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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | Entering Concourse area for electrical isolation of SMDB,FDB and removing of outgoing feeder cable connection | * Electrical hazards * Incompetent person * Unauthorized operation * Fatality | Involving  Operatives, visitors,  and  other site  personnel  within the work area | 4 | 4 | 16 | High | * RAMS briefing shall be conducted and recorded. * Visual inspection shall be conducted by Project engineer. * Permit to work system shall be in place. * Trained competent electrical supervisor shall execute the lock out tag out procedure. * Contact information to be clearly visible on the tag. * Danger Tags and/or locks should be fitted to all isolation points. * Release or restrain stored or residual energy. * Tags should be dated and signed by authorized person. * Locks should be accompanied by a corresponding tag to identify who has locked out the unit. * Warning signage shall be provided on all isolation points. * Tags and locks should only be removed by the person who applied them or by the supervisor after consultation with the signatory of the danger tag. * That the person who applied the danger tag is unavailable, their tag or lock may only be removed in accordance with a management approved procedure. * Stand by person shall be appointed for monitoring the locked units * Suitable and sufficient PPE shall be provided | 1 | 4 | 4 | Low | Site Eng.  Supervisor, Foreman |
| 2 | Isolation of mechanical equipment’s.  Chilled water pipes, fire alarm system, firefighting pipes, water supply pipes, CDP and plumbing.  Using mobile tower/A frame ladder as an access. | . Work at Height  Fall of People,  Fall of Materials,  Property damage,  Slips, Trips and Falls  Mechanical services  Fragile ceiling | Involving  Operatives, visitors,  and  other site  personnel  within the work area | 4 | 4 | 16 | High | * Energy Isolation permits shall be approved. * RAMS briefing shall be conducted and recorded. * Detailed inspection to be carried out, prior to start isolation activity. * Adequate temporary lighting shall be provided, prior to isolate the existing services. * Energy isolation shall be done by trained competent electrician / electrical supervisor. * Shut down all equipment’s and disconnect the power sources. * Lock-out all isolation points by using single padlock or multi padlocks. * Warning signage and emergency contact information will be displayed on isolated source. * Protruding objects shall be marked and covered. * Suitable access equipment’s shall provide. * Tool box talk meeting shall be conducted and recorded. All identified hazards shall be clearly communicated to all. * Alert and work safely to avoid injured by fragile ceiling. * Periodic supervision shall provide. * Coordinate with McLaren and FM Service team to isolate the Fire water line and chiller water line. * Make sure main gate valves positively isolate and there is no water pressure. * Ensure that all existing services for fire alarm and others services should not damage or even if any damage immediate inform to McLaren/ FM. * Mobile Tower must be erect by trained and competent person and inspected by 3rd party certified inspector. * Operatives must ensure that scaffolding is safe to work and displayed green tag in access point. * Person working on scaffolding platform must wear full body harness and anchoring in a secured place. * Scaffolding platform must have guard rail and toe board. * Lanyards should be used with all hand tools to prevent it from falling * Suitable and sufficient PPE shall be provided. | 2 | 4 | 8 | Low | Site Eng.  Supervisor, Foreman |
| 3 | Uses of hand tools and millimeter | Damaged hand tools.  Wrong selection of tools  Homemade tools  Slip and fall |  | 4 | 3 | 12 | Medium | * Hand tools should be visually inspected for defects, prior to use.   Use recommended insulated hand tools only   * Never leave tools as tripping hazard. * Never use damaged, blunt or broken tools to   Avoid injury. Safe working distance between the operation and members of the public must be maintained at all times  Lanyards should be used with all hand tools to prevent it from falling.   * Avoid using of homemade tools. * Visual inspection shall conduct prior to using a hand tool. * Proper hand and body position shall implement. * Millimeter must be calibrated from certified lab. | 1 | 3 | 3 | Low | Site Eng.  Supervisor  Foreman |
| 4 | Use of ’A’ frame Ladder | * Ladder collapse * Fall from Ladder * Trip, Slip * Overhead obstructions. * Damaged ladder. |  | 4 | 3 | 12 | Medium | * Area must inspect where to fix the ladder. * ’A’ frame ladder should have an identification number and tag on the ladder and must maintain Ladder inspection register. * Make sure step ladders are fully opened and locked before use. * The user shall inspect the ladder for defects, prior to use it. If any defects found, replace the ladder with a good one. * Stand by personnel shall be provided for hold the ladder, during the work or if someone onboard on the ladder. * Always maintain 3 point contact when ascending or descending a ladder. * Damaged ladders shall remove from the service. * Operatives shall refrain from using top 2 rungs of a frame ladders and it shall be protected with plywood. * Ladder shall not place in front of any doors, or in any position where they may be knocked over, unless they have been adequately barricaded. * The feet of a ladder shall place on a firm footing, particularly where the ground may be soft or uneven. * Ladders shall never be placed on a box, bricks or any other thing to reach the height. * Ensure that the pads/bush are available for Aluminum ladders. * Suitable and sufficient PPE shall use. | 2 | 3 | 6 | Low | Site Eng.  Supervisor  Foreman |
| 5 | Working in poor visibility/dust condition | Health effects – eye damage/respiratory diseases. | All personnel in the work area | 3 | 4 | 12 | Medium | 1. Prepare the working area for a good working condition.  2.All workers should wear high visibility vest and PPE  3. Ensure that the working area is well-ventilated.  4. Wear goggles & Dust mask when working in a dusty place.  Proper illumination must be arranged in work place  5.TBT conducted  6.First aider and first aid kit available on the site | 2 | 3 | 6 | Low | Site Eng.  Supervisor  Foreman |
| 6 | Housekeeping | Slip, trip & fall injuries from unwanted materials that are scattered everywhere.  Hand injury from sharp objects.  Fire risk from combustible materials.  Serious injury or first aid case incident. | All personnel in the work area | 3 | 3 | 9 | Medium | 1. Work areas should be clear from unwanted materials that are scattered everywhere.  2. Always wear suitable hand gloves, eye protection and dust mask when transferring/arranging materials and debris.  3. Waste disposal must be in designated place. 4.Workers are to be aware of uneven ground and natural tripping hazards like as rocks | 1 | 3 | 3 | Low | Site Eng.  Supervisor  Foreman |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |

Approved By : Name Prabir Kumar Position \_ \_HSE\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_

**RISK ASSESSMENT & CONTROL GUIDELINES**

1. **Executing Steps:**
   1. **Planning**
2. Construction and HSE team must ensure that hazard identification is complete.
3. Construction and HSE team must prioritize the hazard issues, which are of significant in nature. (It means that risks have well established legal requirements, potentially high risks).
4. Construction and HSE team to prepare the risk assessment plan for the priorities identified hazards for these potential high risks.
   1. **Risk Assessment**

Risk is the probability of an event occurring in a given set of circumstances. The ‘event’ is an exposure to hazard. The hazard is the potential to cause harm. The risk assessment is the technique of evaluating not just the likelihood of an event occurring, but also the outcome will be in terms of injury, loss, damage or harm.

* 1. **Risk Assessment Process**

The process of carrying out a risk assessment should be as follows.

1. Identify the hazards.
2. Identify who might be harmed and how.
3. Evaluate the risk and implement the control measures.
4. Record the significant findings.
5. Review the assessment and update if necessary.
   1. **Examination of the Hazards and Risk Associated**

* Competent staff must be used in examining the risk associated with the identified hazard.
* Competent staff should examine following aspect to determine the risk involved:
* Examine the existing control measures in place.
* Identify employees at risk.
* Likelihood of risk.
* Severity
* Risk level and their tolerability.
  1. **Evaluating the risk:**

Once the necessary information has been obtained on the hazards encountered by work activities, next stage is to access the risks.

* + 1. **Risk Rating Score**

Risk rating score is a combination of two factors.

* The severity of the risk that could injure persons or cause damage to plant.
* The likelihood of the risk that it could happen (Probability).

**RISK RATING = LIKELIHOOD X SEVERITY**

**NOTE: Each activity has to be assessed for the risk value for determining the level of Severity and likelihood are mentioned in the table below.**

**SEVERITY**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **No Injury (1)** | **Minor Injury (2)** | **Moderate Injury (3)** | **Major Injury (4)** | **Catastrophic (5)** |
| **Rarely (1)** | **1** | **2** | **3** | **4** | **5** |
| **Unlikely (2)** | **2** | **4** | **6** | **8** | **10** |
| **Possible (3)** | **3** | **6** | **9** | **12** | **15** |
| **Likely (4)** | **4** | **8** | **12** | **16** | **20** |
| **Almost Certain (5)** | **5** | **10** | **15** | **20** | **25** |

**LIKELIHOOD**

**RISK LEVEL:**

|  |  |  |
| --- | --- | --- |
| **Low** | **Medium** | **High** |