



**DALMIA CEMENT (B) LIMITED – CEMENT PLANT
DALMIAPURAM**



Issue No. 01	Rev. No: 00	Effective Date: 01.03.2016	SOP/Elect /26
Issued By: S & P		Approved By: Elect. & Inst Head	
SOP For Relays & Meters Calibration			

Scope/Purpose : This SOP is applicable for safe working during Relays and Meters Calibrations.

Responsibility : Section Supervisor – Electrical

Accountability : Section Head - Electrical

PPE:

1. Safety shoe
2. Safety Helmet
3. Nose Mask
4. Safety Goggles
5. Rubber Gloves

Tools:

1. Insulated electrical tools
2. Earth discharge rod
3. Multi meter
4. Calibrated current Injection Kit.
5. Calibrated Meters / Instruments for measuring voltage, current, frequency, power & Harmonics

Hazard Analysis:

Risks associated

Injury due to electric shock
Injury due to fall of materials
Injury due to CT Burst

Mitigating Measures

Ensure LOTO and OFF condition of electrical circuits
Ensure proper dismantling & handling mechanism
Ensure and Connect the CT leads in proper terminals

Training needs:

1. Emergency Preparedness
2. Systematic Testing & Calibration Procedure for relays & Meters



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Procedure:

- a) Get work permit from the concerned Electrical Section Supervisor.
- b) Ensure Power circuit & Control circuits are in Switched OFF condition
- c) Check & clean the control cubicle.
- d) Check & Confirm the CT & PT Ratios.
- e) Check & Disconnect the relay / Meter Connections need to calibrate.
- f) Connect the Relay / Meters with the Calibrated Current Injection Kit as per logic.
- g) Inject the potential & current to the Relay / Meter and calibrate it.
- h) Check the functionality of Input / Output Logics with respect to design & settings.
- i) Verifies the relay operation is within the trip time and pick up tolerances – for Relay Calibration
- j) check the functioning of alarm which is to notify the errors in the internal circuit
- k) Record the test / calibrated Values of Meters / Relays.
- l) Generate the Test report and Check for error.
- m) If error founded in the report, again repeat the test procedure otherwise generate final Report.
- n) After Calibration again restore the Connections back as per logic.
- o) Check & Ensure all the tools are taken out from Panel / Cubicles.
- p) Return the Work permit.

Emergency / Emergency Shut OFF:

1. If any injury is there, inform to the Electrical Shift Engineer (251 / 9842994062) or Safety Department (523) or call Emergency number 9865160055

Records/Annexure:

1. JSA is enclosed below.



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JOB SAFETY ANALYSIS: (JSA)

Job Safety Analysis	Job: LRR Maintenance	Date: 18.11.2015	Analysis by: B.Madhu	Reviewed by:
Title of employee doing job: Electrician	Supervisor: Section Supervisor	Department: Electrical	Section:	Approved by:
Req'd/recommended PPE: Safety Shoe, Nose Mask, Safety Helmet, and Safety Goggles & Rubber Gloves.				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Checking Power & Control circuit	Exposure to Live circuit	Use Rubber Gloves & Insulated tools	Damaged Tools	Periodic inspection & Replacement
Clean the Panel / Cubicle by Air blower	Dust emission	Use Nose Mask	Damaged Nose Mask	Periodic Replacement
While Charging the Panel after Calibration	CT Burst	Ensuring the CT Leads are connected in Corresponding Terminals Properly	Improper Ct Connections & Connecting the leads in wrong terminals leads to opening of CT secondary	After Restoring the connections back, Ensure the CT leads are connected properly in corresponding terminals.