

Outcome from the learning of Mock Drill

S.NO	TYPE OF MOCK DRILL	OBSERVATIONS	LEARNING	OUTCOME
1	Fire in the mine office area	<ul style="list-style-type: none"> • The mock drill has been conducted during shift end period of plant staff handling fire safety and security the response time was observed good and appreciable. • Everybody involved in this exercise has taken necessary precautions in view of COVID19, maintained social distancing and used nose mask all the time. • Good use of latest communication system observed. • All employees involved in mock drill are observed following emergency plan prepared for mines. • It is observed that all are aware about the handling of emergency and followed as per emergency preparedness plan at mines. • No panic situation at site and emergency handled properly with instructions from site controller. 	<ol style="list-style-type: none"> 1. Emergency contact numbers to be displayed at more places. 2. List of first aiders with contact numbers to be displayed. 3. The scheduled time of ambulance to reach is 10 minutes but it reached the site in 15 minutes. 4. When discussed with gathering after clearance of emergency about 10% are not aware about the exact flow of information to be taken place during emergency. 	<p>There is a need of exercise so as to increase awareness amongst all concerns and rescue team members suggested for more practice for smooth and speedy rescue operations. Emergency contact numbers & First aider lists to be displayed at more places. Training on Emergency plan shall be given to all mine employees during refresher training.</p>
2	Accident due to heavy machinery.	<ol style="list-style-type: none"> 1) Emergency declared at 5.15 P.M. by the Shift In-charge Mr. Yogesh, Assistant Mines Manager. 2) Mr. Yogesh immediately informed to Security & Ambulance and his Senior official immediately (within 3 minutes). 3) Senior official reached immediately at the incident location at 05.19 P.M. and took corrective action to prevent any other incident at the same place. 4) Deployed persons at appropriate location to guide the emergency vehicles like Ambulance van and Security vehicle. 5) Ambulance van located at Mines office reached the site of incident at 05.19 P.M. 6) Security reached at the site of incident at 05.23 P.M. 7) Emergency closed at 05.39 P.M. & onsite training on Emergency preparedness & response was imparted 	<ol style="list-style-type: none"> 1) There was curve at the place of incident where one-way traffic road sign need to be displayed. 2) Approach road of the Mines Workshop area needs to be maintained in good condition. 	<ol style="list-style-type: none"> 1) At the turning on haul road required to prepare one-way traffic. 2) Approach road to be maintained in good condition by deploying Motor grader on regular interval. 3) Educated all the workmen about the importance of Mock Drill. <p>How we can handle such type of real situation on the basis of mock drill.</p>

		to the respective employees by Senior Management of Mines.		
3	Drowning of a person in water filled Surjana Pit	<p>After getting the Information that a person was drowning in water filled area of Surjana pit rescue team was called urgently with tubes and ropes, tools & tackles from security camp by Security Supervisor and briefed the situation and they rushed to the site. Meanwhile Ambulance along with Nursing Staff reached the site. Victim was rescued by the Rescued Team Till arrival of Ambulance CPR was given to the victim. Thereafter the victim was shifted to the OHC where instant medical checkup was done by the Nursing Staff and condition of the victim was found normal.</p> <p>Time of commencement :10:45:00 Completion Time : 11:15 :00</p>	As per emergency preparedness plan rescue team reached at site 5 minutes late. Action is being initiated to educate the rescue team to optimize the time management.	The entry of persons in water filled area of the pit should be prohibited by deputing security watchman and displaying caution board and Refresher Training will be imparted to all employees.
4	General Emergency	<p>Mines Manager - 0 Mr Rajesh Ameta (Pump attendant) - 1 minute Mr Kunal Mishra (Shift Incharge -2 Minute Fire-fighting team (Rajesh Salvi- Sec) -2 Minute First Aid Mr Ajeet Singh Ranawat - 1 minute Mr Ajeet Singh Ranawat - 1 minute Mr Sunil Joshi (Electrical Eng) -3 Minute Mr Milind (Mines foreman) - 3 Minute Water tanker - 4 Minute Ambulance- 2 minute</p>	<p>1. Emergency Siren blown but he could not follow the emergency siren guidelines. 2. Even all responsible persons reached at site quickly by hearing siren but security gate in-charge should inform on mobile also to every key persons.</p>	<p>1. Training and Demonstration to the responsible guards. 2. Training & counseling to responsible persons to strict follow the communication guidelines and even they may aware about the emergency but he should call.</p>
5	Fire in drill machine	<p>Response time for fire tender-8.min. Eng. members-5 min. Mines manager-5 min, additional water tanker having pump-15 min</p> <p>observation 1.at the time of mock drill area was not barricaded 2. auto fire protection system was working but in addition to that manual fire extinguisher was not operated because of rush & lack of attentiveness</p>	<p>1. Operator should operate manual fire extinguisher patiently. to extinguish fire 2.mock drill area should be barricaded</p>	<p>1. Ensure all operators should be imparted fire safety training on regular basis. 2.Additional water tanker should be available every time for emergency 3.Area should be barricaded during mock drill</p>

6	An emergency of fire in Dozer was declared	<p>1) Mine foreman informed the Mines Manager about the fire in doze at 2nd bench haul road, then Manager immediately informed to all concerned departments about the incident. Asst. Manager (Drilling & Blasting) controlled the transportation and give information to exact location to security team & fire tender.</p> <p>2) Response time of mine officials and security team was very quick & appreciable. VTO acted as media person and Mines Agent was acting as an incident controller.</p>	Fire tender driver could not be contacted due to some instrument related issued in his mobile instrument.	Contact number of Security In-charge shall be kept ready hand as an alternative in such situation. Awareness to be imparted to mine foreman and mining mates.
7	Fire in Diesel Generator (DG) operated lightning tower	First information regarding fire in DG operated lightning tower kept at mine office premises given by security guard to shift in-charge. Shift In-charge immediately phone to rescue team and first aid team as well as informed to mines manager. Mines manager informed to in-charge medical officer of JK Cement Works. Mine Manager has also informed security department to send the fire tender. Medical officer send ambulance and medical staff.	Ambulance and medical officer reached at site in 30 minutes. Rescue team and Security also reached at time.	A tool box talk has been conducted by shift in-charge in presence of Mines Manager to workmen for proper housekeeping & preventive maintenance of lightning tower DG to avoid such type of incident. It was ensured that every workman should know the operation of fire extinguisher in emergency.
8	Fire in surface Miner	<p>1. Ambulance reached within 10 min</p> <p>2. Fire Tender reached within 10 min</p>	Ambulance and fire tender took more time because of poor road condition.	Road repairing to be done.
9	Fire in rock-breaker machine during rock-breaking operation	Rock breaker operator informed forthwith about the incident to Asst. Manager present on site by telephonically. Asst. manager immediately rushed to the accident site and also inform Mines manager and Emergency team. Mines Manager instructed for blowing siren and gave instruction to immediately start rescue operation. After recovery of injure persons and rendered first-aid and shifted to Hospital by the Ambulance. Total time taken is 20 minutes.	<p>1. Due to leakage of old diesel pipe, the droplets of diesel fell on the hot parts of engine, due to which the fire started.</p> <p>2. Daily pre-check of rock breaker machine was not done carefully.</p> <p>3. Delay in communication given to Asst. manager about the incident</p>	<p>(1).Strong focus on preventive maintenance of machine.</p> <p>(2).Daily pre-check of rock breaker machine will be done before commencement of work.</p> <p>(3).Refresher training on employees responsibilities during emergency.</p>
10	Fire in Loading machine	<p>1. On seeing the accident, machine operator shut his m/c and trying to come out. Another dumper driver rescued him effectively.</p> <p>2. The dumper driver took out the victim operator from the machine and put on clean ground</p> <p>3. Mine Foreman gave first aid at site by bandage.</p>	<p>1. Delay in communication due to poor network connectivity.</p> <p>2. Every person were trying to support because of this everybody is instructing so it is creating confusion in the persons who were acting.</p>	<p>Responsibility is to be clearly defined and demonstrated.</p> <p>Awareness to be increased.</p> <p>Flow of Information is required</p>

		<p>4. Mining Mate and Foreman checked for consciousness of the victim driver.</p> <p>5. Driver of the other dumper stopped his dumper at safe distance and rescued to the victim operator.</p> <p>6. Firefighting done properly by other dumper driver immediately.</p> <p>7. Sufficient fire extinguisher available in machines and all were in working condition.</p> <p>8. Manager informed the Agent (Main incident controller) in time and rushed to the site. The Agent informed to the Doctor for his readiness at his hospital.</p> <p>9. Manager called the Ambulance for taking the victim for medical help. Ambulance came with rescue team.</p> <p>10. Overall response found satisfactory.</p> <p>11. The injured was rescued in safe procedure.</p>	3. Confusion in flow of information for arrangement and reporting.	to be explained to all the workmen.
11	Collision of Vehicle	<p>1. On seeing the accident, loader operator shut his m/c and rushed for rescue</p> <p>2. Loader Operator took out the victim driver from the vehicle and put on clean ground</p> <p>3. Foremen gave first aid at site by bandage.</p> <p>4. Foremen checked for consciousness of the victim driver.</p> <p>5. Driver of the other dumper stopped his dumper at safe distance and observed accident site.</p> <p>6. Firefighting done properly by other dumper driver</p> <p>7. Sufficient fire extinguisher available in machines and all were in working condition.</p> <p>8. Manager informed the Agent in time and rushed to the site. The Agent informed to the Doctor for his readiness at his hospital.</p> <p>9. Manager called the Ambulance for taking the victim for medical help.</p> <p>10. Overall response found satisfactory.</p> <p>11. The injured was rescued in safe procedure</p>	<p>1. The loader operator sought help late took risk to rescue victim driver from a burning cabin.</p> <p>2. Driver of the other dumper came bit late for rescue after stopping his vehicle. He was watching for a few minutes from the distance.</p> <p>3. He took fire extinguisher from the burning dumper. He could take it from his own vehicle.</p> <p>4. Delay in communication by the foreman due to poor network connectivity.</p> <p>5. Without waiting for Ambulance, the manager or available could have used to carry the victim for medical assistance.</p> <p>6. Confusion in flow of information for arrangement and reporting.</p>	<p>More Awareness / training to be given to all field workmen's</p> <p>Flow of Information chart needs to be prepared and provided to respective persons.</p> <p>Mock drills to be conducted at with more preciseness</p>
12	Fire	<p>On 18.08.21 at round 3:15 PM the tipper was parked in queue with engine running at loading area in Pi-06. Mr. Deva Kaya Rabari (Driver- Prima No.6), hearing</p>	<p>1. Shift engineer / shift in-charge reached at affected area delay.</p> <p>2. Safety coordinator reached at site But</p>	<p>Any damage/fault to be rectified through regular periodic inspection and</p>

		some abnormal sound & noticing fire at back side of cabin, got down from the machine keeping the engine running & disconnected the power supply from Battery cut off switch. Meanwhile, Fire extinguisher was also operated as per its functioning. The driver immediately informed the matter to shift in-charge and others concerned. In the meantime, the fire tender reached the site & extinguished the fire.	vehicle is not parked in takeoff mode at sit. 3. Affected area not barricaded for preventing unauthorized entry. 4.No alternate communication system was available like landline phone in Mines Office area, if mobile tower / mobile network have not available	preventive control measures to be taken (preventive maintenance schedule to be strictly followed and ensure m/c safety and reliability).
13	Unauthorized Entry at Mines	1. Entry time of unauthorized person - 11:20 AM 2. Security person ask for entry 11:21 AM 3. Unauthorized person forcefully entered in Mines - 11:23 AM 4. Security informed to mines official and Security Supervisor - 11:25 AM 5. Security Supervisor and Mine Official reached at entry point - 11:30 AM 6. Unauthorized person hold by security Supervisor and Carry out him outside mine leased area - 11:35 AM	1. Security Person was unknown about Unauthorized entry. 2. Security person has not a telephone number of Mine official list. 3. Unauthorized display board was not at entry Gate.	1. Regular Training should be organized in regular interval. 2. Emergency contact list should be display at entry gate. 3. Security stick should be arranged at entry gate. 4. Unauthorized entry prohibited board should be display at entry gate.
14	Inundation	On 20.08.2021, in 2nd shift at around 3:15PM, all of a sudden a dramatic condition was presumed at North-East Lignite Loading Plot of P.C. Patel (Temple area), in which it was conceived that due to improper maintenance of excavator no. 156, all of a sudden fire took place in the front part of the excavator. However, excavator operator tried to suppress this fire with the help of portable fire extinguisher provided in that excavator but it was not enough to handle this size of fire. It was also tried to get some other fire extinguisher from nearby area to contain fire, but no fire fighting station was available in nearby area. So fire van was called by the area supervisor Shri D.K.Vala, Overman to control this fire by around 3:18PM and for ambulance by 3:18PM. Just after receiving the call regarding incidence Shri Shavubha Jadeja, Ambulance driver and Shri Mohansinh Jadeja, Fire Van driver immediately moved towards requested site along with helper and reached by around 3:22PM and 3:23PM respectively.	1. No fire fighting station was provided in nearby working place, so that fire could be tackled with the help of other fire extinguishers at the earliest before arrival of fire van. 2. Portable Fire extinguisher provided in the excavator was not in good condition. 3. No first aid station was available in nearby area, so that presumed burn injury sustained by Shri Pappu Kumar, excavator operator could have been provided first aid at the earliest, so as to preserve life and promote recovery of the injured. 4. Ambulance was not provided with first aid box along with necessary medicine. 5. Fire van reached to the incidence site in empty condition (no water in the fire	1. Near all working place, fire fighting station must be provided, as per ILO recommendation, so as to quickly respond against fire related eventualities. 2. Near all working place, first aid station must be provided to preserve life and promote recovery of the injured as per Mines Rule 1955 and every first aid station provided with first aid material as desired. 3. All emergency vehicle must be checked periodically and always keep free from any defect for use in emergency.

		<p>Meanwhile, Shri Karansinh Khaped, Assistant Manager, area incharge also inform to Shri Awdhesh Kumar Rai, Assistant Manager (2nd Shift Incharge), about this incidence at around 3:17PM and Shri Awdhesh Rai, 2nd Shift Incharge reached incidence site by 3:44PM after informing and ensuring all emergency vehicle reach to indicated site at the earliest.</p> <p>It was also presumed that Shri Pappu Kumar, excavator operator of excavator no. 156 also sustained burn injury during escaping and fighting with the fire, So Shri V.K. Zala, Contractor Supervisor incharge of that area and Shri Mahesh Viton, Contractor Supervisor with the help of other person present their taken Shri Pappu Kumar to safe place after soothing fire over his body and waiting for ambulance to arrive for necessary medical assistance, as no first aid station was available in nearby area. Response Time: Intimation to shift incharge:3:17 PM & Arrival of Shift incharge:3:44PM, Intimation to ambulance:3:18 PM & arrival of ambulance:3:22 PM, Intimation to Fire Van: 3:18 PM & Arrival of fire van:3:23 PM, Completion of suppression of fire:3:30PM</p>	<p>van).</p> <p>6. Fire van was not in working order as hose pipe joint plug was of smaller in size than the discharge socket of the fire van; hence fire van cannot be operated by using hose pipe.</p> <p>7. As hose pipe is not getting fit in fire van valve, one person forced to hold the hose pipe plug, which could be dangerous in emergency condition.</p> <p>8. Shift incharge, Shri Awdhesh Rai reached the incidence site very late, i.e by 3:44 PM, hence response time of the shift in charge was very poor in such emergence condition.</p>	
15	<p><u>Medical Emergency</u> - Rescue of Person injured during Scrap Material Handling at Scrap yard.</p>	<p>1. General Mazdoor got hand injury while he was doing segregation of scrap material in the scrap yard. 2 Injured person informed to another worker working at scrap yard. 3. Co - worker immediately informed to shift in charge. 4. After receiving information regarding person injured at scrap yard, shift in charge immediately informed to Ambulance Driver and Mines Manager. 5. Ambulance, Shift In charge and Mines Manager reached the scrap yard area.6. Shift Incharge given First aid to victim and immediately arranged to send nearby GMDC Hospital. 7. Mines manager informed to GMDC Hospital to get ready for treatment of injured person. 8. Ambulance reached at GMDC Hospital and all Medical staff including Medical Officer gave treatment immediately.</p>	<p>1. Injured person was not wearing safety gloves. 2. Lack of awareness while handling scrap material.</p>	<p>1. Ensure that all workers and others staff working in mine area including scrap yard area should use PPEs without fail. 2. Regular awareness / safety talk should be given to all workers working at mine. 3. Use of proper tools and tackles while working during scrap material handling in scrap yard.</p>

		<p>9. Meanwhile Mines manager, shift in charge were reached at Hospital. 10. Medical Officer of the GMDC informed to Shift Incharge and Mines Manager that victim has been treated well and is out of danger and he is feeling good now.</p>		
16	<p>Emergency Scenario- Dumper was engaged in carrying ROM from face to labour sorting yards. Our supervisor Mr. Rajan was supervising the safe movement of dumpers, as number of labours were engaged there for sorting of ROM. Suddenly dense clouds loomed over and it started raining. Also thunder storm and lightning started abruptly. The supervisor present at that moment instructed all labours to vacate the plot and rush to the rest shelter. But, the supervisor</p>	<p>Observations: <u>Response time taken for arrangement of manpower and apparatus</u> It took about 10 minutes for communicating and making an arrangement for the same. Another 10 minutes spent for reaching respective place with an ambulance and rescue team. <u>Status of vehicle/ambulance van</u> Ambulance van found ok on communicating with workshop. Maintenance van also checked to be O.K and in working condition. Coordination between the emergency personnel- Found Good. Use of P.P.E- Good <u>Operation tactics</u> The injured person got burn injuries and fell unconscious. So the rescue person applied CPR to bring his consciousness and Burnol cream layer put on the injury as first aid to prevent further infection till the arrival to hospital. CPR was given first by hands-only method applying around 105 compressions per minute and around 2 inch chest compression. Also, Sylvester method used afterwards, till he regained his consciousness. <u>Involvement of local/state administration and SDRF/NDRF in the Mock Drill:</u> The mock drill was conducted involving only company employees.</p>	<p>1. Mr. Prashant, the first-aider could not reach the site due to the threat of further lightning, and heavy rains. 2. Siren did not work, due to sudden power cut-off. 3. Additional availability of rain coats & other monsoon provisions</p>	<p>1. We should not rely on old conventional type of lightning arrester. New improved type of lightning arrester (digital surge protector) with high range of protection should be installed. 2. Siren to be connected with D.G set for emergency use in case of power cut-offs. 3. Additional rain coats, umbrellas to be procured</p>

	himself got struck by lightning and got burn injuries and unconsciousness.			
17	A mock drill was conducted about dumpers head-on collision on Mines main haul road and consequently fire in dumpers and severe injuries to one of the dumper operator.	After head-on collision of two dumpers, one dumper operator got down from dumper and tried to extinguish the fire in the other dumper. As the fire was severe and not able to get controlled with fire extinguisher, he called Assistant Manager Mines. On information from Assistant Manager to Emergency team, rescue team and firefighting team with fire tender rushed to site to extinguish the fire and recovered the injured person from Dumper cabin. In between, the ambulance with doctor as well as First aid persons reached at site, rendered from First Aid and shifted to Hospital. Normal Response time-10 Minutes	1. Ambulance parked on the centre of the road. 2. Area not barricaded properly.	Parking to be done considering safe movement of other vehicles. Refresher Training on employees responsibilities during emergency
18	Tippers Tail end collision on Haul Road & subsequent fire in Tipper.	While one tipper was trying to overtake another tipper, tail end collision of two tipper occurred. Due to collision fire occurred cabin of rear side tipper. One tipper operator got down from tipper and tried to extinguish the fire with help of portable fire extinguisher in the other tipper. As the fire outbreak was severe he called Assistant Manager Mines and he informed to Emergency control room and also Mines Manager and also Emergency siren was raised for alerting the persons in the Mines and Office. Fire tender reached at site and Fire being extinguished by fire tender. The area was cordoned and safely fire was totally extinguished. An emergency gathering being done at site.	1. Area not barricaded during 2. One of the Fire extinguisher operated by Tipper operator but Extinguisher was found little empty.	Proper checking of extinguisher needs to be done. Refresher Training of employees for their responsibilities during emergency
19	Mock drill on injury due to blasting fly rock.	1. At around 01:30 PM: Blast firing was done and immediately after firing one of mining mate who was deployed for installation of minimate for vibration reading near the HEMM workshop area (Victim for Mock drill) came out of blasting shelter and got injured on his left hand due to hit of fly rock.	The victim came out of shelter immediately after firing.	Refresher training to blasting and mining team on taking shelter during the blasting.

		<p>2. Dr. Reached the incident location along with the Ambulance and took over the situation. He assessed the scene safety and confirmed. Taken short history from the first responder, he learned that the victim is having left hand injury, where First Aid has already been given by the First Aider.</p> <p>3. Dr. decided to shift the victim to the Company's Trauma care centre for further examination after discussion being done with the Mines Manager.</p> <p>4. On reaching Trauma Care Centre a thorough examination was carried out and provisionally diagnosed to have left hand injury. Dr. stabilized the condition of the victim & administered necessary treatment and decided to keep the victim in trauma care center.</p> <p>5. At 2:30 pm, The Mock Drill concluded and informed Mine Agent and Mine Manager accordingly.</p>		
20	Fire caught in DA gas cylinder during welding time	<p>1. Mock Situation:- At about 1618hrs ,SG Sashikanta Sahoo noticed that fire caught in 02 DA gas cylinder during welding time.</p> <p>2. Action By Control Room: a. Information shared by whom/when:- Sashikanta Sahoo, Security Guard (SIS) informed control room at 1618hrs.b. Response Initiated - Communicated to whom/when Communicated to security shift incharge with QRT- 1619hrs, Deputy Manager Maintaince-1618hrs, ADM Security- 1620hrs, Manager Security-1620hrs, Dispensary (TSML)- 1622hrs and Shift Incharge TSML-1621hrs. 3. Emergency Team- Security Shift Incharge, QRT, Fire Team, Ambulance Service and TSML Mining Shift In-Charge a. Response Time - 05 Minutes QRT- 1620hrs, Shift In-Charge - 1623, Ambulance- 1627hrs, TSML Mining Shift Incharge - 1645hrs, b. Action initiated How/When:-The security shift incharge along with QRT reached at the site, the incident site was barricaded by auxiliary fire team and workmen. Evacuated 04persons vendor worker</p>	<p>1) Mining Team reached at the location late. 2) Fire extinguisher not deployed by MDO Paertner at working site. 3) Awareness required on procedure of evacuation to assembly point.</p>	<p>1. Fire extinguisher deployment to be ensured at working site. 2. Awareness on Emergency response procedure to workman.</p>

		<p>(Nayak Enterprises), then fire team extinguished the fire using fire extinguisher and fire was under control.</p> <p>4. Incident Duration: Total duration of Mock Drill-27minutes</p> <p>5.Observation details Good team work observed throughout execution of the mock drill. Workers working at the location evacuated properly and sent to assembly point.</p>		
21	Fall of Ground	<p>Rescue team reached the site of accident 132mRL B2S2 Drilling Drive. Check the area for ventilation, loose & obstruction. Two members cleared the approach. The rescue team check the worker for any unconsciousness & body injury. Found injury on right hand elbow & toe of right leg. Loosen his dress & safety items. Immediately Shifted the victim to a fresh air base & given him first aid. After that the victim was sifted to surface with the help of steel stretcher. The injured person was carried with a stretcher to Ambulance and shifted to company dispensary immediately. Doctor attended the person and give him treatment. After the emergency cleared, giving clearance to normal work.</p> <p>Observation:- 1 . The the incident was informed to Mines manager immediately. 2. Communicating to all key personnel & reporting at emergency control room. 3. Declared Emergency by whistle blowing by Security at Decline Entrance. 4. Without loss of time Rescue operation was completed satisfactorily.</p>	<p>1. Electrical engineer of Mahagiri Mines & one key member from Mechanical dept delay in reaching due to lack of vehicle.</p> <p>2. The siren blowing was delayed due to communication error.</p>	
22	Fire near Administrative Bulding	<p>1. On 30.08.2021, at about 11.00 am a fire broke out near Administrative Building.</p> <p>2. The security guard communicate to the emergency control room(main gate) about the incident.</p> <p>3. The fire tender and first aid ambulance reached the site.</p> <p>4. The fire tender put off the fire kept for mockdrill near to crusher area. 5. First Aid Ambulance reached site in time.</p> <p>6. The area of incident was properly cordoned off. 7. The electrical circuit was cut off from MCC. 8. Available fire extinguishers near the building were also used for put off the fire.</p>	<p>(1) Demo of electrical fire extinguisher I.e. dry chemical powder should be given</p> <p>(2) Demo of Foam type, CO 2type extinguisher should be given</p> <p>(3) Positioning of the fire extinguisher was against the wide direction.</p>	

23	Collapse of Structure	<p>1. Alarm was raised in time. (10:45 am)</p> <p>2. Emergency response was met in time First-aid team reached at 10:58 am Injured person was rescued at 11:00 am First-aid completed at 11:15am Ambulance Reached on site at 11:12am Patient reported at KBR-MBR general Hospital at 11:20 am</p> <p>3. Demonstration of First-aid and Rescue and Talk on Dos and Don'ts during such situations</p> <p>4. The mock drill was conducted and completed smoothly at 12:25 pm</p>	<p>1. Lack of General awareness amongst employees to act during emergency situation and how to rescue persons with injury from a collapsed structure.</p> <p>2. More focus on emergency preparedness by the way of regular field interactions and classroom room trainings.</p>	<p>1. Immediate field talk and demonstration of rescue process of persons with injury and trapped in the collapsed structure.</p> <p>2. Dos and don'ts during such situations, method of evacuation and Handling the injured person and Preliminary first aid.</p> <p>3. Workshop at site on 20-09-2021 for mock drill participants regarding the above mentioned points and emergency preparedness.</p>
24	Fire while handling and storage of oil and lubricants	<p>Brief Write-up on observations made during the Mock Drill: While fuel handling was carried on at the HSD Pump of M/s KCCL, Mine Raising & Transporting Contractor, it was observed that cotton waste placed in a container caught fire. The Site Supervisor arranged to divert the workers to the pre-designated Emergency Assembly Point and informed all concerned for emergency help. Fire Fighters rushed to the site for quenching the fire with portable fire extinguishers. Qualified First aider inspected the site for rendering first-aid to injured, if any. The concerned workers were given safety instructions regarding preparedness activities to be followed up against reoccurrence of such type of incidence in their work area. Response time: 3 minutes</p>	<p>Shortcomings observed: (a) Waste cottons generated during fuel handling etc were not regularly disposed of in appropriate area and heaped inside the HSD pump premises (b) One Fire Extinguisher was kept on Fire Stand without discharge hose pipe (a) Waste cottons generated during fuel handling etc were not regularly disposed of in appropriate area and heaped inside the HSD pump premises (b) One Fire Extinguisher was kept on Fire Stand without discharge hose pipe</p>	<p>a. Waste cottons are to be disposed of at regular intervals to an appropriate area b. Fire Extinguishers are to be checked at regular intervals</p>
25	Fall of person from the Dumper	<p>On dt.16.09.2021 at around 3.30 pm it was reported by one of the staff of M/s NSIPL at waste dump that one operator of a dumper fell while getting down from the dumper and got injury in his right hand. Sri Alok Mohapatra Foreman along with other staff of M/s NSIPL rushed to the spot and took the injured person in the shift vehicle and brought to the First-Aid Station. First-aiders were prompt in providing first-aid</p>	<p>i) First-Aid box was not containing the prescribed items. ii) Ambulance siren was not blown. iii) Lack of knowledge of First-Aid observed among the staff.</p>	<p>I) Prescribed items should be kept in the First-Aid box and at proper location. II) Ambulance driver is to be instructed to blow siren while reaching to the spot for clear passage. III) First-aid training to be</p>

		to the victim. Ambulance also arrived in quickest possible time (15 minutes) from the Hospital. Mine Manager and Safety Officer reached the site and enquired about the incident and gave necessary instructions.		imparted to employees.
26	Local fire near oil storage Shed.	a Communication in the area by Fire Alarm/ Siren / Public Address System. Yes Siren given for communication. b Availability of Emergency Plan indicating actions to be taken, emergency telephone numbers, departmental team members. Yes Found to be updated and used. c Availability of Assembly Point. Yes Available d Confirmation of usage of Assembly Point. Yes Used. e Use of Fire Extinguishers, Fire extinguisher used. f Cordoning off the area undertaken, if required. Cordoning done. g Testing of Workability of safety devices and equipment such as Fire Extinguisher, Hydrant, alarms, emergency lighting, etc. Available.	1. Only one no. CO2 and one DCP type fire extinguisher available at site. 2. The person handling the fire extinguisher didn't handle it comfortably.	1. More number of fire extinguishers to be kept at site to deal with fire emergency. 2. Fire training to be imparted to maintenance staff.
27	Fire in crusher plant	Communication in the area by Fire Alarm/ Siren / Public Address System was ensured by Mines foreman/Shift In charge. Emergency Plan indicating actions to be taken, emergency telephone numbers, departmental team members was found to be updated and used. The assembly point was available and was used. The area was properly cordoned and fire extinguisher was used. The ERT participation was satisfactory as per ERP. Response time : Mine Manager - 4 min, safety officer 7 min, security 6 min, fire fighting team-25 min, ambulance 15 min	1. Less number of Fire Extinguishers at site. 2. The camper driver for loading fire fighting equipments was new and did not had idea where to report.	1. More number of fire extinguishers to be kept ready at site. 2. The driver of that vehicle to be fixed and if he is on leave then the driver in place of him should be briefed regarding ERP.
28	Dumper Accident	The area was immediately evacuated and barricaded by Mines Foreman at site. The incident was reported to the Shift In-charge. Communication in the area using Siren/Public Address System was ensured by Shift Incharge/Mines Foreman. Communication to Mines Manger, Safety officer, Medical team and other departmental teams constituted for the purpose as per EMP was ensured by Shift Incharge. Meanwhile,	1- Displayed emergency telephone numbers were not properly visible. 2- Fire extinguisher at site was found to be less. 3. Siren was blown for a shorter period of time as per the EMP.	1- A new board of emergency telephone no. to be displayed. 2 - The font size along with the design to be standardized of all informatory boards across Mines. 3 - More no. of fire extinguishers to be made

		<p>Mines foreman at site cleared the approach roads to the incident site. Emergency telephone numbers displayed was found to be used. Assembly point at site was found to be used. Contractor's ERT team participation was found to be good. They coordinated well with the departmental ERT team and the situation was brought under control in anticipated target time.</p> <p>RESPONSE TIME:</p> <p>1- First Aider arrived on the spot with 03 members=02mins.</p> <p>2 - Mines Manager - 10 mins.</p> <p>3- Ambulance arrived at the spot= 05 mins.</p> <p>4 - Mechanical Inspection Team - 10 mins.</p> <p>5- Area Evacuated in=05 min.</p> <p>6- Search team completed the search of area in= 12 mins.</p>		<p>available at site along with proper demarcation.</p> <p>4. Siren shall be blown for longer period as per EMP.</p>
29	Fire fighting	<p>In the beginning workmen were given briefing on fire fighting and practiced how to use fire extinguishers in field.</p> <p>At about 12.30 p.m. dumper no. 37 came to dumper parking yard and parked. The operator Mr Biraj Kerketa observed some smoke with burning smell from engine side. Immediately he got down from cabin and observed fire in engine. He immediately collected the fire extinguisher (ABC type) fitted at its front portion and extinguished the fire. Then informed to shift in charge and safety officer. After 5 min safety/rescue team reached the dumper parking yard and extinguished at other areas not to spread fire further. Mock drill completed successfully. Time taken for mock drill is 16 min.</p> <p>Cause of fire: The oil hose pipe was damaged and oil sprinkled on engine and caught fire.</p>	<p>Vehicle for conveyance reached lately and safety/supporting team reached to the spot lately.</p>	<p>Vehicle management team needs to give priority to maintain separate vehicle in case of emergency situations.</p>
30	Fall From Height (Fall from height at mini plant/one	<p><u>Observations made during the Mock Drill:-</u></p> <p>a. Time of Raising The Alarm:-3min 35 sec.</p> <p>b. Time of Telephone to HOD/Safety officer/Mines</p>	<p>It took more time to raise the alarm at plant because there was no alarm installed at mini plant. So the person at</p>	<p>Alarm to be installed at various vital locations so that in case of any emergency situation it</p>

	section of the crushing plant)	<p>Manager:-03min 42sec</p> <p>c. Time of Telephone to Quick Response Team:-40sec</p> <p>d. Time of Telephone to Rescue Team:-39sec</p> <p>e. Time of Telephone to Ambulance:-53sec</p> <p>f. Time of Action Started for Rescue Operation:-04min 37sec</p> <p>g. Time of Arrival of Quick Response Team:-05min 14sec</p> <p>h. Time of Arrival of Rescue Team:-04min 42sec</p> <p>i. Time of Arrival of Ambulance:-05min 19sec</p> <p>j. Time of Completion of Mock Drill:21min</p>	the site had to intimate the plant control room to raise the alarm.	could be raised immediately. Survey to be done by Safety & Electrical department to find out the vital locations at mine, workshop, plant and logistic area for the installation of alarms
31	Fall of person from height	<p>While a helper cleaning the wall of store standing up on a shelf, he fell down on losing balance. He was injured but had not lost consciousness. It was noticed that the helper was not under the influence of alcohol. Total response time was 4 Minutes till sending to hospital.</p>	<p>1. Not alert while working.</p> <p>2. Not using safety belt while working at height.</p> <p>3. Not using proper appliances (ladder etc.) for climbing.</p>	<p>1. Working at height to be done as per the SOP.</p> <p>2. Slogan for use of safety belt while working at height to be made and displayed.</p> <p>3. Special training class to be imparted to make aware of SOP.</p> <p>4. Never use shelf to climb up but to use proper ladder.</p>
32	fall from height	<p>1. The mock drill was carried out at 11.28 AM at workshop- Start 2. At around 11.35 AM the ambulance arrived at the spot with the first-aid team- 7 minutes 3. At around 11.36 AM officials like the Mines manager, the Production in-charge along with safety officer reached the spot- 8 minutes 4. The mechanic was rescued and shifted immediately to the first-aid station for the further treatment by 11.37AM- 9 minutes. 5. Ambulance reached the Dispensary at time 11.43 AM- 15 minutes. 6. Situation under Control declared on 11.45 AM- 17 minutes.</p>	<p>1) The incident happened due to the tools in mechanic's hand while climbing up the dumper ladder. The tools made the grip of hand weaker and subsequently the three-point contact was not strong enough to move forward</p> <p>2) The mechanic did not use the existing step ladder at workshop while climbing up the dumper due to his over confidence</p>	<p>1. Awareness is to be increased among mechanics, engineers and in-charges regarding the use of step ladders while climbing up the equipment</p> <p>2.SOP to be followed, specially three points contacts to be ensured while moving up.</p>
33	Belt conveyors	<p>1. Time taken by the plant supervisor to inform the incident to plant I/C.- 1 minutes, 2. Time taken by the plant supervisor to inform the incident to the DOE.- 4 minutes. 3. Time taken by the Plant I/C to reach at the spot.- 5 minutes. 4. Time taken by DOE to reach the spot.- 5 minutes 5. Time taken by the plant I/C to</p>	<p>1. Due to network issue, there was a delay in communicating information to the senior.</p> <p>2. Due to lack of experience, employees' participation in the drill was not prompt.</p> <p>3. First-aid to injured person was not</p>	<p>1. Alternate source of communication (Walky talky) to be provided at working place and site administrative office.</p> <p>2. Training on emergency response plan to be given to</p>

		reach at the spot.- 5 minutes. 6. Time taken by the response team to reach at the spot -medical staff with ambulance.- 5 minutes. 7. Time taken by the response team to reach at the spot -HOD personnel.- 4 minutes	started adequately at the beginning. 4. At the start there was hue situation among the employees.	plant employees on regular basis. 3. Awareness program relating to first-aid to all plant employees. 4. Emergency contact no to be displayed at all suitable places.
34	Truck toppling	Mock Situation: Sri. Pradipta Mohanta was deployed for shifting OB from 580 MRL to OB dump under the supervision of Sri. Niranjana Dalai. After getting load, the Volvo moved to unload and way down the gradient. The haul road was wet and slippery after a shower of rain. The Volvo tipper driver applied service brake to control the speed but the tyre skid and dashed against the left side berm and volvo was likely to be toppled.	1. The said Volvo front end both side tyre was in worn out condition. 2. The haulage road was wet and slippery condition.	Mines Manager suggested to Production team to maintain the haulage road properly and make drainage system to avoid such to keep the road free from mud by using Road Grader. There should no movement of volvo after the rain.
35	Falling Height from	During cleaning of conveyor belt from height of 7 mt of Mobile screen plant helper fall down due to slippage on platform, although he has been weared a safety belt but has not tied to fix structure	1-Plant operator has to be guide the helper and ensure for proper use of safety belt with proper instruction, 2-The conveyor deck should have lower down before cleaning of the wire mesh and conveyor belt, 3-Lack of training and awareness , 4-Ignorance to obey safety code of practice	1-In every course of action the operator has to guide and instruct to helper, 2-Surprise inspection for the safety observance, 3-Proper training to all helpers. 4-Implementaion and carry out of SOP
36	Fire Mock drill	Fire broke-out at the mines workshop area at 10.15am, one security personnel deployed nearby workshop, noticed the fire and immediately blew a whistle, then immediately informed to Time office about the fire incident at 10.16 am, then time office raised an emergency siren and informed to emergency respond teams. Then peaceating team came to the spot at 10.17 am and barricaded the affected area .The fire fighting team arrived immediately at the spot at 10.19 am with sand, water & fire extinguishers to controlled the fire. Then the fire solvage team came 10.21 am for separating the un-burnt usable	1) Oil spillages at work places 2) In proper housekeeping at work place.	1)- Automatic fire alarm systems such as smoke and heat detectors are useful in spotting fires 2)-Firefighting equipment must be installed at every places as per standard guidelines. Appropriate number of personnel must be trained for handling Firefighting equipment. 3)All places should be maintained with proper house keeping & avoid oil spillage

		things near by the spot. During the situation one of the fire fighters injured at 10.22 am, then the victim was rescued and given first aid at 10.24 am and ambulance reached at this spot at 10.27am ,the victim shifted to the hospital by for further treatment. The total incident completed within 12 minutes.		
37	Injury to Mechanical Helper at Cutting area due to sudden sprayed out of hot hydraulic oil on his body whlie trying to stop the leakage of oil from the Shovel	Mock drill was conducted to rescue the Mechanical Helper at Cutting area due to sudden sprayed out of hot hydraulic oil on his body whlie trying to stop the leakage of oil from the Shovel. 1. The Mining Mate standing near to the Shovel, first saw the incident. 2. Immediately, he shouted and called the nearby persons on duty for help. 3. Informed the Mines Forman, Asst. Mines Manager and the First-Aid station about the incident and for immediate action. 4. Within a short span of time, the ambulance with the trained first aider reached the incident area. 5. It is observed that the shoulder and the face area of the Mechanical Helper was partially burnt, coming contact with the hot hydraulic oil sprayed out from the shovel. 6. The rescue team shifted the injured to the First Aid station and applied fist-aid treatment, then proceeds the injured to the District Hospital for further treatment. 7. It took 35 minutes to rescue the injured during the mock drill exercise.	The inspection team observed that the Mechanical Helper without informing his senior and without taking sufficient precaution, tried to stop the leakage of hydraulic oil of the shovel while the shovel is in running condition. The Incident caused because the engine of the shovel was in running condition and hydraulic oil in the shovel was circulating with high pressure and temperature.	The Mine Management arranged a coordination meeting among all staffs. Addressed not to attempt any repair or maintenance work without informing the concerned responsible person and not to carry out any type of work without supervision of a responsible person with all precautionary measures. 2. Advised the mine management to conduct training program to educate the employees regarding technical know how about the HEMMs on regular interval to avoid repeated occurrence.
38	Unsafe Practice of Electrical Work.	Mr. Jitendra kumar sahu, the plant electrician was working at crusher panel room with Helper Mr. Manohar Deogaon on followed by all safety precautions and LOTO system implementation. After completion of maintenance work, the power shut down & LOTO system was released with proper SOP. After a little interval without intimating to Dept. In-Charge, Mr. J.K sahu came back to the panel room with his helper for checking the leakage of body current & on the time of checking the electrician got shocked and fell down on the ground with unconscious condition by contact with panel body with	Ignoring to follow of LOTO procedure during Electrical work preparation. Sop not followed.	-Messages pass system (call tree) to be developed for quick reaction to attend any real incident. -Emergency response team needs to reach the spot as soon as possible. -Medical assistant/Doctor/Hospital phone numbers to be maintained & include in the call tree for earliest intimation,

		bare hand. The witness Mr. M Deogaon(Helper) immediately shouted & took the shut down & he called by wacky to Mr. Sarada prasad sahuo(jr. Electrical engineer) for rescue the victim & within 2 minutes i.e. 4.18 PM Hrs, Mr. S.P sahuo reached at the spot & raised an alarm and informed to the plant I/C Mr. Rahemtullah Khan on followed by the call tree system & further process is carried out by Emergency Response Team & the victim was rescued at 4.23 PM Hrs.		depending on the severity of the case.
39	Dumper Toppling at Mines	On 30th September 2021 at around 04.00 pm one dumper got toppled at stock yard due to uneven floor in the pit also found Loading was one sided. Mines Manager along with the Assistant Manager immediately reached to the site of incident on getting information from site supervisor for rescue and recovery work (within 05 min). Fire fighting immediate came to incident site. All Emergency sirens blew within 10 min of incident.	1. Undulating floor conditions. 2. One sided loading of the dumper.	Check all the site conditions before unloading. All excavator operators shall be trained on safe loading practices.
40	Fire at Training Centre Due to Shot circuit	Due to the shot circuit at Training Centre fire caught t on the wooden furniture. Within 20 minutes the rescue team succeeded to get control on fire.	1. Wires were not dressd propelly on joints. 2. Shortage of fire extinguisher. 3. Earthing arrangement was not up to the standard	01. All the wires must be joint less. 02. Increase the number of Fire extinguisher for emergency. 03. Proper eathing arrangement is required.
41	Safe operation for Trammer in u/g working where materials are transported in tubs by means of gravity or power.	Member participated in mock drill have well known with code of signals on haul road. Properly checked function of stop block and runaway switch. Proper used back stay in ascending tub. They used Manhole for shelter. Followed all safety rules during tramming.	Nil	1. follow up the guidelines/ SOP against running tub on haul road and also during tramming. 2. Follow code of signals. 3. Do not walk on the side of the track while going up and down, 4. Do not use damaged tub. 5. use all safety equipment. 6. Always use back-stay while going uphill. 7. Don't wear loose fitting clothes.

				<p>8. When the tub does not running, put a stop-block</p> <p>9. Open the tubs from the sides and bottom of the buffer, not from the top.</p> <p>10. Keep your head apart between two tubs.</p> <p>11. Before the movement of the tub First checks the coupling, stop-block and the opening of the runaway switch.</p> <p>12. During working on the roads, they must give a signal at the time of loading and unloading the tubs.</p> <p>13. Use man hole for shelter on haul road.</p>
42	<p>a) Fire Tender</p> <p>b) Ambulance & Team</p> <p>c) Fire Brigade Team</p> <p>d) Portable Fire Extinguishers</p>	<p>Situation: Dummy Fire and Smoke created near Mines site. Response of Workmen: At around 10:00 am Mines Shift in charge seen fire during his routine inspection at mines site & inform to emergency number by mobile and intercom and trained personnel immediate rushed at site with first aid & fire extinguishers to extinguish the dummy fire. After this training also given to mine workers for operation of fire extinguishers.</p> <p>Response of Equipment's: Satisfactory</p>	NIL	<p>Periodical firefighting training & awareness programs are to be organized time to time.</p>
43	<p>Excavator caught in fire near crusher.</p>	<p>Date 20.09.2021 Time 12:25 PM Situation: A scenario of Excavator caught in fire created. A mock drill was conducted on 20.09.2021 in Mines near crusher in Bela Cement Works. The Mock Drill was conducted for the assessment of the emergency preparedness and response operation in mines. A scenario created where an excavator caught in fire near Crusher and operator of that excavator rescued from the site. Site: Mines, near Crusher.</p>	<p>Height of stretcher lower than height of Ambulance from ground level which created problem & taken time while taking out patient from ambulance</p>	<p>The height of stretcher and ambulance should be matched to facilitate easy shifting of patient</p>

		<p>Response of Workmen: At around 12:33pm message of fire in excavator given to shift incharge by excavator operator Mr. Arun Kumar. Then shift incharge informed to Hospital, security, Time office, Mines Manager, and head of mines operation. Simultaneously Shift incharge Along with his team reached at site. Meanwhile, Mines manager& other officers, Security incharge, Fire tender, water tanker, Ambulance rushed at site.</p> <p>Response of Persons: Satisfactory</p>		
44	Drowning	<p>At about 11.15 AM on 11th Aug 2021, Mr. Shailendra Samrutwar, Shift-In-Charge in A-Shift informed the control room that a person is drowning in mines sump in South Block. Rescue team reached at site at 11:57 AM. Ambulance reached at 11.57 AM Fire squad reached at 12.08 AM</p>	<p>Overall rescue evacuation was completed in 38 Min</p> <p>Trained swimmer was not available in rescue team</p>	<p>Rescue operation shall be completed in 20 Min. Frequent and scheduled practice required to minimize the timing.</p> <p>Trained swimmers shall be included in the rescue team.</p>
45	Fire broke out in rotor of conveyor belt.	<p>On receipt of message crew personnel mounted on fire tender and rushed to the spot.</p> <ol style="list-style-type: none"> 1. DCPO parked fire tender at safe distance considering wind direction. 2. DC/CISF, CC/F and NMDC official were present at the spot. Umpire directed crew I/C that it is a mock Fire drill to check your preparedness to handle conveyor fire. Show line of action of fire in rotor of conveyor. 3. As per contingency plan, area cordon and evacuation is carried out from alleged area. Crew I/C directed crew personnel to lay out one line of three delivery hose from fire tender by connecting other end with short branch to quench the fire. 4. Crew personnel executed the order of I/C, and acted accordingly. 	<ol style="list-style-type: none"> 1. Communication problem found due to discharge battery of walkie-talkie set of duty sentry. 2. One crew member was found without helmet. 	<p>Crew personnel are briefed about proper use of PPE during firefighting/ Mock exercise and sentry was briefed to change battery timely to ensure availability of communication facility for emergency.</p>