**ACTIVITY: RAIL CHANGING**

1. **Purpose:** - To describe Safe maintenance procedure of Rail Replacement.
2. **Scope:** -
3. MCD Jetty Unloader 1,2,3 & 4.
4. MCD 1 Bat Machines drive rails 0,2,4,5,6 & 7.
5. MCD 1 Hyd. CST mobile hopper drive rails
6. MCD 1 Quench Pusher Blade drive rail.
7. MCD 2 Bat Machine drive rails
8. MCD 2 Hyd. CST mobile hopper drive rails.
9. **References.**: -
10. **Responsibility**: - Engineer- in- charge & Maintenance fitter on the job.
11. **SAFETY PRECAUTIONS:**

* Ensure all Process, Electrical & Mechanical isolation prior to starting work on equipment. Follow documented isolation procedure as per Vedanta approved isolation standards.
* Seek Proper work permit for replacement of rail at required location.
* Job to be carried out by Competent Person.
* Safety briefing / Toolbox talk to be carried out and to be documented
* Follow one man one lock system and use of LOTO box.
* Certified tools and tackles to be used for execution of the job.
* Wear approved PPE (Personal Protective Equipment)
* Ensure that workplace is clean and safe.
* Operate pull cord switch / LCS to Off position prior to work as an additional safety measure.
* Ensure all the planned jobs have been completed and release mechanical isolations if applied.
* All unwanted material from the area to be removed before releasing the equipment electrical isolation.
* Follow proper documented procedure for releasing the electrical isolations as per Vedanta approved isolation standards.
* Ensure all the job is completed as planned and all safety guards have been placed and secured properly as per guidelines before releasing the equipment for operation

6.0 PPE to be used :

* Helmet,
* Safety shoes.
* Dust mask.
* Hand gloves.
* Safety goggles.
* Reflector jacket.
* Job specific PPEs face Shield, Full body Harness, lifeline, fall back arrestor, CO detector etc.

**7.0 Activities**

* Activity No 1 : Replacement of rail.
* Activity No.2 : Preventive Maintenance.

8.0 Aspect- Impact.

Scrap generation Resource Depletion.

Fumes, dust generation. Health

9.0 Hazards identified

1. Physical Hazard

* Dust
* High temperature.
* Fire.

1. Mechanical Hazard

* Trapping between two objects.
* Fall of material like hammer, tools, slung items, bolts, wedges, etc,
* Fall of material while shifting
* Impact of moving / slung items
* Cut from tool.
* Entanglement
* Flying off of gas cutting and welding sparks.

1. Human behaviour aspect of operators:

* Workmen Nature.
* Improper house keeping
* Alcoholism.
* Casual approach.
* Horse play.
* Back pain.
* Non usage of PPEs
* Height Phobia.

1. Electrical hazard.

* Shock.

# Activity No 1 : Replacement of Rail.

**Material Required.**

1. Rail of suitable size and length.
2. Rail holding clamps.
3. Hardware HTS bolts M20 x 60 mm.
4. Packing plates

**Tools Required.**

1. Material Handling Utilities (Crane, Hydra, Trailer etc.)
2. Welding Machine.
3. Certified Lifting belts
4. Certified D- Shackles.
5. Cutting Set.
6. Crow bars.
7. General toolbox.

**Procedure:**

1. Shift the Rail of required size and length to the place of replacement of rail using proper material handling utilities and arrangement (Use of hydra, crane and trailer for shifting with proper certified lifting tools is recommended).
2. Shift all the required tools like portable drilling machine, welding machine, cutting sets and all required lifting tools to the location of replacement of rail.
3. Mobilize material handling utilities like crane or hydra to the location of replacement of crane.
4. Seek permit from the area in charge for the replacement of rail.
5. Isolate the running equipment on the replaceable with proper isolation procedure as per the Vedanta isolation standard.
6. Barricade the working area.
7. Remove the rail holding clamps by loosening the bolts or by cutting if the bolts cannot be re used.
8. Ensure all the rail holding clamps in the area or replacement of rail is removed.
9. Lift the old rail from the place by using proper lifting arrangement and the available material handling utility like crane, hydra etc.
10. Keep the removed rail aside for disposal.
11. Clean the rail base.
12. Check the mounting base structure of the rail and repair if required by quick grouting.
13. Inspect all the bolt fixing blocks of rail clamps and replace / reweld if required.
14. Possibly provide new hardware for all the clamps.
15. Replace the new rail to the position by using same material handling arrangement.
16. Check the level of the rail with the parallel rail in use for that function.
17. Provide packings if required to maintain the required level.
18. Replace clamps if required.
19. Tighten fully all the rail holding clamp bolts.
20. All unwanted material from the area to be removed before releasing the equipment electrical isolation.
21. Follow proper documented procedure for releasing the electrical isolations as per Vedanta approved isolation standards.
22. Release work permit after joint inspection with operation for completion of job to the satisfaction.
23. Run the equipment on the replaced rail and check for any abnormalities noticed.
24. Shift the removed rail to the scrap yard with proper material handling utilities and certified lifting tools and tackles.
25. Recheck the rail holding clamp bolts after 24 hrs of equipment for any looseness of clamp bolts and tighten if required by following the similar isolation process and work permit for replacement of rail.

# Activity No. 2 : Preventive Maintenance.

Preventive Maintenance of Rails are cover under

1. CLTI. (Cleaning, Lubrication, Tightening, Inspection)

CLTI is basically is routine run check inspection and any identified abnormality is documented and updated in SAP in MR Notification. On opportunity the same is resolved and the abnormality is closed.

* 1. **RECORDS:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Record No.** | **Record Title** | **Maintained by** | **Soft/Hard form** | **Retention Time** |
| 1. |  | CLTI | Area in Charge | Hard | 1 Yr. |
| 2. |  | Notification Data | Area in charge | Soft |  |
| 3. |  | Hazard Identification | IMS | Soft | 1 Yr. |
| 4. |  | Risk Assessment | IMS | Soft | 1 Yr. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Date** | **Manual Section Ref. & Para** | **Brief details of Revision** | **New Rev.** |
| 13-08-2022 | Header | Company logo & Document no. | 07 |
|  |  |  |  |
|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Prepared By:**  Head Mechanical Maintenance, Battery 1- MCD | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Head Mechanical Maintenance MCD |
| **Signature:** | **Signature:** | **Signature:** |
| **Review Date: 13.08.2022** | **Review Date: 13.08.2022** | **Review Date: 13.08.2022** |