



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



Issue No. 01	Rev. No: 01	Effective Date: 22.05.2015	SOP/Elect /11
Issued By: S & P		Approved By: Elect. & Inst Head	
SOP For Air Circuit Breaker Maintenance			

**Scope/Purpose** : This SOP is applicable for safe working during Air Circuit Breaker Maintenance

**Responsibility** : Section Supervisor – Electrical

**Accountability** : Section Head - Electrical

**PPE:**

1. Safety shoe
2. Safety Helmet
3. Nose mask
4. Rubber Gloves

**Tools:**

1. Box Spanner set
2. Ring Spanner set
3. Contact cleaning agent

**Hazard Analysis:**

**Risks associated**

**Mitigating Measures**

Injury due to charged spring	Release Spring charge before opening the front cover
Injury due to Tip over of Breaker	Use Proper trolley arrangement for Lifting/Shifting the breaker

**Training needs:**

1. Emergency Preparedness
2. Maintenance and operation exposure of ACBs

**Procedure:**

- a) Get work permit from the concerned Electrical Section Supervisor.
- b) Ensure Control circuit is in Switched OFF condition.
- c) Draw out the ACB from cubicle.
- d) Ensure Spring in discharged condition before starting the maintenance.
- e) Clean the circuit breaker by Air blower.



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- f) Check the fixed & moving contacts.
- g) Check the Arcing & Pre-arcng contacts.
- h) Check, clean & lubricate the spring and spring charging mechanism.
- i) Check the auxiliary contacts & limit switches.
- j) Check the opening/closing coil and measure its resistance value.
- k) Check contact resistance value at closed condition.
- l) Check the close/open operation manually.
- m) Check the close/open operation electrically in Test position.
- n) Switch off the AC & DC control supplies and ensure the spring in discharged condition.
- o) Restore the breaker in cubicle.
- 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. Sub-station maintenance register
2. JSA is enclosed below.



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## SOP For Air Circuit Breaker Maintenance

### JOB SAFETY ANALYSIS: (JSA)

<b>Job Safety Analysis</b>	Job: Air Circuit Breaker maintenance	Date: 17.12.2012	Analysis by: J.Chandrasekaran	Reviewed by:
Title of employee doing job: Electrician	Supervisor: Section Supervisor	Department: Electrical	Section: Load Center	Approved by:
Req'd/recommended PPE: Safety Shoe, Safety Helmet, Nose Mask & Rubber Gloves.				
Sequence of Basic Job Steps	Potential Hazards	Recommended Safe Job Procedure	What Could Go Wrong	Corrective Action
Draw out ACB from Cubicle	Exposure to Live circuit	Use Rubber Gloves	Damaged Rubber Gloves	Periodic Replacement
Clean the ACB by Air blower	Dust emission	Use Nose Mask	Damaged Nose Mask	Periodic Replacement
Check the ACB internals	Injury due to release of charged spring	Before assessing any moving part, Ensure Spring is discharged	Partially Discharged Spring & Faulty Indicator	Visually check the Spring condition
Manual Charging of the ACB	Injury due to Bounce/Slip of handle	Ensuring proper engagement of Spring Charging Handle	Damaged Handle / Handle lock mechanism is not in tact	Before manual spring charging, Ensure the Handle condition & Handle Lock mechanism
Shifting of the ACB	Injury due to Slipping of ACB	Move/Shift the ACB by proper Trolley	Damaged Trolley lifter	Before using the Trolley, Ensure the Trolley lifting arrangements are good in condition
Rack in ACB inside the Cubicle	Exposure to Live circuit	Use Rubber Gloves	Damaged Rubber Gloves	Periodic Replacement
Rack in ACB inside the Cubicle	ACB may get Switched ON	Before Rack in the ACB, Ensure Control circuit is in OFF condition	ACB may get ON due to Mechanical release of Spring charge Holding Latch	Before Rack in the ACB, Ensure Springs are in Released condition

HEAD E & I

HEAD TECHNICAL