

# Substation Circuit Breaker Inspection (Ready-for-Start)

ComEd Training and Reference Material (T&RM)  
CM-CE-303002-R0008  
Rev. 3

**Revision as of 07-20-17 as a result of ACE Report # 01091518:**

For any items on this Ready To Start (RTS) Checklist that cannot be completed OR have conditions that are questionable, the Person In Charge (PIC) is required to contact the appropriate ComEd Subject Matter Expert (SME) to determine the condition that must be achieved prior to Liveness. Any items that cannot be resolved prior to Liveness must be approved by the appropriate SME. That discussion shall be documented in the Comments section at the end of the RTS Checklist. Those Comments shall contain the date discussed, resolution, RTS Lead name and the name and position of the ComEd SME contacted.

**Revision as of 12-28-15 to include verbiage to support NERC CIP v5 activities.**

**Work performed on assets identified as a BES CYBER SYSTEM shall adhere to:**

- **RC-AC-PCS3-007 NERC CIP Configuration Control and Change Management Process.**
- **RC-AC-PGM3-003 NERC CIP Cyber Security Training Program**
- **RC-AC-PGM3-005 NERC CIP Access Management Program**

**ComEd prohibits liveness of Protection System Equipment without verifying all Preventive Maintenance (PM) Work Orders in PassPort per AM-CE-9095.**

Please Print

Location: \_\_\_\_\_

Equipment: \_\_\_\_\_

Work Orders and Task Numbers: \_\_\_\_\_

Checklist Completion: \_\_\_\_\_

Completed by: \_\_\_\_\_

**Any questions, call your Supervisor.**

The Supervisor and Person-in-Charge must review checklists for accuracy after completion of *Additions, Replacements, Maintenance, or Testing*, and verbally verify in person or by phone that each line item is completed before authorizing equipment to be energized and placed In-Service.

**IMPORTANT:** The last person to release clearance shall ensure that each department has completed their related checklists when applicable.

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Items must be initialed or marked *N/A*, and issues must be addressed before *Final Sign-off*.

Department	Checklist completed by (print first and last name)	FINAL SIGN-OFF (Signatures)	Start Date/Time	Completion Date/Time
SSM				
TG				
AO				
Other				

This Substation Circuit Breaker checklist applies generically to Transmission & Substation (T&S) Outdoor Circuit Breakers  $\geq 34\text{kV}$ , as follows:

- Air Circuit Breakers
- Oil Circuit Breakers
- Vacuum Circuit Breakers
- Hydraulic Circuit Breakers
- SF<sub>6</sub> Circuit Breaker

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### Checklist of Circuit Breaker Inspection Tasks

Initial each task to attest to task completion. If a task is not applicable to the job, write "N/A". If notes are required, check the field, and write the notes in the *Comments* section.

#	Tasks	SSM	TG	AO	Other	Peer Check	Notes
1	Verify PM Work Orders exist for new equipment according to AM-CE-9095						
2	Complete Add/Update forms and submit for entry into Cascade/Passport (new or replacement).						
3	Ensure equipment nameplate data has been recorded and forwarded to both Work Planner and responsible T&S Substation Engineer for entry into Cascade/Passport.						
4	Perform SF <sub>6</sub> Purity on SF <sub>6</sub> Breakers.						
5	Ensure oil levels /SF <sub>6</sub> pressures are correct in Breaker main tank.						
6	Confirm CT Switches are in proper position for service.						
7	Bushings: petticoats clean and undamaged; lead to bushing flag connector tight with visual sign of no-ox compound.						
8	Verify proper bushing oil levels. Oil should be visible in sight glass. It should not be low or 100% full. Verify proper gauge indicator type levels.						
9	Removed testing leads and moussing wire.						
10	Compartment vented.						
11	Bushing UST taps tightened and filled per ComEd Spec C-1200.						
12	Bushing potential device grounding switch left in proper position.						
13	Confirm Remote/Local Control Switches are in proper operating position for service.						
14	Control cabinet circuit breakers set to ON position unless tagged otherwise.						
15	Control cabinet heater, thermostat, and controls set to ON position unless tagged otherwise.						
16	All valve configurations proper for startup and operation.						
17	Perform leak check with SF <sub>6</sub> camera before placing equipment in-service.						

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18	No abnormal oil leaks.						
19	Verify case grounds installed.						
20	Nameplate secured to Breaker						
21	Equipment Labeling present and correct per Print or Spec.						
22	Alarms, Trips and Annunciators are operable, checked clear at Annunciator panel, and switches set to closed.						
23	Alarms unable to be cleared prior to release must be communicated to Designated Authority (DA) and Equipment Specialist to obtain consensus and permission.						
24	Relay protection scheme checked normal with test switches in proper position and instrument transformers (CTs and PTs) functional.						
25	Undispatched grounds removed prior to release of ZOP.						
26	Worker's Alteration Log cleared, or status reported to DA with consensus to energize.						

### Follow-up Items

#	Follow-up Items	SSM	TG	Other	Peer Check	Notes
1	Create work requests for SF <sub>6</sub> inspection of the unit and equipment, scheduled within 1 week after energizing, if needed, or as directed by Substation Engineering.					
2	Create work request for IR scan within 1 week after the equipment is energized.					

**Return completed checklist to your Supervisor**





