



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT  
ARIYALUR  
ELECTRICAL MANUAL**

|                         |             |                               |              |
|-------------------------|-------------|-------------------------------|--------------|
| Issue No:02             | Rev. No: 00 | Effective Date: 01.11.2019    | ELEC/SOP/011 |
| Issued By: M.R          |             | Approved By: HOD - ELECTRICAL |              |
| SOP for LRS Maintenance |             |                               |              |

**Scope** : Describing LRS maintenance procedure to Electricians

**Responsibility** : Electrical Engineer

**Accountability** : Section Head

**PPE:**

1. Nose mask
2. Goggles
3. Tested Electrical Rubber Hand Gloves
4. Cotton Gloves
5. Safety shoes
6. Safety helmet

**Tools:**

1. Paint brush
2. Hand Blower
3. Waste Cloth
4. Suitable spanner
5. Insulated Screw driver
6. Discharge Rod

**Hazards:**

**Risk Associated**

Electrical Shock  
Minor body injury

**Mitigating Measures**

Tested Electrical Rubber Hand Gloves  
Safety shoes, gloves, helmet, goggles

**Training needs:**

1. Electrical shock recovery Training
2. Emergency preparedness
3. First aid training

**Procedure:**

1. Take the LOTO of the particular Motor Feeder (11KV HT Feeder) as per ELEC/SOP/001
2. Take the LOTO of the LRS Power Supply with as per ELEC/SOP/003.



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3. Open the Doors in the LRS Panel and Clean. While cleaning use PPEs like Nose mask, goggles and hand Gloves.
  4. Discharge the power terminals of LRS with discharge rod.
  5. Check the Tightness of all LRS power terminal tightness. While doing the tightening handle the tools firmly.
  6. Check the Condition of bushings for good condition. if not good, replace with new one.
  7. Check the Water level in the LRS tank and top up if the level is less than the normal indicated level. For makeup water level, use proper instrument and avoid spillage of water in the ground.
  8. Check the Power Connection Tightness of the Power Contactor of LRS short circuiting contactor. While doing the tightness, handle the proper tools firmly.
  9. Open all the Power Contactors Arc Chute and Clean the Arc Chute, Fixed & Moving Contacts. While cleaning use PPEs like Nose mask, goggles and hand Gloves.
  10. If the Condition of the Contact Kits is not good, replace with new Contact Kits.
  11. Fix the Arc Chute and Check for Free Movement of the Moving Mechanism for all Contactors
  12. Check the Control Wiring Tightness in the Resistance Panel & control panel with proper tool.
  13. Clean the LRS Control Panel with hand blower / cloth. While cleaning use PPEs like Nose mask, goggles and hand Gloves.
  14. Close the all panel doors and box up with Silicon Paste to restrict the dust entry.
  15. Check the LRS box and control panel Body earthing.
  16. Clear the LC as per ELEC/SOP/004 for the power supply of LRS.
  17. Clear the LC as per ELEC/SOP/002 for the motor feeder and check the healthiness in the CCR.
- Take Trial if Possible and record all Check point in the concern Check list.

**Emergency / Emergency Shut OFF:**

1. If electrical shock injury or body injury is there, give First aid and inform to the Safety department or Call Emergency number 3108/9865152222/9750963761.



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## Records/Annexure:

1. Refer Line clearance certificates.
2. JSA as enclosed below.

## JOB SAFETY ANALYSIS:(JSA)

| <b>Job Safety Analysis</b>   | Job: LRS maintenance         | Date:  | Analysis by:   | Reviewed by:   |
|--|------------------------------|--|--|--|
| Title of employee doing job: Electrician   | Supervisor: Section Engineer | Department: Electrical                         | Section:   | Approved by:   |
| Reqd./recommended PPE: Nose mask, Goggles, Tested Electrical Rubber Hand Gloves, Cotton Gloves, Safety shoes, Safety helmet. |                              |  |  |  |
| Sequence of Basic Job Steps  | Potential Hazards            | Recommended Safe Job Procedure                 | What Could Go Wrong                                      | Corrective Action  |
| Put on PPE, Take Permit  |                              |  |  |  |
| Cleaning of Panels   | Eye irritation,              | Wear goggles                                   | Damaged goggles/non standard goggles/ Not wearing goggle | Periodic replacement / Proper training/ Check before use |
|  | Respiration problem          | Wear Nose mask                                 | Damaged nose mask/Not wearing Nose mask                  | Periodic replacement/ Proper training/ Check before use  |
|  | Body injury                  | Use Proper PPE<br>Use proper tools             | May be damaged<br>Tools and material may slip            | Tool box talk  |
| Open the panel door.<br>Discharge the panel terminals by discharge rod   | Electrical shock             | Use Tested Electrical Rubber Hand gloves       | Damaged Gloves / Not checked before use                  | Periodic replacement/ To check for Damage before use     |
| Check the tightness of Power and control terminals   | Body injury                  | Use proper tools                               | Nonstandard /damaged tools                               | Training for tools handling/ Periodic replacement        |
|  |                              | Wear safety helmet, safety shoes , hand gloves | Tools and material may fall on human body                | Without PPE don't perform the job                        |
| Check Short circuit contactor  | Body injury                  | Use proper tools                               | Nonstandard /damaged tools                               | Periodic replacement.<br>Tool box training               |
|  |                              | Wear safety helmet, safety shoes , hand gloves | Tools and material may fall on human body                | Periodic replacement.                                    |