

AM-CE-P034-R3019  
Rev. 1

*Revisions to this document shall be communicated in accordance with program document AM-EU-P034 to ensure alignment between PCM Templates and field work procedures.*

Padmounted Operating Devices						
Component Classification Categories						
Criticality	I	X				34 kV Gas-insulated Load Centers
	II		X			15 kV Gas-insulated Load Centers
	III			X		15 kV & 34 kV Pad-mounted Modules
Duty Cycle	Heavy Load	N/A	N/A	N/A		
	Normal Load	N/A	N/A	N/A		
Service Condition	In Service	N/A	N/A	N/A		
	Spare	N/A	N/A	N/A		
<b>Condition Monitoring Tasks</b>					<b>Failure Codes</b>	<b>Comments</b>
Visual Inspection		1Y	3Y	5Y	1a-b, 2a-d	
Check Pressure		1Y	3Y	N/A	1c	
<b>Failure Finding Tasks</b>					<b>Failure Codes</b>	<b>Comments</b>
None		N/A	N/A	N/A		
<b>Time Directed Tasks</b>					<b>Failure Codes</b>	<b>Comments</b>
None		N/A	N/A	N/A		
<b>Condition Directed Tasks</b>					<b>Failure Codes</b>	<b>Comments</b>
None		N/A	N/A	N/A		

### **FAILURE MODES**

- 1. Fails to Provide Adequate Insulation Level
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- 2. Fails to Maintain Boundary Integrity

### **FAILURE CAUSES**

- 1a. Surface Contamination
- 1b. Mechanical Damage
- 1c. Low Pressure / Lack of Fluid
  
- 2a. Module Weld Failure
- 2b. Loose Connections
- 2c. Corrosion
- 2d. Improper Installation

### **MAINTENANCE TASKS**

- Visual Inspection
- Visual Inspection
- Check Pressure
  
- Visual Inspection
- Visual inspection
- Visual Inspection
- Visual Inspection

**TASK**

Check Pressure  
Visual Inspection

**DEFINITION**

Visually check the SF6 pressure gauge for proper gas pressure.  
Perform external visual inspection including:  
Inspect for pad locking mechanism, secure when required.  
Verify the accuracy of labeling.  
Inspect area around equipment for excessive vegetation, debris or other obstructions.  
Inspect for paint integrity, corrosion, and physical damage.  
Inspect for oil leaks.  
Visually check the structural integrity of the foundation.  
Visually check of wildlife damage and the need for additional material to prevent intrusion.  
Visually check fault indicators (where applicable)  
Visually check for defective or missing barrier boards  
Inspect electronic controls for obvious signs of damage or problems  
Inspect batteries for corrosion or other signs of damage

## Pad mounted Operating Device Template Summary

The Preventive Maintenance program is documented via maintenance templates. Templates have been developed that address transmission, substation, and distribution equipment that is owned, and maintained by Exelon Utilities. Each template documents the program tasks, frequencies, failure modes, and maintenance basis for the associated equipment. Tasks and associated frequencies are designed to address known failure modes of the equipment covered by the template. In general, the tasks included in the maintenance templates are the result of good industry practices, industry experience, and manufacturer recommendations.

### References:

Internal reports and operating experience

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### Boundary Definition

The boundary of pad mounted operating equipment is the structure and accessible functional parts within the structure

Excluded from this treatment are equipment in the vaults that are addressed in separate templates.

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### Failure Experiences

N/A

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### Vendor Recommendations

N/A

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### Disposition of Vendor Recommendations

N/A

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### Basis For Template Tasks

**Check Pressure:** For gas switches, verify proper gas pressure.  
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**Visual Inspection:** This inspection approximates real-time condition monitoring that can detect developing problems and degradation, and provides condition data used to initiate corrective actions.

<b>Revision 0 (ED)</b>		<b>Date 07/22/2005</b>
Writer	Larry Griess (Strategic Programs)	
Reviewer(s)	07/21/05 Template Challenge Session Attendees	
Approver(s)	Kathy McHugh (FAM Maintenance Planning)	
Reason Written	To document the maintenance program tasks, frequencies, failure modes, and maintenance basis	

<b>Revision 1 (ED)</b>		<b>Date 01/26/2007</b>
Writer	Larry Griess (Strategic Programs)	
Reviewer(s)		
Approver(s)	Kathy McHugh (FAM Maintenance Planning)	
Reason Written	General scrub, task and periodity review / update	

<b>Revision 2 (ED)</b>		<b>Date 11/30/2010</b>
Writer	Chris Stefanski	
Reviewer(s)	Ken Wendt (Mgr. Material Condition), Drew Reindel (Mgr. T&S Engineering)	
Approver(s)	Bill Fluhler , Bill Gannon, Nitin Patel, Jim Crane, Bill Sullivan	
Reason Written	Added note to ensure template changes are communicated to affected work groups.	

<b>Revision 0 (CE)</b>		<b>Date 01/30/2015</b>
Writer	Daniel Kurtz	
Reviewer(s)	Larry Burley (BGE), John Basten (ComEd), Dan Zoladz (PECO)	
Approver(s)	Cory Summerson (UFAM BGE), Mike Moy (UFAM ComEd) , J. Coffman (UFAM PECO)	
Reason Written	Created ComEd Template as part of EU alignment	

<b>Revision 1</b>		<b>Date 01/30/2018</b>
Writer	Jimi Conway	
Reviewer(s)	Keith Frost	
Approver(s)	Mike Moy	
Reason Written	Updated for alignment with EU template: Added 34kV gas-insulated load centers. Combined 15- and 34- kV switchgear into the 15kv & 34kV pad-mounted modules.	