1. **PURPOSE:** Safe operation of Hydra
2. **SCOPE:** Plant area Battery 1 & Battery 2
3. **RESPONSIBILITY:** Engineer in charge, Operator
4. **PERFORMANCE INDICATORS:**

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| **Sr. No.** | **Measure** | **Unit** | **Frequency** | **Acceptance Criteria** | **Responsibility** |
| **Quality** | | | | | |
| 1 |  |  |  |  |  |
| **Environment** | | | | | |
| 1 |  |  |  |  |  |
| **Safety** | | | | | |
| 1 |  |  |  |  |  |

1. **PROCEDURE:**

**Mechanical Hazard**

1. Trapping of hand between two objects while adjusting material

2. Trapping below vehicle due sliding

3. Fall of material, hammer, tools, slinged items, bolts, and steel items.

4. Impact of moving / slinged items, overturning / slipping of steel items.

5. Skidding due to poor housekeeping.

6. Failure of rope, brake

7. Sliding/rolling of material from Hydra.

8. Tyre bursting while moving / erection

9. Trapping hand while locking the tempo/truck gates.

10. Trapping below Hydra due to failure of brake, sudden jerk.

11. Trapping between swing are of hydra

12. Hitting due to poor visibility

13. Impact of other vehicles

**Physical hazard**

1. Vehicle emission due to movement.

2. Pressure due to failure of air system/Hydraulic pressurized system during process

**Electrical hazard**

**1.** Electric shock from overhead lines, welding.

Human behaviors- Improper housekeeping, non-use of PPE, Alcolism.

**Aspect and Impact**

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| --- | --- |
| Dust Generation | Air pollution due to movement through dusty area |
| Oil Spillage | Land contamination & Resource Depletion due to failure of hydraulic system in vehicle during process |
| Oil traced waste generation | Land contamination & Resource Depletion develop during rectification of hydraulic/Fuel problems during process |

**Only trained and authorized operators with valid heavy duty license should operate the hydra.**

**Hydra shall not be used for shifting of material and shall only be used for material loading/unloading.**

1. Operator to carry out pre checks of proper working of the Hydra/crane as per instruction manual & checklist for safe working. Any discrepancy noted must be intimated to engineer concern immediately.
2. Always consider 75% of SWL of load chart as safe for handling / lifting. The indicated safe working load varies with boom length and radius and the user must refer load chart before use.
3. No crane shall be loaded beyond 75% of rated load in the specified lifting configuration except for statutory test purposes
4. The hoist rope shall not be wrapped around the load or kinked.
5. The safety latch of hook should be in locked position after sling a load.
6. The load shall be well secured properly balanced in the sling or lifting device before it is lifted more than a few inches.
7. The hook shall be brought over the load in such a manner as to prevent swinging
8. During hoisting, acceleration / deceleration of moving load is not allowed. The load should not contact any obstructions.
9. Side loading of booms shall be limited to freely suspended loads and hydra should not be used for dragging the load.
10. The operator shall test the brakes each time a load for heavier loads by raising it a few inches and applying brakes.
11. Neither the load nor boom shall be removed below the point where less than two full wraps of rope remain on rope drums.
12. The boom shall be carried in line with direction of motion. The empty hook shall be lashed / restrained / retracted to avoid free swing.
13. Hydra shall not be travelled with boom so high that it may bounce back over cab.
14. The operator should not leave his position at the controls while the load is suspended.
15. No person should be permitted to stand or pass under a load on the hook
16. In case any other lifting / shifting equipment brought from different source, the capacity and other details have to be confirmed before starting the job.
17. Sling the weight so that when lifted the weight does not swing.
18. Ensure that the slinging point is at the approximately centroid of the material to be Shifted/lifted.
19. Use Short sling which will tight fit on the material so that swinging of the object can be avoided.
20. Maintain minimum ground clearance while transporting. While moving beneath electrical lines ensures that there is sufficient clearance between the lines and the bucket / boom in the lifted condition. Ensure shutdown of power while working / moving near by power lines.
21. Travel at 2 KMPH speed.
22. Do not allow the people to stand below the hanging material
23. Give instructions to crane operator to move the material safely
24. Before removing the sling from the lifted member, ensure the proper fixing/tightening of the member at the lifted point.
25. Never weld lifting hook on hard facing surface/material of construction unknown or different.
26. Do not travel crane / hydra in lifted boom condition as it may hit over head structure and overhead cables
27. Always park hydra with stoppers in place and with hand brakes operated.
28. Do take care of overhead open electrical lines
29. Sling equipment on its standard lifting hook after inspection.
30. Hydra should be used only during sufficient visibility and clearance is ensured.
31. Follow best slinging practices while slinging items to avoid slipping / rolling.
32. Use certified slings and D shackles of double the capacity of weight to be handled
33. User shall ensure that the operator has under gone periodic eye testing as per form-10.
34. **REFERENCES:**
35. **RECORDS:**

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| **Sr. No.** | **Record No.** | **Record Title** | **Maintained by** | **Soft/Hard form** | **Retention Time** |
| 1. | - | - | - | - | - |

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| **Date** | **Manual Section Ref. & Para** | **Brief details of Revision** | **New Rev.** |
| 13-08-2022 | Header | Company logo & Document no. | 06 |
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| **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** |