**ACTIVITY: WORKING AT NAPOLI PANTOONS**

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* Objective : - Safe and quality maintenance of pump for optimum out put
* Scope : - Blast Furnace Accessories
* Ref. : - Pumps maintenance manual
* Responsibility : - Engineer In charge & Maintenance Fitter on job

**PPE –s to be used :**

 Helmet, Safety shoes, Dust mask, hand gloves, lifebuoys, life jackets and complete sealed goggle,

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| * Work No 1 : Lowering and raising the pontoon * Work No 2 : Painting of pontoon, pipeline structure * Work No 3 : Changing of submersible pump * Work No 4 : Changing of pontoon centrifugal pump | |
| **Aspect-Impact** |  |
| Scrap generation | Resource Depletion |
| Oil Spillage | Land contamination |
| Oil traced waste generation | Land contamination & Resource Depletion |
| Fumes  Draining of water  **Hazards identified** | Health  Resource depletion |
| **Physical Hazard -** | Pressure, temperature, dust inhalation, , congestion, |

drowning in water

**Mechanical hazard –**

* Trapping in between coupling, impeller, guard, dismantled pump and motor, etc.
* Entanglement in between moving parts, guard, coupling.
* Fall of spare parts, rod, slinged items, tools, hammer, etc.
* Fall of person from platform & height.
* Impact of moving/slinged items.
* Slipping over stairs.
* Injury from slip of pump component while assembly / dismantling.
* Impingement of fingers, hand while fitting assembly of pump, bearing fixing, impeller fixing, flange bolts tightening.

**Electrical Hazard** – electric Shock due to welding, electrical cable and machine

**Chemical hazard -** Fire

**Biological Hazard** - Bee sting

**Human Behavior aspect of operators**:

Operator nature, alcoholism, casual approach, horse play, use of mobile at workplace, back pain & non usage of PPE?s



**Workmen carrying out the jobs at Napoli/other pontoons must know swimming and must be equipped with life buoy and jackets**

**Work No 1 : Lowering and raising the pontoon**

1. Inform user departments (production, etc.) regarding the activities to be carried out at least 2 days in advance so that they can keep their reservoir full.
2. Take electrical shutdown LOTO of both the pumps or (required pumps) as per format FRMT/ELECT/06 and retain them for dressing of electrical cables.
3. Tie up chain pulley block with 5 T capacity for lowering and raising of pontoons.
4. Dismantle discharge pipelines of both the pumps at required location.
5. Remove swivel hinge pin (vertical) and lower/raise the pontoon and place at required location and re-fix the swivel hinge pin.
6. If required, provide second chain pulley block of 3 T capacity to pull the pontoon structure.
7. Re-connect discharge pipelines and check flange joints.
8. Ask electrical to dress the cable and normalize the shutdown. Start the pumps and check leakages if any.
9. Tie the pontoon with manila rope to tree on edges of pond to avoid moving in water on its own.

10. Give clearance to user department.

**Work No 2 : Painting of pontoon, pipeline structure**

1. Get the pantoon outside water with the help of Hydra after removal of pump and pieline.
2. Check PPE like Lifebuoys, Life jackets, etc. in position.
3. Open all inspection doors of pontoon and provide an exhaust fan for circulation of air inside the pontoon.
4. No welding/gas cutting/smoking is allowed while painting is going on.
5. All painters should be well informed about the paint fumes.
6. Frequent Inspection to be carried out at every 1-2 hours during painting.
7. Check rope barricade of pontoons is intact.
8. Issue work permit from user department.
9. Follow the painting procedure as per VL/IMS/PID1/MECH/WI/92
10. Painting should be done inside the pontoon by opening manhole cover and on top side of the pontoon, painting can be done to entire structure and pipeline.
11. Ensure circulation of fresh air from outside environment inside the pontoon pocket while painting
12. Clear work permit after completion of work.

**Work No 3 : Changing of submersible pump**

1. Take electrical shutdown LOTO of pump and ask to disconnect the electrical cable.
2. Hook up chain pulley block of 3 T capacity to “A” frame with 3T wire rope sling.
3. Remove discharge pipelines and start lifting the pump.
4. Replace overhauled/new submersible pump after trial. Fill water in motor portion of pump from priming plugs. Ensure to fill water from one plug till it comes out of other one.
5. Re-fix discharge line and give clearance to electrical for connection.
6. Start the pump and check leakages if any. Check pipeline pressure. It should be 8 kg/cm2 approx.
7. Give clearance to user department.

**Work No 4 : Changing of pontoon centrifugal pump**

1. Take electrical shutdown LOTO before starting the job.
2. Check whether lifebuoys, life jacket, rope barricade are intact.

Replace the pump and clear the electrical shutdown and take trial. Follow procedure

VL/IMS/PID1/MECH/WI/44 3. for maintenance of pump.

1. Check leakages if any.
2. Check oil level.
3. Check vibration of the pump. It should be within limit.
4. Check current drawn and abnormal sound.
5. Give clearance to user department.

Follow housekeeping procedure as per VL/IMS/PID1/MECH/WI/91

Follow lubrication procedure VL/IMS/PID1/MECH/WI/93 for lubrication of equipment.

Update the register maintained in the pump control room/mining office. Avoid working in late hours in pontoon.

**Do’s and Don’ts**

# Do’s

* Ensure house keeping
* Clear all scraps & unwanted structures from platforms / work area  Use lifebuoy whenever it is required to work in the water.
* Ensure that the people working near water knows swimming
* Report damaged / corroded structures immediately

# Don’ts

* Work under the influence of alcohol
* Indulge in the Horse Play

**Amendement Record**

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| **Date** | **Manual Section Ref. & Para** | **Brief details of Revision** | **New Rev.** |
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| --- | --- | --- |
| **Prepared By:**  Area Engineer | **Reviewed & Issued By:**  Management Representative | **Approved By:**  Mechanical Head |
| **Signature** | **Signature:** | **Signature:** |
| **Review Date: 12.12.22** | **Review Date: 12.12.22** | **Review Date: 12.12.22** |