manager (Rescue Services) but he was not authorised to act as 'Deemed Agent' with regard to General Manager (Safety) .
- (iii) A slide occurred in January, 2016. A Committee was formed by Director (Operation) and on their recommendations re-handling of 13.44 lakh cu.m. of overburden dump was approved.
- (iv) On occurrence of slide on 09.08.2016, a Committee was again formed with the approval of Director (Operation) on 23.08.2016. The Committee submitted its Report to Director (Operation) on 07.09.2016. As per the Report of the Committee (a) the mining operation like plying of dumpers on haul road and deployment of loading machine etc. in Daheranangi overburden patch would be risky if the mining operations extend towards the old overburden dump. (b) Overburden dump was unstable since the slope angle was high. (c) For ascertaining the barrier and slope stability of overburden dump, data regarding width of barrier between previous working on north side and Fault F-8 was required. (d) The overburden dump spreads partially over the north side of the pit limit of Dahernangi Patch. (e) Approval of re-handling of OB dump in the Board meeting on 30.11.2016 was based on the recommendations of the Committee. It was stipulated in the recommendation that the coal may be extracted only after completion of re-handling of OB dump.
- (v) Workings towards rise side of fault started in 2014 on proposal which was neither routed through ISO nor a copy of the order was marked to ISO.
- (vi) Further extension of extraction of coal towards fault reduced the width of the barrier and it slid.
- (vii) The load of OB dump definitely affected the sliding but the main reason for sliding of OB dump was reduction of width of barrier.
- (viii) Huge fall was not sudden. Small falls at regular intervals were indications of movement of underlying rock.
- (ix) Reduction of width of barrier, blasting and movement of heavy vehicles caused the accident.
- (x) Width of barrier against the fault plane/dump should have been 250 metres. He did not know what was the width of barrier on the day of the accident.
- (xi) ISO was supposed to report only to the Director (Technical) which he had been doing both verbally and in writing. He was not advising the mine management.

6.4.16 Shri D.K. Nayak, the then Agent, Rajmahal Opencast Mine:

- (i) He joined Rajmahal Opencast Mine on 10.09.2014. At the time of the accident he was General Manager (Operation) and 'Agent' of the Mine.
- (ii) On the day of the accident, he was on leave (from 16.12.2016 to 08.01.2017) due to illness.

- (iii) On 15.12.2016, he had inspected the mine and that day he did not apprehend any danger from possible collapse of benches.
- (iv) After development of crack on 04th January, 2016, he had informed Sri Akhilesh Pandey, the then General Manager (In-charge) who in turn informed M/s ECL Headquarters. Crack was 10mm in width and there was no displacement. Experts from Headquarters inquired into it and on their recommendation re-handling of 1.344 million cu.m. OB dump was approved.
- (v) On 09.08.2016, there was an incidence of collapse of bench but it was not noticeable as the bench just rested there. Hence, there was no need to give Notice to DGMS.
- (vi) Place of dumping is decided by a team of officers and ultimately by General Manager (In-charge).
- (vii) On 04th January, 2016 Shri B.R. Reddy and on 09th August, 2016 Shri K.S. Patra were 'Nominated Owners' of the mine.
- (viii) Supervisors of Contractor were not holding statutory certificates except one Sri Lallu Prasad Yadav, Surveyor.
- (ix) Width of barrier between Kaveri Sump and F-8 Fault varied from 18-20m to even 120-150m. Barrier of adequate width had been maintained.
- (x) Wherever the barrier is thick, chances of collapse are more.
- (xi) After the accident, when area was recovered, F-8 fault was found to exist about 70m further towards north from its position marked on the Plan. Actually, the dump was on solid ground and not over Kaveri Sump.
- (xii) Kaveri Sump had not been fully de-coaled. After the accident, around 05 Lakh tonnes of coal from Kaveri Sump was recovered.
- (xiii) Everybody has been doing post-mortem after the accident. However, nobody, neither Safety Committee nor Safety Audit informed about the impending danger before the accident.

6.4.17 Shri Pramod Kumar, the then Manager, Rajmahal Opencast Mine:

- (i) He was the only person who had been suspended by the M/s ECL management after the accident. Later on, after the completion of Departmental Inquiry, he was exonerated of all charges.
- (ii) Contractor's workers were under direct control of the Contractor.
- (iii) He was finding difficulty in exercising his authority as he also had to comply with the directions of the 'Agent' and the 'Deemed Agent'.
- (iv) Increase of height of dump in Kaveri Sump by 57.4m in 2016 was due to dumping of OB excavated from departmental patch.
- (v) The agreement between the 'Contractor' and the 'Company' diluted the statutory powers vested with the Manager under the Mines Act, 1952 to large extent.
- (vi) On 26.12.2016, he had accompanied the then CMD and Director (Technical) during their inspection. They had also gone to the coal face and the CMD had verbally instructed him to increase the production.
- (vii) He had inspected Dahernangi patch on 29.12.2016 in general shift and also at about 5.00PM in second shift. Nothing abnormal was observed by him.
- (viii) Supervisors of Contractor and Mining Sirdars on duty in second shift had not informed him about any un-usual behaviour/sliding of OB benches.
- (ix) Proposal for scientific study regarding slope stability was initiated in the year 2013 and again on 06.01.2016. He felt that the Manager should be vested with financial powers to conduct scientific study to avoid delay.
- (x) In DGMS permission letter, no specific precautions to be taken while working near fault plane were stipulated.

6.4.18 Shri S. Burnawal, the then Safety Officer, Rajmahal Opencast Mine:

- (i) On 26.12.2016, the CMD accompanied by Shri B.N. Shukla, Director (Technical) had inspected OB and coal faces and had instructed to increase production of coal and OB.
- (ii) S/Shri J.P. Singh, the then General Manager, M.K. Rao, the then Agent and Arvind Kumar, the then Manager had allowed dumping of OB over coal bearing area.

- (iii) On 08.12.2016 cracks were observed in OB re-handling bench. It did not appear to be dangerous.
- (iv) On 28.12.2016 fresh cracks were observed on the upper benches of loose OB.
- (v) He had inspected the OB and coal benches on 29.12.2016. To him everything appeared to be normal.
- (vi) He had accompanied Shri N. Sharma, during his inspection in August, 2016. Shri Sharma had gone upto benches.
- (vii) Safety Board of M/s ECL inspected the Dahernangi patch on 26.10.2016. They did not mention about any danger from dump slide.
- (viii) Mine was inspected by members of Safety Committee and also Workmen's Inspectors. Nobody pointed out any danger.
- (ix) After the accident when coal was extracted the main fault was exposed and was found at a position about 30-40m towards north from its position shown on the Plan.
- (x) The accident was caused due to reduction of width of barrier against fault plane, excessive pressure of dump and effect of fault/slip. Dumping in Kaveri sump was done since 2007. He knew this fact as he was posted in Rajmahal since 2004.

6.4.19 Shri Dilip Roy, the then Assistant Manager, Rajmahal Opencast Mine:

- (i) He had inspected workings of Dahernangi Patch in the first shift and also in the second shift of 29.12.2016 from 5.00PM to 06.00PM. Everything appeared to be normal.
- (ii) At the time of accident only operation of re-handling of OB dump was being done.
- (iii) There were 2 benches in coal, 3 in in-situ OB and 4 to 5 in OB dump.
- (iv) Monitoring of movement of strata was being done through reading on a scale attached to a plumb bob.

6.4.20 Shri Vijay Kumar Singh, the then Assistant Manager, Rajmahal Opencast Mine:

- (i) The Manager allocated the place of duty at the beginning of the shift. In the second shift of 29.12.2016 he was deployed as an Assistant Manager in the Dahernangi Patch. On 27th and 28th he was deputed in the Departmental Patch.
- (ii) Operations in the mine were normal till about 7.00PM, i.e. before the occurrence of the accident.
- (iii) S/Shri Hemnarayan Yadav and Ejaj Hussain had not informed him about formation of any crack that day before the accident.
- (iv) Workers of Contractor were taking instructions from their supervisors and not from him.

6.4.21 Shri Niraj Kumar Sinha, the then Assistant Manager, Rajmahal Opencast Mine:

- (i) He was on duty as Assistant Manager at Dahernangi Patch in the night shift of 28.12.2016. Operation after 1.30AM in the night was stopped due to accumulation of dense fog in the mine.
- (ii) No crack had developed in the night shift. There was some loose material on the roadway which was levelled to facilitate transportation of machineries.
- (iii) Supervisors of Contractor were deciding the place of work. He was responsible only for the safety of machineries deployed.
- (iv) Reading of plumb bob during night shift remained constant at 28cm.

6.4.22 Shri Padma Charan Dhar, the then Assistant Manager, Rajmahal Opencast Mine:- He was on duty as Assistant Manager at Dahernangi Patch in the first shift on 29.12.2016. Plumb bob reading was 28cm in the beginning and also at the end of the shift.

6.4.23 Shri Ranjit Kumar Singh, the then Assistant Manager, Rajmahal Opencast Mine:

- (i) He was generally performing his duties in Departmental Patch, but on 28.12.2016, he was deputed to inspect Dahernangi Patch in view of absence of Shri Vijay Kumar Singh, Assistant Manager.
- (ii) Workers of Contractor were taking instructions directly from their supervisors.
- (iii) A plumb bob was provided for monitoring of the crack. However, there was no instruction regarding the point of reading at which alarm for withdrawal of persons was required to be raised.
- (iv) Only one Overman and two Mining Sirdars were deployed to perform their duties at three places namely in coal, in-situ OB and OB re-handling faces.

6.4.24 Shri Naresh Prasad, the then Blasting Officer, Rajmahal Opencast Mine:

- (i) No blasting was done in Dahernangi Patch on 29.12.2016.
- (ii) In one round, generally 30-40 holes with 30-35kg of explosives in each hole were blasted. Total charge of explosives per round of blast was about one tonne.
- (iii) PPV monitoring machine was being placed at about 50 to 100m from the place of blasting.
- (iv) Normally, reading of vibrometer was 3-6 but it was less (2 to 3) near the fault.

6.4.25 Shri Damodar Ram, the then Colliery Surveyor, Rajmahal Opencast Mine: He was Surveyor in Dahernangi Patch. Sri Nandan Kumar, the then Surveyor, used to assist him. After the accident when area was recovered, F-8 fault was found slightly shifted towards north from its position shown on the Plan. Some minor faults were also discovered. The Plan maintained at the mine was not upto date as quarterly survey was due only after end of the fourth quarter, i.e. after 31.12.2016.

6.4.26 Shri Nandan Kumar, the then Surveyor, Rajmahal Opencast Mine:

- (i) On 09.08.2016, 10-12 benches, about 100m in length, had slid. About 3-4 lakhs tonnes of 'mitti' had collapsed.
- (ii) Height of dump above floor of the sump varied from 146-151m.
- (iii) RL of floor of Dahernangi Patch was (-)90 to (-)81m and RL of ground level was 87-88m.
- (iv) During recovery operations after the accident, fault F-8 was found located at 0-70m towards north with reference to its position marked on Geological Plan. Four new faults, not marked on the Plan, were also detected.
- (v) He had signed on the Plan and Sections of the site of accident prepared by DGMS Surveyors after the accident for its correctness. It was correct in all respect except that the position of fault F-8 was traced from the Geological Plan, which later on was not found to be correct.

6.4.27 Shri Nilam Toppo, the then Overman, Rajmahal Opencast Mine:

- (i) He was Overman on duty in the first shift of 29.12.2016 in Dahernangi Patch of Rajmahal Opencast Mine. Reading of plumb bob to measure the movement of crack had remained constant throughout the shift and he had informed his successor accordingly.
- (ii) On the 26th and 27th he had observed crack/fall of side and had informed Sri Roy accordingly. He did not enter this fact in the Overman's daily inspection report book since the same had not been provided by the management.
- (iii) Everything was normal and nothing unusual was noticed by him during the shift prior to the accident.
- (iv) He had not seen but had heard about the occurrence of a fall about 15 days prior to the occurrence of the accident.

6.4.28 Shri Sujay Kumar, the then Overman, Rajmahal Opencast Mine:

- (i) In the 2nd shift of 29.12.2016, he was Overman on duty in Dahernangi Patch of Rajmahal Opencast Mine. On instruction from Shri V.K. Singh, Assistant Manager, he was performing his duties for preparation of a ramp. This place was about 2-2.5 Km. from the place where re-handling of OB was being done.
- (ii) He was instructed to see the operation of the pump. While he was going to the site of the pump the accident occurred.
- (iii) He was not writing the daily inspection report since book for the same was not provided by the management.

6.4.29 Shri Barun Shankar Chakraborty, the then Workmen's Inspector (Mining), Rajmahal Opencast Mine:

- (i) He had been Workmen's Inspector in Rajmahal Opencast Mine for about six (06) years from the year 2011 to 2017.
- (ii) He did not report about any danger from the dump as it did not appear dangerous to him.

6.4.30 Shri P.N. Mishra, the then Mining Sirdar/Shot-firer, Rajmahal Opencast Mine:-

Blasting in Deep Mining Zone was conducted on 28.12.2016 and no blasting was conducted in that area on 29.12.2016.

6.4.31 Md. Ejaj Hussain Ansari, the then Mining Sirdar, Rajmahal Opencast Mine:

- (i) He was on duty as Mining Sirdar in the second shift of 29.12.2016 in Dahernangi Patch of Rajmahal Opencast Mine. It was his first day in this patch.
- (ii) Shri R.K. Singh, Assistant Manager and Shri V.K. Singh, Assistant Manager, instructed him to monitor the reading of plumb bob and inform them in case of any variation.
- (iii) About 15 minutes before the occurrence of the accident Shri V.K. Singh on walkie-talkie instructed him to guide the movement of dozer located near view point. As soon as he reached near view point, the accident occurred.

6.4.32 Shri Hemnarayan Yadav, the then Mining Sirdar, Rajmahal Opencast Mine:

- (i) He was on duty as Mining Sirdar in the second shift of 29.12.2016 in Dahernangi Patch of Rajmahal Opencast Mine. Loading of coal was stopped about two hours after commencement of the shift due to non-availability of blasted coal.
- (ii) To a pointed question whether work in coal and OB benches was stopped from 25th to 27th, he replied that the work was not stopped in coal and OB benches from the 25th to 27th.
- (iii) While he was proceeding towards the pump house, the fall occurred suddenly.

6.4.33 Shri Mahendra Mal, the then Assistant Foreman (E&M), Rajmahal Opencast Mine:

- (i) He was on duty as Assistant Foreman in the 2nd Shift of 29.12.2016 in Dahernangi Patch of Rajmahal Opencast Mine. No loading of coal was done after his arrival at about 3.00PM.
- (ii) He had never heard of any fall/crack prior to the occurrence of the accident.

6.4.34 Shri Vinesh Shivji Dholu, Owner, M/s MIPL-NKAS (JV):

- (i) He was Director of M/s MIPL.
- (ii) Nobody reported to him about dangerous conditions prevailing in the mine prior to the accident.
- (iii) Machineries in the mine were deployed as per direction of the General Manager (In-charge).

6.4.35 Shri Krishna Kanth Upadhaya, the then Supervisor, M/s MIPL-NKAS (JV), Rajmahal Opencast Mine:

- (i) He was supervisor of the Contractor. In the second shift of 29.12.2016, he was supervising the operation of ramp preparation which was at about 300m from the working face.
- (ii) He did not observe any fall of coal/OB in this shift prior to the accident.
- (iii) He did not perceive any danger before the occurrence of the accident.
- (iv) He denied having stated during DGMS enquiry that he had seen dangerous conditions and had informed Lallu Khan about the danger.

6.5.0 Other Evidences:**6.5.1 Accident Plan/Sections:**

- (i) The accident Plan and Sections of the site of accident was prepared by surveyors of DGMS with the help of management surveyors.
- (ii) The position after the accident was plotted after actual surveying in the field and the position before the accident was traced from the Plan available in the mine at the time of enquiry.
- (iii) The Plan and Sections were certified for its correctness by the Surveyors of DGMS and the management and were countersigned by the Manager, Agent, GM (In-charge) and 'Nominated Owner' of the mine and also by Sri K. Gyaneshwar and Sri U. Saha of DGMS.
- (iv) Seven sections were drawn at an interval of 100m along AA', BB', CC', DD', EE', FF' and GG' as marked on the Plan.

6.5.1.1 Scrutiny of Plan and Sections revealed the following:

- (a) Slide was limited to Sections from AA' to EE'.
- (b) The in-situ/coal strata failed at points about 15m, 27m, 23m and 30m above floor of Seam II combined (floor of Kaveri Sump) on the upthrow side respectively at Sections along AA', BB', CC', DD' and EE'. Failure along FF' and GG' was almost negligible.

- (c) Approximate cross- section area of failure of in-situ strata along Sections AA' to EE' is given below:

Sections	Coal (m ²)	OB (m ²)	Total (m ²)
AA'	280	2120	2400
BB'	240	2650	2890
CC'	Nil	810	810
DD'	370	1400	1770
EE'	Nil	350	350

6.5.2 Relevant extract from Minutes of the 294th Meeting of Board of Directors of M/s ECL held on 30.11.2016 (Second paragraph, page No.5)(Annexure –XII):

“The OB dumps contain clay and its water absorbing capacity is more, the overburden becomes as good as black cotton soil, so the dump is sliding frequently. Earlier also this type of slides had occurred and had entrapped one shovel. Hence, to ensure safety at the working of 20 Million Patch (Dahernangi Patch) and OB re-handling from the dumping is required. If OB re-handling is not done, then about 2.20MTe of coal of 20 Million Patch would be blocked and approx. Rs. 300.00 per tonne profit would be lost.”

6.5.3 Decision taken in the 77th meeting of CMD's with M/s CIL Chairman held on 08.07.2013 (point 4, page No.166 of HPC Report Annexure) (Annexure –XIII):

An extract from ATR on the points discussed in the meeting of CMD's is given below (taken from enclosure to HPC Report):

“CMD, BCCL/NCL raised the issue of procurement and installation of Radar for monitoring of OB dump movement as per directives given by DGMS subsequent the sliding of OB dump at Jayant OCP, NCL. He mentioned that tendering was done but it could not be finalised due to complaint from a party regarding extra condition of Camera beyond DGMS requirement. Moreover, it was also clarified that while the system is strict vigilant on the movement of one side of the dump, the other side remained unwatched and in the absence of forecast, the possibilities of sliding of the other side cannot be eliminated.

In this connection, CMD, WCL mentioned that Installation of Radar system needs to be relooked. Moreover, installation of Radar would incur hugecost (approx. Rs. 8.00 crores in each Project), which will further deteriorate the economics in the case of WCL Projects, where trend of cost plus basis of the project is insisted upon.

After prolonged discussion on the above issues, it was decided that the subject matter would be taken up with DGMS. Chairman, CIL advised that the DT, CIL would take the lead on this and take up the matter for getting clarification from DGMS. As such, action for procurement and installation of Radar is kept on hold and subject to clearance from DGMS, further action would be taken.”

6.5.4 An extract from HPC Report (point x, page No.65) (Annexure -XIV):

“The incidences of dump/slope failures in the past as well as the statutory provisions necessiated the real time monitoring of the slopes, on 24 X 7 basis. It has been noted that the proposal was initiated for procurement of 3 slope stability monitoring system one each for Sonapur Bazari OCP, Rajmahal Project and SP Mines Area of ECL on 29.03.2011 but the same never materialized, citing the requirement of some clarification from DGMS. DGMS has, however vide their Technical Circular no.8 of 2013, dated 23.09.2013 had clarified the issue. In spite of the clarification from DGMS, no further action was taken.”

CHAPTER VII

SUMMARY OF ASSESSORS' REPORT

7.1.0 Report of Shri Akhter Javed Usmanee, Assessor:

7.1.1 DGMS:

(i) Inquiry Report:

- (a) Shri R. Guha, the then DG, appointed a Committee followed by a sub Committee to conduct Inquiry into the accident that occurred in Rajmahal Opencast Mine on 29.12.2016.

- (b) The Committee submitted its Report in 43 days.
- (c) The Report was full of flaws and was factually incorrect.
- (d) Holding of persons responsible or not responsible was based on faulty reasoning, imaginary facts and pre-drawn conclusions.
- (e) The Report was based on immediate causes for accident and not on systemic failures, as admitted by Shri R. Guha, the then DG, DGMS in course of his deposition in the Court.
- (f) The role of officers of DGMS for non-enforcement of statutes was not enquired into.

(ii) Enforcement:

- (a) DGMS allowed extension of workings from dip to rise instead of normal practice from rise to dip.
- (b) DGMS did not object to creation of dump into a sump to a dangerous height.
- (c) DGMS did not issue Prohibitory Orders in spite of dangerous conditions prevailing in the mine.

7.1.2 Report of HPC:

- (i) M/s CIL constituted a High Powered Committee to enquire into the accident.
- (ii) The Committee did in-depth analysis of causes and acts of omissions and commissions which resulted in the accident and did not hold anyone specifically responsible for the accident.

7.1.3 Frequent transfers and postings: There were frequent transfers and postings of senior level management from level of CMD to level of General Manager. During period of 5 months from July, 2016 to November, 2016 CMD, Director (Technical), General Manager (Safety) and General Manager, Rajmahal, all were changed. Further, there was no system of handing over charge specifying safety measures requiring immediate attention of the incoming officer.

7.1.4 Planning: Planning was ill-conceived. Land was not acquired in one go, though production capacity of Rajmahal was very well known. This led to in-pit dumping.

7.1.5 In-pit dumping:

- (i) Kavery Sump, already filled with slurry/in a fluid condition, was a bad choice for dumping. Land for dumping was available on the west side of this dump but since its distance was more, decision of dumping into Kaveri Sump was taken on cost consideration.
- (iii) In four years from 2012 to March, 2016, the dump was raised to about 146m in height above the floor of the sump.
- (iv) OB was dumped upon fault F-8 without any consideration of danger from its dead load.

7.1.6 Geological disturbances:

- (i) Fault F-8 was full of joints, but these joints were not marked on the geological Plan maintained in the mine and were detected only during recovery operations after the accident.
- (ii) Fault-F-8 was found about 60m north of its position shown on the geological Plan when the area was recovered after the accident. It was found existing right below the dump. Centre of gravity of dump was just beside the fault F-8.
- (iii) Exertion of load of dump on fault plane was supplemented by shock waves created by regular blasting in the area.

7.1.7 Barrier/batter: Initially a barrier, about 200m in width against fault plane was left while commencing extraction of coal in 2014. This barrier was gradually reduced due to extraction of coal from dip to rise.

7.1.8 Slope Stability Radar: Purchase of Slope Stability Radar (SSR) was stalled by CMDs of subsidiary companies in their meet with the Chairman, M/s CIL on 08.07.2013.

7.1.9 Conclusion on Causes: The event of this accident had been designed to happen since its inception. Following lapses caused the accident that occurred in Rajmahal Opencast Mine on 29.12.2016:

- (i) Piecemeal/poor planning based on unreliable geological data and non provision of funds for safety in the estimated operational cost of the Project.
- (ii) In-pit dumping into slurry based sump on costconsideration.

- (iii) Non-installation of SSR, purchase of which was stalled by CMDs in their meet with the Chairman, M/s CIL.
- (iv) Continuous extraction of coal even after incidences of cracks/slides in the mine.
- (v) Frequent transfers of senior level management of M/s ECL and Rajmahal Opencast Mine.
- (vi) Defunct safety institutions like Safety Committee, Workmen's Inspector.
- (vii) Poor quality of inspections/dispension of General Inspection and non-issue of Prohibitory Orders by DGMS despite persistent dangerous conditions prevailing in the mine.

7.1.10 Recommendations:

- (i) Clear cut guidelines should be in place about the circumstances under which the Court of Inquiry under the Mines Act, 1952 would be constituted in case of an accident in any mine. It should be constituted at the earliest and not left to the discretion of the authority.
- (ii) No Inquiry has ever been completed in three months. Therefore, the period of three months stipulated in the first Notification constituting the Court of Inquiry was not practical. This resulted in un-necessary wastage of time of the Court in seeking subsequent extensions. Hence, the period specified for completion of the Inquiry should be realistic from the very beginning.
- (iii) Cost estimates of Project should include the cost of Safety, Health and Welfare.
- (iv) Anjan Hill Court of Inquiry had recommended a sum of Rs. 12 lakhs as an ex-gratia compensation to heirs of the victims, about ten years ago. The recommendation was accepted by the Government of India and the amount was paid by M/s SECL. The Hon'ble Court is requested to consider and recommend payment of an ex-gratia amount of Rs. 30 lakhs to the legal heirs of the victim.
- (v) The Contractor workers' family in case of death must be treated at par with permanent worker of coal companies in respect of monetary benefits and other welfare schemes.
- (vi) Group Gratuity Insurance for Contractor workers' should be made compulsory.
- (vii) A senior officer should be appointed as Manager of a mine.
- (viii) Sufficient fund for scientific studies, purchase of instrumentations and other matters related to Safety, Health and Welfare of mine workers should be provided for at the disposal of the mine Manager.
- (ix) CMD of a company is the CEO and hence, he only should be nominated as 'Owner' of any mine.

7.2.0 Report of Shri Ravindra Sharma, Assessor:

7.2.1 Causes: The accident at Dahernangi Patch of Rajmahal Opencast Mine on 29.12.2016 was in the form of a slope failure. It was caused due to following conditions prevailing in the mine, at that point of time:

- (i) Presence of huge internal OB dump in close proximity.
- (ii) Geological disturbances.
- (iii) Presence of aquifers
- (iv) Weak batter.

7.2.1.1. Presence of huge internal OB dump in close proximity:

- (i) A high internal OB dump existed on the north side in close proximity to workings in coal and in-situ OB.
- (ii) The dump had been formed by dumping of OB in a water sump, known as Kavery sump, about 100m deep. The dump had been further raised to about 46m above ground level. Naturally, the bottom portion of the dump contained silt/water.
- (iii) CIMFR in their Report of year 2011 had observed that old sump (Kaveri sump) existing on the upthrow side of fault was full of silt which had tendency to flow.
- (iv) The bottom of the dump had been further saturated by aquifers present thereat.
- (v) The dump had seen almost eight monsoons.

From above, it is clear that the lower portion of the internal dump was almost like slurry and its dead weight in combination with hydrostatic pressure developed huge vertical and horizontal stresses which got released by pushing the weak batter/pit slope horizontally, the other three sides of the sump being solid and strong.

7.2.1.2 Geological disturbances:

- (i) The area lying between the workings in coal/in-situ OB and Kaveri sump was highly disturbed geologically. This was evident from the fact that while working in the area on the north side (prior to 2007) of this disturbed zone, the then management apparently could not extract about 4 lakh tonnes of coal (recovered after the accident) lying in the vicinity of the geologically disturbed zone.
- (ii) While planning, this area was initially excluded in view of it being highly disturbed and was annexed later on in view of favourable coal/OB ratio.
- (iii) During recovery operations after the accident fault F-8 had been found at a position about 0-70m north of its position marked on the geological Plan. Four additional faults of throw varying from 10-20m and some slips were also deciphered in the area lying between the then workings in coal/in-situ OB and Kaveri sump, which were not marked on the Plan.

From the above, it is clear that the area was highly disturbed geologically. These geological disturbances in the vicinity of the workings had weakened the strata considerably and had also provided weak planes for the slide.

7.2.1.3 Presence of aquifers: Aquifers were reported to be prevalent in the area. In order to take appropriate preventive measures against such aquifers while extracting coal and removing OB in the area, the CMPDIL had recommended for conducting advanced de-watering of the strata ahead of coal and OB faces but this aspect was not given due importance. These aquifers had not only weakened the strength of the strata against OB dump and fault planes but had also lubricated the fault and bedding planes of coal and sandstone blocks.

7.2.1.4 Weak batter:

- (i) About 100m high pit slope standing at a steep slope angle was causing increased stress at its toe.
- (ii) Extension of workings towards north had reduced the width and size of the slope/batter and it had become thin and weak.
- (iii) Several incidences of strata movements prior to the accident had caused cracks in area around the batter and seepage of aquifer water through these cracks had made the cracks wider and the batter further weak.
- (iv) Vibrations caused by movement of HEMMs and heavy blasting in adjacent area had also caused cracks in the batter.

7.2.1.5 Conclusion: From the above, it is clear that the accident was caused due to high pressure/stress exerted on a very weak high wall slope (batter) by huge dead weight of the dump in combination with high hydrostatic pressure resulting into its failure along fault planes. The failure of batter resulted into sliding of dump.

7.2.2 Circumstances:

7.2.2.1 Failures at almost all levels of management structure for several years resulted into this accident. These failures are summarised below:

- (i) **Planning level:** The area of Dahernangi Patch at Rajmahal Opencast Mine was geologically highly disturbed due to presence of number of faults/shear zones. This impediment required careful planning supported by detailed geological investigations and appropriate scientific study regarding stability of pit/dump slope. The Report was prepared without detailed geo-technical investigations and scientific study.
- (ii) **Corporate level:**
 - (a) **Approval of Project Report:** The proposal for operation of Rajmahal Opencast Mine for approval of the Board of M/s ECL in the year 2014 was not routed through ISO for vetting and was directly agreed by the Director (Technical) which was approved by the Board. The proposal was also not sent to CMPDIL for technical scrutiny and vetting prior to its approval.
 - (b) **Proposal for scientific study for slope study:** The proposal for scientific study was initiated from the mine level on 20.12.2013 and repeated proposal was initiated on 06.01.2016 but it was not given due importance. Again a Committee constituted by the Director (Technical) to look into the incidence of slide of OB dump that occurred on 09.08.2016 recommended for scientific study and re-handling of 17.30 lakh cu.m of dump. The recommendation for re-handling was approved but the recommendation regarding scientific study was ignored.
 - (c) **Proposal for procurement of Slope Stability Radar (SSR):** DGMS had issued Circular No. DGMS (Tech.)/S&T/Circular No.2 dated 22.09.2010 for installation of SSR in all large opencast mines. The proposal for its procurement was pending in M/s ECL head quarter since

the year 2011 and did not materialise till the occurrence of the accident. If SSR had been installed in Rajmahal Opencast Mine it would have indicated the movement of strata and persons could have been withdrawn to a safe place before the accident.

(d) **Lack of Monitoring:**

(i) The then CMD of M/s ECL had approved the proposal for re-handling of OB dump in the Board meeting on 30.11.2016 but during his inspection of the mine on 26.12.2016, he did not inquire from the mine management regarding status of implementation of the decision of the Board.

(ii) After incidence of slide on 09.08.2016, the ISO had recommended for stoppage of workings in coal and in-situ overburden till the OB dump was de-capped but they did not follow it up to find if their recommendations were being implemented by the mine management.

(e) **Agreement between M/s ECL and the Contractor:** The agreement between M/s ECL and the Contractor entrusted entire responsibility for safe operations in Dahernangi Patch of Rajmahal Opencast Mine to the Contractor but statutory persons who were competent to ensure safety were appointed by M/s ECL. There was dual supervision on operations in the mine. These factors created confusion between officers of M/s ECL and staff of the Contractor in respect of their role/responsibility regarding implementation of safety statutes.

(iii) **Mine level:**

(a) **Permission under Regulation 98 of the Coal Mines Regulations, 1957 (CMR, 1957):** Coal in Deep Mining Zone of Rajmahal Opencast Mine was being extracted without permission from DGMS under Regulation 98 of the CMR, 1957 to form benches in coal exceeding three meters in height right from the date of its inception till the date of accident. If the management at any point of time had applied to DGMS for permission furnishing details of geological disturbances and presence of OB dump in the vicinity, DGMS could have directed them to apply with support of scientific study Report and then the recommendations of scientific study would have been stipulated by DGMS in the permission letter.

(b) Re-handling of overburden dump was also being conducted without permission under Regulation 98 of the CMR, 1957.

(c) The benches were steeply sloped/inadequately benched in contravention of the provisions of Regulation 98 of the CMR, 1957.

(d) The management remained complacent and did not act even after occurrence of several incidences of slides/cracks in the area prior to the accident.

(iv) **Safety institutions:** None of the safety institutions like Safety Committee, Workmen's Inspectors and Safety Audit pointed out any dangerous conditions prevailing in the mine.

(v) **DGMS:**

(a) Inspecting officers of DGMS failed to detect that the management had been working in the Deep Mining Zone and were also conducting re-handling operations of the OB dump without obtaining permission under Regulation 98 of the CMR, 1957.

(b) Officers of DGMS while making inspections of Rajmahal Opencast Mine must have noticed the presence of geological disturbances and high internal dump in the vicinity of Deep Mining Zone, but failed to direct the management to submit application for permission supported by scientific study.

(c) Inspecting officers of DGMS did not point out violations for contravention of the provisions of Regulation 98 of the CMR, 1957 regarding steep slope/inadequate benching in coal, in-situ OB and OB dump during their inspections.

(vi) **The Contractor:** Though the Contractor was technically responsible for taking safety measures as per agreement signed between him and the M/s ECL but in practice it was not possible for him to implement safety statutes in the mine since all statutory persons in the mine were appointed by M/s ECL on whom he had no control.

7.2.2.2 **Conclusion:** Since there have been failures/negligence at all levels in the management hierarchy starting from the level of planning to the level of mine management, failures of safety institutions like Safety Committee, Workmen's Inspector, Safety Audit, etc. and also failures of the officers of DGMS for several

years, it is clear that everybody in the system was responsible for this accident. The entire system and practices followed are to be blamed.

7.2.3 Recommendations: Provisions regarding determination of appropriate method of working based on scientific study and monitoring of slope stability have since been provided under the Coal Mines Regulations, 2017. Hence, recommendations on these matters are not required. Other recommendations to avoid similar accidents in future are given below:

- (i) **Finalisation and approval of the Project Report:** While preparing a Project Report of a large opencast mine, planners should clearly specify, in detail, all operations such as method of working, place of dumping, layout of dumps, layout of roadways for transportation etc required to be carried out in the mine. The Report should be vetted by Internal Safety Organisation (ISO) before its approval.
- (ii) **Execution:** Project Report is prepared after due consideration of various parameters involved in operations of a mine. An executive, generally concerned with production, is likely to take wrong decision while making any deviation from the approved Plan. Hence, a system should be so evolved that an executive operates a mine strictly as per approved Plan. If any deviation is required due to changed circumstances, it should be done in consultation with the planner.
- (iii) **Status of the Manager:** As per requirements of Section 17 of the Mines Act, 1952, a Manager is responsible for the overall management, control, supervision and direction of the mine. Hence, a senior official in the mine should be appointed as Manager to fulfil the requirements of the Statute.
- (iv) **Role of the Contractor:** Role of a Contractor should be limited to carrying out of certain operations in the mine. Responsibility for safety in the mine should exclusively rest with the manager and officials under him and the Contractor should conduct all operations under total control of the Manager.
- (v) **External Safety Audit:** In addition to Internal Safety Audit, a mine should also be audited by an external agency annually to detect any unsafe condition/practice prevalent in the mine.

CHAPTER VIII

CAUSES

8.1.0 ANALYSIS OF EVIDENCE: On analysis of statements of witnesses deposed in the Court and scrutiny of records/reports including Inquiry Report of DGMS and Report of investigation carried out by High Powered Committee comprising of scientists from CIMFR, Professors from ISM, Dhanbad and BIT Mesara, Ranchi, the Court has arrived at a conclusion that the accident in Rajmahal Opencast Mine that occurred on 29.12.2016 was caused due to following conditions prevailing in the mine at that point of time.

- (i) Presence of geological disturbances.
- (ii) Presence of aquifers
- (iii) Creation of high internal OB dump in close proximity to workings.
- (iv) Deepening of dip side workings
- (v) Reduction of width of barrier/batter against fault plane/OB dump
- (vi) Blasting in area adjacent to fault planes
- (vii) Movement of HEMMs

8.1.1 Presence of geological disturbances:

- (i) As per geological Report of CMPDIL, 17 normal faults were postulated within Rajmahal Opencast Mine. Among these, five southward hading faults namely F-1, 6, 8, 11 and 15 were of major magnitude. Thus, the southern side of the block was structurally complex (as per HPC Report).
- (ii) The area on southern side was disturbed to such an extent that while working in the area on north side in the year 2007, the then management could not dare to proceed further and had left the area without extracting remaining four lakh tonnes of coal (extracted after the accident from south side)
- (iii) While planning for extraction of coal in Deep Mining Zone, the area lying in the vicinity of geological disturbance was initially excluded.

- (iv) During the proceedings of the Court, it was brought to its notice that after the accident when area was recovered, the fault F-8 was found located at a position about 0 to 70m further north of its position marked on geological Plan (70m, 30-40m and slightly towards north as stated by S/Shri D K Nayak, the then Agent, S Burnawal, the then Safety Officer, Damodar Ram, the then Surveyor respectively).
- (v) During recovery operations four additional faults of throw varying from 10m to 20m and some slips were also deciphered in area lying between coal/in-situ OB and Kaveri Sump which were not marked on the Geological Plan.

From above it is clear that **a number of identified/unidentified fault planes/shear zones were existing in the Deep Mining Zone.** The attitudes of fault planes were such that they formed small blocks/wedges in the vicinity of the operational area.

8.1.2 Presence of Aquifers: CMPDIL, after hydrogeological studies had identified presence of five major aquifers in Rajmahal Opencast Mine. In order to take appropriate preventive measures against such aquifers while extracting coal and removing OB in the area, they had recommended for conducting advanced dewatering of the strata ahead of coal faces. However, this aspect was not given due importance. **These aquifers were not only weakening the strength of the strata against OB dump and fault planes but were also lubricating the fault and bedding planes of coal and sandstone (in-situ overburden).**

8.1.3 Creation of high internal OB dump in close proximity to workings:

- (i) A major fault F-8 running E-W had divided the area of Dahernangi Patch into two parts namely
 - (a) Main Mining Zone (North Side -Uphrow side of fault) and
 - (b) Deep Mining Zone/20 M Patch -Downthrow side of fault). Coal on the north side of fault had been extracted by opencast method about ten years prior to the occurrence of this accident (completed by the year 2007). Workings could not be further extended towards south side because area was geologically disturbed. The void created by excavation was initially used as a sump known as Kaveri Sump. It was about 100m in depth. Lateron, it was filled with OB dump. Till the year 2014, its height above the floor of Kaveri Sump was about 88m, but about 58m dumping done in the first quarter of 2016 increased its height to about 146m above floor of the sump.
- (ii) Since the dump was created in a sump, obviously, its bottom portion contained silt/water. CIMFR in their Report of the year 2011 had also observed that the old sump (Kaveri Sump) existing on upthrow side of fault was full of silt which had a tendency to flow.
- (iii) Dump was also getting saturated with water of aquifers prevalent in the area.
- (iv) Dump was not a solid mass. It was porous. It had seen almost eight monsoons. Hence, in every monsoon water had been percolating into sump through dump.
- (v) The Director (Technical) of M/s ECL in Board meeting on 30.11.2016 had observed that the dump contained clay and its water absorbing capacity was more. It became as good as black cotton soil and had tendency to slide.

The Court, therefore, is fully convinced that **internal OB dump was very much saturated with water and its dead weight in combination with hydrostatic pressure exerted huge vertical and horizontal stresses which got released by pushing the batter/pit slope horizontally, the other three sides of the sump being solid and strong.**

8.1.4 Deepening of dip side workings: Workings on south side of the fault plane were deepened without leaving barrier of adequate width against fault plane/OB dump. **About 100m high pit slope standing at steep slope was causing huge stress at its toe.**

8.1.5 Reduction of width of barrier/batter against fault plane/OB dump: Workings in Deep Mining Zone were being extended continuously towards fault planes/OB dump. This action of the management **gradually reduced the width and size of batter supporting the fault plane/OB dump which resulted into increased stress over the batter.**

8.1.6 Blasting in area adjacent to fault planes: During extraction of coal and removal of overburden, regular drilling and blasting were being carried out in Deep Mining Zone lying downside of the fault. On examination of blasting records for the month of December, 2016, it is evident that the quantity of explosives during the ten days prior to the accident had increased both in coal as well as in OB benches. Place of blasting varied from about 45m to 85m in sandstone (in-situ overburden) and from about 80m to 122m in coal benches. Records of blast vibrations were not available, but **blasting in coal at a distance of 80m and in sandstone benches at a distance of 45m must have caused vibrations higher than its**

threshold value. These vibrations caused residual strains at the fault planes and in the vicinity thereof.

8.1.7 Movement of HEMMs: There was regular movement of heavy earth moving machineries in the vicinity of the area under operation. **Vibrations created by their movements also contributed to the formation of cracks in the batter/barrier supporting the fault plane/OB dump.**

8.2.0 Conclusion: From the analysis of evidences stated above, the Court has arrived at the following conclusions:

- (i) Extension of workings towards zone of geological disturbances reduced the width and size of batter resting against fault plane/OB dump appreciably.
- (ii) Aquifers, prevalent in the area caused weakness in the strength of batter resting against fault plane/OB dump.
- (iv) Regular movements of HEMMs and vibrations created due to blasting formed cracks in the batter and surrounding area.
- (iv) About 100m steeply sloped batter caused increased stresses at its toe.

Reduction of width, presence of aquifers, movements of HEMMs and regular blasting in area, as mentioned above, weakened the strength of 100m high steeply sloped batter to such an extent that it could not withstand the huge dead weight and hydrostatic pressure of 146m high OB dump saturated with water, and failed most probably along fault planes. The failure of batter resulted into instant sliding of dump, about 600m X 100m in size and 4.31 lakh cu.m. in volume (as per HPC Report), burying 23 workers employed thereat.

CHAPTER – IX CIRCUMSTANCES

9.1.0 ANALYSIS OF EVIDENCES: Analysis of evidences and scrutiny of records/reports have revealed that there have been lapses at various levels for several years that led to the occurrence of this accident. These lapses/failures are summarised below:

9.1.1 Lapses during conceptualization and planning:

- (i) Originally, when in the year 1987 Project Report of Rajmahal Opencast Mine was prepared by Metchem, Canada, the property lying on south side of F-8 fault plane was not considered on the ground that area was geologically disturbed, mining conditions were difficult and sufficient geotechnical data required for planning were not available. Lateron, this area was included by CMPDIL in their Report of 2007. This **Report was prepared without detailed geotechnical investigations.** The Report did not mention the method of work to be adopted and preventive and precautionary measures to be taken while working in such a geologically disturbed area at about 180m deep excavation. The Report was also silent about place and profile of dumping and monitoring of bench movements.
- (ii) The planning of a singular block was done in stages and not in one go. **The piece meal conceptualization and sanctions of the project led to un-planned in-pit dumping.**

9.1.2 Lapses at Corporate level:

- (i) **The proposal for operation at Dahernangi Patch of Rajmahal Opencast Mine for approval of the Board of M/s ECL in the year 2014 was not routed through ISO** for vetting and was directly agreed by the Director (Technical) which was approved by the Board. The proposal was also not sent to CMPDIL for technical scrutiny and vetting prior to its approval. Though safety is considered to be an inherent feature of any Project, **financial provisions for taking safety measures were not included in the operational estimates** approved in this proposal.
- (ii) **Proposal for scientific study for slope study:** The proposal for scientific study was initiated from the mine level on 20.12.2013 and was again re-iterated on 06.01.2016, but no adequate steps were taken for its approval. Again a Committee constituted by the Director (Technical) to look into the incidence of slide of OB dump that occurred on 09.08.2016. This Committee recommended for conducting a scientific study and re-handling of 17.30 lakh cu.m. of OB dump. **The recommendation for ‘re-handling’ was approved but the recommendation regarding ‘scientific study’ was ignored.**
- (iii) **Procurement of Slope Stability Radar (SSR)/Suitable Slope Monitoring System:**

- (a) DGMS had issued Circular No. DGMS (Tech.)/S&T/Circular No.2 dated 22.09.2010 for installation of SSR in all large opencast mines. **The proposal for its procurement was pending in M/s ECL head quarter since the year 2013** and did not materialise till the occurrence of the accident. Movement of strata in the mine was being monitored by naked eyes, plumb bob and personnel observation. **If SSR/suitable slope monitoring system had been installed in Rajmahal Opencast Mine, it would have indicated the movement of strata and persons could have been withdrawn to a safe place before the occurrence of the accident.**
- (b) The issue of procurement of SSR was taken up in the meeting of Chairman, M/s CIL with CMDs of its subsidiaries on 08.07.2013. In view of the fact that the instrument was very costly and might adversely affect the economics of the Project, it was decided in the meeting to refer the matter for reconsideration of DGMS. It was also felt that the utility of this instrument may be limited as it was effective in forecasting the movement of one side of the dump but was not effective for its other side. DGMS vide their Technical Circular No. 8 dated 23.09.2013 re-iterated the need to *“Deploy a suitable slope monitoring system in mines customized to the local needs as arrived at by a Risk Assessment Process, for ensuring timely withdrawal of men and machinery from any area in a mine likely to be affected by an impending slope failure”*.

However, despite clear guidelines of DGMS as stated above no further action for procurement of suitable slope monitoring system was taken.

(iv) **Lack of monitoring:**

- (a) Shri R.R.Mishra, the then CMD of M/s ECL had approved the proposal for re-handling of OB dump on 30.11.2016 but **while making inspection of the mine on 26.12.2016 he did not inquire from the mine management about the status of implementation of this decision of the Board.**
- (b) After incidence of slide on 09.08.2016, the **ISO had recommended for stoppage of workings in coal and in-situ overburden till the OB dump was de-capped but they did not monitor to find whether their recommendations were being implemented by the mine management.**

(v) **Agreement between M/s ECL and the Contractor:**

- (a) While statutory persons who were competent to ensure safety were appointed by M/s ECL, the entire responsibility for safe operations in Dahernangi Patch of Rajmahal Opencast Mine was entrusted to the Contractor by the agreement between M/s ECL and the Contractor. There was **dual supervision of operations in the mine. These factors created confusion/overlapping of responsibilities between officers of M/s ECL and staff of the Contractor regarding implementation of safety statutes.**
- (b) **The agreement was also an infringement on powers vested on the Manager of mine under the Mines Act, 1952.** The Manager and officials working under him had no control over employees of the Contractor.

9.1.3 Lapses at mine level:

- (i) **Permission under Regulation 98 of the Coal Mines Regulations, 1957 (CMR, 1957):** Coal in Deep Mining Zone of Rajmahal Opencast Mine was being extracted without obtaining permission as required under Regulation 98 of the CMR, 1957 to form benches in coal exceeding three meters in height. If the management at any point of time had applied to DGMS for permission furnishing details of geological disturbances and presence of OB dump in the vicinity, DGMS might have directed them to apply with the support of scientific study and then it might have stipulated the recommendations of scientific study in the permission letter.

Permission letter No (s). S4/03/26/006/II.B (87)/1182 dated 08.04.1987 and No. S3/010367/II-B/98(1)(3) & 100(1)/1638 dated 5th July, 2012 were for extraction of No. II seam Bottom (Top section) and No. II seam Top respectively at Lalmatia Patch and were not applicable for extraction of seams No. II & III at Deep Mining Zone.

- (ii) **Re-handling operations of overburden dump were also being conducted without permission under Regulation 98 of the CMR, 1957.**

- (iii) **In-pit dumping:** Though land on the west side was available, **dumping in Kaveri Sump, filled with slurry, was done purely on cost consideration**, its distance from the point of operation being less. Dumping from the year 2012 to March, 2016 was done upon fault F-8 to a height of about 146m above floor of the sump which exerted huge dead weight on the fault planes.
- (iv) **The benches were steeply sloped/ inadequately benched in contravention of the provisions of Regulation 98 of the CMR, 1957.**
- (v) **The management remained complacent and did not act even after several incidences of fractures/cracks in benches prior to the accident.**
- (vi) As per Inquiry Report of DGMS, there was an incidence of movement of strata in the second shift on 29.12.2016 but persons in-charge of operations in the mine in this shift withdrew persons only from coal and in-situ OB benches and not from re-handling face. However, this fact was not proved in the Court. Witnesses in the Court denied their statements purported to have been given by them during inquiry of DGMS. DGMS did not file affidavit to prove their findings in the Court.
- (vii) **Complacent attitude of the management towards safety:**
 - (a) **Statutory personnel like Overmen, Mining Sirdars were not writing their daily statutory inspection reports** just because books for writing such reports were not provided by the management. These reports provide basic inputs on status of safety in the mine for information of the Manager.
 - (b) **Extraction of coal and re-handling of OB dump were being done without permission from DGMS.**
 - (c) Though operations were conducted at three places in Dahernangi Patch of the mine, statutory persons like **Overmen and Mining Sirdars were not provided at each place** and even those who were provided in the second shift of 29.12.2016 had been sent for additional duties away from the area under extraction. **At the time of accident no Overman/Mining Sirdar was present at re-handling patch.**

Above mentioned matters clearly indicate that **ensuring safety of mining operations was not a priority as far as the management were concerned.**

9.1.4 Lapses of Safety Institutions:

- (i) Safety Committee formed under Rule 29T of the Mines Rules, 1955 for promoting safety in mines serves as a forum for communication on safety. Meetings are held at mine level every month, but the **Safety Committee of Rajmahal Opencast Mine did not point out any dangerous conditions prevailing in the mine.**
- (ii) Workmen's Inspectors appointed under Rule 29Q of the Mines Rules, 1955 are supposed to inform the Manager and the Inspector (DGMS) about any danger which comes to their notice, but **no Workmen's Inspector of Rajmahal Opencast Mine informed either the Manager or the Inspector about the danger existing in the mine.** Shri Barun Shankar Chakraborty, the then Workmen's Inspector deposed in the Court that he did not report about any danger from the dump as he could not perceive any possible danger from it.
- (iii) Internal Safety Audit of Rajmahal Opencast Mine was done in March, 2016. **Auditors did not mention in their Report about any un-safe conditions prevailing in the mine.**

9.1.5 Lapses of DGMS:

- (i) Many officers from DGMS inspected Deep Mining Zone of Rajmahal Opencast Mine since its inception till the occurrence of accident but **none considered it necessary to scrutinise the permission letters** issued by DGMS in 1987 & 2012 regarding their applicability to Deep Mining Zone.
- (ii) **Officers of DGMS** while making inspections of Rajmahal Opencast Mine must have observed geological disturbances and presence of high internal dump in the vicinity of Deep Mining Zone, but **did not stop the operation.** In view of complex conditions prevailing in the mine, they should have directed the management for submission of application for permission supported by scientific study.
- (iii) **Inspecting officers of DGMS did not point out violations for contravention of the provisions of Regulation 98 of the CMR, 1957** regarding slope/benching in coal, in-situ OB and OB dump prevailing in Dahernangi Patch of Rajmahal Opencast Mine. They also **did not take action for non installation of Slope Stability Radar in the mine.**

- (iv) Shri N.Sharma, the then Director of Mines Safety, who inspected the re-handling patch on 11.08.2016 did not point out violations regarding inadequate benching and deposed before the Court that the area was adequately benched during his inspection. It is difficult to accept his this statement as only two days before his inspection on 09.08.2016, a slide had occurred in the area. Also, the Committee of ISO after inquiry into the said incidence had recommended for de-capping of OB dump.

9.1.6 Lapses on part of the Contractor:

- (i) Terms of contract signed between M/s ECL and the Contractor required the Contractor to ensure that all workings were made as per provisions of the Mines Act, 1952 and Rules and Regulations made thereunder. He was further required to employ adequate number of supervisors for ensuring safe working in the mine. Contractor should also ensure that such supervisors are constantly in touch with the Safety Officer of the mine and works as per his guidance. However, from depositions made by the Manager, Safety Officer, Assistant Managers and Mining Supervisors of the mine in the Court, it was revealed that supervisors of Contractor were neither reporting to nor taking directions from the statutory personnel of the mine. **The Contractor, therefore, failed to ensure that his supervisors and other employees work under the guidance and overall control of the statutory personnel of the mine as required by the terms of the contract.**

From above, it is evident that **lapses during planning and conceptualization of this Project, inaction, adhoc decisions and lack of monitoring at corporate level, complacency of officials at mine level, dual control on operations in the mine of the management and the Contractor, defunct safety institutions like Safety Committee, Workmen's Inspector, Safety Audit and poor quality of inspections by DGMS officers caused this accident.**

9.2.0 Conclusion: In light of what has been discussed above, the Court is of the view that the accident in Rajmahal Opencast Mine that occurred on 29.12.2016 was caused under following circumstances:

- (i) **Planning/Conceptual level: Project Report of any Project forms its base, but in the case of Rajmahal Opencast Mine it was prepared in stages resulting into piecemeal decisions at operational level.** Further the Report for extraction of coal in area lying in proximity to major geological disturbances was prepared without detailed geotechnical investigations. The Report did not dwell upon the manner of extraction when 180m deep excavation approached major geological disturbances. The Report also did not mention about place and profile of dumping and this decision was left to the executives at mine level which resulted into in-pit dumping in a sump over fault planes.
- (ii) **Corporate level:** The Project Report was approved by M/s ECL Board without its vetting by ISO. **The senior management of M/s ECL did not take action on the proposal for scientific study for slope stability.** In pursuance of the decision taken in the CMDs meet dated 08th July, 2013, M/s CIL and M/s ECL did not procure suitable slope monitoring system. After incidences of slides/cracks in benches, the management took adhoc decisions for de-capping of OB dump without going into detailed causes of failures. **The ISO had recommended for commencement of extraction of coal only after completion of de-capping of OB dump, but the top management including the then CMD and Director (Technical) of M/s ECL failed to monitor the implementation of the same.**
- (iii) **Mine level:** The mine management were
- (a) **extracting coal in Dahernangi Patch of Rajmahal Opencast Mine and also re-handling the OB dump without obtaining permission from DGMS under Regulation 98 of the CMR, 1957,**
 - (b) **took wrong decision of dumping OB into Kavery Sump over faulted zone,**
 - (c) **remained complacent even after several incidences of slides/failures in the mine and**
 - (d) **failed to activate institutions like Safety Committee and Workmen's Inspector.**
- (iv) **DGMS:** Coal in Deep Mining Zone of Rajmahal Opencast Mine was being extracted without obtaining permission from DGMS under Regulation 98 of the CMR, 1957. Benches formed in the workings were steeply sloped/in-adequately benched. The mining operations in Deep Mining Zone were conducted in the vicinity of highly disturbed geological zone and high overburden dump. These were serious contraventions of the CMR, 1957, **but officers of DGMS who were supposed to enforce the CMR, 1957 did not take adequate steps to ensure removal of dangerous conditions in the mine and allowed to run the mine in unsafe condition.**

- (v) **Contractor:** Contractor of M/s MIPL-NKAS (JV) did not ensure that his supervisors report for their duties and take directions from statutory personnel's of the mine and hence **he was responsible for non implementation of the condition of the contract signed between him and the M/s ECL regarding working of his employees under the control of the mine management.**

From above, it is evident that lapses/failures at various stages of planning, management at every level, Contractor and enforcement agency resulted into this accident. **The Court is of the view that it will not be fair to hold any one individual/organisation responsible for this accident. It was in fact the failure of the entire system and practices which led to this unfortunate accident.**

CHAPTER – X

RECOMMENDATIONS

10.1.0 Safety steps/Remedial measures:

10.1.1 Provisions regarding determination of appropriate method of working based on a scientific study and monitoring of slope stability have now been provided under the Coal Mines Regulations, 2017. Hence, recommendations on these matters are not needed. Other recommendations to avoid similar accidents in future are given below:

- (i) **Preparation and approval of the Project Report:** While preparing a Project Report of a large opencast mine, **planners should clearly specify in detail all operations like manner of extraction, place of dumping, layout of dump, layout of roadways for transportations etc required to be carried out in the mine. The estimated cost of the project should also include funds for safety and acquisition of land.** The project should be approved with the condition that operations in the mine is commenced only after complete acquisition of land required for operations. The report should be considered for approval after its vetting by Internal Safety Organisation.
- (ii) **Planning & Execution:** There should be a clear segregation of authorities involved in planning and those responsible for execution of the Plan. **It is recommended that a Planning and Monitoring Committee may be set up comprising all relevant stake holders who would be responsible for preparation and execution of the Project Report after taking into consideration all parameters including safety parameters involved in operation of a mine.** This Committee may also be entrusted with the responsibility of regular monitoring of the project at its execution stage to ensure that there are no deviations from the original approved Plan. This is necessary as an executive, generally concerned with production, is likely to take decisions deviating from the approved Plan in order to achieve production targets. Such decisions may prove costly in terms of safety parameters of the mine. If any deviation is required due to changed circumstances, it should be done in consultation and approval of this Planning and Monitoring Committee.
- (iii) **Status of the Manager:** As per requirements of Section 17 of the Mines Act, 1952, a Manager is responsible for the overall management, control, supervision and direction of the mine. However, in practice, it is seen that the Manager is a very junior officer and therefore has virtually very little control over the management of the mine. Most of the operational decisions are taken at higher levels with very little input from the Manager. This creates lot of confusion and is against the spirit of Section 17 of the Mines Act, 1952. **Hence, it is recommended that a sufficiently senior officer is appointed as Manager of the mine to fulfill the statutory requirements of the Act.**
- (iv) **Role of the Contractor:** Full and exclusive responsibility for safety in the mine should rest with the Manager and mine officials under him as required by the Mines Act, 1952 and the Rules and Regulations made thereunder. **Role of a Contractor should be limited only to carrying out certain operations in the mine under total control and direction of the Manager.**
- (v) **External Safety Audit:** In addition to Internal Safety Audit, **a mine should also be audited by an external agency to detect any unsafe condition/practice prevalent in the mine.**
- (vi) **Monitoring of slope stability in opencast mines:**
Strata monitoring including dump monitoring for deeper opencast mines and dumps of more than 60m height should be made mandatory to provide real time information about the loads and strains on benches and dumps.
- (vii) **Digital Occupational Safety and Health (OSH) Observatory:** There have been many disasters due to opencast bench and dump failures in coal mines in India in recent past. In most of the cases the causes of failures were one and the same, i.e. none adherence to the bench parameters and presence of geological disturbances including hydrological effects.

It is recommended that a Digital OSH Observatory should be set up at national level where in digital records of all the accidents, disasters, health issues, status of mines and their risk levels in digital forms is maintained for reference and is in public domain.

- (viii) **Mine Digitalization and Emergency Action Plan:** After any mine disaster, it is generally difficult to locate the entrapped miners leading to delay in rescue and recovery operations. In order to avoid such a situation and to ensure emergent rescue operations of affected persons, a provision under the Coal Mines Regulations, 2017 has already been made as given below:

Regulation 37 (5)(c) *“The Owner shall ensure that a system is established so that the names of all persons who are employed belowground can be accurately known at any time, as well as their probable location”.*

It is recommended that the above mentioned provision 37 (5) (c) of the Coal Mines Regulations, 2017 be amended so that it is applicable to opencast mines also.

- (ix) **Delegation of financial powers to the ‘Nominated Owner’:**As per Section 18 (1) of the Mines Act, 1952, the ‘Owner’ and ‘Agent’ of every mine are responsible for making financial and other provisions and for taking such steps as may be necessary for compliance with the provisions of the Act and the regulations, rules, byelaws and orders made thereunder. The company, under Section 76 of the Act, nominates one of its Directors to assume the responsibility of the ‘Owner’ of the mine for the purposes of the Act. **Therefore, it is recommended that such ‘Nominated Owner’ be delegated full financial powers for matters related to safety so that he is able to fulfil his obligations required by the Act.**

10.2.0 COMPENSATION:

10.2.1 Recommendations regarding labour welfare:

- (i) Shri Shivkant Pandey, Colliery Mazdoor Sangh during his deposition and Shri Girirao B Nagpure, Asst. General Secretary, INMF (INTUC) in his report have requested the Court for making recommendations for Ex-gratia payment of Rs. 25 lakhs and Rs. 15 lakhs respectively to legal heirs of workmen who died in the accident that occurred in Rajmahal Opencast Mine on 29.12.2016. Shri Randir Prasad Singh, President, RCMS, ECL Regional Committee has also requested for payment of maximum possible amount. Their requests are based on requirement of social security to families of deceased and also on the ground that such recommendations were made earlier by the Anjani Hill Mine Court of Inquiry in the year 2010.
- (ii) Even though the issue of payment of compensation does not fall within the purview of the terms of reference of the Court of Inquiry, the Court of Inquiry has considered the requests of representatives of workers on the ground of humanity, social security and precedence of such consideration and recommendation of Rs. 12 lakhs ex-gratia compensation by Anjani Hill Mine Court of Inquiry in the year 2010.
- (iii) The Court also felt that this disaster occurred due to the failure of the entire system and practices adopted in the mine. The innocent contractual workers fell prey and lost their lives due to the negligence and casual approach of all stake holders involved in planning and execution. Hence, the Court felt the need to recommend higher ex-gratia compensation to the families of these contractual workers who perhaps lost their only bread earner of the family in this unfortunate accident.
- (iv) The Central Civil Rules provides for payment of a sum of Rs. 25 lakhs as an ex-gratia compensation to families of Central Government Civilian employees who die in an accident in course of performance of their duties. These Rules, though not applicable to workers employed in mines, provide guideline for determination of the amount of compensation in such cases.
- (v) It is on record of the Court (Report of HPC) that a sum of Rs. 5 lakhs by M/s ECL and Rs. 5 lakhs by the Contractor under whom workers were directly employed was paid to legal heirs of all deceased workers, immediately after the accident. **The Court appreciates their stand but is of the view that the amount paid was not adequate and hence recommends for payment of total ex-gratia compensation amounting to Rs. 15 lakhs** to legal heirs of each of 23 workers who died in the accident on 29.12.2016. Since, a sum of Rs. 10 lakhs (Rs. 5 lakhs by M/s ECL and Rs. 5 lakhs by the Contractor) has already been paid, **the Court recommends for payment of additional amount of Rs. 5 lakhs as ex-gratia compensation by M/s ECL** to legal heirs of deceased workers.
- (vi) In addition to the above stated ex-gratia compensation (Rs. 10 lakhs by M/s ECL and Rs. 5 lakhs by the Contractor), **Contractor is liable to pay compensation under the Workmen’s Compensation Act, 1923 and other legal dues like Gratuity, Provident Fund, Bonus, etc., which if already not**

paid, should be paid to the legal heirs of all the deceased workers within three months from the notification of Gazette.

10.3.0 RECOVERY OF EXPENSES: Rule 22 of the Mines Rules, 1955 made in exercise of the power conferred by Section 58 (c) of the Mines Act, 1952 enables the Court of Inquiry to direct the recovery of the expenses of the Court to be made from the 'Owner' of the mine concerned, if the accident is caused due to negligence or carelessness on the part of the management. This report discloses that the accident has occurred due to negligence of the management of the company and non-observance of safety precautions. It follows, therefore, that the entire expenses of this Court of Inquiry have to be recovered from the management, namely, M/s Eastern Coalfields limited. The Court hereby directs the M/s ECL management to pay the entire expenses of this Court of Inquiry.

CHAPTER – XI

ACKNOWLEDGEMENT

The Court would like to place on record its appreciation for all those who assisted the Court in its Inquiry, particularly S/Shri Sri Jagdish Narayan Singh; Mohammad Younush Ansari, K.N.Singh & R.K.Sharma of IMMA; Randir Prasad Singh of RCMS; Girirao B. Nagpure of INMF (INTUC); Ashok Kumar Sharma & Dhiraj Kumar Rajak; Balmiki Prasad Singh & Jitendra Kumar Singh of AIMP; Pulak Baran Chakrabarty, R.K.P.Singh & Seo Pujan Thakur of CMOAI; Purnanand Mishra of INMOSSA, Narendra Kumar Singh of ABKMS (BMS); Sujit Bhattacharjee of CMS; Brajesh Pratap Singh; Arvind Kumar Pandey & Md Ahmad Ansari of CMC (HMS); Shivkant Pandey of CMC & Ali Hussain Ansari; C.B.Prasad & Kumud Ranjan of DGMS.

The Court would also like to acknowledge assistance received from members of the High Powered Committee, retired officers of DGMS, the management of ECL particularly the General Manager, Kunustoria Area, General Manager (Safety) and their staff. The Court appreciates the assistance/security provided by the State Governments of West Bengal and Jharkhand.

The Court would also like to put its appreciation on record contribution of DGMS officials and Dr. Phalguni Sen, retired Professor, IIT(ISM).

Special thanks to Shri Venkanna Banothu, Dy. Director of Mines Safety who worked as Member Secretary to the Court and put in long hours of work, made audio recording of entire Court proceedings and assisted Court in all possible manner. Court would like to place on record its appreciation for his hard work, sincerity and commitment.

(Rashmi Verma)
Chairperson,
Rajmahal Court of Inquiry.

LIST OF ANNEXURES

S.No.	ANNEXURE No.	DESCRIPTION
1	ANNEXURE-I	List containing names of the victims (as per affidavit submitted by the M/s ECL & the Contractor).
2	ANNEXURE-II	Gazette Notification of appointment of Court of Inquiry, Gazette Notifications of Extension of period of Inquiry and letter of appointment of Member Secretary to the Court.
3	ANNEXURE-III	Public Notice inviting submission of Affidavits
4	ANNEXURE-IV	Court Procedure
5	ANNEXURE-V	List of witnesses on affidavits with their dates of deposition in the Court.
6	ANNEXURE-VI	List of all deponents deposed before the Court with dates of deposition and cross examination.
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8	ANNEXURE-VIII	Assessors' Report of Shri Akhter Javed Usmanee & Shri Ravindra Sharma.
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10	ANNEXURE-X	Report of Inspection by the Court on 22.10.2019.
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12	ANNEXURE-XII	Relevant extract from Minutes of the 294 th Meeting of Board of Directors of M/s ECL held on 30.11.2016.
13	ANNEXURE-XIII	Relevant extract from decision taken in the 77 th meeting of CMD's with M/s CIL Chairman held on 08.07.2013.
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16	ANNEXURE-XVI	Pendrive containing Audio recording of Court proceedings.

ANNEXURE- I**LIST CONTAINING NAMES OF THE VICTIMS (AS PER AFFIDAVIT SUBMITTED BY THE M/S ECL & THE CONTRACTOR)**

Sl.No.	NEME OF THE VICTIM	DATE OF BIRTH
1	GAGANKUMAR	15.07.1989
2	LADDU PRASAD	01.01.1987
3	JAY PRAKASH RAY	12.11.1978
4	KULESHWAR MAHATO	10.02.1991
5	RAJ KAMAL GOSWAMI	01.07.1992
6	SUNIL MUNDA	15.08.1987
7	MADHUSHYAM BHIMANI	01.06.1978
8	NAGESHWAR PASWAN	10.03.1978
9	LALLU KHAN	01.01.1983
10	PARVEJ ALAM	03.06.1989
11	HARIKISHIR YADAV	02.01.1996
12	JAVED AKHTER ANSARI	10.01.1996
13	RAJENDRA YADAV	01.01.1988
14	BRIJESH KUMAR YADAV	15.04.1996
15	SANJAY KUMAR SHAHI	03.10.1992
16	MD NURUL	15.02.1988
17	AJEET PATEL	10.11.1990
18	MOHAMMAD SHAKIL AKHTER	27.08.1987
19	VIKASH KUMAR PATEL	01.07.1987
20	JULFKAR MOHMMAD	10.07.1991
21	JAMEER MD	01.01.1988
22	SANJEET VISHWAKARMA	10.10.1993
23	BHIM RAM	01.01.1985

श्रम और रोजगार मंत्रालय

अधिसूचना

नई दिल्ली, 13 अगस्त, 2019

का.आ. 2927(अ).—29 दिसम्बर, 2016 को झारखंड राज्य के जिला गोड्डा में, मेसर्स ईस्टर्न कोल्ड फील्डस लिमिटेड की राजमहल की खुली खदानों में एक दुर्घटना घटित हुई थी;

और, 2017 की रिट याचिका संख्या 66 (मोहम्मद सर्फराज बनाम झारखंड राज्य और अन्य) में राँची स्थित माननीय झारखंड उच्च न्यायालय ने तारीख 5 अप्रैल, 2019 के आदेश द्वारा मामले का निपटान करते हुए यह अभिनिर्धारित किया कि “तथापि, दुर्घटना के कारणों और परिस्थितियों की जांच के लिए जांच न्यायालय की परिधि बहुत व्यापक है और यदि अतिरिक्त सुरक्षा संबंधी कार्रवाई या उपचारी उपायों का किया जाना अपेक्षित है तो इस संबंध में जांच न्यायालय सिफारिश कर सकता है। ऐसी परिस्थितियों में केन्द्रीय सरकार को खान अधिनियम, 1952 की धारा 24 में यथा अनुद्घ्यात पूर्वोक्तप्रयोजन के लिए जांच न्यायालय की नियुक्ति पर विचार करना चाहिए”;

और, केन्द्रीय सरकार की यह राय है कि दुर्घटना के कारणों और परिस्थितियों की किए जाने वाले अपेक्षित अतिरिक्त सुरक्षा संबंधी कार्रवाई या उपचारी उपायों के लिए सिफारिशें, यदि कोई हों, करने की औपचारिक जांच की जानी चाहिए;

अब, केन्द्रीय सरकार खान अधिनियम, 1952 (1952 का 35) की धारा 24 की उपधारा (1) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए श्रीमती रश्मी वर्मा, पूर्व सचिव, भारत सरकार कोजांच करने के लिए और तीन मास के भीतर रिपोर्ट प्रस्तुत करने के लिए नियुक्त करती है। केन्द्रीय सरकार निम्नलिखित व्यक्तियों को जांच करने में एसेसर के रूप में नियुक्त करती है, अर्थात:-

- (i) श्री अख्तर जावेद उस्मानी, हिन्द मजदूर सभा का प्रतिनिधि;
- (ii) श्री रविन्द्र शर्मा, पूर्व मुख्य खान निरीक्षक और डी. जी. एम. एस.।

[फा. सं. एन-11012/3/2016-आईएसएच.।।]

कल्पना राजसिंहोत, संयुक्त सचिव

MINISTRY OF LABOUR AND EMPLOYMENT

NOTIFICATION

New Delhi, the 13th August, 2019

S.O. 2927(E). - Whereas an accident has occurred in the Rajmahal Opencast Mines of M/s. Eastern Coal Fields Limited, in District Godda of Jharkhand State on 29th December, 2016 causing loss of lives;

And whereas the Hon'ble High Court of Jharkhand at Ranchi in Writ Petition No. 66 of 2017 [Md. Sarfaraj Vs. State of Jharkhand and others], while disposing of the case vide its order dated 5th April, 2019 held that “However, scope for a Court of inquiry to examine the causes and circumstances attending the accident is much wider and if any further safety steps or remedial measures are required to be taken, the Court of inquiry can make the recommendation in that regard. In such circumstances, Central Government should consider appointing a Court of inquiry for the purpose aforesaid as contemplated in section 24 of the Mines Act, 1952”;

And whereas the Central Government is of the opinion that a formal inquiry into the causes and the circumstances attending the accident and to make recommendations, If any, for further safety steps or remedial measures required to be taken, ought to be held;

Now, therefore in exercise of the powers conferred by sub-section (1) of section 24 of the Mines Act, 1952 (35 of 1952), the Central Government hereby appoints Smt. Rashmi Verma, Former Secretary to the Government of India to hold such inquiry and present a report within a period of three months. The Central Government also appoints the following persons as assessors in holding of the inquiry, namely:-

- (i) Shri Akhter Javed Usmanee, representative of Hind Mazdoor Sabha;
- (ii) Shri Rabindra Sharma, Ex-Chief Inspector of Mines and DGMS

[F.No. N-11012/3/2016-ISH.II]

KALPANA RAJSINGHOT, Jt. Secy.

श्रम और रोजगार मंत्रालय

अधिसूचना

नई दिल्ली, 13 नवम्बर, 2019

का.आ. 4081(अ). - भारत सरकार, श्रम और रोजगार मंत्रालय ने तारीख 13 अप्रैल, 2019 की अपनी अधिसूचना संख्यांक का. आ. 2927(अ) द्वारा, जो कि भारत सरकार के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (ii) में प्रकाशित, भारत सरकार के पूर्व सचिव, श्रीमती रश्मी वर्मा को मैसर्स ईस्टर्न कोल फील्ड्स लिमिटेड के खुली कास्ट खदान, राजमहल झारखंडराज्य के जिला गोड्डा में हुई बड़ी दुर्घटना के कारणों और परिस्थितियों की जांच पड़ताल करने और तीन माह की अवधि के भीतर अर्थात् 29 दिसंबर, 2016 तक जांच रिपोर्ट प्रस्तुत करने के लिए नियुक्त किया गया था;

और जबकि, तीन महीने की उक्त अवधि 12 नवंबर, 2019 से समाप्त हो रही है;

और जबकि, जांच-पड़ताल करने और सिफारिश, यदि कोई हो, आगे की सुरक्षा कदमों या उपचारी उपायों के लिए तथा रिपोर्ट प्रस्तुत करने के लिए अवधि बढ़ाना आवश्यक हो गया है;

अतः, अब केंद्रीय सरकार इस अवधि को 13 नवंबर, 2019 से 12 फरवरी, 2020 तक, तीन माह की और अवधि अथवा जांच रिपोर्ट प्रस्तुत किए जाने के दिन या तारीख, जो भी पहले हो, तक के लिए बढ़ाती है। तदनुसार, जांच-पड़ताल करने और सिफारिश करने, यदि कोई हो, आगे की सुरक्षा कदमों या उपचारी उपायों के लिए और रिपोर्ट प्रस्तुत करने के लिए तथा श्री अख्तर जावेद उस्मानी, हिन्द मजदुर सभा के प्रतिनिधि और श्री रबिन्द्रशर्मा, पूर्व मुख्य खान निरीक्षक और डीजीएमएस, मूल्यांकक के रूप में नियुक्ति की अवधि के तीन महीने अर्थात् 13 नवंबर, 2019 से 12 फरवरी, 2020 अथवा जांच रिपोर्ट प्रस्तुत किए जाने के दिन या तारीख, जो भी पहले हो, तक के लिए बढ़ाई जाती है।

[फा. सं. एन-11012/3/2016-आईएसएच.॥]

कल्पना राजसिंहोत, संयुक्त सचिव

MINISTRY OF LABOUR AND EMPLOYMENT

NOTIFICATION

New Delhi, the 13th November, 2019

S.O. 4081(E). - Whereas the Government of India in the Ministry of Labour and Employment vide their notification number S.O. 2927(E), dated 13th August, 2019 published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-Section (ii) appointed Smt. Rashmi Verma, Former Secretary to the Government of India to go into causes and circumstances of the major accident which occurred on 29th December, 2016 at Rajmahal Opencast Mines of M/s. Eastern Coal Fields Limited in District Godda of Jharkhand State and to make recommendations, if any, for further safety steps or remedial measures required to be taken, ought to be held and present a report within a period of three months;

And whereas the said period of three months will be coming to end on 12th November, 2019;

And whereas it has become necessary to extend the period within which the inquiry is to be conducted, and, recommendations, if any, for further safety steps or remedial measures is to be made and report presented;

Now, therefore, the Central Government do hereby extend this duration for a further period of three months from 13th November, 2019 to 12th February, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier. Accordingly, the period of appointment of Chairperson Smt. Rashmi Verma, Former Secretary to

Government of India to conduct the inquiry, and, to make recommendations, if any, for further safety steps or remedial measures and present the report and the period of Shri Akhter Javed Usmanee, representative of Hind Mazdoor Sabha and Shri Rabindra Sharma, Ex-Chief Inspector of Mines and DGMS, as assessors is also extended for a further period of three months from 13th November, 2019 to 12th February, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier.

[F.No. N-11012/3/2016-ISH.II]

KALPANA RAJSINGHOT, Jt. Secy.

श्रम और रोजगार मंत्रालय

अधिसूचना

नई दिल्ली, 17 फरवरी, 2020

का.आ. 740(अ). - भारत सरकार, श्रम और रोजगार मंत्रालय ने तारीख 13 अगस्त, 2019 की अधिसूचना का. आ. संख्यांक 2927(अ) द्वारा जो भारत के राजपत्र, असाधारण, भाग II, खंड 3, उपखंड (ii) में प्रकाशित की गई थी, भारत सरकार के पूर्व सचिव, श्रीमती रश्मि वर्मा को मैसर्स ईस्टर्न कोल फील्ड्स लिमिटेड के खुली कास्ट खदान, राजमहल, झारखंड राज्य के जिला गोड्डा में हुई बड़ी दुर्घटना के कारणों और परिस्थितियों की जांच पड़ताल करने और तीन माह की अवधि के भीतर अर्थात् 12 नवंबर, 2019 तक जांच रिपोर्ट प्रस्तुत करने के लिए नियुक्त किया गया था;

और उक्त जांच न्यायालय को सौंपे गए कार्यों को पूरा करने तथा रिपोर्ट प्रस्तुत करने की अवधि तारीख 13 नवंबर, 2019 की अधिसूचना संख्या का. आ. 4081(अ.) के द्वारा तीन माह की अतिरिक्त अवधि के लिए अर्थात्, 12 फरवरी, 2020 तक बढ़ाई गई थी;

और तीन माह की बढ़ाई गई अवधि 12 मई, 2020 को समाप्त हो जाएगी;

और पूर्वोक्त अवधि के दौरान जांच न्यायालय ने अपनी जांच में काफी प्रगति की है और जांच की कार्यवाही के दौरान प्रस्तुत गवाहों और अनेक दस्तावेजों की जांच करने के लिए अब भी और अधिक समय उपेक्षित है;

और अवधि को बढ़ाना आवश्यक हो गया है जिसमें जांच की जानी है, तथा अतिरिक्त सुरक्षा उपायों या उपचारात्मक उपायों, सिफारिश यदि कोई हो, को किया जाना है और रिपोर्ट को प्रस्तुत किया जाना है;

अतः, अब केंद्रीय सरकार, इस अवधि को 13 फरवरी, 2020 से 12 मई, 2020 तक तीन महीने के लिए या उस दिन या उस तारीख जिसको जांच रिपोर्ट प्रस्तुत की जानी है, इनमें से जो भी पहले हो, बढ़ाती है तथा 12 मई, 2020 के बाद आगे कोई अवधि नहीं बढ़ाई जाएगी और उक्त अवधि में जांच पूरी की जानी है। तदनुसार, जांच करने और अतिरिक्त सुरक्षा उपायों या उपचारात्मक उपायों, सिफारिश के लिए यदि कोई है, और रिपोर्ट को प्रस्तुत करने के लिए अध्यक्ष श्रीमती रश्मि वर्मा, पूर्व सचिव, भारत सरकार तथा एसेसर के रूप में श्री अख्तर जावेद उस्मानी, हिन्द मजदूर सभा के प्रतिनिधि और श्री रबीन्द्र शर्मा, पूर्व मुख्य खान निरीक्षक और डीजीएमएस की नियुक्ति अवधि 13 फरवरी, 2020 से 12 मई, 2020 तक या उस दिन या उस तारीख जिसको जांच रिपोर्ट प्रस्तुत की जानी है, इनमें से जो भी पहले हो, तक बढ़ाई जाती है।

[फा. सं. एन-11012/3/2016-आईएसएच.।।]

कल्पना राजसिंहोत, संयुक्त सचिव

MINISTRY OF LABOUR AND EMPLOYMENT

NOTIFICATION

New Delhi, the 17th February, 2020

S.O. 740(E). - Whereas the Government of India in the Ministry of Labour and Employment *vide* their notification number S.O. 2927(E), dated 13th August, 2019 published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-Section (ii) appointed Smt. Rashmi Verma, Former Secretary to the Government of India to go into causes and circumstances of the major accident which occurred on 29th December, 2016 at Rajmahal Opencast Mines of M/s. Eastern Coal Fields Limited in District Godda of Jharkhand State and to make recommendations, if any, for further safety steps or remedial measures required to be taken, ought to be held and present a report within a period of three months, i.e., upto 12th November, 2019;

And whereas to accomplish the tasks assigned to the said Court of Inquiry and to submit a report the duration was extended for a further period of three months, i.e., upto 12th February, 2020 *vide* notification number S.O. 4081 (E) dated the 13th November, 2019;

And whereas the extended period of three months will be coming to an end on 12th February 2020;

And whereas during the aforesaid period the Court of Inquiry made a considerable progress in its enquiry and still require further more time to examine the witnesses and several documents submitted during the course of inquiry;

And whereas it has become necessary to extend the period with in which the inquiry is to be conducted, and, recommendations, if any, for further safety steps or remedial measures is to be made and report presented;

Now, therefore, the Central Government do hereby extend the duration for a further period of three months from 13th February, 2020 to 12th May, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier and no further extension will be granted beyond 12th May, 2020 and the enquiry is to be completed within the said period. Accordingly, the period of appointment of Chairperson Smt. Rashmi Verma, Former Secretary to the Government of India to conduct the inquiry, and, to make recommendations, if any, for further safety steps or remedial measures and present the report and the period of Shri Akhter Javed Usmanee, representative of Hind Mazdoor Sabha and Sri Rabindra Sharma, Ex-Chief Inspector of Mines and DGMS, as assessors is also extended for a further period of three months from 13th February, 2020 to 12th May, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier. [F.No. N-11012/3/2016-ISH.II]

KALPANA RAJSINGHOT, Jt. Secy.

श्रम और रोजगार मंत्रालय

अधिसूचना

नई दिल्ली, 28 मई, 2020

का.आ. 1679(अ).—भारत सरकार, श्रम और रोजगार मंत्रालय ने तारीख 13 अगस्त, 2019 की अधिसूचना का. आ. संख्यांक 2927(अ) द्वारा, जो भारत के राजपत्र, असाधारण, खंड 3, उपखंड (ii) में प्रकाशित की गई थी, भारत की पूर्व सचिव, श्रीमती रश्मि वर्मा को मैसर्स ईस्टर्न कोल फील्ड्स लिमिटेड के खुली कास्ट खदान, राजमहल, झारखंड राज्य के जिला गोड्डा में हुई बड़ी दुर्घटना के कारणों और परिस्थितियों की जांच पड़ताल करने और तीन माह की अवधि के भीतर अर्थात् 12 नवंबर, 2019 तक जांच रिपोर्ट प्रस्तुत करने के लिए नियुक्त किया गया था;

और उक्त जांच न्यायालय को सौंपे गए कार्यों को पूरा करने तथा रिपोर्ट प्रस्तुत करने की अवधि तारीख 13 नवंबर, 2019 की अधिसूचना सं. का. आ. 4081(अ) द्वारा तीन माह की अतिरिक्त अवधि के लिए अर्थात्, 12 फरवरी, 2020 तक बढ़ाई गई थी और 17 फरवरी, 2020 की अधिसूचना सं. का. आ. 740(अ) द्वारा तीन माह की अतिरिक्त अवधि के लिए अर्थात्, 12 मई, 2020 तक भी बढ़ाई गई थी;

और, तीन माह की बढ़ाई गई अवधि 12 मई, 2020 को समाप्त हो गई;

और, पुर्वोक्त अवधि के दौरान जांच न्यायालय ने अपनी जांच में काफी प्रगति की है और जांच की कार्यवाही के दौरान प्रस्तुत गवाहों और अनेक दस्तावेजों की जांच करने के लिए अब भी और अधिक समय अपेक्षित है;

और, 27 फरवरी, 2020 तक पंद्रह बैठकों का आयोजन किया जा चुका है और 50 व्यक्तियों ने अभिसाक्ष्य दिया तथा उनकी परीक्षा की तथा कार्यवाहियों के दौरान 1200 पृष्ठ निदेशित किए;

और, 27 फरवरी, 2020 की बैठक में न्यायालय ने पश्चिम बंगाल राज्य के पश्चिम वर्धमान जिले के कुनुस्तोरिया क्षेत्र पर 24 से 26 मार्च 2020 तक अपनी बैठकों का आयोजन करने का विनिश्चय किया। संबंधित व्यक्तियों को समन, नोटिस और जानकारी दी गई थी;

और, कोविड-19 महामारी के प्रकोप को देखते हुए देशव्यापी लॉकडाउन के कारण न्यायालय की बैठकों का आयोजन नहीं किया जा सका;

और, अवधि को बढ़ाना आवश्यक हो गया है जिसमें जांच की जानी है तथा अतिरिक्त सुरक्षा उपायों या उपचारात्मक उपायों, सिफारिश यदि कोई हो, को किया जाना है और रिपोर्ट को प्रस्तुत किया जाना है;

अतः, अब, केंद्रीय सरकार, इस अवधि को 13 मई, 2020 से 12 अगस्त, 2020 तक तीन माह की अतिरिक्त अवधि के लिए या उस दिन या उस तारीख जिसको जांच रिपोर्ट प्रस्तुत की जानी है, इनमें से जो भी पहले हो, बढ़ाती है। तदनुसार, जांच करने और अतिरिक्त सुरक्षा उपायों या उपचारात्मक उपायों, सिफारिश के लिए, यदि कोई है और रिपोर्ट को प्रस्तुत करने के लिए अध्यक्ष श्रीमति रश्मि वर्मा, पूर्व सचिव, भारत सरकार तथा एसेसर के रूप में श्री अख्तर जावेद उस्मानी, हिन्द मजदूर सभा के प्रतिनिधि और श्री रबीन्द्र शर्मा, पूर्व मुख्य खान निरीक्षक और डीजीएमएस की नियुक्ति 13 मई, 2020 से 12 अगस्त, 2020 की अवधि तक या उस दिन या उस तारीख जिसको जांच रिपोर्ट प्रस्तुत की जानी है, इनमें से जो भी पहले हो, बढ़ाई जाती है।

[फा. सं. एन-11012/3/2016-आईएसएच.।।]

कल्पना राजसिंहोत, संयुक्त सचिव

MINISTRY OF LABOUR AND EMPLOYMENT

NOTIFICATION

New Delhi, the 28th May, 2020

S.O. 1679(E).—Whereas the Government of India in the Ministry of Labour and Employment *vide* their notification number S.O. 2927(E), dated 13th August, 2019 published in the Gazette of India, Extraordinary, Part II, Section 3, Sub-Section (ii) appointed Smt. Rashmi Verma, Former Secretary to the Government of India to go into causes and circumstances of the major accident which occurred on 29th December, 2016 at Rajmahal Opencast Mines of M/s. Eastern Coal Fields Limited in District Godda of Jharkhand State and to make recommendations, if any, for further safety steps or remedial measures required to be taken, ought to be held and present a report within a period of three months i.e., upto 12th November, 2019;

And whereas to accomplish the tasks assigned to the said Court of Inquiry and to submit a report the duration was extended for a further period of three months, i.e., upto 12th February, 2020 *vide* notification number S.O. 4081(E), dated the 13th November, 2019 and also for a further period of three months, i.e., upto 12th May, 2020 *vide* notification number S.O. 740(E), dated the 17th February, 2020;

And whereas the extended period of three months came to an end on 12th May 2020;

And whereas during the aforesaid period the Court of Inquiry made a considerable progress in its enquiry and still require further more time to examine the witnesses and several documents submitted during the course of inquiry;

And whereas till 27th February, 2020, fifteen number of sittings have been held and 50 persons were deposed and examined and around 1200 pages of documents were referred to in the course of proceedings;

And whereas on 27th February, 2020 sitting, the Court decided to hold its sittings from 24th to 26th March, 2020 at Kunustoria Area, Paschim Bardhaman District of West Bengal State, summons and notices and information had been given to the concerned persons;

And whereas due to nationwide lockdown in view of outbreak of COVID-2019 pandemic the sittings of the Court could not be held;

And whereas it has become necessary to extend the period with in which the inquiry is to be conducted, and, recommendations, if any, for further safety steps or remedial measures is to be made and report presented;

Now, therefore, to give continuity to the aforesaid Court of Inquiry, the Central Government do hereby extend the duration for a further period of three months from 13th May, 2020 to 12th August, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier. Accordingly, the period of appointment of Chairperson Smt. Rashmi Verma, Former Secretary to the Government of India to conduct the inquiry, and, to make recommendations, if any, for further safety steps or remedial measures and present the report and the period of Shri Akhter Javed Usmanee, representative of Hind Mazdoor Sabha and Shri Rabindra Sharma, Ex-Chief Inspector of Mines and DGMS, as assessors is also extended for a further period of three months from 13th May, 2020 to 12th August, 2020 or till the day or date on which the report of the inquiry is submitted, whichever is earlier.

[F.No. N-11012/3/2016-ISH.II]

KALPANA RAJSINGHOT, Jt. Secy.

No. N-11012/3/2016-ISH.II

GOVERNMENT OF INDIA

MINISTRY OF LABOUR AND EMPLOYMENT

Shram Shakti Bhawan, Rafi Marg,
New Delhi-110001, Dated 14th August, 2019

To

CIM & HOD,
DGMS,
DGMS-826001

Subject.: Constitution of Rajmahal Court of Inquiry under Section 24 of the Mines Act, 1952- the order dated 5th April, 2019 of the Hon'ble High Court of Jharkhand at Ranchi in Writ Petition No.66 of 2017 [Md. Sarfaraj v/s. State of Jharkhand and others] – regarding.

Sir,

I am directed to enclose a gazette notification on the above subject for further necessary action and to inform that with the approval of competent authority **Shri Venkanna Banothu, Dy. Director**, DGMS, Dhanbad is appointed herewith as Member Secretary to the Court of Inquiry. His appointment will be in addition to his existing official work with the DGMS. His appointment will also be effective from the date of issue of this order and till the Court of Inquiry complete its work.

2. It is requested that Hon'ble Chairperson and Assessors may be well informed of their appointment in the Court of inquiry for their valuable cooperation. All the necessary assistance as required may be provided so that the report could be expedited within time as stipulated in the said Gazette Notification.

3. This may kindly be given Top Priority.

Yours faithfully,

(Dr. Mahendra Kumar)
Director

Tel.: 011-23731574

E-mail ID: mahendrakumar.rb@gov.in

Encl.: As above.



GOVERNMENT OF INDIA
MINISTRY OF LABOUR AND EMPLOYMENT
COURT OF INQUIRY – RAJMAHAL OPENCAST MINE ACCIDENT
PUBLIC NOTICE

In exercise of the powers conferred by sub-section (1) of Section 24 of The Mines Act, 1952 (35 of 1952), the Central Government, vide Gazette Notification No. S.O. 2927 (E) dated 13th August 2019, has appointed the undersigned to hold a formal inquiry into the causes and the circumstances attending the accident causing loss of lives that occurred on 29th December, 2016 at Rajmahal Opencast Mines of M/s Eastern Coalfields Limited in Godda district of Jharkhand State. The Central Government has also appointed Shri Akhter Javed Usmanee, representative of Hind Mazdoor Sabha and Shri Ravindra Sharma, Ex-Chief Inspector of Mines and DGMS as assessors in holding of the inquiry.

The Court of Inquiry calls for representation by means of affidavits from employees, staff, management or any other person who are directly or indirectly acquainted or have knowledge with regard to the cause and circumstances leading to the accident. Such duly sworn affidavits attested by a Notary in public are required to be filed on or before 05 PM of 08th November, 2019 to Member Secretary of Court of Inquiry, Sri Venkanna Banothu, in the office of DGMS, Main Building, Directorate General of Mines Safety, Hirapur, Dhanbad, Jharkhand, 826001, in person or by post. No further time shall be given to file affidavit beyond the date notified above.

Affidavits filed will be treated as chief examination for the purpose of evidence and persons affected/ interested will be permitted for cross examination. Examination of witnesses will be held generally in Kunustoria Area(Paschim Bardhaman district of West Bengal State) of M/s Eastern Coalfields Limited a subsidiary of Coal India Limited or at any other place to be decided by the Court.

The received affidavits will be uploaded in the DGMS website (www.dgms.gov.in) on daily basis to enable all interested parties to have access to it. If any person requires hard copies of the affidavits the same will be made available to him by the Member Secretary on payment of Rs.2 per page on electronic mode (through www.bharatkosh.gov.in).

Sd/-

(Smt. Rashmi Verma)

New Delhi

Dated: 20th September, 2019

Chairperson to the Court of Inquiry & Former
Secretary to the Government of India



भारत सरकार

श्रम एवं रोजगार मंत्रालय

जाँच न्यायालय- राजमहल खुली खदान दुर्घटना

आम सूचना

खान अधिनियम 1952 (1952 का 35) की धारा 24 की उपधारा (1) के तहत प्रदत्त शक्तियों का प्रयोग करते हुए केन्द्रीय सरकार ने राजपत्र अधिसूचना सं. S.O. 2927 (E), दिनांक 13 अगस्त, 2019 के द्वारा झारखंड राज्य के गोड्डा जिला स्थित मेसर्स ईस्टर्न कोलफील्ड्स लिमिटेड की राजमहल खुली खदान में दिनांक 29 दिसम्बर, 2016 को घटित दुर्घटना, जिसके कारण मानव जीवन की क्षति हुई, के कारणों और परिस्थितियों की औपचारिक जाँच हेतु अधोहस्ताक्षरी को नियुक्त किया है। केन्द्रीय सरकार ने श्री अख्तर जावेद उस्मानी, हिन्द मजदूर सभा के प्रतिनिधि और श्री रवीन्द्र शर्मा, पूर्व मुख्य खान निरीक्षक और डी.जी.एम.एस. को भी जांच करने में असेसर के रूप में नियुक्त किया है।

जाँच न्यायालय दुर्घटना घटित होने के कारणों एवं परिस्थितियों से प्रत्यक्ष या अप्रत्यक्ष रूप से भिन्न अथवा जानकारी रखनेवाले कर्मियों, स्टाफ, प्रबंधन या अन्य किसी व्यक्ति से शपथ पत्र के माध्यम से प्रतिनिधत्व आहूत करता है। ऐसे शपथ पत्रों को नोटरी पब्लिक द्वारा विधिवत तस्दीक कराकर व्यक्तिगत या डाक से दिनांक 8 नवम्बर, 2019 के शाम 05 बजे तक या उसके पूर्व खान सुरक्षा महानिदेशालय, हीरापुर, धनबाद, झारखंड- 826001 के मुख्य भवन में जाँच न्यायालय के सदस्य सचिव श्री वेंकन्ना बानोतु के कार्यालय में जमा किया जाए। उपरोक्त अधिसूचित तिथि के बाद शपथ पत्रों को जमा करने के लिए अतिरिक्त समय नहीं दिया जायेगा।

नोटरी पब्लिक द्वारा तस्दीक किये गये प्राप्त शपथ पत्रों को मुख्य परीक्षण हेतु साक्ष्य माना जाएगा एवं प्रभावित/इच्छुक पक्षों को प्रतिपरीक्षण हेतु अनुमति दिया जाएगा। गवाहों का परीक्षण सामान्यतः कोल इंडिया लिमिटेड की अनुपंगी कंपनी (सबसीडीयरी), ईस्टर्न कोलफील्ड लिमिटेड के कन्स्तुरिया क्षेत्र (पश्चिम बर्धमान जिला, पश्चिम बंगाल राज्य) या न्यायालय द्वारा निर्धारित किसी भी अन्य स्थान पर किया जाएगा।

प्राप्त शपथ पत्रों को, सभी संबंधित पक्षकारों की जानकारी में लाने हेतु प्रतिदिन डीजीएमएस की वेबसाइट {www.dgms.gov.in} पर अपलोड किया जायेगा। यदि कोई व्यक्ति शपथ पत्रों की प्रतिलिपि प्राप्त करना चाहे, तो 2 रूपये प्रति पृष्ठ की दर से राशि का इलेक्ट्रॉनिक माध्यम से {through www.bharatkosh.gov.in} भुगतान करने पर जाँच न्यायालय के सदस्य सचिव द्वारा उपलब्ध कराया जाएगा।

ह०/-

नई दिल्ली

दिनांक: 20 सितम्बर, 2019

(श्रीमती रश्मी वर्मा)

अध्यक्ष, जाँच न्यायालय
एवं पूर्व सचिव भारत सरकार

ANNEXURE-IV

CODE OF COURT PROCEDURE

1. In all, 16 affidavits have been received by the Court. All have been accepted. Further affidavits will not be allowed.
2. All persons who have submitted affidavits would be allowed to depose in the Court only once. However, they may supplement it by submission to Court in writing by the date prescribed by the Court.
3. The Court may summon such persons for deposition which it considers necessary for establishment of causes and circumstances connected with the accident.
4. The Court may call for submission of such documents from concerned persons for scrutiny which it considers necessary.
5. All 16 persons who have submitted the affidavit will be allowed to cross-examine all persons deposing in the Court.
6. The Court may disallow such questions in cross-examinations which it considers irrelevant.
7. Since the purpose of Court is to find the causes and circumstances connected with the accident and there is no accused person, assistance of advocates will not be allowed.
8. In case of any dispute, decision of the Court will be final.
9. Court shall decide any further modalities/procedure as and when required.

Sd/-
(Shri Ravindra Sharma)
Assessor

Sd/-
(Shri Akhter Javed Usmanee)
Assessor

Sd/-
(Smt. Rashmi Verma)
Hon'ble Chairperson

ANNEXURE-V

RAJMAHAL COURT OF INQUIRY**LIST OF WITNESSES ON AFFIDAVITS WITH THEIR DATES OF DEPOSITION IN THE COURT**

Sl.No.	Name and address	Representing	Affidavit Dairy No & date	Deposed on
01	Shri Jagdish Narayan Singh, S/o Late Deo Narayan Ram, Resident of 104, Uma Shanti Apartment, Kanke Road, Ranchi – 834008.	Individual	01, 18.10.2019	18.12.2019 (AN)
02	Shri Mohammad Younush Ansari, S/o Late Md. Latif Ansari, Dy. Treasurer, IMMA Resident of Friends Colony, Panderpalla, Near Dhanbad City School, Bishnupur, Dhanbad, Jharkhand- 828130.	Indian Mine Managers Association, Dhanbad (India)	03, 29.10.2019	18.12.2019 (AN)

	Shri K.N.Singh, President, IMMA Shri R.K.Sharma, General Secretary, IMMA.			
03	Shri Randhir Prasad Singh S/o Late Wakil Pd Singh, President, Rastriya Colliery Majdoor Sangh, E.C.L.Regional Committee, Lalmatia, Mahagama, Godda-814154.	Rastriya Colliery Majdoor Sangh, E.C.L. Regional Committee	05, 06.11.2019	11.02.2020 (AN)
04	Shri Girirao B. Nagpure S/o Bhimraoji Nagpure, Asst. General Secretary- INMF (INTUC), C/o RKKMS (INTUC), WCL Head Qtrs Comple, s, Telangkhedi Road, Civil Lines, Nagpur- 440001.	Indian National Mineworkers Federation (INMF- INTUC)	07, 07.11.2019	18.12.2019 (AN)
05	Shri Ashok Kumar Sharma S/o Late Anteryami Sharma & Shri Dhiraj Kumar Rajak S/o Rajendra Kumar Rajak, Residents of Dhanbad.	Individual	08, 07.11.2019	18.12.2019 (AN)
06	Shri Balmiki Prasad Singh S/o Late Lakhan Singh, Vice President, AIMPA & Shri Jitendra Kumar Singh S/o Late Ganga Dayal Singh, Secretary, AIMPA, Residents of Dhanbad.	All India Mining Personnel Association	09, 07.11.2019	18.12.2019 (AN)
07	Shri Pulak Baran Chakrabarty S/o Sri Gour Chandra Chakrabarty, Resident of 4/1, Hari Mohan Dutta Road, Green Park, Dum Dum, North 24 Paraganas, West Bengal- 700028. Shri Seo Pujan Thakur, Shri Raj Kishore Prasad Singh.	Coal Mines Officers Association of India, ECL Branch	10, 08.11.2019	18.12.2019 (AN)
08	Shri Purnanand Mishra S/o Late Bishnu Deo Mishra, General Secretary, INMOSSA, INMOSSA Bhawan, Hume Pipe Area at Barakar, P.S.: Kulti, Paschim Bardhman, West Bengal – 713324.	Indian National Mines Official and Supervisory Staff Association (INMOSSA)	11, 08.11.2019	19.12.2019 (AN)
9	Shri Saurabh Sunny S/o Sri K.P.Singh, Urja Nagar, P.O. : Mahagama, Godda, Jharkhand.	M/s ECL Management	12, 08.11.2019	Not turned up
10	Shri Narendra Kumar Singh S/o Late Sita Ram Singh, President, ABKMS, Bankola No.4 (New Shiv Mandir), P.O.- Ukhra, P.S. Andal, Paschim Bardhman,	Akhil Bhartiya Kadan Mazdoor Sangha (Bhartiya Mazdoor Sangha)	13, 08.11.2019	19.12.2019 (AN)

	West Bengal – 713363.			
11	Shri Sujit Bhattacharjee S/o Sukhendu Sekar Bhattacharjee, Vice President, CMSI, CITU, Koyla Shramik Bhavan, N.S.B.Road, Paschim Bardhaman, West Bengal.	Colliery Mazdoor Sabha of India	14, 08.11.2019	19.12.2019 (AN)
12	Shri Brajesh Pratap Singh, S/o Late Ram Janki Prasad Singh, Resident of A-303, Shiva-Krishna Vandan Appartment, Katol Road, Nagpur- 440013.	Individual	15, 08.11.2019	01.02.2020 (AN)
13	Shri Arvind Kumar Pandey, S/o Late Ganesh Dutt Pandey, Area Secretary, CMC-HMS EP weilder, Rajmahal, Residing at B-Type Quarter No.30/60, Urjanagar, Mahagama, Godda, Jharkhand.	CMC affiliated to HMS	17, 13.11.2019	30.01.2020 (AN)
14	Shri Ali Hussain Ansari S/o Late Jamaluddin Ansari, Village: Bara Vorai (Bahadur Tola), Lalmatia, Godda, Jharkhand.	Individual	18, 13.11.2019	30.01.2020 (AN)
15	Shri Md Ahmad Ansari S/o Md. Kalam Ansari, Area President, CMC-HMS, Village: Bara Vorai (Bahadur Tola), Lalmatia, Godda, Jharkhand.	CMC affiliated to HMS	19, 13.11.2019	30.01.2020 (AN)
16	Shri Shivkant Pandey S/o Late Medini Prasad Pandey, General secretary, CMC, Resident of Hill View North, P.O. Asansol, Paschim Bardhman, West Bengal.	Colliery Mazdoor Congress	20, 13.11.2019	31.01.2020 (AN)

ANNEXURE-VI

RAJMAHAL COURT OF INQUIRY

LIST OF DEPONENTS DEPOSED BEFORE THE COURT WITH DATES OF DEPOSITION & CROSS EXAMINATION

S.No.	Name of the Witness	Date of deposition and cross examination
01	Shri R.Subramanian, Chief Inspector of Mines & Director General (Officiating), Directorate General of Mines Safety (DGMS).	18.12.2019 (FN)
02	Shri Utpal Saha, the then Deputy Director General of Mines Safety, DGMS, Eastern Zone, Sitarampur.	18.12.2019 (FN) & 20.12.2019 (FN)
03	Shri P.K.Sarkar, the then Deputy Director General of Mines Safety, DGMS, HQ, Dhanbad.	18.12.2019 (AN)
04	Shri Niranjana Sharma, the then Director of Mines Safety, DGMS, Sitarampur Region No.3, Eastern Zone, Sitarampur.	19.12.2019 (FN & AN)
05	Shri Md. Niyaji, the then Deputy Director of Mines Safety, DGMS, Sitarampur Region No.3, Eastern Zone, Sitarampur.	19.12.2019 (AN)

06	Shri V.Lakshmi Narayana, the then Director of Mines Safety, DGMS, Eastern Zone, Sitarampur.	19.12.2019 (AN)
07	Shri R.R.Mishra, the then Chairman cum Managing Director, M/s Eastern Coalfields Limited (M/s ECL).	30.01.2020 (FN)
08	Shri Rahul Guha, the then Director General of Mines Safety/Chief Inspector of Mines, DGMS.	30.01.2020 (FN)
09	Shri S. Saran, Chairman, High Powered Committee/Chairman, CMPDI, Ranchi.	30.01.2020 (FN & AN)
10	Shri B.N.Shukla, the then Director (Technical) Operation/Nominated Owner of M/s ECL.	31.01.2020 (FN)
11	Shri S. Banerjee, the then General Manager (Safety), M/s ECL.	31.01.2020 (AN)
12	Shri Sanjay Singh, the then Chief General Manager, Rajmahal Opencast Mine.	31.01.2020 (AN)
13	Shri D.K.Nayak, the then Agent, Rajmahal Opencast Mine.	31.01.2020 (AN)
14	Shri Pramod Kumar, the then Manager, Rajmahal Opencast Mine.	01.02.2020 (FN)
15	Shri S. Burnwal, the then Safety Officer, Rajmahal Opencast Mine.	01.02.2020 (AN)
16	Shri Nandan Kumar, the then Surveyor, Rajmahal Opencast Mine.	01.02.2020 (AN)
17	Shri Gorakh Singh, the then Surveyor, DGMS.	01.02.2020 (AN)
18	Shri Dilip Roy, the then Assistant Manager, Rajmahal Opencast Mine.	10.02.2020 (FN)
19	Shri Vijay Kumar Singh, the then Assistant Manager, Rajmahal Opencast Mine.	10.02.2020 (FN)
20	Shri Ranjit Kumar Singh, the then Assistant Manager, Rajmahal Opencast Mine.	10.02.2020 (FN)
21	Dr. Phalguni Sen, Member of High Powered Committee/Former Professor, IIT (ISM).	10.02.2020 (FN & AN)
22	Shri Vinesh Shivjee Dholu, Owner, M/s MIPL-NKAS (JV).	11.02.2020 (FN)
23	Shri Akhilesh Pandey, the then General Manager, Rajmahal Opencast Mine.	11.02.2020 (FN)
24	Shri Padma Charan Dhar, the then Assistant Manager, Rajmahal Opencast Mine.	11.02.2020 (FN)
25	Shri Niraj Kumar Sinha, the then Assistant Manager, Rajmahal Opencast Mine.	11.02.2020 (FN)
26	Shri Damodar Ram, the then Colliery Surveyor, Rajmahal Opencast Mine.	11.02.2020 (FN)
27	Shri Sujay Kumar, the then Overman, Rajmahal Opencast Mine.	11.02.2020 (FN)
28	Shri Md. Ejaz Hussain Ansari, the then Mining Sirdar, Rajmahal Opencast Mine.	11.02.2020 (FN)
29	Shri NilamToppo, the then Overman, Rajmahal Opencast Mine.	11.02.2020 (FN)
30	Sri Barun Shankar Chakraborty, the then Workmen's Inspector (Mining), Rajmahal Opencast Mine.	11.02.2020 (FN)
31	Shri Naresh Prasad, the then Blasting Officer, Rajmahal Opencast Mine.	11.02.2020 (AN)
32	Shri Hem Narayan Yadav, the then Mining Sirdar, Rajmahal Opencast Mine.	11.02.2020 (AN)
33	Shri Mahendra Mal, the then Assistant Foreman (E&M), Rajmahal	12.02.2020 (FN)

	Opencast Mine.	
34	Shri Krishna Kanth Upadhaya, the then Supervisor, M/s MIPL-NKAS (JV), Rajmahal Opencast Mine.	12.02.2020 (FN)
35	Shri P.N.Mishra, the then Mining Sirdar/Shot-firer, Rajmahal Opencast Mine.	12.02.2020 (FN)

ANNEXURE-VII

RAJMAHAL COURT OF INQUIRY

LIST OF WITNESSES ON AFFIDAVIT WHO SUBMITTED OBSERVATIONS

Sl. No.	Name and address	Representing
01	Shri Jagdish Narayan Singh,	Individual
02	Shri Mohammad Younush Ansari, Dy. Treasurer & Shri R.K.Sharma, Honorary General Secretary	Indian Mine Managers Association, Dhanbad (India).
03	Shri Girirao B. Nagpure, Asst. General Secretary.	Indian National Mineworkers Federation (INMF-INTUC).
04	Shri Balmiki Prasad Singh, Vice President & Shri Jitendra Kumar Singh, Secretary.	All India Mining Personnel Association.
05	Shri Seo Pujan Thakur	Coal Mines officers Association of India, ECL Branch.
06	Shri Purnanand Mishra, General Secretary	Indian National Mines Official and Supervisory Staff Association (INMOSSA).
07	Shri Sujit Bhattacharjee, Vice President	Colliery Mazdoor Sabha of India, CITU.
08	Shri Brajesh Pratap Singh	Individual.
09	Shri Arvind Kumar Pandey, Area Secretary	CMC affiliated to HMS.
10	Shri Ali Hussain Ansari	Individual.
11	Shri Md Ahmad Ansari, Area President	CMC affiliated to HMS.

ANNEXURE-VIII

Rajmahal Opencast Mine Accident & Enquiries

1. Rajmahal Opencast Mine is owned by a Public Sector Enterprises namely M/s Eastern Coalfields Limited & situated in District Godda of Jharkhand. On 29th of December, 2016, a slide in a Mine Waste Dump heightened up to 147 -151 meter, consisting of overburden crust, rocks and a mass of 4.313 Million Cubic Meter slides down. {High Power Committee Report page 53}. 23 contractor workers were buried alive beneath this mass. The scale of slide and fatalities are unprecedented in Indian Mining History.
2. Director General of Mines Safety Organisation, hereinafter DGMS, is a department of Ministry of Labour & Employment & being a regulator in safety of mines in India had started an enquiry with a 5 member committee headed by Shri Utpal Saha, Dy. DGMS. The Committee later adopted one more member. A subcommittee to assist the main committee headed by Shri Utpal Sah consisting, one Dy. Director of Mines Safety and four Surveyors was also appointed vide letter dated NIL, Reference Number Nil but year 2016 is mentioned and on top received was sealed as 09/01/17 {page 11 of the report of enquiry volume - 1}. The DGMSO Enquiry Committee had submitted its Report on 10.02.2017. & holds 16 person responsible for mishap.
3. M/s Coal India Limited, hereinafter, CIL is a holding company for M/s Eastern Coalfields Limited. CIL also constituted a High Power Committee, hereinafter HPC on 30.12.2016, to conduct enquiries and suggestions. This committee was chaired by Shri Shekhar Saran, CMD, CMPDIL & its members were Mining Engineers, Professor

IIT {ISM}, Dhanbad, Professor BIT, Meshra & Head of Slope Stability Division, CIMFR, Dhanbad.

4. HPC Report was submitted on 25.04.2017 to Chairman CIL. It had done a very detailed and comprehensive analysis to the circumstances & cause of accident but did not hold any one responsible specifically.
5. Internal Safety Organisation, hereinafter ISO of M/s Eastern Coalfields Limited, hereinafter, ECL, headed by its General Manger Safety, also conducted its own enquiries. ISO has submitted its report to Director Technical {Operation} on 27/01/2017. The report holds Manager of Mine and officials below Manager as responsible for the accident.
6. Safety Officer of Mine has also conducted statutory enquiry but no reference to his report had found in any of enquiries. Mine Manger ordered S K Choudhary, Safety Officer to conduct the enquiry. {Deposition by Manager, Pramod Kumar on 01.02.2020}.
7. These reports were not satisfactory in their conclusions and there was demands of constitution of Court of Enquiry in accordance of Subsection 1 of Section 24 of the Mines Act, 1952 as per precedence of constitution of Court of Enquiry in case of death of miners 4+ in mine accidents of past.

Constitution of Court of Enquiry

8. The issue for constitution of Court of Enquiry in to the accident at Rajmahal OCP had come before Honourable High Court of Judicature, State of Jharkhand, vide writ petition no. 66 of 2017.
9. Honourable Court was pleased to issue directions to Government of India for considering constitution of the Court of Enquiry into the accident at Rajmahal Mine on 29th December, 2016 causing 23 casualties.
10. After High Court Directions, the Government of India, constituted a Court of Enquiry, under provisions of the Mines Act, 1952, Section 24 vide Gazette Extra Ordinary Notification no.2927 dated 13th August, 2019 and appointed Smt Rashmi Verma, former Secretary to Government of India to hold the enquiry and also appointed Shri Ravindra Sharma, former DGMS, Ministry of Labour & Employment and the undersigned as Assessors to the Court.
11. Government of India had directed to hold enquiry within three months as tradition permits in these notifications. This time frame is impractical & impossible to complete any enquiry.
12. In every such enquiries, extensions were given by Government of India by way of publications in official Gazettes which is also a part of tradition but also a waste of time and money of public resourses..
13. Shri Venkanna Banothu, Dy Director of Mines Safety {DGMSO} has been appointed as Secretary to the Court by the Ministry of Labour & Employment, GOI, vide letter No. N-11012/3/2016 -ISH- II Dated 14th August, 2016.

Court Proceedings

14. Only then first sitting only could be held on 16th September, 2019 at Delhi and modalities of proceedings keeping in view of natural justice and dictum of Audi Alterm Partem and access & convenience of eye witnesses, important witnesses, not filling affidavits for the deposition, are to be summoned etc. had decided.
15. Accordingly the public hearings by the Court are to be held as near as possible to the Rajmahal Mine and participation is to be by way of submitting affidavits. The witnesses deposed before Court are to be recorded on audio also. The notice inviting witness and affidavits was to published in leading and locally circulated news papers, both Hindi and English, and DGMS website,
16. Minutes of sittings of Court and the all the nitty-gritty of proceedings are on the record. On advent of COVID -19 the sittings were held through video conferencing. Records are to maintained by the Member Secretary to the Court.
17. The Court had made a physical inspection of accident site on 22nd October, 2019. The Chairperson Smt. Rashmi Verma Jee was accompanied with Assessors Shri Ravindra

Sharma Jee, the undersigned and Shri Venkanna Banothu jee Secretary to the Court. The DGMS official led by Shri D. K. Shoo Jee, Dy. Director General of Mines Safety were also present during the inspection of Court. This inspection only established that there is no physical evidence left. The slid mass off 4.13 million Cubic Meter of mining waste dump was removed and production of coal was started by the management. Accident site was totally disturbed in view of ongoing mining activities.

18. It was explained to the Court that two major thermal power projects namely Farakka and Kahalgaon was dependent on supply of coal from Rajmahal Mine and all enquiries were completed. Almost two years & 10 months from the date of accident. Some maps were also shown to the Court on the date of visit which didn't shed much light to the cause and circumstances of the accident. The annual production of coal from mine is 17 million ton and continued.

Rajmahal Mine Project conceptualisation & it's working at accident place

19. Rajmahal Mine: Rajmahal Opencast Mine is in Rajmahal Coalfields aka Lalmatia Coal Block, district Godda of Jharkahnd. This is situated between a latitude $25^{\circ} 1' 12''$ & $25^{\circ} 3' 15''$ N and its longitudes are $87^{\circ} 21' 0''$ & $87^{\circ} 24' 0''$. {Report of Enquiry volume - 1, by DGMS, on Page 28th of 126}
20. At first the Project was sanctioned in August, 1980 for 5.0 Million Tonne per year. The revised project report was prepared by METCHEM, Canada, Inc. and submitted in September 1987. Subsequently sanction for expansion of its rated capacity of production up to 10.5 Million Tonne per anum was given in November 1988. the revised cost estimate for this expanded capacity of 10.5 Million ton was sanctioned by Government of India in July, 1993.
21. The Ministry of Coal has approved the expansion of coal production capacity up to 17 Million Ton per anum in 2005 vide its letter no. 43011-28-2003-CPAM Dated 6th February, 2005 with an incremental investment of Rs. 50.08 crores through outsourcing of over burden removal and coal extraction. The Coal Mines Planning and Design Institute Limited has prepared the Project Report for approved expansion of production of coal capacity up to 17 Million Ton and submitted in August 2007. {PR - Volume-1}. The Project Report was sanctioned by Government of India in September, 2009 for an additional capital investment of Rs. 153.82 crore {djksM+} up to the target year. {HPC Report Chapter - 2}.

Conceptualisation and sanctioning of Project & exclusion of Cost of Safety of Mine from the Estimation of Operational Cost in Project Reports.

22. *These project reports and sanctions for a singular Coal Block i.e. Rajmahal or Lalmatia Coal Block. from time to time is the proof of piecemeal decision making process of the Government. Rajmahal Block of Coal is a singular block of Coal. The piecemeal conceptualisation & sanctions had led to unplanned in - pit dumping, non- availability of fund with Rajmahal Mine Management for Scientific Studies & Slope Monitoring System and proved not only myopic but very dangerous too.*
23. *The project report for 17 million tonne per anum had devoted a chapter - XVI {Page No. 100 -104} on Safety and discuss the STABILITY OF BENCHES. Para 16.1.2. of sanctioned Project Report is quoted below;*
24. *However, no separate budget provision for Safety items and stability studies and further safety needs were provided in project report. {Page Second of Project Report, letter to Chairman, CIL, dated 6th February 2006, mentioned above}.*
25. *This kind of omissions of COST TO SAFETY from Project Reports Operational Cost Estimation is common in all project reports & became the greatest problem for keeping pace of SAFETY with TARGETED PRODUCTION as well as actual cost of project. It seems to be omitted to keep the projects operational cost at lower side to meet the out dated & impractical INTERNAL REVENUE RETURN QUOTIENT satisfied. "The individual bench face slope for high wall benches have been kept 70° to the horizontal & that for spoil benches have been kept at 37° to the horizontal. It is suggested that stability studies be conducted for arriving at safe overall slope angle for high wall and also for dumps. It is particularly important in view of high dump heights proposed in the project and abundance of soil type materials in overburden" Unquote. Proposed height of*

dumps was not mentioned in the report so the dangers associated to proposed heights could not ascertain.

26. *This stereo type of project Reports led to the second & third stages of decision making process by multiple authorities at corporate level for maintaining pace of safety with production, procuring of much needed state of art instrumentation for safety in mines. Such decisions always go by cost considerations and inherent process delays by multiple layers of corporate decision making mechanism.*

Scientific study by Central Institute of Mining and Fuel Research:

27. A study of *STABILITY OF BENCHES* of mine was done as per approved Project Report. It was done by CENTRAL INSTITUTE OF MINING AND FUEL RESEARCH, hereinafter CIMFR. The study was headed by Dr. V. K. Singh.
28. After accident on 29.12.2016, Dr V K Singh, acted as a member of HPC of Coal India Limited. His experience and expertise was not at Court disposal as he did not respond to summons and no warrants were issued by Court.
29. CIMFR Report Titled as "*Advice on High Wall Slope Study Stability of the Lalmatia Hill Mining Area of Rajmahal OCP, ECL*". submitted in April 2011.
30. CIMFR studies was confined to LALMATIA HILL with highest RL of 192 Meter {Page 2 of CIMFR Study}. No study was done of DAHERNANGI PATCH or 20 Million Patch or any other dump. Lalmatia Hill was nature's creation. The slided Dump's was manmade on wet earth of Kavery Sump.
31. In year 2011 dump height of Kavery sump was 28.6 Meters only {Page 45 of HPC report}. The dump was further incrementally layered with waste mine materials and rise to 146 meters up to March 2016.
32. The CIMFR report on page no 8 & 9, explicitly opined that "*The early identification of movement zones allows steps to be taken to minimise the impact of mining on stability by implementation of correct remedial measures and at the same time provide for optimum coal extraction. The system contrasts strongly with more common passive system that frequently only record the occurrence of an event for subsequent post & mortem examination. The active monitoring system permits early and confident decision making by management for safety purpose.*" It further warns & emphasized that;
- "The consequences of slope failure can be very devastating when men or heavy earth moving machines come/work close to an unstable zone. The slope failure can cause severe disruption to the complete mining operation."*
33. CIMFR report on Page 10, dwelt on **MONITORING SYSTEM** and suggested following monitoring methods, such as;
1. **Survey Based Method:**
 - A: **Total Station & Level based monitoring.** B: **Tension Crack monitoring.**
 2. **Other Monitoring Methods with future & wide spread applications;**
 - A: **Terrestrial Photogrammetric Methods** B: **Global Positioning System** C: **Computerised Total Station Monitoring** D: **3 D & LASER Scanner** & E: **Slope Stability Radar.**
34. Under the head of "*Latest slope monitoring techniques*", report suggests that;
1. **Automated Total Station Network {Robotics},**
 2. **Non & Reflective Lidar {Light Detection and Ranging}**
 3. **Slope Stability Radar**
 4. **GPS {Global Position System}**
 5. **Digital & Aerial Photography.**
35. The report further analyse the characteristics of the various system and recommended for SLOPE STABILITY RADAR & mentioned the manufacturers, {page 11}.

Efforts for purchasing SLOPE STUDY RADAR SYSTEM {SSRS}:

36. In the same month of submission of CIMFR report, a note no. ECL/SAFETY/2011/SLOPE STABILITY RADAR/15/58 Dated: 02/04/2011, was initiated by Internal Safety Organisation of M/s ECL through its Chief Manager{Mining} for purchasing 03 no. of Slope Stability Radar System {SSRS} each for Sonapur Bazari Project, Rajmahal Project & SP Mine Area of ECL, referring to Technical Circular of Coal India Limited by the Director Technical {CIL} vide letter no CIL/DT/035A/09/ 132 dated 16.05. 2009& its Para 9 as well as DGMS Circular {Tech.} S&T Circular No. 2 Dated 06.07.2010& its clause no 4(ii). {HPC Report, Volume - II}
37. But above note for purchasing 03 nos. of Slope Study Radar System {SSRS} has failed to see the day of light, despite being reduced to Radars only & recommendations of CIMFR studies, DGMS S&T, Circular No. 2 of 2010 & DT {O} & CIL letter no. 132 dated 16.05.2009 itself. These were efforts started 06 - 07 years aback& well before the accident date 29.12.2016.
38. HPC had tried to fathom the cause & the relevant papers were part of High Power Committee Report VOLUME - II, as submitted before Court of Enquiry in three sets.
39. As per papers annexed in of HPC Report Volume - II, Annexure - A -17 from Page 156 to 166, there is a lot of noting on the note dated: 02/04/2011 {Para 32 above} and direction for fresh indent for two SSRS only can be seen. On 08/06/2013 a pre NIT Draft for discussion in meeting was put up for approval.
40. Before any further action on the above process {Para 35} the CMDs Meet of Coal India Limited & it's Subsidiaries, including M/s ECL, had took place on 8th of July, 2013.
41. As per minutes of 77th CMDs Meet dated 8th July, 2013, under the heading of "ATR {Action Taken Report} on the points discussed in the earlier Meeting of CMDs" Point No. 4.0. issue of Slope Study Radar System procurement was discussed.
42. "CMD BCCL/NCL raised the issue of procurement and installation of Radar for monitoring of OB dump movement as per directives given by DGMS subsequent to the sliding of OB Dump movement at Jayant OCP, NCL. clarified that while the system is strict vigilant on the movement of one side of the dump, the other side remain unwatched and in the absence of forecast, the possibilities of sliding on the other side is there. CMD, WCL, mentioned that installation of radar to be relooked as it will cost around Rs. 8 crores in each project which will further deteriorate the economics of WCL Projects. Than it was decided the subject matter be taken up with DGMS and Chairman CIL advised that DT CIL would take the matter to DGMS".
43. DGMS further clarified in later date vide circular n0. 8 of 2013 Dated 23.09.2013 {Page - 65, Para - X of HPC Report}. But CMDs Meet never reconsidered the issue of purchasing.
44. Para 36 to 42, above, is clear that CIL & ECL are aware of the requirement of Slope Study Radar as intent of circular of Director Technical, CIL no. 132 Dated 16.05.2009. But CMDs meet was deciding the fate of proposal of purchasing two sets of SSRS. CMDs meet on economic considerations, decided for further consultation and differ the decision. The safety was taken a back seat.
45. CMDs Meet has exercised the Direction, Supervision & Control and blocked the proposal of ECL in advance stage for purchasing of two Slope Study Radar System for ECL. But CMDs Meet, an informal body never held responsible by any enquiries.
46. DGMS enquiry report in page 83 of volume - 1, under heading of "Recommendations" point no. 5, refers to its circular no.2, of 2010 for follow up. But failed to ask a single question or deliberate the issue of non - compliance of its circulars and no violation made during inspections. CMDs Meet authority and role was also not taken up.
47. Similarly HPC has included all documents referred above in its volume - II but failed to discuss the authority & roll of CMDs Meet Decision in stalling the decision of procurement of SSRS in ECL in its report.

48. **The CMDs Meet, though an informal body, comprising of the Chairman, CIL with all the CMDs of its subsidiaries were party to stall the procurement of SSRS for safety in opencast mines of ECL on economic consideration for WCL.**
49. **DGMS Circular No. 2 of 2010 was quoted in HPC report page 30 - 31 and specifically quote the relevant portion for deployment of "Slope Study Radar {SSR}" for real time monitoring. but nothing about initiative of DT CIL, since 2009 or ECL efforts 2013 etc had discussed in this report and also on the reasons of not installing the system.**

Working of Rajmahal Mine:

50. The major operations of Rajmahal Mine was outsourced was as per Project Report & M/s Rajmahal Coal Mining Company Limited {RCML} was awarded the excavation of 199.98 Million ton of coal and removal of 159.39 Million Cubic Meter of Over Burden/Parting on 14th April, 2012 and started its workings from 1st of July, 2013 in the Main Mining Zone. {HPC Report page - 16}
51. At the Deep Mining Zone, where the production/working was discontinued in 2007 and in pit dumping started. {Statement of S.P. Burnwal, Safety Officer, on 01/02/2020 & Akhilesh Pandey General Manager on 11/02/2020, before Court of Enquiry}. In pit dumping was being done from Departmental Patch and RCML Patch on a supposedly De - Coaled Area. {Statement of Manger Rajmahal Mine on 01.02.2020}. It was dumped on the fault area, where, accident took place on 29th of December, 2016.
52. HPC Report on page 44 point no. 5.2 also described the events under heading of "*Creation OB Dump {over Kaveri Sump} at Rajmahal OCP*". state that;
- i) Part of the OB which failed from the existing OB dump, was approximately 140 meters high from the floor of quarry, where entire coal was extracted about 10 years aback. Coal Extraction was completed at this place and face did not move further due to presence of 60 meters down throw fault towards south side. This area was also being used as a sump, which was known as Kaveri Sump. The coal extraction from seam III and seam II at Deep Mining Zone was being done towards south side of this dump by M/s MIPL - NKAS {JV}. As stated earlier the said dump was created from 2007 onwards."
- ii) As the final expected depth of working of Deep Mining Zone were to be 60 m below the base of OB dump, a batter of about 150 to 200 meters was initially left and the access roads were made for extraction of coal and overburden partings."
53. *This part of HPC Report is very important to ascertain the cause of accident as it proves that initially the dump was created upon a sump in De- Coaled area. Working below sump was not planned because of 60 meter down through fault. Dump on Kaveri Sump had gained height in 2011 to 2016 and raise from 28.6 Meters to 146 Meters up to March 2016. {Page 45 of HPC Report}*
54. The Central Mine Planning and Design Institute hereinafter CMPDIL has prepared a conceptual report in December 2008. and ECL board in its 225th meeting approved it on 29.01.2009. {HPC Report Page 46}
55. After approval for expansion of project capacity from 10.5 Million to 17 million tonne by Government of India in September 2009, it was planned to extract Coal from Deep Mining Zone below *Down Through Fault* also. The proposal was based on CMPDIL
56. ECL Board further approved a proposal of out sourcing of 11.8 Million Tonne of Coal with 27.96 MT OB in first phase on 04.09.2009. This proposal was not vetted by ISO. {Page 46 of the HPC Report}
57. Work Order No. ECL/HQ/CMC/W.O./Deep Mining OC PATCH /700 was issued to contractor M/s Saumya Mining Private Limited {SMPL} on 20/10/2009, for removal of OB 27.96 MT and extraction of 11.8 MT coal was engaged but discontinued its workings since 8th February, 2014 on administrative grounds. Reason for discontinuation or fore closure of contract or any penalties for discontinuation etc had not discussed in report. {HPC Report Page 46}
58. **A fresh contract of 20 Million Cubic Meter of OB and extraction of 7 MT coal from Dahernangi Patch was awarded on 10th of June 2015 to M/s Mahalaxmi Infra -**

Contract Private Limited {MIPL - NKAS JV}. This contractor was operating at the place where this unfortunate accident happened.

59. Contract Agreement itself a document in question as of responsibilities to safety of workers as per agreement and as per Mines Act, 1952 and its Rules and Regulations differs and overlaps to the great extent. The overlapping of the responsibility due to ambiguous terminology used in contract was become a tool of shifting responsibilities between the management and contractor.

60. The Indian Contract Act, 1972 is clear about what constitutes a contract;

Section 2 "Interpretation - Clause. & {E} Every promise and every set of promises forming the consideration of each other is an agreement".

Section. & 10. "What agreements are contracts. & All agreements are contracts if they are made by the free consent of parties competent to contract, for a lawful consideration and with a lawful object and are not hereby declared to be void".

61. But this contract of 20 million patch is an example to saying of Criss Jami, an American Philosopher "*Together, we form a necessary paradox; not a senseless contradiction*"

62. Whereas, clause 18 A [i, ii, iii, iv, v & vi] of the agreement, signed by MIPL {NKAS} JV & M/s ECL, is clear in terms of responsibilities of Contractor;

18. & SAFETY: Since the work shall be carried out in Mining Area, the contractor shall take full precaution as per Mines Act, other Acts, Regulations etc prevailing, applicable in Area.

A) In order to ensure safety at contractual work site all contractors are advised to comply with following:

- i) The contractors are made responsible to ensure safety of the workmen under them.
- ii) Except to special circumstances {to be recorded in writing and with due approval} no contractor to be allowed to employ sub & contractors/petty contractors.
- iii) At each work site contractor will employ adequate supervisors for ensuring safe working and will inform local management in writing. No work can be started by contractors at any site without such employment.
- iv) Such supervisors will constantly be in touch with the Safety officer of the mines and will conduct work as per his guidance,. the suitability of the supervisor for the purpose of ensuring safety will be assessed by Safety Officer/Mines Manager and if needed he shall be given suitable training.
- v) All hazardous and serious jobs must be preformed after safety protocol is signed by all concerned agencies and taking all safety measures.
- vi) The contractor must ensure that all workings are as per provisions of Mines Act, Regulation and Rules made thereunder.

63. Sub Clause iv of Clause 18 of the agreement as mentioned in Para 45 above, was never implemented by the contractor or its workers. The deposition of Safety Officer of Mine Shri S P Burnwal on 1st of February 2020 is very clear about of state of things. I only quote one answer from the cross examination of Shri SP Burnwal in connection to sub clause iv of clause 18 of agreement between Contractor MIPL - NKAS {JV} & M/s ECL;

Quote: प्रश्न: "कान्ट्रैक्टर लोग अपने आदमी को ट्रेनिंग नहीं देता होगा तो आप कैसे खोजते है ट्रेनिंग के लिये, आपका क्या कन्ट्रोल है? कान्ट्रैक्टर लोगों को कानून का पालन करवाने की जिम्मेदारी आपकी है, आपका कोई कन्ट्रोल ही नहीं है तो क्या करते हैं?"

उत्तर: नहीं सर, हम लोगों का कोई कन्ट्रोल नहीं है, हमारी बात नहीं सुनते है। Unquote

64. Similar statements repeatedly was made before the Court of Enquiry by the Manager of Mine on 01.02.2020, Assistant Managers and Mining Supervisors of M/s ECL. The Supervision & Control of line management of M/s ECL was virtually absent due to prevalent working practice.

65. For illustrations "Q. And there B Form is not at your office? **Answer** of Manager: no, Sir, it is not kept in my office but it is maintained and from time to time it is checked but it is not signed by Manger because control is not exercised by Manager." Manger further said in his reply to question that He cannot take action against the contractual worker under Coal Mines Regulation, 1957, Regulation 41.
66. Whereas the Mines Act, 1952, Mines Rules 1955, Coal Mines Regulation, 1957 {As in force on the date of accident and for another 10 Months}, Permission, By Laws, Order all has framed on the basis of Authority of Manager. Section 17 {2} of the Mines Act, 1952, describe the responsibility of Manager of a mine in no uncertain terms that;
17 {2} "Subject to any instruction given to him by or on behalf of the Owner or Agent of Mine, the Manager shall be responsible for the overall management, control, supervision and direction of the Mine and all such instruction given by the Owner or Agent shall be confirmed in writing forthwith"
67. But this type of wording in agreement has eroded the authority and overlapped on the roll of Manger in case of Supervision and control. The contractor was being controlled by the Project Officer/Agent. Engineer & in & Charge, was the General Manager of Rajmahal Mine but not the Manager of Mine. {Cross Examination of Manger on 01.02.2020}
68. *In Sub Clause III of Contract, the word, "adequate supervisor" has no qualification attached to it. Adequate Supervisors are left to the satisfaction of contractor. They were appointed and one of them most experienced Shri Lallu Khan , himself trapped in slide.*
{DGMS Report used word "Most Sincere" for not holding contractor responsible. Page - 78
69. *Manager of Mine on 01.02.20' stated without any rebuttal to his statement at the Court of Enquiry, that in ECL these types of agreement with similar clauses are regularly being signed and in force. This is still standard practice in M/s ECL.*
70. *Here is the question mark on the intention of both the signatory of contracts that whether parties ever meant to adhere with these umbrella standard clauses by ECL in this or all such agreements. Contractors signing and accepting with their free will and accepting the onus of safety knowingly had not held responsible.*
71. **However, DGMS Enquiry Report Volume & 1, Page 78 of 126 Para, 18 states that "I also do not hold owner of contractual company i.e. M/s MIPL & NKAS {JV} and any of its supervisors responsible because they were performing their job as per contract deed and it was the operational management of mine to caution them while they were performing their job at a risky area. Further, the contractual company has lost one of his most sincere supervisor namely Lallu Khan is this tragedy so much so they have lost as many as 18 nos. of HEMM in this accident and valued life of their as many as 23 employees. Therefore. in my opinion they have already paid heavy penalty by losing their men and machineries including site in- charge."**
72. DGMS report, page no. 81 recorded production loss of 3.5 Lakh tonne of Coal Production and 11,200 Man Shifts to M/s ECL. Therefore in similar logic, M/s ECL had lost Millions in terms of its loss of production and consequential cost for removal of slide mass of 4.313 Million Ton quantity and many other expenses. If so, no employee or executive of ECL should have held responsible because of losses to M/s ECL.
73. *The DGMS Official, assuming the role of Judge, failed to note that that Joint Insurance Policies on the name of Contactor and M/s ECL against any damages even by an act of God & for Workmen Compensation and other liabilities has to be taken. So ground of losses etc are flimsy. Para {XVII} and its sub clauses of the Clause 12 of the contract signed by contractor and M/s ECL or deliberately ignored at time of report writing.*
74. On page no. 24 of cross examination a question pose to Shri Utpal Saha, Enquiry officer by Shri Ravindra Sharma, Assessor that "Do You agree that the contractor is Owner of Mine for the purpose of Mines Act? As per defination of Owner of Mines for the purpose of Mines Act, do you agree or not?" Shri Utpal Saha conceded that "As per definition of the Owner, I cannot say no".

75. *This was part of contract agreement & the cost of insurance is covered in bidding. Therefore no personnel losses to M/s MPIL - NKAS {JV} contractor or M/s ECL has occurred because of this accident, so the logic of MERCY on contractor is frivolous and fallacious.*
76. On 11th February 2020, contractor accepted before the Court of Enquiry that he has signed the agreement and he is owner of MIPL.
77. Section 2 {L} of Mines Act, 1952 says that a contractor is also owner but so as to exempt the Owner from any liability. But In this case, the binding contract between the parties made him liable for safety standards.
78. *The DGMSO had exceeded its mandate & scope of enquiry and wearing robe & wigs, start controlling the fate of subject, equates the action of contractor with its losses and compensate the contractor by not holding the contractor as responsible though he had entered in to such contract.*

Proposals for Scientific/Geotechnical Study for Slope Stability

79. Rajmahal OCP mine Manger initiated a note vide no. RJML/GM{OP}/MGR/231 dated 20.12.13 for Geotechnical study for optimum dump slope design at Rajmahal OCP. The copy of letter made available to the Court has sign of Manager & GM {OP} and marked to ASO {Area Safety Officer or Area Survey Officer??} for putting it to General Manager I/C. Whether it has gone any further is not known.
80. A note for "Slope stability & Scientific study by outside agency for 20 MIL Cum OB patch executed by M/s MIPL & NKAS {JV} vide work order no. ECL/HQ/CMC/WO/Daharnangi OC Patch/502 Dt. 10/06/2015 date/o6/01/2016 was signed by Assistant Manager {Survey}, CM/Manager ROCP, GM {OP} & Area Survey Officer on 06/01/2016. What happened to this note was also not known.
81. The note dated 20.12.2013 clear by mentioning of failures in past. Relevant portion of note dated 20.12.2013 is placed ahead that " *Rajmahal OCP one of the Mega Project of ECL initially designed for 10.5 MTY capacity, which involves huge quantity of overburden handling and dumping of same mostly in de-coaled area. The project has experienced bad incidents of dump slides/failures in the past, fortunately no accident had taken place. Since large volume of overburden has to be handled in future requires proper dumping design so as to ensure safety of HEMM, persons and mine during the-course of excavation*"
82. This note establishes that even prior to 20.12.2013, mine was experiencing the dump slides and failures. DGMS never reported of this or not mentioned in its inspection report or in violation book. It seems that DGMS officials were solely relying on and dependent upon mine management reporting and did not observe any danger on its own.
83. No one was ever called and hauled or issued notices or prosecuted for not reporting it from the management. This was the style of working of management and quality of inspection by the DGMS officials for mine.

DGMSO Enquiry Report of Accident

84. DGMS Enquiry has statutory status. It was conducted by a committee, co-option to committee and an assisting subcommittee. Enquiry was conducted & submitted its report on 10.02.2017, within 43 days, while rescue & recovery was still going on and whole ground had not cleared of huge slide.
85. The most of statements taken by Enquiry Committee were not cross examined at all. Especially those recorded by Shri Niranjana Sharma, Director of Mines Safety, Sitarampur Zone under whose jurisdiction Rajmahal Mine falls. Shri Sharma cross - examined none. Every one of committee is taking independent statement and no consultation and almost no cross examination or chance to rebuttal by witnesses for any statement against them was part of procedure.
86. There will be two examples will be sufficed as they were part of proceedings of Court of Enquiry that of Statement of Safety Officer of Mine, as recorded by DGMSO that the then CMD ECL, on 26/12/2016 has ordered to resume production. When asked, CMD ECL has denied before the Court. S P Burnwal, Safety officer did not contradict the then

- CMD before the Court but later in absentia again repeated that CMD had asked to increase the OB Production.
87. Shri Utpal Saha had taken slippery grounds, used misinterpretation and unsubstantiated facts to exonerate not only contractor but the then CMD, ECL. He mentioned in report page that he {R. R. Mishra} has appointed Owner Agent General Manager & Manager etc. {Page 78 of DGMS Enquiry Report, Volume - 1}
 88. Shri R. R. Mishra had taken charge of ECL on 23/11/2016. The Owner was nominated in August 2016, General Manager in July 2016 and Agent & Manager three Years before.
 89. Shri Utpal Saha has conceded that Shri R. R. Mishra have not appointed Owner or Agent under his signature. {Page 27 of Statement & Cross Examination Date: 18 - 20.12.20}
 90. **Shri Utpal Saha said that there is a guideline which permits him not cross examine or take statement in person of any witness. He also stated it is an internal matter and he was on chair. He further said that there is guideline {Page 28 of the Cross Examination}. But he never submit any guidelines before the Court.**
 91. **Whereas, Shri Rahul Guaha, former Director General of Mines Safety and appointed the enquiry committee under the chairmanship Shri Utpal Saha, and accepted its report by the then Deputy DGMS, has categorically denied the existence of such internal guidelines {Page 5 of Statement dated 30.01.2020 }.**
 92. Shri Utpal Saha has attributed his prejudices & many false notions in report. It was stressed upon him in Court that as Enquiry Officer of accident of this scale and being Dy. DGMS at that time and later Chief Inspector of Mines of India he cannot be factually wrong.
 93. **For sake of example Excavation Engineer {Page 22 of Volume - 1 of DGMS Enquiry Report} re held responsible though they are not statutory personal like Colliery Engineer or Manager, on grounds that they are in charge for vehicular movements. But for not holding Contractor & CMD responsible, he strictly go by the letter of statue. {Page 6 of his statement}.**
 94. On Page 22 of the deposition, Shri Utpal Saha has said that he relied on the statement of Shri Mahendra Mal for holding Excavation Engineers responsible. {Page 22 of his deposition}. DGMS report was produced and owned by Shri Utpal Saha {Page - 1 of his deposition before the Court dated 18.12.2019 }.
 95. ***The statement of Shri Mahendra Mal was part of record of Volume - II of DGMS Report, Page 207- 208. He said he was in - charge of pumping operation and had not said anything about vehicular movement or maintenance or about Excavation Engineer. Shri Mahendra Mal only stated that machine were buried in slide {Page - 208}. He has not cross examined by DGMS Official recording his evidence.***
 96. Similarly on Page 53 of DGMS Enquiry Report Volume - 1, the only reference to Shri Mahendra Mal under heading of point no. 9.1.2 is of one line that, "*Shri Mahendra Mal corroborated the statement of Hemnarayan Yadaw*".
 97. While deposing before the Court of Enquiry, Shri Mahendra Mal had not uttered a word in respect to role of Shri Devendra Kumar Sinha Chief Engineer {Excavation}.
 98. This is the proof of prejudice or rather vindictiveness in holding many responsible for the acts they have not committed, dates not attributable to their role and myopic way of looking in to things and going after immediate cause.
 99. On page 69 - 70 of the report Shri Utpal Saha had ascribed many dates to S. K. Singh, the then General Manager In - Charge when he was not posted at Rajmahal Project. Shri Utpal Saha personally recorded the statement of S. K. Singh and he stated that he joined Rajmahal on 6th of July, 2016. Dates of receiving SMS in regards to cracks/starta failures/slides/disturbance etc. gone back to 04/01, 15/02, 06/06/2016
 100. At the last utterance of his deposition {Page 53} Shri Utpal Saha said to the Court that "*I have a submission to this Court, operation at this Dahernangi Patch was permitted to contractor of ECL vide agreement letter no. such and such dated 16.06.2015 for excavation of 200 lakhs Cum. of OB and 70 lakh tonne of coal. To award such a big amount of contract a scheme must been prepared by planning department of ECL. I mean to say CMPDIL and approval of competent authority must have obtained, knowing fully*

well existence of geological disturbances and working at a dip side of a major 60m fault with a dead weight of OB dump at the rise side was permitted by technical committee, planning department of ECL rather CMPDIL and approving authority. I request this is my humble submission to the Court, this point could be pondered upon and at length, it should be discussed in this Court.

101. Though these suggestions to Court was made to cover the shortcomings of report as well as of quality of DGMS inspection. But in fact, this statement has a great value in it. It indicates not only limitation of DGMS inspection Methods but also to the wrong planning and ignorance to safety aspects of working at the conceptualisation stage, be it geological or installation of instruments, or wrong working from deep to rise side below a fault that run beneath the a very huge unstable dump.
102. Here is the real cause of an accident lies. Time of accident could not be predicted but the seeds planted during planning stage. While suggesting to the Court, Shri Utpal Saha as quoted in Para above pointed to myopic planning without consideration of geological disturbances, studies, & wrong kind of working from deep to rise below a fault that run beneath a huge fault, but alas! at the time of writing report he only goes on immediate causes. Statue has nothing to do with DGMS Official Shortcomings, no penalty for them, nothing. DGMS is an organisation for safety of miners but acting as "Eminence Grise" only. In most of time not in a preventive roll but seems only doing post - mortem analysis
103. Former Director General of Mines Safety Shri Rahul Guha, on 30.01.20' deposed before the Court of Enquiry that, *"I would like to say that there is parts of this accident. One is the immediate Cause and other is the Systematic causes.*
104. In page - 3 of his deposition Shri Guha had pointed out the contract's first deviation, second deviation and correctly describe these deviations as ad hoc steps or planning. It was learnt that III deviation also approved by ECL Board and all goes to one and only contractor.
105. In page 4-5 of deposition Shri Rahul Guha said that a total change in present system has to come in form of Safety Management Plan. He also agreed to suggestion that there is lot of scope of improvement in manner of DGMS enquiries and inspection methodology.
106. Shri Niranjana Sharma has deposed before the Court and as he had inspected Rajmahal Mine on 10th& 11th of August, 2016, after slide of 9th August 2016. He inspected Dahernangi Patch on 11th August, 2016. and had pointed out spot violations in respect to haul road, road sign etc. But he did not see or observed & failed to mention the slide in tune of around 4 MT on 09.08.2016{Page 02 of his deposition}.
107. Shri Sharma further answered to the questions posed by Assessor Shri Ravindra Sharma as below;

Q: Do You inspected the coal benches?

A: No. Coal was not visible & half of OB was submerged in water.

Q: Did you inspected OB benches?

A: Yes, I inspected the benches in overburden dump where contractor was working.

Q: Dump Slide Bench, were they adequately benched & sloped?

A: Yes, adequately benched, I did not find any violation in that.
108. For time & again Shri Sharma refers the wrong facts in enquiry report as typographical error, and ascribe them to missing coma & full stops. These repeated defence shows the quality of report.
109. If dump benches were adequately sloped and benched on 11th August, that means that there was no slide on 9th of August. But even management of Rajmahal accepted that there is slide and a committee from headquarters has inspected and submitted its report to DT {Operation} but not to the Mine Management.
110. This is the quality of inspection & its justification. Because of act of deliberate omission about the dump slide in inspection report & spot violation book, the omission was justified under solemn oath, before the Court.

111. Shri Niranjana Sharma, the then DMS repeatedly said before the Court that he had visited the Dahernangi Patch on 11/08/2016, but could not see any land slide.
112. Question of competence of Md Niayazi was debated a lot. He accepted that he has obtained First Class Manager Certificate under Coal Mines Regulation for Coal Mines in 2017 {page - 17} after accident. It is DGMS senior office order that he was put in charge of such complex mega project like Rajmahal.
113. From the statement of Md. Niyazi, it has come out that in tripartite safety committee at ECL level, it was agreed that Form "B" and Attendance Register will be kept by Contractor & counter signed by Manager. It shows that DGMS Official are fac party to the decision. So no one should expect much from DGMS officials while they are facilitating contractor beyond the scope of statute.
114. There are other minor contradiction like whether it was raining on 11th August 2016 or not. As per Shri Niranjana Sharma it was raining on that day & if Shri Niazi is to be believed it was not raining.
115. Shri Niazi also said one very interesting thing when asked that on 09.08.2016, Shri K. C. Patra was the nominated Owner as Shri B N Shukla has Joined ECL on 17/08/2016 why Shri K C Patra has not made responsible for not reporting of around 4 MT slide on 09/08/2016 to DGMS. He replied that "It has not intentionally kept out, I think we have not referred to Form - I of the appointment of nominated Owner".
116. On the similar logic for the slide dated 04/01/2016 Form - I had not been seen. On that nominated Owner was Shri Ramchandra Reddy. The Deemed Agent/General Manager I/C was Shri Akhilesh Pandey. DGMS report had covered a lot for hiding occurrences of slides dated 04/01/2016 & 09/08/2016 from DGMS Officials or they could have prevented the accident.
117. But for they had made responsible Owner {From 17/08/2016}, Deemed Agent/GM I/C from {06/07/2016} & Agent and Manager. But report did not hold Responsible real Owners & General Manager on 04/01/2016 and 09/08/2016.
118. Cross Examination of Shri Niazi had some important aspect that, the permission taken in 1987 has no validity & when permission was granted Dahernangi patch was not worked or any dump existed. For deep hole blasting at Dahernangi Patch no permission was applied or granted. There are two & three minor faults not known previously were exposed after clearance of slid waste material. In pit dumping only should have been done in a fully de-coaled Area.
119. Shri V. Laxminarayan has contradicted Shri Niranjana Sharma about not seeing the report of Safety Management Plan {SMP} Workshop held in September, 2016. He wrongly told to the Court that Shri Sujay, Overman & Imtiaz Hussin, Mining Sirdar had participated in SMP Workshop. Later he gracefully corrected himself when shown the list of participants & agreed that he was confused with names & they had not participated.
120. Former Professor, Department of Mining Engineering of Indian School of Mines {IIT}, Doctor Falguni Sen, on 10.02.20' stated {Page - 9} before Court that,
Quote: "Actually, I asked them that since when that southern border is looking like this and certain portion in the mine. I showed them the curvature you have done like this convex curvature. . I said DGMS officers, they have not seen this, they said yes, they have seen, in August, they have actually visited. I said they have not written anything about the high wall safety and major problem is just beyond the high wall there is a village, if anything goes wrong the village will be effected. So, and you know God permit, if anything goes at night may be 30 - 40 families will be wiped out. So, that is what I felt that even of course it is my opinion no one is responsible for that. DGMS should also watch/handle they should also take part if safety is not there they should try to impose that you have to maintain this otherwise Section 22 is available, I will stop the mines. You first do this I am not bothered about you got the land on that side or not you have to maintain slope or you have the full monitoring system. They those short of monitoring possible, visible monitoring possible that gives you at least 12 hours indication prior to any instabilities going to cause failing. So that should have been". Unquote.
121. *The permission application file for Rajmahal Project was not available with DGMS office. It has not produced before the Court despite repeated insistence by Assessor Shri Ravindra Sharma. It was said that it simply did not available.*

122. DGMS Permission dated 8th April, 1987 for Rajmahal Mine was given for working in Seam - II {Para 2 of permission letter}. But the Seam No. 2 and Seam No. 3 was conflated in working and no new permission in this case of merging of two seams or working below down through fault, was sought by management. DGMSO knowing this, due to its regular inspection and its accesses to progressive plans and map of mine, had not think fit to ask for resubmission of plans and study or impose any condition.
123. This rendered the permission from DGMS to work in Seam II, as inane.

Coal India Limited, Constituted Expert/High Power committee's Report

124. Coal India Limited has constituted a Committee on 30/12/2016 and styled as a High Power Committee without assigning any power to it. The details of committee is are in Para - 3 of Page - 1.
125. This committee comprise of experts from Birla Institute of Technology, Meshra {Ranchi} from the Indian School Of Mines {IIT}, CIMFR, and experience Mining Engineers Like CMD CMPDIL, & the then Director Technical of South Eastern Coalfields Limited.
126. Only former Professor ISM, Doctor Falguni Sen & Shri Shekhar Saran CMD, CMPDIL had deposed before the Court. Rest did not turned up despite summons.
127. HPC report is in two volumes. It is a very detailed & enlightening document. given the various mechanism of dump failures with design, the short comings on part of conceptualisation, planning, ECL management, approval, study, DGMS role etc. But it failed to ascribe to a single cause or entity for failure.
128. Four type of failures of dump mechanism was mentioned in report Circular, Circular cum Planer & Base failure {Page - 21}. But not specific on the type of failure occurred on 29.12.2016.
129. Whereas on Page - 33, Para no. 4.1.2. report clearly mentioned that, "It was also gathered from the statements "that a "bang" sound was heard just before the slide, which indicated the failure of in - situ strata".
130. On 30.01.2020, Shri Saran deposed before the Court & reiterated as below;
Page - 7. "This was the contribution of our expert, so what I could understand because it was circular cum planner failure when consider overburden dump the top dump and in - situ rock what which initially fail that was actually it was so much pressure on that in - situ rock simply collapse actually you can call it planer failure or bench failure everything is just pushed towards high wall side."
131. Shri Saran, in Page no. 4 has stated that though Aberfan in South Wels, U. K., Kulda OCP in Odisha were external dumps & Rajmahal Mine dump is an in - pit dump but in failure of all these dumps, water has played a major role and one of the cause.
132. HPC report recorded in Page 49, Column no. 6 (1) that, Re-handling of OB 1.344 CUM by MIPL, Through separate tender to MIPL, work order issued on 05.08.2016. in Column 6 (2) it was noted that {i} Work completed by reducing height from 146 m to 30 . As per record work completed on 09.08.2016. & in same column (3) 1.344 MCuM OB re-handling was insufficient to reduce the height of dump from 146m RL to 30m RL. (ii) The stability of benches on OB dump could have been worsened by plying of a number of equipment at such heights.
133. On Page 5, Shri Saran had informed the Court that " I think that the coal depth below that area was around 100m from the level of Kaveri Sump. The floor of the Kaveri Sump to the deep most working on the southern side was around 100m. So, I mean the fault the confluence of fault F - 8 & F - 10 was exactly below overburden."
134. On page - 64 of HPC report, Para iv) of Findings of the Committee, *immediate cause of failure was explained in no uncertain terms that* " The presence of 140m high dump in close proximity of the pit slope added dead weight over standing 100m high pit slope mass. The pit slope yielded at lower level due to the dead weight of 140m high dump along with 100m high pit slope standing at a steeper slope angle. The yielding of pit slope resulted in to the failure of the overlying dump also."

135. Due to presence of unidentified faults/shear zones in deep mining zone, appropriate scientific investigation for determining the method of working in the area and more intensive monitoring of bench movement of batter wall and internal dump was required."
136. in respect to Para 131 above, in this report from Para 77 to 81, Page - 11 , under heading of *Proposals for Scientific/Geotechnical Study for Slope Stability*, it was put in detail about the occurrences of slides prior to 2013 & efforts of mine management since 2013 for scientific studies. It seems that the delegation of power of M/s ECL, had not empowered Mine Management to Order the Scientific Studies.
137. For purpose of "Intensive Monitoring" Para 35 above {Page - No. 5} of this report reproduced "In the same month of submission of CIMFR report, a note no. ECL/SAFETY/2011/SLOPE STABILITY RADAR/15/58 Dated: 02/04/2011, was initiated by Internal Safety Organisation of M/s ECL through its Chief Manager{Mining} for purchasing 03 no. of Slope Stability Radar System {SSRS} each for Sonepur Bazari Project, Rajmahal Project & SP Mine Area of ECL, referring to Technical Circular of Coal India Limited by the Director Technical {CIL} vide letter no *CIL/DT/035A/09/ 132* dated *16.05. 2009*& its Para 9 as well as DGMS Circular {Tech.} S&T Circular No. 2 Dated *06.07.2010*& its clause no 4(ii). {HPC Report, Volume - II}.
138. Former Professor, Department of Mining Engineering of Indian School of Mines {IIT}, Doctor Falguni Sen, deposed before the Court on 10.02.2020. Honourable Chair Person, ask specifically about reasons for this accident , Dr. Sen stated that, {relevant portion only is reproduced for clarity sake from Page - 2}, "*And we have few meetings, to discuss and again and again find out what could be reason why such failure and then in our report also we mentioned that it is likely that there are certain other geological disturbances. Which later on has been proved when they have been removed that there are certain slips and certain faults which we did not see and there was no such records. That such faults may or there may be there, but we found that the manner we like that there are some more slips, that is what we found. So it seems that there had been some disturbances, some disturbances at the coal block area may be because of those slips and another things*".
139. Dr. Sen further stated that dead weight of slid mass from dump would be around 6.8 Million Tonne 4×1.7 (Bulking factor). If bulking factor is to be taken only as 1.7 than $4.313 \text{ Cum} \times 1.7 = 7.3321$ Million tonne to be exact. It is also clear from evidence that whole dump had not slid. Than dead weight of dump prior to slide on the fault was much more than 7.3321 Million tonne.
140. HPC has devoted a whole Chapter - VI, from Page - 64 to 70, titled as "Findings of the Committee". It covers the committee's recommendation also. It is very specific about the Planning stage precaution, Monitoring etc. & accepted the limitation of geological survey and said that clause 10, Page - 70. "*It is possible that any unfavourably oriented discontinuity (shear planes/fault/s_ may be present in the mining area, which could not detected during exploratory drilling and it is detected during ongoing excavation. It may create unsafe mining condition. The resident geologist should conduct field mapping to see the existence of faults in the fresh exposures of the pit. It will help to detect the impending failure along these undetected weak planes.*".
- 141 *The HPC report is a comprehensive document but Coal India Limited & its Subsidiaries had not adopted its many recommendations in their working to avoid risks.*

M/s Eastern Coal Fields Limited and it's Operation at Rajmahal Mine

142. It is establish and accepted fact that, Rajmahal Open Cast Mine, has run through various stages of approval, from 5 Million Tonne a year in 1987 to 17 Million tonne capacity extension in 2009 that could only achieved after the accident.
143. The piece meal planning and no one go land acquisition for this ever expanding project led to in - pit dumping of allegedly de - coaled area of mine, due to pressure of production, {Statement of Shri Shekhar Saran}
144. Mine management since the initiation of Rajmahal Mine had adopted a very callous attitude in regard to different permissions.
145. The wrong planning and shot sightedness of management had led to increase in height in 5 years since 2011, 28.6m to 146 M in 2016. {HPC Report page - 45 } despite available

land in west side. {Cross examination of Shri Akhilesh Pandey - Ex GM by Shri B P Singh}.

146. Shri Nandan Kumar, Surveyor had stated that after recovery & cleaning of grounds, actual position of F - 8 Fault was seen to be under toe of dump by 50 - 60 meters & not as shown in plans available with management. {Page - 4 of deposition of Shri Nandan Kumar on 01.02.2020}. About the fault F -8's real positioning was not the same as shown in plans for mining is the conclusion come out in BHU Studies.
147. Shri Nandan Kumar had also deposed as recorded in Page no. 4 that dump area was not fully de - coaled and on Page- 8 he said that when new faults were found after accident they were named as Fault F-8B, Fault, F - 8C etc.
148. Para 144 & 145 above shows that mine is worked in a blind mode. Even a minor joint in fault can induce further weakness and when in situ bench under which coal was extracted is run through multiple faults, & merged seams and huge dead weight in form of a heighten dump of 146 meter height, the accident cannot be averted.
149. There are many minor but important violations that shows the mine run without any regard to statutory duties. First, many deposition come before the Court that;
 1. Statutory Diaries were not available with Mining Sirdar & Overman since two years.
 2. Contractor worker's Form "B" & Form "D" is maintained by Contractor and is kept with him at his camp.
 3. Contractor worker are not reporting for their duties to Shift Manager of shift Overman or Mining Sirdar. They do not exercise the control & supervision of contractor workers. Even Safety officer and Manager of Mine has stated the same under the oath.
 4. Contractor workers and Mining Supervisors have no direct contact as they had allotted different channel for use of Walkie - Talkie.
 5. Standard Operating Procedure framing was not tripartite as per permission 2012. Safety Management Plan or hand plan or DGMS Permission for working was not given to Mining Supervisors and even executives working in shifts. {Statement of Shri Dilip Roy, Vijay Kumar Singh Assistant Managers, Neelam Toppo, Sujay Kumar Overman, Imtiyaz Ansari Mining Sirdar all before the Court & DGMS Enquiry}
 6. Pit Safety Committee was totally defunct & so was the office of Workmen Inspector. The discussion about cracks & slide never took place.
 7. Working was going on three places, Coal extraction, OB removal for Coal Extraction & De - Capping of bench to reduce it heights. But Sirdar & Overman were not deployed in all three working faces.
 8. Blasting charge & its impact is not decided and assessed by Manager of Mine. It was done by Blasting Officer. {Manager Statement}.
 9. Dahernangi Patch, for extraction of Coal, was working from deep to rise against the permission {Clause 3.1. annexure to Permission letter dated 08/04/1987} and against any standard practice of safe mining. The coal extraction was being done beneath the in situ base on which the dump rests.
 10. DGMS permission dated 08.04.1987 {Para - II} & Modification in that permission vide no. 1637 dated 05.07.2012 {Clause 2.2} are for working in Seam-II only. Whereas, Seam II, Top & Seam II Bottom and Seam III all 3 Seam were merged in a later stage. However, no permission for this new geological situation was applied nor given.
 11. Dump was created in a wet base by filling the Kaveri Sump and extended upon the Fault F - 8 and some other minor faults or joints exists in the fault F -8.
 12. Dump base was submerged in water, heavy pumping was being done on regular basis. and characteristics of Black Cotton Soil formed and weaken the dump and area being worked below.
 13. The dump at Kaveri Sump was not designed but made to arose by filling the auriferous sump {Statement of Shri Akhilesh Pandey - Ex General manager Rajmahal}.

14. Safe Barrier, Special Precaution of permission and pre mature collapse as mentioned in regulation are used as ambiguous & fancy words & no one seems to know its actual meaning and what to do with these words that had a wide range of interpretation.
150. These above and many other stances of ignorance of safety, provisions of ACT, RULES, REGULATIONS, PERMISSION and nothing to say about DGMS Circulars were the fashion of the day because the poorest quality of inspection of DGMSO.
151. In total, mine management, officials, contractor & DGMS, all were very complacent in their behaviour and neglecting the safety and not perceiving any danger. Opencast Mining in India has some examples of dump failures but after starting the de - capping/Off - loading of dump everyone seems to assured themselves.
152. Cracks were known to all mine officials. It was monitored in a most primitive and crude way, using PLUM BOB. No standing instructions, in case of increase of cracks or Plum Bob readings for stoppage of work. Only matter was faithfully recorded for being seen by higher officials of Mine.
153. System was such that after slide took place on 9th August 2016, Internal Safety Organisation team headed by Shri B. Prasad had inspected the site and made a some important recommendations. But that not reached to Mine Management. Only a letter was sent for information like map & plans.

On 29.12.2016 The Day of Accident

154. **The dump Slide occurred between 7 PM to 7.15 PM in Second Shift at Dahernangi Patch of Rajmahal Mine.**
155. **Dahernangi Patch was inspected by Manager of Mine between 5.30 P.M to 6 P.M. & then by Safety Officer also inspected the workings approximately between 6.10 to 6.40 PM.**
156. **Coal production was stopped around 4,30 and Shift Assistant Manager Shri V. K. Singh and after that Manager & Safety Officer all visited the working face up to 6.30 PM. Thereafter they went to the OB removal face supervised by late Lallu Khan.**
157. **Shri Vijay Kuamr Singh Assistant Manager in Second Shift has deployed shri Sujay Kumar Overman to look after RAMP situated kilometre afar. Shri Imtiaz Hussain was asked to guide the contractor dozer for re - deployment at different coal face. Shri Hemnaryan Yadaw was taken to Canteen by Shift Assistant Manager.**
158. **First there was a "bang" sound, due to in situ bench failure and dump slide took place {HPC Report}. 23 Contractor workers buried alive. Post Mortem report of all 23 workers was same for cause of death "ASPHYXIATION".**

Management of Mine

159. Manager of Mine, Pramod Kumar, had joined the Rajmahal Mine in May 2013. He was also in Charge/Officiating as Project Officer/Agent on the day of accident. Dsump Height at the time of his joining was around 80m.
160. Shri D. K. Nayak was Project Officer/Agent for Rajmahal Mine deposed before the Court on 30.01.2020. Shri Nayak had submitted that he had joined Rajmahal Mine on 10.09.2014 but he was on leave from since 16th December 2016 to 8th January 2017. {page 1 of the deposition}. He further stated that when he joined Rajmahal Mine the dump height was already 88 meters. {Page - 2}.
161. Shri Sanjay Kumar Singh deposed before the Court on 30.10.2020 that he Joined as General Manager of Rajmahal Project on 06.07.2016. Shri Singh has told the Court that after his Joining there was no OB dumping was allowed to made on the Dump. The Dump Height was already 146 to 147 meters. On 9th August, 2016 partial slide occurred. The DMS visited the site on 11th August 2016. The ISO headed Committee report had not reached to him till the accident dated 29/12/2016. Letter asking of plans from Headquarters had been received and plans were sent to ECL HQRS.
162. Shri Sushant Banerjee, the then General Manager {Safety} ECL had deposed before the Court on 31.01.2020. Shri Banarjee submitted that he joined as to the Post of GM Safety

- on 16.08.2016. ISO was an under staffed organisation. He had not appointed as "Deemed Agent" by Owner or acting as such in the capacity of General Manager Safety/Head of ISO .
163. Shri B. N. Shukla had joined on 17/08/2016. Before that incidence of slide on 04/01/2016 and 9/08/2016 occurred and allegedly not reported to DGMS.
 164. On 23/08/2016 as Director Technical Operation/Owner through his Technical Secretary, Shri B. N. Shukla, constituted a committee for study of dump at Rajmahal OC. This Committee headed by B. Prasad of ISO, ECL, submitted its report on 06/09/2016. The report was sent to General Manager Planning ECL, for further necessary action on 07/09/2016. {Statement of GM Safety on 30.01.2020}.
 165. Shri R. R. Mishra is CMD WCL. He has taken additional charge of CMD ECL and Joined on 23/11/2016. on 30.11.2016 proposal of offloading of dump was approved in first Board meeting chaired by him.
 166. Shri R. R. Mishra has visited the Rajmahal OCP on 26/12/2016 with Shri B N Shukla, DT {O}/Owner. It was alleged by Safety Officer Shri S P Burnwal, that Shri Mishra had asked to increase production. Shri R. R. Mishra has denied this allegation before the Court without any rebuttal.
 167. Contractor MPIL - NKAS {JV} was working with their employees at Rajmahal Mine. Shri Vinesh Shivjee Dholu, Owner MPIL had deposed before the Court on 11.02.2020. He accepted that all the 23 workers died were his employees.
 168. There were Assistant Managers, Under Managers, Overman, Foreman & Mining Sirdars who are supposed to exercise Control & Supervision on contractor's worker also. But practically they could not do so.
 169. Even manager & Safety Officer of Rajmahal Mine with Assistant Manager also deposed before the Court that they too lacking control & supervision up on the contractor workers due to prevalent system.

Terminal benefits & Compensation to legal heir of innocent workers died

170. Shri Shiva Kant Pandey has deposed before the Court and requested for an ex - gratia payment of Rupees 25 lakhs to family members. He relied on the Anjan Hill Mine Explosion accident {06/05/2010} where 14 Permanent workers had died. The Court of Enquiry recommended for payment of Rs. 12 Lakh as EX - GRATIA including compensation. It was accepted by SECL management & paid to their heirs.
171. In high Power Committee Report & DGMS Report & in management statements it is mentioned that Contractor has paid Rs. 5 Lakhs as Ex - Gratia to all workers. It was a widely publicized matter and many appreciated the *kindness*.
- 172.. When specifically asked about the amount of terminal benefits like, Pension, Gratuity, P.F. Life Cover Scheme, or Group Gratuity Scheme, Leave with wages etc management of ECL Rajmahal had submitted a written reply that, It was all the part of Rs. 5 Lakhs paid by contractor.
173. It is established now that it was not an act of kindness but against legal obligations. However, how the pension was calculated for life is not understandable. How Gratuity was calculated or proportionate leave as they died on 29/12/2016 in the end of calendar year or previous leave in their credit was paid and what was amount is not very clear.
174. It was also informed that Contractor workers are not entitled for Life Cover Scheme in case of Death. No Group Gratuity insurance Scheme cover even permanent workers of ECL.

Assessor's Conclusion

01. The mishap at Dahernangi Patch of Rajmahal Opencast Mine on 29.12.2016 is an unprecedented accident in Indian Opencast Mining history. Not only death toll is high but the negligence & myopia is at their best in part of DGMSO & ECL Management. Poor, innocent worker died without an iota of apprehension that what is going to strike them.

02. *It can only be prevented if;*
- A. If; In 1987, project would have been sanctioned in one go and land acquired. It would certainly avoided the IN PIT unplanned dumping of Earth Crust aka Overburden on mineral at not fully decoaled area.
 - B. If; The sole dependency on exploratory bore holes made prior to 1987 avoided & with the advancement of science and availability of State of Art technology was used to find underlying hidden faults such as F - 8B and F 8C.
 - C. If; The cost of scientific studies and compliance was added in project operational cost than project report approved.
 - D. If; The advice of Director Technical, Coal India Limited on 16.05.2009, DGMS Circular no. 2 of 2010 & CIMFR Scientific Study recommendations in April 2011 for purchasing Slope Study Radar was implemented, fund provided in time.
 - E. If; The CMDs MEET of CIL & its subsidiary a body without any legal obligation and Eminence Grise, like DGMS organisation had not barred the ECL proposal for purchasing TWO SLOPE STUDY RADAR SYSTEM in 2013.
 - F. If; The System of General Inspection by DGMSO in every three years {Statement of Shri R. Subramanian, Chief Inspector of Mines & DGMS} had not abandoned since 2014 by introduction of computer generated inspection system. DGMS Enquiry Report recommendations Page 83 recommendation 6 also suggests to restore it in opencast mine for all inspection but it was abandoned for UG mine also.
 - G. If; DGMS permission would not had used the words open to multiple interpretations like SPECIAL CARE, ADEQUATE PRECATION, DUE DELEGENCE or given specifics about the width of Barrier/Batter to be left.
 - H. If; The PIT SAFETY COMMITTEE and WORKMEN INSPECTOR were statutory responsible institution in statute and they had functioned responsibly.
 - I. If; no frequent transfer & posting of all senior officer from CMD, DT {O}, General Manager {Safety}, of ECL & General Manager {I/C} would not have been made within 05 Months of span.
 - J. If; *There would have been provisions for handing over in writing with full details, all the impending dangers to safety of man or machinery in every case of new posting of senior officials. it is yet to be adopt as a system by coal companies.*
 - K. If; The huge dump of 146 meters in height and million tonne of weight not incrementally created upon the fault F -8, during 2012 to 2016, despite available land in west side, to save the transportation costs by saving lead dumping was made on nearest available site. The dead load had caused the failure of in situ bench.
 - L. If; Contract Agreement would have been clearer in terms of supervision & control, responsibility of safety not only in terms of compensation and legal liabilities but also in terms of actual responsibility.
 - M. If; The contractor workers would have put under control of Mine Manager.
There are lot of ifs and buts could have been added to sequence but in nut and shell there are the features that had contributed in failure of base in situ bench than slide.
03. Can this accident averted by human observance and withdrawal of person deployed there on 20/12/2016? No. Because of sudden break of in situ base bench on which dump rests, in absence of Slope Study Radar System or any other continuous monitoring system, slow and study weakening of in situ bench under million of tonnes dead weight on the fault F - 8, since 04/01/2016, physical observation by naked eyes and eight hour shift time is not humanly possible.
04. It could only averted if the scientific studies would have conducted and worked at Dahernangi Patch stopped after 04/01/2016 by ECL Management that used to send team from headquarters but never stopped the work due to pressure of production or DGMS would have been imposed SECTION 22 -A of Mines Act, 1952 restrictions at Dahernangi Patch in time.

05. In absence of this apprehension and regular small sliding, the complacent management assign additional duties to Hemnarayan Yadaw Mining Sirdar {Pump Station} Sujay Kumar Overman {at the Ramp} and Imtiaz Ansari Mining Sirdar for guiding the contractor's Dozer to another working place.
06. *The movement of dump needs to be monitored not by naked eyes, plum bobs and personal observation. It needs Slope Study Radar System or equivalent advance system.*
07. *DGMSO had made people responsible but not those who had thwarted the ECL late but sincere effort in 2013 on economic consideration and conveniently forgot the safety.*
08. *There was limitation of statute in 2016. Only one Regulation 98 was in Coal Mines Regulations, 1957. After this accident that many legislative need like Scientific Studies or Contractor & Supplier roles and even word ergonomics has found place in Coal Mines Regulations, 2017. It is not ideal but less ambiguous and with more provision than to the Coal Mines Regulations 1957.*
09. It is not clear that why DGMS Enquiry Report had not even discussed the responsibility of CMDs Meet is a body with no legal locus - standi, for stalling the purchase of Radar as per their own circular no. 2 of 2010 or CMPDIL for providing unreliable data at the time of planning of project. Why their age old study through bore holes not updated, not providing fund for safety in project report and of the Owners not ensuring the reporting of on the slide dated 04/01/2016 or 09/08/2016 or prior to 2013 as indicated in note for purchasing the radar.
10. In view of all above it is very clear that multiple layer of decision making, indirect controls on decision making process even in the matter of safety, personal etc. of a registered subsidiary company under companies Act like M/s ECL by the holding company and its other subsidiaries.
11. It is also clear Exclusion of cost of safety in estimation of mining operation cost of project despite safety is inherent feature of any industry, absence of instruments of monitoring in 2016, faulty contract agreement, defunct Pit Safety Committee, Workmen Inspector institution, complacent management, frequent changes in senior level management, CMD, Owner, GM Safety, GM I/C of project, erosion of authority of Mine Manager, creation of huge dump of unchecked heights, on a sump & without any objection from the DGMSO, No changes/enhancement in financial powers of Director Technical after nomination as Owner in safety matters of mine, all of this caused this accident. There was total failure of the system adopted by the Government Agency since the time of conceptualisation, planning & approval of this project, absence of reliable data for Project Report, lack of fund provision for safety, faulty agreement, poor quality of inspection & no General Inspections by DGMSO are the main causes.

Recommendations

01. Though this Enquiry was constituted on third year of the accident and there is no physical evidence left on ground, all that had been learnt during the Court of Enquiry Proceedings and from the documents produced before the Court, about the circumstances, causes and occurrence of this tragedy I think that Honourable Chair Person of this Court of Enquiry may please to consider the following for possible future occurrences that;
- A. *Clear cut guidelines must be at place about the circumstances under which the Court of Enquiry, under Mines Act, 1952, would be constituted in case of accident in any mine. It should be constituted at the earliest & not left to discretion and case to case basis decision.*
- B. *No enquiry ever completed in three months so the time and extensions of three month is not practical and this must be dispensed with.*
- C. *The Cost estimation of project must include the cost of SAFETY HEALTH & WELFARE. For example in case of Underground mines, cost of ventilation stoppings, providing drinking water at work place and in case of Open Cast Mines, Measure and instrumentation of Dust Suppression, Ear Muff, Dump Monitoring etc must be added to cost estimation at the time of formulation and approval of project.*
- D. *Anjan Hill Mine Explosions took place on 06/05/2010, claiming life of 13 permanent & one Contractor worker {Total 14 casualties} of M/s South Eastern Coalfields Limited, Bilaspur, Chhattisgarh. Honourable Chairperson, Justice {RTD.} Bishwnath Shetty, Court of Enquiry in his report {Page - 212 of 236}, had recommended Rs. 12 lakh as Ex*

- Gratia to heir of victims, 10 years ago. Recommendations accepted by Government of India and paid by the SECL.

- E.** *Rajmahal Mine Court of Enquiry is second to Anjan Hill Mine Court of Enquiry. In USA exemplary financial penalties imposed upon the mine operators due to their strong Laws of Torts. Only higher financial cost of accident can made the Indian Operators of Mine will made them more responsive to health and safety of miners.*
- F.** *Honourable Court should consider and be pleased to recommend Rs. 30lakhs to the next to kin of the victim in lines of Anjan Hill Mine accident where the workers were permanent SECL workers and compassionate employment was also provided to them. .*
- G.** *The family of victims should be treated at par with Permanent workers.*
- H.** *As the Mines Act, 1952 provides that Owner or Agent of mine can appoint themselves as Manager of Mine if they possess the prescribed qualifications, A senior officer must be appointed as Manager of the Mine.*
- I.** *Sufficient fund for scientific studies or for purchase of instrumentation, for drinking water, for air, for dust suppression measure and instruments shall be at the disposal of Mine Manager or in - charge of Safety so the unnecessary file shuttling and time lapse did not occur in mater of life & death that is safety and health.*
- J.** *The contractor worker's family must get all their legal dues in case of death and all the dues must be insured to avoid delay in payment.*
- K.** *The contractor worker's family in case of death must be treated at par of permanent worker of coal companies in monetary benefit computations & other welfare schemes.*
- L.** *Group Gratuity insurance for contractor workers shall be compulsory.*
Submitting this report to Honourable Chair Person of Court of Enquiry in to mishap of Rajmahal Mine of M/s ECL .
- M.** *CMD is the CEO of Company and only he should be the Owner of any mine.*

Summary of Report

- 01.** The Rajmahal Mine mishap, claiming 23 lives of contractor workers was earlier wrapped up in a manner that is a total show off. First of its kind, DGMS constituted an enquiry committee. Later the committee was given assistance of a subcommittee and a co opted member and a report in 43 days.
- 02.** The DGMS Enquiry report is full of flaws, factually wrong, at many places and imaginary facts and pre drawn conclusions were fitted by applying faulty reasoning in holding people responsible & not responsible.
- 03.** It mainly hold responsible persons, as described in the Mines Act, 1952. But failed to apply the same stick on contractor defined as Owner in same Act and not even go in to the direction, control & supervision exercised by super body like CMDs Meet as owner or deemed agent as defined in Act and Regulations.
- 04.** DGMS had not scrutinise the roll of its own official or even discussed in areas of not enforcing the permission, Circular, allowing deep to rise working and not pointing the violations or imposing **Section 22 or 22 - A** of Mines Act, 1952. The DGMSO had not objected to creation of dump on a sump where silt is already in floating condition and allowed dangerous heights of dump.
- 05.** DGMSO main role of pointing out violation of permissions, dangerous practices and not imposing section 22 as rightly pointed out by Dr. Falguni Sen, Professor, ISM{IIT}.
- 06.** **Former DGMS, Shri Rahul Guha had agreed specifically about sytem failure quotient of an accident but DGMS Enquiry report was based on immidiata causes of accident.**
- 07.** Coal India Limited, being a holding company for M/s ECL had appointed an Expert Committee, styled as High Power Committee for Enquiry. This Committee had done in depth analysis of cause and acts of omission & commissions in past & present but do not hold any one specifically responsible.
- 08.** *Frequent transfer & posting of senior level management from General Manager, Rajmahal, General Manager, Safety, Director Technical and Owner & Chairman cum*

Managing Director of Eastern Coalfields Limited, in span of 6 months from July 2016 to December 2016 without any system of handing over of charge in matter of safety needing immediate attentions had led every officials to start a new.

09. System is such that Manager Rajmahal, before the Court stated that he joined in 2013 but not aware of Scientific Studies by CIMFR in 2011.
10. The Planning is ill conceived. Its production capacity from Rajmahal Block is known but all the land was not acquired in one go, necessary clearance not obtained. It leads to IN - PIT Dumping in mine.
11. In 2007, the then management of Rajmahal Mine had chosen a bad site, Kavery sump, where base is already filled with slurry in a fluid condition. It was also revealed in enquiry that this area was not fully de-coaled.
12. They start filling it and height was rose to 36 meters to 72 mtrs than 147 meters within 4 years from 2012 to 2016. It was dumped upon the fault F -8, without any considering of dead load.
13. Fault F -8 itself is full with joints and mine faults not shown the plans. It only come to known after accident and clearance of Ground.
14. Management had land available in west side of this dump but it was at more distance so to save money dumping was being resort to nearest site that was Kaveri Sump.
15. Fault -8 position as shown in plans was found deviated by 60 meters. It was found deep below dump by Benaras Hindu University {IIT}. Centre of Gravity of dump is just beside the fault F - 8 and pushing with load.
16. This load exertion was supplemented by shock waves heating the fault. These were generated by regular blasting vibrations.
17. Barrier or space was initially left to 200 meters in 2014 while starting of extraction of Coal in 2014 was gradually reduced due to extraction of coal was being done from DEEP TO RISE below down throw fault starting from toe of dump
18. In nut and shale this event of accident was being designed to happen since its inception and stage set when In Pit Dumping Started and heighten to up to 147 meters up to March 2016.
19. The Poor Planning, IN PIT DUMPING, REGULAR DUMPING on KAVERI SUMP on economic considerations, Slope Study Radar System not allowed to be purchased by CMDs MEET, Re-visiting the bore hole data and of authentication and recasting of geological plan, General Inspection system of DGMSO, dispensed with, Vigilant & Competent officials pointing out the unsafe practices, Imposing of Section 22 - A by the DGMS Official, Stoppage of work of extraction of coal by ECL HQRS Officials and apprehension of Mine Management for this scale failure and withdrawal could have prevented this accident. **The dump movements could & would not humanly possible and only sophisticated instruments and 24×7 monitoring could & would give timely warning & there was none because the Cost of Accident is so meagre as less than around 20 LAKHS only, PER LIFE. 23×20 = Rs. 460 lakhs. One Slope Study Radar System was costing Rs. 800 Lakhs.**

So the cost of lives were insured and cheaper too.

20. It is the way mines are being operated. If Lives were insured up to Rs. 100 Lakhs each than SLOPE STUDY RADARS would have been there, Dump heights would not have been so high and it would not have created on fluid slurry base sump etc.
21. Therefore, from piece meal planning, inception, drawing not so reliable geological plans and not providing fund for safety in Project Report by excluding cost of safety from operating cost, responsible for land acquisition, in pit dumping, creating Kaveri Sump, Not imposing Section 22 -A despite dangers and not stopping production, frequent transfer of senior level management of ECL & Rajmahal, poor quality of inspection of DGMSO, total defunct functioning of Pit Safety Committee & Workmen Inspector like statutory institutions, No General Inspection, No adequate fund at the disposal of Mine level management for scientific studies or purchase of SSRS or other equivalent System, CMDs MEET acting over and above the board level functions of the

ECL, CMD & Owner, etc all attributed to triggering & causing the accident on 29th December, 2016.

This my submission for consideration.

Sd/-
{Assessor}

Khongapanee: Koriya: Chhattisgarh

12/07/2020

Continue

Ex-Gratia Payment to next of kin {USA} to 23 Contractor Workers died in harness on 29/122016 in Rajmahal Mine of Eastern Coalfields Limited

The inadequacy of Ex -Gratia Payment to the dependents of Contractor workers was come before the Court of Enquiry on by Shri Shivakant Pandey. He relied on the additional Ex -Gratia, awarded by Court of Enquiry, in to Anjan Hill Mines of M/s South Eastern Coalfields Limited, Mishap on 06/05/2010. At Anjan Hill Mine 13 permanent workers and one Contractor Worker had died and one other worker died in late stage. Court of Enquiry consider only 14 workers including one contractor worker as the worker was under treatment till the recommendations of Court of Enquiry made, accepted by Government of India and recommendations implemented by M/s SECL.

The recommendations of Court of Enquiry in Anjan Hill Mine Mishap, Chaired By Justice{Retired} Shri Vishwnath Shetty in respect of quantum of Ex - Gratia is quoted below.

Quote: Page : 211 - 214: "PARA - 8.1.4 & 8.1.5. : SECL isa Government of India Company and a subsidiary of Coal India Ltd. Therefore, strictly speaking, the guideline issued/rules framed by the Government of India for award of ex - gratia compensation relied upon by WW-1 will not apply so far as SECL is concerned. However, the amount of ex -gratia compensation indicated by the Government of India to its civil employees in the circumstances referred above in clause (d) can, to a large extent, be taken as guideline for determination of compensation to be payable to the legal heirs of such of those persons including son of WW-1 who died in the accident that occurred at Anjan Hill Mine on 6th May, 2010. There cannot be any doubt that workers who work in an underground mine work under serious hazardous conditions. Their life is exposed to danger. Any movement, on account of, many occasions beyond the control of any one or on some occasions, on account of negligence on the part of management in taking sufficient protection in protecting the workers working in mines, the worker may die in an accident while working in mine. The labour force who work in mine generally less qualified and belong to working class who would not have anything to fall back, if the bread winner of the family dies. It is common knowledge that many a times young widows and children of victims have to face innumerable problems. Evidence on record shows that SECL Management paid an ex-gratia amount of 5 lakhs to the legal heir of each of deceased employees in addition to sum of Rs 4,39,000 awarded by the Workmen Compensation Commissioner. While the Court of Enquiry appreciate the stand taken by SECL Management in paying Rs 5 lakhs as ex-gratia in addition to the compensation awarded by the Workmen Compensation Commissioner, the only question that arises for consideration is whether the quantum of ex-gratia payment already made is reasonable and whether a recommendation is required to be made for enhancement? Taking in to account several factors including condition which workmen works, timing of work, their family background etc; the Court of Enquiry is of the opinion that it would be fair and reasonable to make a recommendation for award of ex-gratia compensation of Rs 12 lakhs{twelve lakhs} to the legal heirs of all the employees of SECL who died in accident, in addition to compensation awarded by the Workmen Compensation Commissioner. Since an amount of Rs 5 lakh has already paid, the Court of Enquiry recommends SECL to pay another sum of Rs 7 lakhs (seven lakhs). While fixing the additional amount of Rs 7 lakhs, the Court of Enquiry has also taken in to account that dependent of victim of accident are provided with employment by SECL. The Court of Enquiry is also of the view

that amount to be paid by SECL to the legal heirs of the victims is required to fully protected and are not to be deprived off the same on account of their ignorance, illiteracy etc. Therefore, it is necessary to recommend SECL to invest the said amount by way of fixed deposit in a nationalized bank for a minimum period of 5 years from the date of deposit in the joint name of all the legal heirs of the deceased employees. However, the interest that would accrue on the said deposit may be payable to the legal heirs of victims. The Court of Inquiry would also recommend to SECL to release the said amount earlier than five years in the event of urgent need of the amount on account of marriage/higher education of the children of the victim of the accident or for purchase of residential accommodation. The Court of Inquiry recommends that such deposit may be made by SECL within 4 weeks of publication of this report.

8.1.5. Further, evidence on record shows that one late Nirmal Kumar, who was hired by the management from one late Ujjwal Das who was a labour contractor also died in the accident while he was working in surface on the morning of 6th May. In the facts and circumstances, the Court of Inquiry is of the opinion that without going in to details of the question whether he had become an employee of SECL though hired through contractor, it is fair, just and reasonable to treat him in par with the employees of SECL who died in the accident and recommends to SECL to give all the benefits to the legal heirs of the Nirmal Kumar which are extended to legal heirs of deceased employees of SECL [i.e. ex-gratia compensation of Rs 12 lakhs, extension of medical facilities to the families and compassionate employment]. The compensation to be paid to his legal heirs is also required to be invested as in the case of legal heirs of deceased employees of SECL."Unquote

This recommendations was made on the basis of *CCS Extraordinary Pension Rules* submitted by WW-1. WW-1 was father of late Shri Abhishek Sharma died in accident. He submitted the *CCS EXTRAORDINARY PENSION RULES, Clause "D"* was taken as guideline for deciding factor for quantum of Ex -Gratia and quoted below;

" (d) Death occurring while on duty in the specified high altitude, inaccessible border posts, etc., on account of natural disaster, extreme weather conditions. - Rs. 15 lakh"

The above facts are taken from Anjan Hill Mine Court of Enquiry Report as published in Gazette of India and in public domain.

This clause (d) of *CCS Extraordinary Pension Rules* was taken as Guideline and in total Rs. 12 lakhs only {Not 15 lakhs} was awarded. Earlier paid Ex -Gratia by SECL of Rs. 5 lakh was excluded. It was the *CCS Extraordinary Pension Rules position as in, 2010*.

Government of India, Ministry of Personnel, Public Grievances & Pensions, had vide letter No. F. No. 38/37/2016-P&PW(A)(i) Dated 4th August, 2016 had review the rates of Ex -Gratia w.e.f. 01/12/2016 as below;

" Death occurring while on duty in the specified high altitude, inaccessible border posts, etc., on account of natural disaster, extreme weather conditions. - Rs. 35 lakh"

Anjan Hill Court of Enquiry was taken Rs 12 Lakh for on the basis of situation described in (d) and "NATURAL DISSASTER" is included in it.

When revised by Government of India on 04/08/2016 with effect from 01/12/2016 the Ex - Gratia for above was enhanced to Rs. 35 lakhs, therefore the Court of Enquiry of Rajmahal Mine has this issue for enhancing the quantum of Ex - Gratia, because the compensation itself is not sufficient.

A cursory reading make it clear that Rs. 12 lakh was awarded despite the COMPASIONATE APPOINTMENT to the dependent of victims was also provided. Recommendation for employment of dependent to one Contractor Worker also made. Whereas;

1. 23 contractor workers died on 29/12/2016 but their dependents were not provided with any employment.
2. As per HPC Report Page - 42, No deceased worker was paid compensation more than Rs. 9 lakhs. Highest Compensation was mentioned as Rs. 8,96,000/- only to late Shri Ajay Kumar Serial No. 13.
3. In the same page it is mentioned in column no. 05 "Ex - gratia {Rs. 5 lakhs as per MIPL}.
4. However, M/s MIPL - NKAS {JV} submitted in writing to the Court of Enquiry that this Rs. 5 lakhs is in lieu of legal dues, such as Gratuity, Pension, Fund, Leave wages, Bonus etc.

5. Hence, only Rs. 5 lakhs as Ex-gratia was paid to the deceased contractor workers.

6. Compensation is awarded as per provision of Employees Compensation Act, 1923 and Age Factor as mentioned in Schedule IV of the Act.

7. Minister of Coal had enhanced the amount of Ex - gratia from Rs. 5 lakhs to 15 lakhs for the worker died in any mine accident both for contractor worker and Permanent workers in Coal India.

8. Rajmahal Mine accident is not an ordinary accident. It was a DISASTER, A SYSTEM & MAN Initiated DISASTER.

A Permanent worker in 2016 in case of normal death in harness will get following amount apart from legal dues, (A) Life Cover Scheme Amount Rs. 1,12,800/-, Profit Link Reward, 55500/- etc.

For natural disaster the Government of India has enhance ex - gratia up to 35 lakhs since 01/12/2016 and accident occurred on 29/12/2016.

All the relevant documents are attached herewith the revised report of assessor, for kind consideration for enhancement of Ex-Gratia for dependents poor contractor workers.

A. Each Pit Safety Committee meeting's minutes & Pages of Workmen Inspector form "U" must be displayed in notice board & at the entrance of every mine.

Sd/-

Assessor

{Akhter Javed Usmanee}

Rajmahal Court of Inquiry

Report of Ravindra Sharma, Assessor

1.0 Introduction:

1.1 On 29.12.2016 when this accident occurred, mining operations at Rajmahal Opencast Mine were being carried out at following three patches:

- (i) Dahernangi Patch operated by contractor MIPL-NKAS (JV)
- (ii) RCML patch operated by another contractor
- (iii) Departmental Patch operated directly by ECL

1.2 Dahernangi Patch was bounded by Departmental Patch on its west and by RCML patch on its east. The accident, which is being enquired into, occurred at Dahernangi Patch.

1.3 A major fault F-8 of 60m throw running E-W divided the area of Dahernangi Patch into two parts:

- (a) Main Mining Zone (North side- upthrow side)
- (b) Deep Mining Zone/20 M Patch (South side- downthrow side)

1.4 Coal on north side of the fault had been extracted by opencast method about 10 years before the occurrence of this accident (completed by year 2007). Workings could not be extended further south due to presence of a 60m downthrow fault, as mentioned above. The de-coaled area (void) was initially used as a sump-known as 'Kaveri Sump' about 100m in depth. Later on it was filled with OB dump. The dump was further heightened upto about 47m above ground level during first half of the year 2016. On the day of accident re-handling of this dump was being done to lower its height and to facilitate advance of workings of south side, since in-situ bench of the south side had almost touched the toe of the dump.

1.5 Coal and in-situ overburden (OB) were being extracted on south side by opencast method deploying HEMMs.

1.6 All three operations – extraction of coal, extraction of in-situ OB and re-handling of OB dump were being carried out by the contractor MIPL-NKAS (JV).

2.0 **Events prior to the accident:** The second shift of 29.12.2016 commenced at 2.00pm. The operations in Dahernangi patch were being carried out both in coal and OB dump (re-handling). After about two hours, operations in coal face was stopped due to non-availability of blasted coal. At around 7.00PM only re-handling of OB dump was being done.

3.0 Occurrence of Accident: At around 7:00PM while operation of re-handling of overburden dump was going on, a violent sound followed by collapse of in-situ overburden and coal benches and subsequent slide of overburden dump occurred. Total area of slide as per HPC report was about 600m X 110m, its volume being about 4.31Mcum. The collapse/slide was sudden and without forewarning. It did not give any time to persons employed in the area to escape and 23 men along with eighteen (18) HEMMs got buried beneath the fallen material.

4.0 CAUSES:

4.1.0 EVIDENCE:

4.1.1 Report of DGMS: A Committee chaired by Sri Utpal Saha, the then Dy. Director General of Mines Safety, enquired into the accident under section 23(2) of the Mines Act, 1952 and found that:-

- (i) As many as three parallel fault planes had intersected the operational area in close vicinity thereby dividing the area into small blocks/wedges.
- (ii) The dump existing on the north side was exerting its dead weight over the area being excavated. The dead weight was also exerting lateral pressure against the thin barrier existing between in-situ overburden and the dump.
- (iii) With advancement of in-situ overburden and coal faces towards north direction, the width of barrier against dump got reduced.
- (iv) Regular deep hole blasting to the tune of 1500-1600 Kg. per round and large scale movement of HEMMs in the area were causing disturbances in the strata.
- (v) Operations mentioned at (i), (ii) and (iv) above disturbed the equilibrium of underlying strata triggering sudden failure of in-situ overburden and coal benches existing along and between fault planes. This was followed by instantaneous slide of overburden dump resulting in engulfing of all men and machineries present in the area by debris.

4.1.2 Report of High Powered Committee: A High Powered Committee was constituted by the then Chairman, Coal India, to enquire into the causes of the accident. The committee chaired by Sri S. Sharan, the then CMD, CMPDIL, comprised of eminent engineers/scientists from industry and scientific and educational institutions of the country. The committee arrived at causes given below;

- (i) The accident was caused due to failure of highwall (batter) slope, most likely along the fault planes. Yielding of pit slope resulted into failure of overlying dump.
- (ii) Extension of workings towards north side resulted in reduction of width of batter against fault plane zone which yielded at lower level due to dead weight of 140m high dump along with 100m high pit slope standing at steep slope angle. The steeper mining at intermediate and lower level increased stress at the toe of standing pit slope. It activated movement in pit slope mass and also activated the movement along fault plane. Once any movement is activated due to steeper slopes at intermediate and/or lower levels, water percolation also increases through the micro fractures of the in-situ slope mass. It leads to high hydrostatic pressure and causes failure to the lower steeply slope mass, resulting in failure of overhanging upper slope mass also.
- (iii) Failure of batter wall might also have been triggered due to the blasting in coal and in-situ overburden adjacent to the batter.

4.1.3 Report/Deposition in the Court:

- (i) **Sri Utpal Saha:** In-situ overburden and coal benches failed due to the dead weight of overburden plus the operations due to heavy blasting and movement of machineries. All three were main factors.
- (ii) **Sri N. Sharma:** Small slides occurred due to rain but cracks in the in-situ strata and coal occurred due to pressure exerted by continuous blasting in the rib against the fault plane. Pressure was also exerted by overburden dump. This triggered ejection of thin barrier left against old workings and the fault.
- (iii) **Sri B.N. Shukla:** First in-situ solid mass failed/moved horizontally for about 150 to 250m and then overburden dump fell down in the created gap. The accident was not caused by overburden dump. Failure of in-situ strata was not due to dump pressure. It might be due to horizontal stress. It is a matter of investigation.
- (iv) **Sri Sushant Banerjee:** Reduction of width of barrier, blasting and movement of heavy vehicles caused the accident.
- (v) **Sri D.K. Nayak:** After the accident when area was recovered, F-8 fault was found to exist at about 70m further north of its position shown on the plan. Actually, the dump was on solid ground and not over Kaveri Sump. Kaveri Sump had not been fully de-coaled earlier.

- (vi) **Sri S. Burnawal:** The accident was caused due to reduction of width of barrier against fault plane, excessive pressure of dump and effect of fault/slip. Dumping in Kaveri sump was done since 2007. I know since I was in Rajmahal since 2004.
- (vii) **Sri Shekhar Saran:**
- (a) Dump was created over a waterbody which had its own risk. Creation of 146m high dump must have made tremendous impact on the barrier against fault on the south side. The previous management as precautionary measure had left around 150 to 250m barrier on the south side. Pressure of confluence of two faults F8/F9 just below the dump/waterbody was already source of trigger for land slide.
 - (b) In 2011, CIMFR after studying the stability of slope and OB benches had recommended:-
 - (i) Old Sump (Kaveri Sump) existing on upthrow side of fault is full of silt which had tenancy to flow. A safe barrier against the fault and sump is necessary.
 - (c) Extension of workings towards the fault triggered the slide.
- (viii) **Dr. Phalguni Sen:**
- (a) This accident was in form of slope failure. Geological discontinuity, shear strength and slope geometry play important part in slope failure.
 - (b) Dump created in one go and created one after another at interval of 2 to 3 years have different effect. Contact between different layers of dump are weak planes.
 - (c) Disturbances caused by movement of dumpers might also have initiated the failure.
 - (d) Effect of blasting was not considered because no blasting was done in the area on the day of accident.
 - (e) It was a complex phenomenon, very difficult to pin point whether the lower portion failed first causing the upper portion to come down or upper portion failed first causing movement in lower portion.
 - (f) Slope geometry was high. Dump geometry was also quite high. Authority must have seen some instability. That is why they were reducing the height of dump.
 - (g) If vertical load cannot be transmitted on one side this will have a tendency to press the other side and the vertical stress may be converted into horizontal stress.
 - (ix) **Sri Sanjay Kumar Singh:** There were aquifers in the faulted zone. Seepage of water might have caused collapse of the strata.
 - (x) **Sri J.N. Singh, Individual:** The main reason for the accident was the unknown faults and weak zones near the working patch where the accident took place. In-situ bench failed first which resulted in the fall of OB dump lying above.
 - (xi) **Sri B.P.Singh, Individual:** Accident was caused due to (a) deepening of the dip side workings, (b) reduction of width of barrier/batter against fault plane, (c) presence of high internal dump on the rise side, (d) presence of aquifers and (e) heavy blasting in area adjacent to batter/workings.
 - (xii) **IMMA (Indian Mine Managers Association):** Unidentified fault planes/ shear zones intersected the batter on the downthrow side of fault F-8 leading to potential plane and wedge failure. This supplemented by surcharge load of 140m high dump might have caused failure of batter. Batter failure resulted in the dump failure.
 - (xiii) **Indian National Mine Workers' Federation (INTUC):** The accident was caused due to:-
 - (a) Haphazard working i.e. working on coal and in situ OB benches at the bottom of mine and removal of old OB dump on the top at the same time which involved movement of HEMMs.
 - (b) Height of old dump beyond permissible limit.
 - (c) Sides of OB and coal benches not kept properly sloped.
 - (d) Fault Plane.
 - (e) Blasting.

4.1.4 Board Meeting of ECL: In the meeting of Board of ECL held on 30.11.2016, Director (Tech.) apprised the Board "The OB dumps contain clay and its water absorbing capacity is more, the overburden becomes as good as black cotton soil, so the dump is sliding frequently. Earlier also this type of slides had occurred and had entrapped one shovel. Hence, to ensure safety at the working of 20m patch (Dahernangi Patch) and OB re-handling from dumping is required. If OB re-handling is not done, then about 2.20MT. of coal of 20 Million Patch would be blocked and approx. Rs. 300 per tonne profit would be lost."

4.1.5. Accident Plan/Sections:

- (i) The accident plan and sections of the site of accident was prepared by surveyors of DGMS with the help of management surveyors.
- (ii) The position after the accident was plotted after actual surveying in the field and the position before the accident was traced from the plan available in the mine at the time of enquiry.
- (iii) The plan and sections were certified for its correctness by surveyors of DGMS and the management and were countersigned by the Manager, Agent, GM (In-charge) and nominated Owner of the management and also countersigned by Sri K. Gyaneshwar and Sri U. Saha of DGMS.
- (iv) Seven sections were drawn at interval of 100m along AA', BB', CC', DD', EE', FF' and GG' as mentioned on the plan.
- (v) **Scrutiny of plan and sections revealed the following:-**
 - (a) Slide was limited to sections from AA' to EE'.
 - (b) The in-situ/coal strata failed at points about 15m, 27m, 23m and 30m above floor of seam II combined (floor of Kaveri sump) on the upthrow side respectively at sections along AA', BB', CC', DD' and EE'. Failure along FF' and GG' was almost negligible.
 - (c) Approximate cross-section area of failure of in situ strata along sections AA' to EE' is given below.

Sections	Coal (m ²)	OB (m ²)	Total (m ²)
AA'	280	2120	2400
BB'	240	2650	2890
CC'	Nil	810	810
DD'	370	1400	1770
EE'	Nil	350	350

4.2.0 ANALYSIS OF EVIDENCES:

4.2.1 Analysis of statements of witnesses and scrutiny of records and reports have revealed that the accident at Dahernangi Patch of Rajmahal Opencast Mine on 29.12.2016 was in the form of a slope failure. It was caused due to following conditions prevailing in the mine, at that point of time.

- (a) Presence of huge internal OB dump in close proximity.
- (b) Geological disturbances.
- (c) Presence of aquifers
- (d) Weak batter.

4.2.2 Internal OB dump:

- (a) An internal OB dump existed on the north side in close proximity to workings under operation in coal and in-situ OB.
- (b) The dump had been formed by dumping of OB in a water sump, known as Kavery sump, about 100m deep. The dump was further raised to about 47m above ground level. Naturally, the bottom portion of the dump contained silt/water.
- (c) CIMFR also in their report of year 2011 had observed that old sump (Kaveri sump) existing on the upthrow side of fault was full of silt which had tendency to flow.
- (d) The bottom of the dump had been further saturated by presence of aquifers in the vicinity.
- (e) The dump had seen almost eight monsoons.
- (f) Shri B.N.Shukla, the then Director (Technical) during his deposition in the Court stated that failure of slope had not been caused by the dump, but his presentation in the Board meeting of ECL held on 30.11.2016, i.e. only one month before the accident regarding nature of the dump had been opposite to his deposition in the Court. The relevant portion from the minutes of the Board is given below:

“The OB dumps contain clay and its water absorbing capacity is more, the overburden becomes as good as black cotton soil, so the dump is sliding frequently. Earlier also this type of slides had

occurred and had entrapped one shovel. Hence, to ensure safety at the working of 20m patch (Dahernangi Patch) and OB re-handling from dumping is required. If OB re-handling is not done, then about 2.20MT of coal of 20 Million Patch would be blocked and approx. Rs. 300 per tonne profit would be lost.”

From above, I am fully convinced that the lower portion of the internal dump was almost like slurry and its dead weight in combination with hydrostatic pressure developed huge vertical and horizontal stresses which got released by pushing the weak batter/pit slope horizontally, the other three sides of the sump being solid and strong.

4.2.3 Geological disturbances:

- (a) The area lying between the workings in coal/ in-situ OB and Kaveri sump was highly disturbed geologically. It was so much disturbed that while working the area on the north side (prior to 2007) of this disturbed zone the then management apparently could not extract about 4 lakh tonnes of coal (recovered after the accident) lying in vicinity of the geologically disturbed zone.
- (b) While planning, this area was initially excluded in view of it being highly disturbed and was annexed later on in view of favourable coal/OB ratio.
- (c) During deposition in the Court Shri Nayak, the then Agent, Rajmahal Opencast Mine stated that fault F-8 had been found at a position about 70m north of its position marked on the geological plan when the area was recovered after the accident. However, it is surprising that he did not bring this fact to the notice of the Court during inspection of Rajmahal Opencast Mine on 22.10.2019. Had he informed the Court about this fact on that day, the Court would have verified his contention.
- (d) During recovery operations four additional faults of throw varying from 10m to 20m and some slips were deciphered in the area lying between the then workings in coal/in-situ OB and Kaveri sump.

From the above, it is clear that even if it is assumed that F-8 fault was not present in the vicinity of the area where the batter/pit slope failed, the point that area was highly geologically disturbed has been proved beyond doubt. These geological disturbances in vicinity of the workings had weakened the strata considerably and had also provided weak planes for the slide.

4.2.4 Presence of aquifers: Aquifers were reported to be prevalent in the area. In order to take appropriate preventive measures against such aquifers while extracting coal and removing OB in the area, the CMPDIL had recommended for conducting advanced de-watering of the strata ahead of coal and OB faces but this aspect was not given due importance. These aquifers had not only weakened the strength of strata retaining against OB dump and fault planes but had also lubricated the fault and bedding planes of coal and sandstone blocks.

4.2.5 Batter:

- (a) About 100m high pit slope standing at a steep slope angle was causing increased stress at its toe.
- (b) Extension of workings towards north had reduced the width of the slope/batter against fault plane/dump and it had become thin and weak.
- (c) Several incidences of strata movements in the past had caused cracks in area around the batter and seepage of aquifer water through these cracks had made the cracks wider and the batter further weak.
- (d) Vibrations caused by movement of HEMMs and heavy blasting in the area had also caused cracks in the batter.

From the above, I am of the view that this accident was caused due to high pressure/stress exerted on very weak high wall slope (batter) by huge dead weight of the dump in combination with high hydrostatic pressure causing its failure along fault planes. The failure of batter resulted in dump failure.

4.3 Conclusion: While contractual workers were employed to form benches in overburden dump in opencast workings of Dahernangi Patch of Rajmahal Opencast Mine, the huge dead weight of dump in combination with hydrostatic pressure exerted tremendous pressure/stress on the coal/in-situ batter. The thin and steeply sloped batter, weakened further by blasting and movement of machineries, failed. The failure of batter resulted into instant sliding of the dump burying 23 workers and HEMMs. Total area of the slide was about 600m X 110m, its volume being 4.31 M. Cu.m (as per HPC Report).

5.0 Circumstances leading to the accident/Responsibility:

5.1.0. Evidence:**5.1.1 Report of DGMS:**

- (i) Special care while operating in the vicinity of geologically disturbed area was not taken as required by DGMS permission letter.
- (ii) Sides of in-situ OB, Coal and spoil bank were not adequately benched/sloped as required by DGMS permission letter.
- (iii) OB dump was not de-capped from top downwards in consultation with a scientific agency prior to removal/extraction of in-situ OB and coal.
- (iv) Men and machineries deployed at OB dump were not withdrawn prior to the accident when situation was alarming with visible cracks on the haul road of OB dump and along edges of OB benches as reported by supervisors of contractor.
- (v) Sixteen persons from level of the then Director(Tech.) to Mining Sirdars were responsible for contraventions mentioned above at (i), (ii), (iii) & (iv).
- (vi) Sri R.R. Mishra, the then CMD, was not responsible since CMD does not come within purview of the Mines Act, 1952.
- (vii) The contractor and their supervisors were not responsible since it was job of operational management to caution them while they perform their jobs in risky area.

5.1.2. Sri R. Guha:

- (i) Immediate cause was non-withdrawal of persons after stoppage of work in the area from 23rd to 26/27th December and taking adhoc decisions to combat risks from dump without proper planning/scientific study was systemic cause.
- (ii) Contractor and his supervisors were not made responsible since statutory personnel supervising the operations were appointed by the management.

5.1.3. Sri U. Saha:

- (i) Permission from DGMS for forming benches in OB dump was not obtained by the management.
- (ii) Requested the Hon'ble Court to ponder about the role of planning department of ECL/CMPDIL for working in geologically disturbed area/beneath overburden dump.

5.1.4. Sri Niranjan Sharma:

- (i) On 10.08.2016, he inspected the plan in survey office and on 11.08.2016, he inspected Dahernangi patch where re-handling of dump was being done. Coal and OB in-situ (partially) benches were waterlogged. He did not observe any slide that had occurred on 09.08.2016.
- (ii) The file regarding grant of permission in 1987 was not traceable in the office of DGMS and hence enclosed plan of the permission letter was not available.
- (iii) Overburden dump was found adequately benched during his inspection on 11.08.2016.
- (iv) On 11.08.2016 periphery of dump had crossed the projection of fault on ground level. It had reached the limitation of workings on the south side. Toe of the dump was up to the edge of in-situ overburden bench.
- (v) To pointed question that whether inconsistency between analysis of evidence and conclusion of cause in DGMS Inquiry report was due to negligence, Sri Sharma replied "to some extent".
- (vi) Workmen's Inspector and Safety Committee, two eyes of safety in mine had become defunct.

5.1.5. Sri Niyazi:

- (i) In the year 2016, he did not inspect the area where the accident occurred on 29.12.2016.
- (ii) Plan(enclosure to permission letter of DGMS dated 1987) showing the area for which permission was granted was not available in DGMS.
- (iii) Real time monitoring of dump slope as required by DGMS circular was not installed at Rajmahal opencast mine.
- (iv) After discussion in the DGMS Inquiry Committee, it was decided that since CMD(ECL) does not come within purview of the Mines Act, 1952, he should not be made responsible.

5.1.6 Report of High Powered Committee:

- (i) Stipulations of DGMS and statutory provisions regarding working near faults, methodology to be adopted for designing, control and monitoring of dump slopes in opencast mines, development of safety management plan, real time monitoring of slope strata etc. were not complied with. DGMS also did not point out violations in their inspection reports regarding these contraventions.
- (ii) Dumping of OB was done in the muck/silt of erstwhile Kaveri Sump to an undesirable height of 140m due to non-acquisition of land.
- (iii) Small scale dump failures in the past (04.01.2016, 09.08.2016 and 08.12.2016) were overlooked. Indications of slope/dump failures were not taken seriously by the mine management. Even Safety Committee, Workmen's Inspectors, the ISO officials and teams visiting from ECL Headquarters did not act and it was not given due importance.
- (iv) When the work of coal extraction was suspended due to falling of OB material in Deep Mining Zone at about 4.30PM on 29.12.2016, the management did not take action to suspend the re-handling operations in the OB dump also.
- (v) Lapses during conceptualization and planning: The area of proposed Dahernangi Patch (Deep Mining Patch) was complex due to presence of geological disturbances and surcharged load of internal dump. Both impediments required careful planning supported by detailed geological investigation. Proper care was not taken while planning for working near major fault zone.
- (vi) Non-provision of instrumentation: No mechanism of real time round the clock monitoring of the slope was available at the mine.

5.1.7. Sri Shekhar Saran:

- (i) When in the year 2009, seventeen million tonnes capacity mine project was approved, then additional area on southern side of the fault was also considered and annexed in view of favourable coal/OB ratio though area was geologically highly disturbed.
- (ii) It was a systematic failure. Failure took place at various levels.

5.1.8. Dr. Phalguni Sen:

- (i) DGMS officers who inspected the mine and CMD and Director (Tech.) of ECL who inspected the mine were equally responsible.
- (ii) It is not the man, it is the system that works.
- (iii) Slope stability Radar cannot prevent failures but monitors movement of strata and provides enough time for withdrawal of men and machineries.

5.1.9. Sri Akhilesh Pandey:

- (i) He had initiated the proposal for re-handling of 13.44 million cum of OB dump after detection of crack in January, 2016.

5.1.10. Sri R.R. Mishra:

- (i) He takes part in the management, control, supervision and direction of the company.
- (ii) To pointed question that since he approved the proposal in the Board meeting on 30.11.2016 to remove the danger from the dump, did he try to know whether that was implemented/adequate safety measures had been taken reply was "I did not ask"
- (iii) He could not say as to who was responsible for this accident.

5.1.11. Sri B.N. Shukla:

- (i) The company has an ISO. The company has a Bipartite Safety Board, having representatives from all unions, meetings are held every month. The Safety Board inspected Rajmahal Opencast Mine on 21.10.2016. Safety Committee and Workmen's Inspector function at mine level. Safety audit of Rajmahal was done on 30.03.2016. Area level tripartite safety committee meetings are held to discuss matters of safety. None of them brought to his knowledge about any danger/violation at Rajmahal Opencast Mine.
- (ii) There was no provision in DGMS permission letter regarding scientific study.
- (iii) GM (Safety) was reporting to him daily. He did not get any information from him regarding high benches at Rajmahal Opencast Mine.

- (iv) He did not find anything un-usual during his inspections of Rajmahal Opencast Mine on 26.11.2016 and 26.12.2016.
- (v) He was satisfied with the measures taken by the mine management on implementation of approval of the Board in the meeting held on 30.11.2016.
- (vi) Action on scientific study, proposed by the management, was under process.
- (vii) No dumping was done in Kaveri Sump during his tenure as Director (T).

5.1.12. Sri D.K. Nayak:

- (i) No body, neither the Safety Committee nor the Safety Audit informed him about any danger before the accident.

5.1.13. Sri Pramod Kumar:

- (i) Based on inquiry from ISO, he was the lone person to have been suspended by the management. The inquiry was conducted and he was exonerated of all charges.
- (ii) Contractor's workers were under direct control of the contractor.
- (iii) He was finding difficulties in exercising his authority as he had to listen to the Agent and the deemed Agent.
- (iv) Increase of height of dump in Kaveri Sump by 57.4m was due to dumping from Departmental patch.
- (v) The agreement between the contractor and company diluted the statutory power vested with the Manager under the Mines Act, 1952 to large extent.
- (vi) On 26.11.2016, he had accompanied CMD and Director(T) during their inspection. They had also gone to the coal face and the CMD had verbally instructed to increase the production.
- (vii) He had inspected Dahernangi patch on 29.12.2016 in general shift and also at about 5.00PM in second shift. Nothing abnormal was observed by him.
- (viii) Supervisors of contractor and Mining Sirdars on duty in second shift had not informed him about any un-usual behavior/sliding of OB benches.
- (ix) Proposal for scientific study regarding slope stability was initiated in the year 2013 and again on 06.01.2016. He felt that the Manager should be vested with financial powers to conduct scientific study to avoid delay.
- (x) In DGMS permission letter, no specific condition for precautions to be taken while working near fault plane was stipulated.

5.1.14. Sri S. Burnawal:

- (i) On 26.12.2016, CMD accompanied by Sri B.N. Shukla, Director (Tech.) had inspected OB and coal faces and had instructed to increase production of coal and OB.
- (ii) S/Sri J.P. Singh, the then G.M., M.K. Rao, the then Agent and Arvind Kumar, the then Manager had allowed dumping of OB over coal bearing area.
- (iii) On 08.12.2016 cracks were observed in OB re-handling bench. It did not appear to be dangerous.
- (iv) On 28.12.2016 fresh cracks were observed on the upper benches of loose OB.
- (v) He had inspected the OB and coal benches on 29.12.2016. To him everything appeared to be normal.
- (vi) He had accompanied Sri N. Sharma, during his inspection in August, 2016. Shri Sharma had gone up to benches.
- (vii) Safety Board of ECL inspected RCML patch on 26.10.2016. They did not mention anything about danger from dump slide.
- (viii) Mine was inspected by members of Safety Committee and also Workmen's Inspectors. Nobody pointed out about any danger.
- (ix) After the accident when coal was extracted the main fault was exposed and was found at a position about 30m to 40m towards north from its position shown on the plan.

5.1.15. Sri Nilam Toppo:

- (i) He was Overman on duty in the first shift of 29.12.2016 at Dahernangi Patch of Rajmahal Opencast Mine. Reading of plumb bob to measure the movement of crack had remained constant throughout the shift and he had informed his successor accordingly.
- (ii) On the 26th and 27th he had observed crack/fall of side and had informed Sri Roy accordingly. He did not enter this fact in the daily inspection report book since the same had not been provided by the management.
- (iii) Everything was normal and nothing unusual was noticed by him during the shift prior to the accident.
- (iv) He had not seen but had heard about the occurrence of fall about 15 days prior to the occurrence of the accident.

5.1.16. Md. Ejaj Hussain Ansari:

- (i) He was on duty as Mining Sirdar in the second shift of 29.12.2016 at Dahernangi Patch of Rajmahal opencast mine. It was his first day in this patch.
- (ii) Sri R.K. Singh and Sri V.K. Singh instructed him to monitor the reading of plumb bob and inform in case of variation.
- (iii) About 15 minutes before the occurrence of the accident Sri V.K. Singh on walkie-talkie instructed him to guide the movement of dozer located near view point. As soon as he reached near view point the accident occurred.

5.1.17. Sri Sujay Kumar:

- (i) In the 2nd shift of 29.12.2016, he was Overman on duty at Dahernangi Patch of Rajmahal Opencast Mine. On instruction from Sri S.K. Singh, he was performing his duties for preparation of a ramp. This place was about 2-2.5 Km. from the place where re-handling of OB was being done.

5.1.18. Sri Damodar Ram:

- (i) He was surveyor at Dahernangi Patch. Sri Nandan Kumar used to assist him. After the accident when area was recovered, F-8 fault was found slightly shifted towards north from its position shown on the plan. Some minor faults were also found. The plan maintained at the mine was not upto date as quarterly survey was due only after end of the fourth quarter.

5.1.19. Sri Hemnarayan Yadav:

- (i) He was on duty as Mining Sirdar in the second shift of 29.12.2016 at Dahernangi Patch of Rajmahal Opencast Mine. Loading of coal was stopped after about two hours due to non-availability of blasted coal.
- (ii) To pointed question he replied that work in coal and OB benches from the 25th to 27th was not stopped.
- (iii) While he was proceeding to operate pump, fall occurred suddenly.

5.1.20. Sri Mahendra Mal:

- (i) He was on duty as Assistant Foreman in the 2nd Shift of 29.12.2016 at Dahernangi Patch of Rajmahal Opencast Mine. No coal loading was done after his arrival at about 3.00PM.
- (ii) He never heard of any fall/crack prior to the occurrence of the accident.

5.1.21. Sri K. K. Upadhaya:

- (i) He was supervisor of the contractor. In the second shift of 29.12.2016, he was supervising the operation of ramp preparation which was at about 300m from working face.
- (ii) He did not observe any fall of coal/OB in this shift prior to the accident.
- (iii) He did not perceive any danger before the occurrence of the accident.
- (iv) He denied having stated during DGMS enquiry that he had seen dangerous conditions and had informed Lallu Khan about the danger.

5.1.22. Sri Dilip Roy:

- (i) He had inspected workings of Dahernangi Patch in the first shift and also in the second shift of 29.12.2016 during period from 5.00PM to 06.00PM. Everything was normal.

- (ii) At the time of accident only operation of re-handling of OB dump was being done.
- (iii) There were 2 benches in coal, 3 in in-situ OB and 4 to 5 in OB dump.
- (iv) Monitoring of movement of strata was being done through reading on a scale attached to a plumb bob.

5.1.23. Sri P.N. Mishra:

- (i) Blasting was done on 28.12.2016 and no blasting was conducted in Deep Mining Zone on 29.12.2016.

5.1.24. Sri V.K. Singh:

- (i) He was on duty as an Assistant Manager in the second shift on 29.12.2016.
- (ii) Operations in the mine were normal till about 7.00PM, i.e. before the occurrence of the accident.
- (iii) S/Sri Hemnarayan Yadav and Ejaj Hussain had not informed him about any formation of crack that day before the accident.

5.1.25. Sri Niraj Kumar Sinha:

- (i) He was on duty as Assistant Manager at Dahernangi Patch in the night shift of 28.12.2016. Operation after 1.30PM in the night was stopped due to accumulation of dense fog in the mine.
- (ii) No crack had developed in the night shift. There was some loose material on the roadway which was levelled to facilitate transportation of machineries.
- (iii) Reading of plumb bob during night shift remained constant at 28cm.

5.1.26. Sri P.C. Dhar:

- (i) He was on duty as Assistant Manager at Dahernangi Patch in the first shift on 29.12.2016. Plumb bob reading was 28 cm at beginning and also at the end of the shift.

5.1.27. Sri Barun Shankar Chakraborty:

- (i) He was Workmen's Inspector for about six (06) years from the year 2011 to 2017.
- (ii) He did not report about any danger from the dump as it did not appear to him dangerous.

5.1.28. Sri Vinesh Shivji Dholu:

- (i) Nobody reported to him about dangerous conditions prevailing in the mine prior to the accident.

5.2.0 Analysis:

5.2.1 Analysis of evidences and scrutiny of records/reports have revealed that there have been failures at every level of management structure for several years resulting into this accident. These failures are summarised below:

- (a) Planning level: The area of Dahernangi Patch at Rajmahal Opencast Mine was constrained not only by presence of faults/shear zones but was also under surcharge load of high internal dump. These impediments required careful planning supported by detailed geological investigations and appropriate scientific study regarding stability of pit/dump slope. The report was prepared without detailed geo-technical investigations and scientific study.
- (b) Corporate level:
 - (i) Approval of project report: The proposal for operation of Rajmahal Opencast Mine for approval of the Board of M/s ECL in the year 2014 was not routed through ISO for vetting and was directly agreed by the Director (Technical) which was approved by the Board. The proposal was also not sent to CMPDIL for technical scrutiny and vetting prior to its approval.
 - (ii) Proposal for scientific study for slope study: The proposal for scientific study was initiated from the mine level on 20.12.2013 and repeated proposal was initiated on 06.01.2016 but it was not given due importance. Again a Committee constituted by the Director (Technical) to look into the incidence of slide of OB dump that occurred on 09.08.2016 recommended for scientific study and re-handling of 17.30 lakh cu.m of dump. The recommendation for re-handling was approved but the recommendation regarding scientific study was ignored.
 - (iii) **Proposal for procurement of Slope Stability Radar (SSR):** DGMS had issued Circular No. DGMS (Tech.)/S&T/Circular No.2 dated 22.09.2010 for installation of SSR in all large opencast mines. The proposal for its procurement was pending in ECL head quarter since the year 2011 and

did not materialise till the occurrence of the accident. If SSR had been installed in Rajmahal Opencast Mine it would have indicated the movement of strata and persons would have been withdrawn to a safe place before the accident.

(iv) Follow up action:

- (a) Shri R.R.Mishra, the then CMD of ECL had approved the proposal for re-handling of OB dump on 30.11.2016 but during his inspection of the mine on 26.12.2016 did not inquire from the mine management regarding status of implementation of the decision of the Board.
- (b) After incidence of slide on 09.08.2016, the ISO had recommended for stoppage of workings in coal and in-situ overburden till the OB dump was de-capped but they did not follow it up to find if their recommendations were being implemented by the mine management.

- (v) **Agreement between ECL and the contractor:** Entire responsibility for safe operations at Dahernangi Patch of Rajmahal Opencast Mine was entrusted to the contractor by the agreement between ECL and the contractor, but statutory persons who were competent to ensure safety were appointed by ECL. There was dual supervision on operations in the mine. These factors created confusion in respect of role/responsibility between officers of ECL and staff of the contractor regarding implementation of safety statutes.

(c) Mine level:

- (i) Permission under Regulation 98 of the Coal Mines Regulations, 1957 (CMR, 1957): Coal in Deep Mining Zone of Rajmahal Opencast Mine was being extracted without permission as required under Regulation 98 of the CMR, 1957 to form benches in coal exceeding three meters in height from the date of its inception till the date of accident. If the management at any point of time had applied to DGMS for permission furnishing details of geological disturbances and presence of OB dump in the vicinity, DGMS would have directed them to apply with support of scientific study and then would have stipulated the recommendations of scientific study in the permission letter.

Permission letter No(s). S4/03/26/006/II.B(87)/1182 dated 08.04.1987 and No. S3/010367/II-B/98(1)(3) & 100(1)/1638 dated 5th July, 2012 was for extraction of No. II seam Bottom (Top section) and No. II seam Top respectively at Lalmatia Patch and was not applicable for extraction of seams No. II & III at Deep Mining Zone.

- (ii) Re-handling operations of overburden dump were also being conducted without permission under Regulation 98 of the CMR, 1957.
- (iii) The benches were steeply sloped/ inadequately benched in contravention of the provisions of Regulation 98 of the CMR, 1957.
- (iv) The management remained complacent and did not act even after several incidences of fractures/cracks prior to the accident.
- (v) As per inquiry report of DGMS there was an incidence of movement of strata in the second shift on 29.12.2016 but persons in-charge of operations in the mine in the shift did withdraw persons only from coal and in-situ OB benches and not from re-handling face. However, this fact was not proved in the Court. Witnesses in the Court denied their statements purported to have been given by them during inquiry of DGMS. DGMS did not file affidavit to prove their findings in the Court.

(d) Safety institutions/ISO:

- (i) Safety Committee formed under Rule 29T of the Mines Rules, 1955 for promoting safety in mines serves as a forum for communication on safety. Meetings are held at mine level in every month, but the Safety Committee of Rajmahal Opencast Mine did not point out any dangerous conditions prevailing in the mine.
- (ii) Workmen's Inspectors appointed under Rule 29Q of the Mines Rules, 1955 are supposed to inform the Manager and the Inspector about any danger which comes to their notice, but no Workmen's Inspector of Rajmahal Opencast Mine informed either the Manager or the Inspector about the danger existing in the mine. Shri Barun Shankar Chakraborty, the then Workmen's Inspector deposed in the Court that he did not report about any danger from the dump as it did not appear dangerous to him.
- (iii) Safety audit of Rajmahal Opencast Mine was done in March, 2016. Auditors did not mention in their report about any un-safe condition prevailing in the mine.

(e) DGMS:

- (i) Many officers from DGMS must have inspected Deep Mining Zone of Rajmahal Opencast Mine since its inception till the occurrence of accident but everyone failed to scrutinise the permission letter of 1987 & 2012 regarding applicability of these permissions to Deep Mining Zone.
- (ii) Officers of DGMS while making inspections of Rajmahal Opencast Mine must have noticed geological disturbances and presence of high internal dump in the vicinity of Deep Mining Zone, but failed to direct the management for submitting fresh application supported by scientific study regarding stability of the slope.
- (iii) Inspecting officers of DGMS did not point out violations for contravention of the provisions of Regulation 98 of the CMR, 1957 regarding slope/benching in coal, in-situ OB and OB dump prevailing in Dahernangi Patch of Rajmahal Opencast Mine.
- (iv) Shri N.Sharma, the then Director of Mines Safety, who inspected the re-handling patch on 11.08.2016 did not point out violations regarding inadequate benching and deposed before the Court that the area was adequately benched. His this statement cannot be accepted, since, only three days before his inspection on 09.08.2016, a slide had occurred in the area and also the Committee of ISO after inquiry into the said incidence had recommended for de-capping of OB dump.

(f) The contractor:

- (i) As per terms of agreement the contractor was responsible for implementation of the Mines Act, 1952 and Regulations and Rules made thereunder.
- (ii) In practice, however, all statutory persons starting from the Manager to Mining Sirdars were appointed by ECL on whom the contractor had no control.

Therefore, though technically responsible, in practice it was impossible for the contractor to implement safety statutes in the mine.

5.2.3 Conclusion: Since, there have been failures/negligence at all levels in the management hierarchy starting from the level of planning to the level of mine management, failures of safety institutions like Safety Committee, Workmen's Inspector, Safety Audit, etc. and also failures by the officers of DGMS in fulfilling their obligations for several years, I am of view that everybody in the system has been responsible for this accident. The entire system and practices followed are to be blamed.

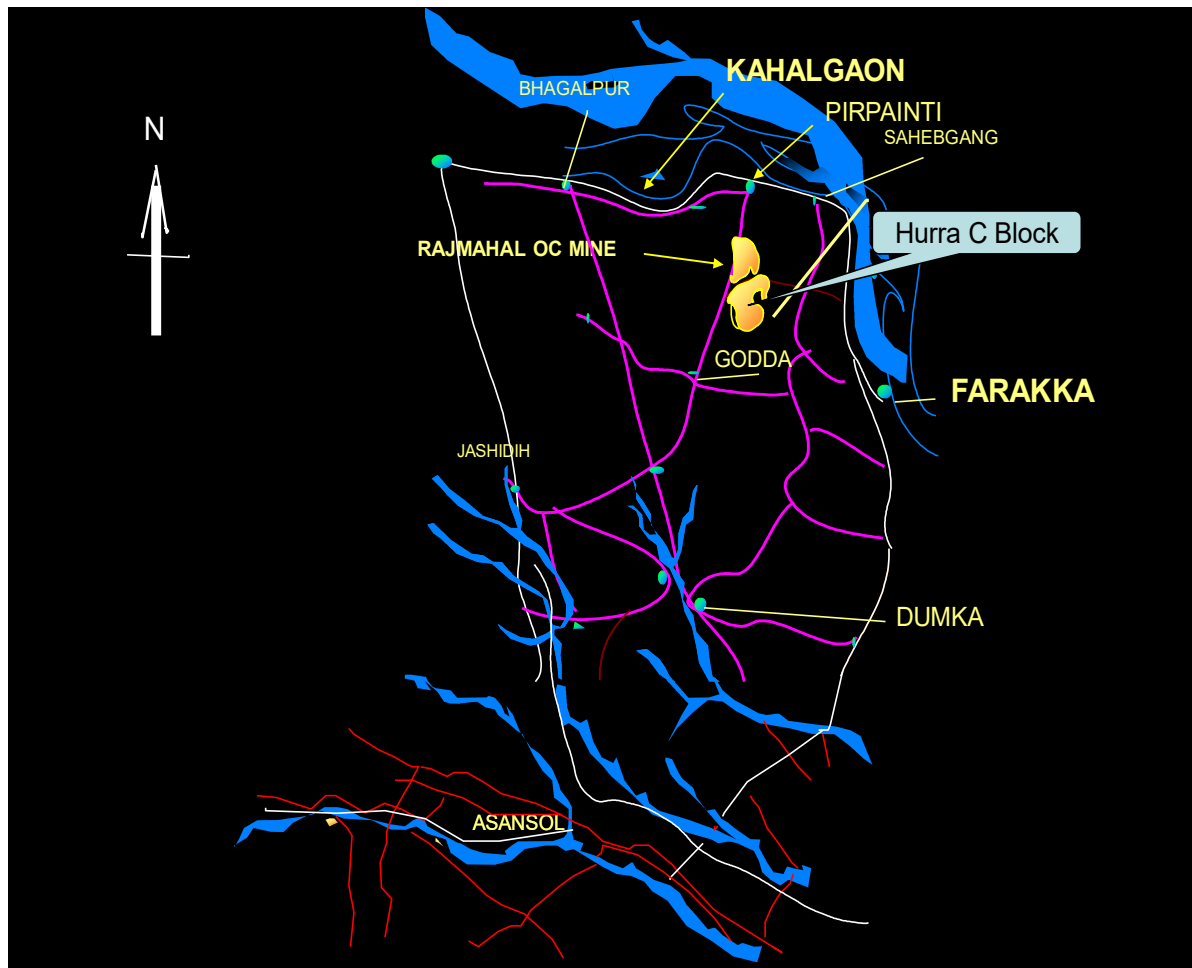
6.0 Recommendations: Provisions regarding determination of appropriate method of working based on a scientific study and monitoring of slope stability have now been provided under the Coal Mines Regulations, 2017. Hence, recommendations on these matters are not needed. Other recommendations to avoid similar accidents in future are given below:

- (i) **Finalisation and approval of the Project Report:** While preparing a project report of a large opencast mine, planners should clearly specify in detail all operations such as method of working, place of dumping, layout of dumps, layout of roadways for transportation etc required to be carried out in the mine. The report should be vetted by Internal Safety Organisation before its approval.
- (ii) **Execution:** Project report is prepared after due consideration of various parameters involved in operation of a mine. An executive, generally concerned with production, is likely to take wrong decision while making any deviation from the approved plan. Hence, a system should be so evolved so that an executive operate a mine strictly as per approved plan. If any deviation is required due to changed circumstances, it should be done in consultation with the planner.
- (iii) **Status of the Manager:** As per requirements of Section 17 of the Mines Act, 1952, a Manager is responsible for the overall management, control, supervision and direction of the mine. Hence, a senior official in the mine should be appointed as Manager to fulfil the requirements of the statute.
- (iv) **Role of the contractor:** Role of a contractor should be limited to carrying out of certain operations in the mine. Responsibility for safety in the mine should exclusively rest with the manager and officials under him and the contractor should conduct all operations under total control of the manager.
- (v) **External Safety Audit:** In addition to internal safety audit, a mine should also be audited by an external agency to detect any unsafe condition/practice prevalent in the mine.

Sd/-

(Ravindra Sharma)

Assessor to the Rajmahal Court of Inquiry.



(NOT TO SCALE)

LOCATION PLAN OF RAJMAHAL OPENCAST MINE

ANNEXURE-X

RAJMAHAL COURT OF INQUIRY

Subject: Inspection of the site of accident that occurred at Rajmahal Opencast Mine on 29.12.2016.

- 1.0 Smt. Rashmi Verma, the Hon'ble Chairperson of the Court of Inquiry accompanied by Sri Akhter Javed Usmanee & Sri Ravindra Sharma, Assessors along with officials of DGMS & M/s Eastern Coalfields Limited reached the Rajmahal Opencast Mine and inspected the site of accident at about 04:00 P.M. on 22.10.2019. Names and designations of the persons accompanying the Hon'ble Court is at Annexure-I.
- 2.0 Since the accident occurred on 29th December, 2016, the site of accident had been disturbed by the management for resumption of work. Shri D.K.Nayak, General Manager (I/C) of Rajmahal Opencast Mine showed the Court the site where the accident had occurred and explained in detail with the help of the plan of the accident site prepared by the management immediately after the accident.
- 3.0 It was found that overburden dump had been adequately benched after the accident. At the time of inspection, no work was being done at the accident site. The height of overburden dump had since been reduced to 64metres. It was also explained by Shri D.K.Nayak, General Manager (I/C) that the dump had been formed on the upthrow side of the fault after complete extraction of coal and on the date of accident coal was being extracted on the down throw side of the fault.
- 4.0 The Hon'ble Court asked the management to submit the copies of the proposals along with plans submitted by the management to DGMS for obtaining various permissions connected with this accident under the Coal Mines Regulations, 1957 along with copies of the permissions obtained from DGMS.

- 5.0 After inspection of the site of accident, a meeting was held at about 7:30 P.M. in the Guest house of Rajmahal project of M/s ECL. Names and designations of the persons present in the meeting are at Annexure-II.
- 6.0 Shri D.K.Nayak, General Manager (I/C) of Rajmahal Opencast Mine presented a power point presentation regarding the details of workings of Rajmahal Opencast Mine.
- 7.0 The Court asked Shri D.K.Nayak, General Manager (I/C) of Rajmahal Opencast Mine to submit following documents to the Member Secretary, Rajmahal Court of Inquiry by 08.11.2019:
- Management structure of the mine specifying responsibility and accountability of every person as required under Regulation 8A of the Coal Mines Regulations, 1957.
 - Dates of submission and approval of initial project report and expansion proposals thereof along with their copies & period of formation of overburden dumps on the up throw side of the fault that led to this accident.
 - Report of the High Power Committee constituted by Ministry of Coal to enquire in to this accident.
 - Initial/Periodical Medical Examination & Vocational Training details of the deceased persons in the accident.
 - Photographs taken by the management immediately after the accident.
 - List of DGMS seizures
 - Workmen's Inspector reports of the year 2016.

Sd/-

(Shri Ravindra Sharma)
Assessor

Sd/-

(Shri Akhter Javed Usmanee)
Assessor

Sd/-

(Smt. Rashmi Verma)
Chairperson

ANNEXURE-I

Name and Designation of persons present during the inspection of the site of accident by the Hon'ble Court on 22.10.2019 at Rajmahal Opencast Mine of M/s Eastern Coalfields Limited:

Sl. No.	Name	Designation	Signature
1	Sri D.K.Sahu	DDG, HQ & CZ, DHN	
2	Sri B. Papa Rao	DDG	
3	Sri N.P.Deori	DMS	
4	Sri J.N.Biswal	GM (Safety)	
5	Sri D.K.Nayak	GM (I/c)	
6	Sri Kishore Kumar	GM (Op)	
7	Sri B.B.P. Singh	GM (PCD & L)	
8	Sri H.K.Choudhary	APM	
9	Sri S.A.Rao Yadav	Ch.Mgr (Per)	
10	Sri P.R.Tripathi	ISO, ECL	
11	Sri C.K.Bera	ISO, ECL	
12	Sri D.Ghosh	ISO, ECL	

13	Sri S.Mukherjee	ISO, ECL	
14	Sri S.R.P. Verma	Area Safety Officer	
15	Sri Satish Murari	Mine Manager	
16	Sri O.P.Choudhary	Safety Officer	
17	Sri A.K.Mishra	Area Survey Officer	
18	Sri Damodar Ram	Survey Officer	
19	Sri S.Murmu	Area Sales Manager	
20	Sri Nandan Kumar	Surveyor	

ANNEXURE-XI

RAJMAHAL COURT OF INQUIRY

NAMES AND DESIGNATIONS OF PERSONS PRESENT IN THE MEETING ON 22.10.2019

Sl. No.	NAME (S/Shri)	DESIGNATION
1	Dinesh Kumar Sahu	DDG, HQ, DGMS
2	B. Papa Rao	DMS, DGMS, Eastern Zone
3	N.P.Deori	DMS, DGMS, Eastern Zone
4	D.K.Nayak	GM (In-charge), Rajmahal Opencast Mine
5	Kishore Kumar	GM (Operations), Rajmahal Opencast Mine
6	H.K.Choudhary	APM, Rajmahal Opencast Mine
7	S.A.Rao Yadav	Chief Manager (Per), Rajmahal Opencast Mine
8	P.R.Tripathi	ISO, M/s ECL
9	C.K.Bera	ISO, M/s ECL
10	S.Mukherjee	ISO, M/s ECL
11	S.R.P. Verma	Area Safety Officer, Rajmahal Opencast Mine
12	Satish Murari	Manager, Rajmahal Opencast Mine
13	O.P.Choudhary	Safety Officer, Rajmahal Opencast Mine
14	A.K.Mishra	Area Survey Officer, Rajmahal Opencast Mine
15	S.Murmu	Area Sales Manager, Rajmahal Opencast Mine
16	Nandan Kumar	Surveyor, Rajmahal Opencast Mine
17	Malyaz Singh	Dy.Mgr (E&T), Rajmahal Opencast Mine
18	D. Ram	Assistant Manager (Survey), Rajmahal Opencast Mine
19	D. Ghosh	ISO, M/s ECL

ANNEXURE-XII

On 29.07.2016 and 30.07.2016. The reasons of occurrence of 2nd modification of pit limit line/cut area was as follows.

Dahernangi Patch is bounded by Departmental Patch in western side and by RCML Patch on eastern side. The approach road to this Patch was provided after removal of OB within the Departmental Patch and modified the pit limit 1st time duly approved by ECL Board in its 286th meeting, held on 23.02.2016. The coal and OB from southern part of Dahernangi OC Patch has been extracted by modifying the 1st pit limit line. The northern part of Dahernangi OC Patch could not be extracted due to existence of old OB Dump and for this extraction, it is required to make another approach road by modifying the pit limit 2nd time as the previous approach road would not be preferable for geo-mining condition and for steep gradient would be unsafe for plying of HEMM. Area authority again proposed a 3rd modification of pit limits line/cut area along with 3rd Deviation Estimate for this work. The reasons of occurrence of 3rd modification of pit limit line/cut area are as follows:

The OB Dumps contain clay and its water absorbing capacity is more. The overburden becomes as good as black cotton soil, so the Dump is sliding frequently. Earlier also this type of slides had occurred and had entrapped one shovel. Hence, to ensure safety at the working of 20 Million Patch (Deharnangi Patch) and OB Re-handling from the dumping is required. If OB re-handling is not done, then about 2.20 M.Te of coal of 20 Million Patch would be blocked & approx. Rs. 300.00 per Tonne profit would be lost. Apart from the above OB Dump, re-handling is emergent by outsourcing for the following unavoidable circumstances:

1. Deployment of Departmental HEMM for re-handling of OB Dump is not possible at a high altitude area for maintaining benches according to DGMS Permission.
2. The OB transportation roadway and site of Dump would be common for this re-handling OB and for the OB of 20 Million Patch. So, movement of Departmental Haul Pack and contractual dumper would be on the same roadway which is surface.
3. Side slope of the Dump is required to be maintained at an angle of 36 degree to avoid further slide of Dump.
4. RCML Patch where at present Departmental equipment are deployed is far away (about 2.6. Km) from the site of Dump. So, it is very difficult to shift heavy machineries for operation to this site.

It is recommended to execute the above re-handling job by the existing contractor of Dahernangi OC Patch. i.e. M/s MIPL-NKAS (JV). It is not feasible to engage another contractor to execute the job as the new tender may take considerable time for finalisation and there is immediate danger to men and machinery due to collapse of OB Dump. So, in order to maintain production, the existing contractor may be engaged.

The 3rd deviated amount is Rs. 253.80 Crore, which is 9.065% below the awarded amount. 3.75% above the 2nd deviated amount and 8.01% below the 1st Deviation Estimate. The L-1 & L-2 status has been examined and seen that L-1 status remains L-1. The agreement provides for such type of deviation. The contractor M/s MIPL-NKAS (JV) vide letter dtd. 22.11.2016 also agreed to execute the work in the 3rd proposed modified limit line and 3rd Deviation Estimate at the existing rate, terms and conditions of the agreement.

(ii) In view of above, considering the agreement provision and targeted production of the Company, Board after detailed deliberation approved the proposal for:

- (a) 3rd modifications of pit limit line as proposed by Area.
- (b) 3rd deviation estimate for an amount of Rs. 253.80 Crore, which is 9.065% below the awarded amount and 3.75% above the 2nd deviated amount and 8.01% below the 1st Deviation Estimate. Board noted that the deviated amount is excluding escalation/de-escalation and Service Tax, which would be paid additionally over and above the deviated amount as per the terms and conditions of the agreement brought out in the agenda.

294.03 (Y) 2nd Deviation Estimate for change in lead for coal transportation from face to P.S. Siding at a lead distance of 13-14 Km in Sector-2A (Part-B) being worked by M/s. Mahalaxmi Nilkanth (JV).

ANNEXURE-XIII

Dated 29.07.2013

Letter No. ECL/HQ/TS/
General Manager(Excv)
General Manager(MM)
General Manager(Safety))
General Manager(P&P)
General Manager(S&M)
General Manager(LRE)
General Manager(F)/IC
General Manager(CMC)
General Manager(P&IR)

ECL HQ.

All Area General Managers,

ECL

Dear Sir,

Sub: Minutes of the 77th Meeting of CMDs held on 8th July, 2013.

CGM/TS to Chairman, CIL has forwarded the minutes of the **77th meeting of CMDs held on 8th July, 2013** with a request to furnish the **Action Taken Report** on the points discussed in the meeting. The relevant extract of the Minutes related to your department is enclosed herewith for furnishing the **ATR** positively by 2nd August, 2013 for perusal of CMD and onward transmission to CIL.

Yours faithfully

(Niladri Roy)

GM(T&MS)/TS to CMD

Encl: As above.

CMDs after prolonged discussion on the above, opined implementation of the circular should not be with retrospective effect shall be with prospective effect. As such, it was decided that NCL shall go ahead as per NIT

Action: CMD NCL

3.0 ATR on the points discussed in the earlier Meeting of CMDs:

ATR of all the points, as brought out in the agenda note, were noted CMDs.

Action: All CMDs/FDs, CIL

- 4.0 CMD, BCCL/NCL raised the issue of procurement and installation of Radar for monitoring of OB dump movement as per directives given by DGMS subsequent to the sliding of OB Dump at Jayant OCP, NCL. He mentioned that tendering was done but it could not be finalized due to a complaint from a party regarding extra condition of Camera beyond DGMS requirement. Moreover, it was also clarified that while the system is strict vigilant on the movement of one side of the Dump, the other side remained unwatched and in the absence of forecast, the possibilities of sliding on the other side cannot be eliminated.

In this connection, CMD, WCL mentioned that Installation of Radar system needs to be relooked. Moreover, installation of Radar would incur huge cost (approx. Rs. 8.00 crores in each Project), which will further deteriorate the economics in the case of WCL Projects, where trend of cost plus basis of the project is insisted upon.

After prolonged discussion on the above issues, it was decided that the subject matter would be taken up with DGMS. Chairman, CIL advised that the DT, CIL would take the lead on this and take up the matter for getting clarification from DGMS. As such, action for procurement and installation of Radar is kept on hold and subject to clearance from DGMS, further action would be taken.

Action: DT, CIL

- 5.0 CMD, BCCL/NCL informed that CBI has conducted raid in some of the Washeries of BCCL and asked the management to measure the quantum of slurry lying in the pond and rejects lying deposited at washery premises since last 60-70 years. The measurement may be done by CMPDI but in the absence of Floor R.L./Contour Plan, CMPDI is unable to measure. Since the measurement of the stock / rejects is continued for the last 60-70 years, the exact contour plan is not readily available. However he requested CMPDI to evolve a mechanism, either by taking into account the past 60-70 years record or any other method conducive to the presently available technical know-how.

ANNEXURE-XIV

moved pit benches. Had the dump failed first, all the pit benches would have been covered with dump material.

- vi) Due to delay in land acquisition, the project was facing the problem of dumping space for many years. The top benches were not being advanced due to rehabilitation problems and management was using the space available inside the quarry for OB dumping, although the height of the dump created over the de-coaled area (north of the F8 fault at Kaveri Sump) was about 140 m from the floor of the de-coaled quarry. The south side of this dump later failed resulting in the loss of life and machineries.
- vii) Due to presence of unidentified faults/shear zones in Deep Mining Zone, appropriate scientific investigation for determining the method of working in the area and more intensive monitoring of bench movement of batter wall and internal dump was required. However, Committee did not find any serious attempt by area or HQ officials for considering the application of slope monitoring system.
- viii) Actions which were required for compliance of statutory provisions with respect to working near faults and slope monitoring were not considered seriously by the mine officials. In spite of incidences of slope/dump failures in the past, the issue was not addressed in the Safety Committee Meetings or ISO inspections appropriately. Inspections by the statutory personnel of the mine, in the Deep Mining Zone, lacked quality and objectivity. Even the maintenance of inspection records were not proper. It was also observed that DGMS has not specifically pointed out these violations in their inspection reports. A copy of recent violations, given during inspection by DMS Sitarampur is enclosed at **Annexure-22**.
- (ix) It has been observed by the Committee that the said outsourced patch was mostly supervised by contractual supervisors, who were not competent as per the provisions of CMR, 1957. The cross examination also revealed that the charge handover on important statutory positions or competent level of management in the area, did not include the safety aspects of the mine.
- (x) The incidences of the dump/slope failures in the past as well as the statutory provisions necessitated the real time monitoring of the slopes, on 24 x 7 basis. It has been noted that the proposal was initiated for procurement of 3 slope stability monitoring system one each for Sonapur Bazari OCP, Rajmahal Project and SP Mines Area of ECL on 29.03.2011 but the same never materialized, citing the requirement of some clarification from DGMS. DGMS has, however vide their Technical Circular no. 8 of 2013, dated 23.09.2013 had clarified the issue. In spite of the clarification from DGMS, no further action was taken.
- (xi) Even the records of monitoring of cracks by conventional method, adopted in the mine, were not properly maintained.

ANNEXURE-XV

RAJMAHAL COURT OF INQUIRY

LIST OF DOCUMENTS RECEIVED IN THE COURT

Sl. No.	RECEIVED FROM	DATE OF SUBMISSION/ REF.	SUBJECT
1.	Shri R. Subramanian CIM/DG (O), DGMS	18.12.2019	Copy of Report of Inquiry conducted by DGMS into the fatal accident that occurred in Rajmahal Opencast Mine on 29.12.2016 – 3 Volumes (Volume I – 126 pages, Volume II- 279 pages, Volume-III – 19 pages, one accident plan and two sections).
2.	Shri Niranjana Sharma, the then Director of Mines Safety, EZ, Sitarampur.	19.12.2019	Copy of Report of Inquiry conducted by DGMS into the fatal accident that occurred in Rajmahal Opencast Mine on 29.12.2016 – Volume-I – 126 pages.
3.	Shri P. K. Sarkar, the then DDG, HQ, DGMS.	19.12.2019	Copy of Report of Inspection made by S/Shri P.K. Sarkar, DDG(HQ), S.S. Prasad, DMS (S&T) and K. Gyaneswar, DDMS, HQ in Rajmahal OCP of M/s ECL on 31.12.2016 in connection with the fatal accident that occurred on 29.12.2016 – 11 pages.
4.	Shri Sujit Bhattacharjee, Vice President, CMS	19.12.2019	Copy of Inspection Report in respect of disaster in Bhorai deep mines of Rajmahal OCP – 16 pages.
5.	Shri R. K. Sharma	20.12.2019	Copy of letter of the year 2015 from Shri Ashutosh Chakraborty to the Director, DGMS, Dhanbad regarding violation of Safety Rules in Rajmahal Coal Mines Area – 03 pages.
6.	Shri J.N.Singh, Individual	30.01.2020	A Plan of Deep Mining Zone of Rajmahal Opencast Project showing yearwise Reduced Levels of OB dump.
7.	Shri Sujit Bhattacharjee, Vice President, CMS.	CMSI/2020/RCOE/05 dated 30.01.2020	Observations on the Inquiry Report of DGMS, Dhanbad – 3 pages.
8.	Shri B.N.Shukla, the then Director (Technical) Operations, M/s ECL	31.01.2020	(i) Copy of monthly coal production report – 01 page. (ii) Copy of proposal for hiring of HEMM for re-handling of 17.30 lakh cu.m. OB dump lying on the north side of 20M patch – 22 pages.
9.	Shri D. K. Nayak, the then Agent, Rajmahal Opencast Mine	31.01.2020	Plans of Rajmahal Opencast Mine - 02 Nos.
10.	CMD, CMPDI, Ranchi	31.01.2020	Copy of Report of High Powered Committee into the accident that occurred on 29.12.2016 in Deep Mining Zone of Rajmahal Opencast Mine: (a) Volume-I – 4 sets – 70 pages. (b) Volume-II – 4 sets – 237 pages.
11.	CMD, CMPDI, Ranchi	01.02.2020	A Pendrive containing soft copy Report of HPC into the accident that occurred on 29.12.2016 in Deep Mining Zone of Rajmahal Opencast Mine.
12.	Shri P.N.Mishra,	GS/INMOSSA/Court of Enquiry/2020/108 dated	Submission of observations of INMOSSA – 31 pages.

	General Secretary, INMOSSA.	27.01.2020, submitted on 01.02.2020	
13.	Shri Pramod Kumar, the then Manager, Rajmahal Opencast Mine	01.02.2020	(i) Copy of letter No. RJML/GM (OP)/MGR/231 dated 20.12.2013 regarding Geotechnical study for optimum dump slope design at Rajmahal OCP, Rajmahal Area – 1 page. (ii) Slope stability and scientific study by outside Agency for 20 Mil. Cum OB patch executed by M/s MIPL-NKAS (JV) vide work order No. ECL/HQ/CMC/WO/ Daharngi OC Patch/502 Dt. 10.06.2015 (Copy of letter No. ECL/RJML/OCP/ SURV/180 dated 06.01.2016) – 01 page. (iii) A copy of CMD letter No. ECL/C-5 (D)/113A/2774/33 dated 03.04.2018 – 02 pages.
14.	Shri D. Ram, Asst. Manager (Survey), Rajmahal Opencast Mine	11.02.2020	(i) Report of slope stability for Rajmahal OCP, Godda, Jharkhand – July 2019 prepared by Department of Mining Engineering, Indian Institute of Technology, Banaras Hindu University, Varanasi – 39 pages. (ii) Final Report on Dump Slope stability for Rajmahal OCP, Godda, Jharkhand – June 2018 prepared by Department of Mining Engineering, Indian Institute of Technology, Banaras Hindu University, Varanasi – 40 pages.
15.	Shri Ejaz Hussain Ansari, the then Mining Sirdar, Rajmahal Opencast Mine.	11.02.2020	A hand Plan showing the distance of various working places in the mine.
16.	Shri Sujay Kumar, the then Overman, Rajmahal Opencast Mine	11.02.2020	A hand Plan showing the distance of various working places in the mine.
17.	DG, DGMS	DG/P/CMC/116 dated 24.01.2020:	(i) Copy of documents related to launching of prosecution by DGMS in CJM Court, Godda – 277 pages. (ii) Copy of details of inspections of Rajmahal Opencast Mine made by DGMS officials (Mining Discipline) from the year 2005 to 06.01.2020 (including a workshop regarding the formulation of Safety Management Plan held on 26 th & 27 th September, 2016) – 453 pages. (iii) Copy of details of inspections of Rajmahal Opencast Mine made by DGMS officials (Mechanical discipline) from the year 2005 to 06.01.2020 – 119 pages. (iv) Copy of details of inspections of Rajmahal Opencast Mine made by DGMS officials (Electrical discipline) from the year 2005 to 06.01.2020 – 180 pages.
18.	DDG, EZ, Sitarampur	EZ/DDG/2019/1563 dated 07.11.2019	(i) Other documents: (a) Copy of Form-D of the deceased persons - 10

			<p>pages.</p> <p>(b) Copy of Medical Examination Reports of the deceased persons .- 46 pages</p> <p>(c) Copy of Form B of the deceased persons - 23 pages.</p> <p>(d) Copy of Safe Operating Procedures - 16 pages.</p> <p>(ii) Copy of Recommendations of High Powered Committee – 04 pages including a plan.</p> <p>(iii) Copy of blasting reports (from 18.10.2016 to 28.12.2016) – Vol.1: 102 pages, Vol.2: 108 pages.</p> <p>(iv) Copy of statements recorded by Inquiry Officers of DGMS-279 pages.</p> <p>(v) Copy of inspection reports made by DGMS officials between 01.01.2015 and 29.12.2016 - 81 pages.</p> <p>(vi) Copy of Coal Production Reports:</p> <p>(a) Monthly production reports (from April, 2014 to November, 2016) - 46 pages</p> <p>(b) Daily production reports (from 01.07.2016 to 31.12.2016) – Vol. 1: 133 pages, Vol.II: 124 pages, Vol.III: 125 pages.</p> <p>(vii) Copy of documents related to 2nd Modification of pit limit along with 2nd deviation for the work of hiring of HEMM for removal of 200.00 lakh cu.m. OB and 70.00 lakh tonne Coal at Dahernangi Patch - 30 pages.</p> <p>(viii) Copy of documents related to 3rd Modification of pit limit along with 3rd deviation for the work of hiring of HEMM for removal of 200.00 lakh cu.m. OB and 70.00 lakh tonne Coal at Dahernangi Patch - 45 pages.</p> <p>(ix) Copy of agreement between M/s ECL and M/s MIPL-NKAS (JV) for removal of OB and coal at Dahernangi Patch - 112 pages.</p> <p>(x) Copy of documents related to proposal for hiring of HEMM for re-handling of 17.30 lakh cu.m. OB along F-8 fault on north side of 20M patch - 07 pages.</p> <p>(xi) Copy of Statutory Diaries of :</p> <p>(a) Shri Pramod Kumar, the then Manager (3Nos) - 1- 53 pages, 2-58pages, 3-35 pages.</p> <p>(b) Shri S.P. Barnwal, the then Safety officer (2Nos.) - 1- 47 pages, 2- 43 pages.</p> <p>(c) Shri Vijay Kumar Singh, the then Assistant Manager (1No.) - 56 pages.</p> <p>(d) Shri N.K. Sinha, the then Assistant Manager (1No.) - 28 pages.</p> <p>(e) Shri Dilip Roy, the then Assistant Manager (1No.) - 36 pages.</p> <p>(f) Shri Sudhir Prasad Singh, the then Assistant Manager (1No.) - 46 Pages.</p> <p>(g) Shri Padma Charan Dhar, the then Dy. Manager (1No.) - 15 pages.</p>
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			<p>(h) Shri Naresh Prasad, the then Blasting Officer (1No.) - 20 pages.</p> <p>(i) Shri Prasun Kujur, the then Overman (1No.) - 13 pages.</p> <p>(j) Shri P.N. Mishra, the then Mining Sirdar (1No.) - 14 pages.</p> <p>(xii) Copy of Minutes of Safety Committee meetings (from June, 2016 to November, 2016) - 06 pages.</p> <p>(xiii) Copy of CIMFR Report on high wall slope stability of Lalmatiya Hill, April, 2011- 22 pages.</p> <p>(xiv) Copy of Workmen's Inspector register in Form-U - 43 pages.</p> <p>(xv) Copy of action initiated by DGMS against the officials of Rajmahal Opencast Mine of M/s ECL- 01 page.</p> <p>(xvi) Copy of:</p> <p>(a) Working Plan - 01 No.</p> <p>(b) Water danger plan - 01 No.</p> <p>(c) Geological Plan - 01 No.</p> <p>(d) Working Plan of 20 Million Patch (01.01.2017) - 01 No.</p>
19.	DDG, EZ, Sitarampur	EZ/DDG/2019/1751 dated 11.12.2019	<p>(i) Copy of Statements recorded by DGMS during enquiry - 3 sets - 279 pages each.</p> <p>(ii) Copy of reports of inspections made by officials of DGMS during period from January, 2011 to 29th December, 2016 – 3 sets - 45 pages each.</p> <p>(iii) Copy of letter of award [Ref. No. ECL/HQ/CMC/LOA/Dahernangi OCP (RJML)/106 dated 10.02.2015] and work order [Ref. No. ECL/HG/CMC/W.O./ Dahernangi OCP Patch/502 dated 10.06.2015] regarding hiring of HEMM for removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal at Dahernangi Patch of Rajmahal Area [3 sets - 7 pages each].</p> <p>(iv) Copy of Modification of Pit Limit/Cut Area for the work of hiring of HEMM for removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal at Dahernangi Patch of Rajmahal Area [3 sets - 9 pages each].</p> <p>(v) Copy of 2nd modification of pit limit line along with 2nd deviation estimates for the work hiring of HEMM for removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal at Dahernangi Patch of Rajmahal Area [3 sets - 31 pages each].</p> <p>(vi) Copy of 3rd modification of pit limit line along with 3rd deviation estimates which necessitated due to execution re-handling OB to avoid further slide of dump for work of hiring of HEMM for removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal at Dahernangi Patch of Rajmahal Area [3 sets - 46 pages].</p> <p>(vii) Copy of 13th R.A. Bill for hiring of HEMM for</p>

			<p>removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal at Dahernangi Patch of Rajmahal Area from inspection till 31.10.2016 [3 sets - 8 pages each].</p> <p>(viii) Copy of explosive consumption record from 26.07.2016 till 11.08.2016 [3 sets - 4 pages each].</p>
20.	DDG, EZ, Sitarampur	EX/DDG/2019/37 dated 10.01.2020	<p>ANNEXURE-A:</p> <p>(i) Copy of Form-D of M/s MIPL- NAKS (JV) – 103 pages.</p> <p>(ii) Copy of Form-E of M/s MIPL- NAKS (JV) – 74 pages.</p> <p>(iii) Copy of Form-B of M/s MIPL- NAKS (JV) – 23 pages.</p> <p>(iv) Copy of daily Blasting Records at M-20 (MIPL) Patch (from 18.10.2016 to 29.12.2016) – 105 pages.</p> <p>(v) Copy of daily Blasting Records at RCML Patch (from 15.12.2016 to 29.12.2016) – 59 pages.</p> <p>(vi) Copy of daily Blasting Records at Departmental Patch (from 26.08.2016 to 29.12.2016) – 79 pages.</p> <p>(vii) Copy of Form-32 Receipt of Explosives (SME) (from 01.08.2016 to 29.12.2016) – 70 pages.</p> <p>(viii) Copy of stock Register (Nonel & Booster) (from 09.11.2016 to 29.12.2016) – 54 pages.</p> <p>(ix) Copy of Explosive Transit Slips (from 22.12.2016 to 29.12.2016) – 08 pages.</p> <p>(x) Copy of Explosives Consumption at RCML Patch (from October, 2013 to December, 2016) – 77 pages.</p> <p>(xi) Copy of Statutory Diaries of</p> <p>(a) Shri Naresh Prasad – 19 pages.</p> <p>(b) Shri Sudhir Prasad Singh – 38 pages.</p> <p>(c) Shri Prasoon Kujur – 13 pages.</p> <p>(d) Shri A. Banerjee – 16 pages.</p> <p>(e) Shri M.P.Harijan - 16 pages.</p> <p>(f) Shri P.N.Mishra – 14 pages.</p> <p>(g) Manager's Diary - 03 Nos. 144 pages.</p> <p>(h) Area Safety Officer's Diary – 43 pages.</p> <p>(i) N.K.Sinha – 27 pages.</p> <p>(j) Safety Officer – 89 pages.</p> <p>(k) Dilip Roy, the then Asst. Manager – 32 pages.</p> <p>(l) P.C. Dhar, the then Asst. Manager – 14 pages.</p> <p>(m) Vijay Kumar, the then Asst. Manager -55 pages.</p> <p>(xii) Copy of Mine Plan showing the location of place of blasting – 01 No.</p> <p>(xiii) Copy of Explosive SME Challan for the month of December, 2016 – 777 pages.</p> <p>(xiv) Copy of Surface Plan – 01 No.</p> <p>(xv) Copy of Working Plan – 01 No.</p>

			<p>(xvi) Copy of Geological Plan – 01 No.</p> <p>(xvii) Copy of Water Danger Plan – 01 No.</p> <p>(xviii) Copy of 2nd modification of pit limit along with 2nd deviation, estimate for removal of 200.00 lakh cu.m. OB and extraction of 70.00 lakh tonne of Coal, letter No. ECL/HQ/CMC/2016/771 dated 26.08.2016, letter No. ECL/HQ/ CMC/1046 dated 29.12.2016, etc. – 94 pages.</p> <p>(xix) Copy of Contract Agreement – 111 pages.</p> <p>(xx) Copy of letter No. MIPL/Coal/RCMP/152 dated 04.09.2016 – 21 pages.</p> <p>(xxi) Copy of letter of MIPL- NKAS (JV) letter dated 16.10.2016 to GM (I/C) – 01 page.</p> <p>(xxii) Copy of Running Account Bills, 1st, 10th, 11th, 12th, and 13th RA Bills – 37 pages.</p> <p>(xxiii) Copy of Survey Report (24.10.2016 to 24.11.2016) – 03 pages.</p> <p>(xxiv) Copy of Strata Movement Measurement Book (16.02.2016 to 26.02.2016) - 28 pages.</p> <p>(xxv) Copy of SME Register No.3 (02.07.2016 to 29.12.2016) – 44 pages.</p> <p>(xxvi) Copy of Form-I of Manager, Surveyor, Assistant Manager, Blasting Officers, Safety Officer, Colliery Engineer – 18 pages.</p> <p>(xxvii) Copy of SOPs – 16 pages.</p> <p>(xxviii) Copy of Minutes of Safety Committee Meetings form Aug – Nov, 2016 – 06 pages.</p> <p>(xxix) Copy of Form-O of deceased – 46 pages.</p> <p>(xxx) Copy of machine deployment details of M/s MIPL- NKAS (JV) – 01 page.</p> <p>(xxxi) Copy of Workmen's Inspector Report – 87 pages.</p> <p>(xxxii) Copy of Monthly Production Register (from 2014 – Nov. 2015) – 65 pages.</p> <p>(xxxiii) Copy of Daily Production Register from (01.07.2016 – 29.12.2016) – 387 pages.</p> <p>(xxxiv) Copy of Mine Control Room Register– 1524 pages.</p> <p>(xxxv) Copy of Excavator belonging to M/s MIPL Examination Record– 08 pages.</p> <p>(xxxvi) Copy of MIPL Vehicle Examination Record– 10 pages.</p> <p>(xxxvii) Copy of Documents related to modification of contract– 128 pages.</p> <p>(xxxviii) Copy of Form-E (General), M/s MIPL-NKAS (JV) (from 01.12.2016-31.12.2016) – 10 pages.</p> <p>(xxxix) Copy of Explosives Delivery Order and Loading Sheets– 147 pages.</p> <p>ANNEXURE-B:</p> <p>(i) Copy of permission granted vide letter No. S4/03/26/006/II-B/87/1182, Sitarampur dated 08.04.1987 - 11 pages.</p>
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21.	DDG, EZ, Sitarampur	EZ/DDG/2020/266 dated 22.05.2020	Copy of Note & related papers regarding Inquiry under Regulation 26 of the CMR, 1957 against delinquents in respect of fatal accident to 23 contractor workers at Rajmahal Opencast Mine of M/s ECL – 03 pages.
22.	Director of Mines Safety (Exam)	Exam/2020/400 dated 10.02.2020	Copy of the Inquiry Report conducted under Regulation 26 of the CMR, 1957 related to the fatal accident that occurred at Rajmahal Opencast Mine of M/s ECL on 29.12.2016 -15 pages.
23.	Director of Mines Safety (Exam)	Exam/2020/761 dated 12.03.2020	Copy of entire proceedings in respect of inquiry conducted under Regulation 26 of the CMR, 1957 related to the fatal accident that occurred at Rajmahal Opencast Mine of M/s ECL on 29.12.2016 – 96 pages.
24.	Director of Mines Safety (Exam)	Exam/2020/272 dated 01.06.2020	Copy of Note-sheet in respect of inquiry conducted under Regulation 26 of the CMR, 1957 related to the fatal accident that occurred at Rajmahal Opencast Mine of M/s ECL on 29.12.2016 – 4 pages.
25.	GM (Safety), M/s ECL	ECL/Safety/Rajmahal COI /13 dated 07.01.2020	Copy of statements submitted to the Chief Inspector of Mines and Regional Inspector of Mines by the Owner of Rajmahal Opencast Mines showing Names and designations of persons authorized to act on behalf of the Owner in respect of management, control, supervision and direction – 06 pages.
26.	GM (Safety), M/s ECL	ECL/Safety/Rajmahal Court of Inquiry/ dated 17.01.2020	<p>(i) Copy of contract deed, work order issued to contractors – 3 sets, 117 pages each.</p> <p>(ii) Copy of statements taken by ISO after accident – 3 sets, 164 pages each.</p> <p>(iii) Copy of statements taken by High Powered Committee – 3 sets, 92 pages each.</p>

27.	GM (Safety), M/s ECL	ECL/GM (Safety)/2019-20/122 dated 10.02.2020	(i) Copy of names and designations of persons who worked as Owners of M/s ECL for the purpose of Mines Act, 1952 from 1975 to 1984 - 01 page. (ii) Copy of blast induced ground vibrations monitoring reports - 23 pages. (iii) Copy of environmental clearance for increasing production from 10.5 MT to 17.00 MT- 06 pages.
28.	GM (Safety), M/s ECL	ECL/GM (Safety)/2019-20/123 dated 10.02.2020	Copy of Note of inspection prepared by Sri B.N. Shukla, the then Director (Technical) Operations of M/s ECL in respect of his visit with CMD of Rajmahal OCP on 26.12.2016 - 01 page.
29.	GM (Safety), M/s ECL	ECL/GM/Safety/Rajmahal COI/196 dated 06.03.2020	(i) Copy of Minutes of the 294 th Meeting of Board of Directors of M/s ECL held on 30.11.2016 - 10 pages. (ii) Copy of Work Order for re-handling of 13.44 lakh Cu.m. OB from Dahernangi Patch - 8 pages. (iii) Copy of status of procurement of Slope Stability Radars - 02 pages. (iv) Scientific Study Report of Rajmahal Opencast Mine - 46 pages.
30.	GM (Safety), M/s ECL	ECL/Safety/Rajmahal/COI/229 dated 16.03.2020	(i) Copy of proposal for re-handling of 1.344 million cu.m. OB from Dahernangi Patch - 1 page.
31.	GM (Safety), M/s ECL	ECL/GM/Safety/Rajmahal/228 dated 16.03.2020	(i) Copy of action taken by M/s ECL against employees in connection with accident that occurred at Rajmahal Opencast Mine on 29.12.2016 - 4 pages. (ii) Copy of delegation of financial powers approved by Board of Directors of M/s ECL from 2011-12 to 2016-17 - 25 pages.
32.	GM (Safety), M/s ECL	Vide E-mail dated 16.03.2020	(i) Copy of letter No. ECL/RJML/OCP/ MGR/653 dated 05.03.2020 of Mine Manager, Rajmahal Opencast Mine - 01 page. (ii) Copy of delegation of financial powers of Chairman & Functional directors of M/s Coal India Limited - 13 pages.
33.	Mine Manager, Rajmahal Opencast Mine	ECL/RJML/GM(OP)/MGR/375 dated 7.11.2019	(i) Copy of seizure of documents By EO of DGMS after accident - 04 pages. (ii) Copy of permission for rescue and recovery obtained from DGMS - 03 pages. (iii) Copy of organization structure of Rajmahal OCP - 01 page. (iv) Copy of DGMS official inspection report for last two years - 55 pages. (v) Copy of Project Report 10.5 MTY to 17.5 MTY - 229 pages. (vi) Copy of IME/PME and VTC of persons involved in accident - 69 pages. (vii) Copy of High Powered Committee Report - 71 pages. (viii) Copy of proposal approved by Board for approval and extension of M/s MIL excavation at Dahernangi Patch accident site - 24 pages. (ix) Copy of blasting records at Daherngagi OB dump site for the month of January, 2016 - 01 page.

			<p>(x) Copy of three years coal production record from Dahernangi Patch – 01 page.</p> <p>(xi) Copy of 10 years Rain fall record– 01 page.</p> <p>(xii) Copy of photographs taken after accident – 08 Nos.</p> <p>(xiii) Copy of CIMFR study Report (2011-12) for stability of Highwall slope – 22 pages.</p> <p>(xiv) Copy of proposal of management to DGMS for different permissions – 56 pages.</p> <p>(xv) Copy of Minutes of Safety Committee – 23 pages.</p> <p>(xvi) Copy of Accident Plans – 03 Nos.</p> <p>(xvii) Copy of statement recorded by ISO officials – 171 pages.</p> <p>(xviii) Copy of Action taken on officials of Rajmahal Opencast Mine – 23 pages.</p>
34.	Mine Manager, Rajmahal Opencast Mine	ECL/RJML/MGR/OCP/428 dated 08.12.2019	<p>(i) Copy of explosive consumption during period from 20.12.2015 to 05.01.2016 and 26.07.2016 to 10.08.2016 - 02 pages.</p> <p>(ii) Copy of daily OB and Coal Removed/Dispatched – 01 page.</p> <p>(iii) Copy of inspection and visit by the DGMS officials from January 2011 to December 2016 – 52 pages.</p> <p>(iv) Copy of Recommendation made by Committee headed by Sri Utpal Saha, DGMS- 01 page.</p> <p>(v) Copy of modification in original work order and date of commencement -14 pages.</p>
35.	Mine Manager, Rajmahal Opencast Mine	ECL/RJML/MGR/OCP/525 dated 20.01.2020	Copy of hindrance register – 3 sets, 634 pages.
36.	Chief Manager (Personal) Rajmahal Ares	GMI/P&IR/51/2062 dated 16.03.2020	Affidavit dated 07.03.2020 containing information related to payment of ex-gratia, gratuity, pension, etc. to the family members of 23 deceased workers – 44 pages.
37.	Shri Vinesh Dholu, Director, M/s MIPL-NKAS (JV)		<p>(i) Affidavit dated 12.02.2020 containing information related to payment of ex-gratia, gratuity, pension, etc. to the family members of 23 deceased workers.</p> <p>(ii) Affidavit dated 27.02.2020 containing information related to payment of ex-gratia, gratuity, pension, etc. to the family members of 23 deceased workers.</p>