



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

Issue No:02	Rev. No: 00	Effective Date: 01.11.2019	ELEC/SOP/63
Issued By: M.R		Approved By: HOD - ELECTRICAL	
SOP for Lightning arrester maintenance			

**Scope** : Lightning arrester Maintenance

**Responsibility** : Electrician

**Accountability** : Electrical Engineer

**PPE:**

1. Nose mask
2. Goggles
3. Cotton Gloves/LT rubber gloves
4. Safety shoes
5. Safety helmet
6. Full body harness with double lanyard as per the requirement

**Tools:**

1. Discharge rods
2. Earth tester
3. Test lamp/Multimeter/Clamp meter
4. Suitable spanner
5. Cutting pliers
6. Screw Driver
7. Fiber Ladder

**Hazards:**

**Risk Associated**

1. Electrical Shock
2. Minor body injury
3. Fall from height

**Mitigating Measures**

1. Tested Electrical Rubber Hand Gloves
2. Safety shoes, gloves, helmet, goggles
3. FRP -A type Ladder & Full body harness

1. Emergency preparedness
2. First aid training



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**Procedure:**

1. Get general & Height work permit from the concerned Electrical section in-charge.
2. Clean Lightning spike with wire brush/Cloth. While cleaning, use PPEs like Nose mask, goggles and hand Gloves.
3. Check condition of lightning spike (Any cracks or damages).
4. Check condition of the earth flat and its insulator from lightning spike to earth pit chamber.
5. Open Earth Pit Chamber Cover, while opening handle the cover firmly, and take care about insects / snake bite.
6. Clean the Pit with Wire Brush / Hand Blower / Cloth. While cleaning, use PPEs like Nose mask, goggles and hand Gloves.
7. Open the earth flat from the Earth Electrode.
8. With the Earth Tester, Measure the Earth Pit Resistance Value (Individual Value).
9. Add Water and Salt / Char coal in to the Pit if required, While water pouring, avoid water spillage in the ground.
10. If required measure the Earth Resistance after a day or two for confirming the earth resistance within the range.
11. Check the Condition of Bolts, Nuts and Washers, if required replace and apply the Grease to avoid the rust. While applying, avoid spillage of Grease.
12. Close the Earth Pit Chamber Cover. While closing, handle the cover firmly.

**Emergency / Emergency Shut OFF:**

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



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**Records/Annexure:**

JSA is enclosed below.

**JOB SAFETY ANALYSIS: (JSA)**

<b>Job Safety Analysis</b>	Job:Lightning arrester maintenance	Date:	Analysis by:	Reviewed by:
Title of employee doing job: Electricians	Supervisor: Section Engineer	Department: Electrical	Section: Plant	Approved by:
Reqd./recommended PPE: Full body harness,Safety helmet, Safety shoe & Rubber Gloves.				
<b>Sequence of Basic Job Steps</b>	<b>Potential Hazards</b>	<b>Recommended Safe Job Procedure</b>	<b>What Could Go Wrong</b>	<b>Corrective Action</b>
Checking of lightning Spike	Body injury	Wear full body harness	Fall from height	Without full body harness/PPE don't perform the job/ Proper training / Follow SOP
Checking Physical condition	Injury due to fall of slab / material	Proper handling of Weight objects	Slip while displacing the slabs	Proper Handling methods
	Injury due to insects / snake bite	Be alert while opening earth pit cover and inspect for insects /snake availability	Not taking care on this aspect	Tool box talk before job
Earth flat disconnection & re-connection	Electric shock	Proper discharging methods	Usage of Improper tools & Non availability of alternate Discharge path	Usage of proper tools & Proper arrangement of Alternate discharge path
	Body injury	Wear safety helmet, safety shoes , hand gloves	Tools and material may fall on human body. Fingers can get caught between earth flats.	Without PPE don't perform the job/ Proper training / Follow SOP
Measuring Earth pit value	Electric shock	Safe Maintenance procedure	Improper measuring tools	Usage of Proper instruments