**STANDARD OPERATING PROCEDURE**

**CRUSHER OPERATION**



**ODISHA MINING CORPORATION LTD.**

**KODINGAMALI BAUXITE MINE**

**Authorized By**

1. **PURPOSE:**

To provide the Standard Operating Procedure for Fixed Crusher operation in Kodingamali Bauxite Mine.

1. **SCOPE**:

This procedure is applicable for safe Operation of Fixed Crusher in Kodingamali Bauxite Mine.

1. **RESPONSIBILITY:**

|  |  |  |
| --- | --- | --- |
|  | Fixed Crusher Operation | Crusher Incharge |
|  | Fixed Crusher Maintenance | Crusher Incharge |
|  | Crushing – Conveying System Operation | Supervisor/Shift Incharge |
|  | Operational Control | Area in-charge |

1. **SAFETY AND HEALTH HAZARDS:**

* Slip/trip/fall
* Head on Collision
* Roll Over/Toppling of Dumper
* Hitting by other HEMM/Structure/Persons
* Dust generation during Operation
* Noise during Operation
* Vibration during Operation
* Diesel/ Hydraulic Oil - Inflammable, Fire hazards.
* Acid Batteries- Skin contact can lead to extensive and severe burns and highly toxic.

In order to avoid injuries to personal and damage to machinery, the following precautions are very important.

* Work required PPE i.e. with safety shoes, helmet, dust musk, fluorescent jacket suitable for long distance visibility etc.
* Adherence to instruction related to Operating safety as per statutory guidelines.
* Pre Operation Safety features checklist.
* Regular Checks & Maintenance.

***Note: Report immediately to Supervisor, Shift Incharge and Safety officer for any incident/accident.***

1. **ENVIRONMENT ASPECT:**

* Dust generation
* Noise Pollution
* Vibration
* Oil Spillage
* Diesel- Inflammable, Fire hazards.
* Electrical – Fire hazards
* Oil/Grease – Inflammable, Fire hazards.
* Acid Batteries- Skin contact can lead to extensive and severe burns and highly toxic.

Preventive measures:

* Use of Dry fog system for dust control.
* Use of Dust Mask/Earplug
* Control of leakages

1. **TOOLS:**

* All Work required PPEs like Safety Helmet, Safety shoes, Nose mask, Ear Plug & Jacket.
* Required Tools & Tackles

1. **PROCEDURE:**

**General Instructions for Fixed Crusher Operation:**

* Ensure the use of all required personal protective equipment by all persons.
* Before starting the crusher, always give a warning signal.
* During operation always keep the crusher control room doors closed and no one in the vicinity of the room.
* Ensure no person working therein, when Crusher in operation and material is unloading.
* Persons working in crusher hopper should always wear all PPE’s as per requirements.
* Safety belts should be used during working above crusher openings and lifeline should be tied sufficiently short to prevent wearer to fall into crusher.
* Before doing repair work on crusher take work permit and all motors should be shut down and locked and rendered inoperative and tagged to prevent any other person from starting.
* Take adequate precautions while cleaning of material in crusher hopper, chutes.
* No person should clean or repair any part while belt conveyor in motion.
* Keep the path and railing along belt conveyor clean and in good condition.
* No person should travel or ride moving belt conveyor, use over bridge to cross the conveyor even if belt is not running.
* Take work permit before working on belt conveyor.
* Ensure all guards of machine, couplings are in place after any repair work.
* Always be cautious at work.

**Duties of Crusher Shift Incharge:**

Operator shall check the followings:

* Crusher liner plate bolts for tightness.
* Material accumulation under discharge belt.
* Condition of chain scraper.
* Compressor oil level and V-belt condition.
* Apron feeder spill back hopper.
* Crusher and hopper condition for any abnormality.
* Spillage from crusher housing.
* Warning hooter and lights.
* Discharge chute.
* Emergency switches start or stop.
* Material pile up on pulleys and idlers or below idlers and belts.
* Lumps of materials are not wedged between belt and pulley.
* Conditions of all chutes, gear box not overheating and not producing any unusual noise.
* Idler, self-aligning idlers rotating freely and not missing along the length of belt.
* Condition of couplings, idler supports, rollers and belt tensioning rope.
* Condition of belt scrapers, skirt boards are not damaging belt, condition of pulley lagging.
* Belt is running centrally and not slips condition of splices and joints.
* All the safety devices like pull cord etc. are not damaged and in working condition
* Water tank and chemical tank level of dust suppressions system.

**Normal Start up**:

* Before starting the equipment in sequence, ensure no person is engaged in any cleaning, repair/rectification work.
* Remove the barricade from hopper.
* Give clear warning signal before starting the system and at the time of restarting after intermittent stoppage.
* When the system is stopped due to any reason and restarted after sometime ensure that no one is working on any part of the equipment.
* Whenever any repair/rectification of work has to be carried out in any equipment/system in running condition, ensure personal supervision.
* When there is no material being received from mines due to any reason, stop all auxiliaries – it saves precious “POWER”.
* In case any fault in any of the system that would require more than 15 minutes to restore back in operation, then stop the main drive also along with other auxiliaries.
* Communicate continuously with the Mines Pit and BC-5 Discharge chute and loading point for smooth and continuous operation.