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| **Serial****No.** | **Sub-Activities** | **Hazards Identified****(Generic & Task)** | **Risks Involved****(People & Property)** | **Risk Rating** | **Control Measures** | **Residual Risk** |
| **Severity** | **Probability** | **Initial Risk** |
| 1. | Prepare work area | Unauthorized, untrained workers |  CutsAbrasions | 2 | A | L | * TBT/DSTI to be conducted by the foreman/ safety officer prior to work commencement
* Task specific safety training to be provided
* Authorized personnel to undertake the job
* Daily safety inspection should be carried and eliminate the hazard.
 | Low(ALARP) |
| 2. |  Manual Handling | * Incorrect lifting of loads
* Sharp edges.
* Placing the object while fingers underneath.
* Slip/trip/fall ( same level )
* Unsafe posture
 | * Back Injuries
* Cut to finger
* Strain
* Musculoskeletal Injuries
 | 3 | C | M | * Any lifting tasks shall be carried out by persons physically capable to do so
* No employee should be asked to carry loads above his capacity and in any case no load shall exceed 30kg per man.
* Mass of the load is more then to be equally shared
* Deploy enough number of personnel for lifting task depending upon the type of load to be lifted.
* Use easy mode of transport like trolley etc.
* Load not to be lifted above your shoulder height
* Keep your fingers away from pinch point while placing the load
* Area to be illuminated with adequate lighting.
* Proper personal protective equipment’s to be used while manual handling of materials and loads.
 | Low(ALARP) |
| 3. | Working with Hand tools ( screw driver, spanner ) | * Slip, trip and fall
* Damaged warn out hand tools
* Flying objects
* Mushroom Heads
* Using incorrect type
 | * Fatigue
* Trigger finger
* Cuts and abrasions
 | 3 | C | M | * Defective tools should not be issued or used to perform the task, to be checked by store keeper
* Don’t extend the spanner by using a pipe as an extension bar
* Hand tools shall be free from oil, grease etc.
* Chisel’s head shall have safety cap to avoid finger injury.
* Never use a file as a lever
* Never use a screw driver as a chisel
* Use eye/ face protection when there is flying materials hazard, wear gloves while required to protect the hands
* Use right tools for the job
 | Low(ALARP) |
| 4. | Working with ladder | * Person/ material falling from height
* Over reaching
* Over loading
* Obstructing the access way
* Slippery or uneven surface
 | * Sprain and strain
* Fracture
* Injury to the person
 | 3 | C | M | * The ladder should extend minimum one meter from the top for safe movement
* Heavy materials should not be carried
* Do not erect in slippery, uneven surface should be set up with a 4 vertical to 1 horizontal slope ( 4:1 )
* Inspection and maintenance to be registered and recorded by the store keeper
* Step ladder must fully open and lock and the devices to be as per manufacturer
* Defective ladder should not be used and report it immediately
* Do not work from the top of two rungs
* Remember the 3 point contact
* Do not work in front of the door. If work is carried then locked the door or blocked off
* Ladder to be used for short duration works only limited to 15 min.
* Color coded system to be implemented
 | Low(ALRP) |
| 5. | Working on mobile scaffold | * Uneven surface
* Overhead structure and cable
* Materials and worker fall from height
* Untrained, unauthorized workers
* Collapse of scaffold
 | * Sprain and strain
* Fracture
* Spinal cord damage
* Musculoskeletal Injury
* Fatality
 | 3 | C | M | * Do not stack materials on to the scaffold
* Visual inspection should carry before use
* Out rigger fitted and breaks are locked on
* Only trained scaffolder shall be involved in erection & dismantling activities.
* No person to be on the scaffold while it is being moved
* Scaffold only use in on level and surface area
* Safety harness to be used above 2mtr height and anchored in above shoulder height at all time
* Tagging system to be implemented ( i.e., all safe scaffolds shall be provided with green tags and unsafe scaffolds with red tag )
* Keep walkways free of obstacles, tools and equipment
* Never stand and sit on the hand rails
 | Low(ALARP) |
| 6. | Working with electricity | * Electricity
* Conductors ( water, metal, concrete )
* Broken wires
* Improper plug, case
* Overloading
 | * Electrocution or death
* Burns and shocks
* Muscle contraction
* Heart, lung Paralysis
* Fire
 | 4 | B | M | * Only those persons who have been adequately trained and experienced in the work of electricity to allow for the same.
* Electrical work shall not carry out in wet Conditions.
* LOTO procedure to be followed during testing & commissioning.
* Do not overload to the circuits.
* Communicate to all personnel about testing & commissioning.
* Don’t use homemade electrical accessories and use industrial type only.
* Disconnect main supply before commencing the work.
* Defective tools and equipment should not be used, report it and replaced it immediately.
* Barricade the location and signage to be placed where circuits and equipment’s are energized.
* PPE should be worn at all-time where working in energized circuits. ( Insulated gloves, Electric resistivity shoe )
 | Low(ALARP) |
| 7. | Electrical Testing & commissioning using millimeter, insulation tester | * Unauthorized/ untrained Person
* Faulty Instrument
* Improper identification
* Electrocution
 | * Electric shock and Burns
* Cut and abrasion
 | 3 | B | M | * PTW system shall be applied and implement.
* Competent team shall be involved to execute the activities.
* Calibrated / certified instrument only shall be used.
* Ensure that the circuit is not live before using the instrument.
* Emergency procedure shall be briefed to all personnel prior to start the activity.
* Emergency evacuation plan shall be readily available according to site condition and briefed to the workforce prior to start.
* Emergency contact numbers shall be displayed at work location for easy communication
* Trained first aider, fire warden and emergency vehicle to be available at the site during the activity.
* Communicate to all personnel about testing & commissioning.
* Warning signs and boards should be provided and area to be well barricaded
* Appropriate PPE shall be worn at all times.
 | Low(ALARP) |
| 8. | Working in hot weather | Heat Stress | * Dehydration
* Sunburn
* Skin Cancer
 | 2 | B | M | * Drink plenty of water
* Employees shall be trained about heat stress symptoms & first aid measures.
* Avoid highly physical tasks during the hottest part of the day
* Isotonic drinks to be provided
* Provide sufficient rest breaks based on the humidity & temperature conditions
 |  Low(ALARP) |
| 9. | While working at night shift | * Poor illumination
* Slip/trip/fall
 | * Fatality
* Cuts
 | 3 | B | M | * Proper illumination to be provided light post to be secured from fall
* Proper cable management system to be followed
* All materials to be staged in proper manner without obstacles
 | Low(ALARP) |
| 10. | Work Completion | * Poor housekeeping
* Slip/trip/fall
 | Fire | 2 | A | L | * General housekeeping, Remove all surface, unwanted waste materials from the building
* All necessary precautions will be adopted to prevent fire
 | Low(ALARP) |

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|  |  | **RISK MATRIX** |  | Probability |
|  |  |  |  |  | A | B | C | D | E |
| Severity | People | Assets | Environment | Reputation | Improbable1 in 100,000Years | Remote1 in 10,000Years | Occasional1 in 1000years | Probable1 in 100 years | Frequent1 in 10 years |
| 5-Catatrophic | Multiple fatalities or permanent total disabilities | Extensive damage | Massive effect | International impact |  |  |
| 4-Severe | Singlefatalities or permanent total disabilities | Major damage | Major effect | National impact |  | **High Risk** |
| 3-critical | Major injury or health effects | Local damage | Localised effect | Considerable impact |  | **Medium Risk****(ALARP)** |  |  |
| 2-Marginal | Minorinjury or health effects | Minor damage | Minor effect | Minor impact |  |  |
| 1-Negligble | Slight injury or health effects | Slight Damage | Slight effect | Slight impact | **Low Risk** |  |

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| HIGH | **3-E****4-C,D,E****5-B,C,D,E** |
| MEDIUM | **1-D,E****2-B,C,D,E****3-A,B,C,D****4-A,B****5-A** |
| LOW | **1-A,B,C****2A** |