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

Pole Top Transformers						
Component Classification Categories						
Criticality	I	X				O'Hare circuits
	II		X			Circuit Mainstem
	III			X		Fused Taps
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		
Condition Monitoring Tasks		**Task Frequencies**			**Failure Codes**	**Comments**
Visual Inspection		**2Y**	**2Y**	**6Y**	**2a-e, 3b**	
Failure Finding Tasks		**Task Frequencies**			**Failure Codes**	**Comments**
Thermography		**6M**	**2Y**	**N/A**	**3a, 3c-e**	
Time Directed Tasks		**Task Frequencies**			**Failure Codes**	**Comments**
None		**N/A**	**N/A**	**N/A**		
Condition Directed Tasks		**Task Frequencies**			**Failure Codes**	**Comments**
None		**N/A**	**N/A**	**N/A**		

FAILURE MODES	FAILURE CAUSES	MAINTENANCE TASKS
1. Fails to Provide Adequate Cooling	1a. Debris in Manhole	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2a. Gasket Failure	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2b. Weld Failure	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2c. Tank/Case Corrosion	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2d. Loose Connections	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2e. Tank Over Pressurization	Visual Inspection
2. Fails to Maintain Boundary/Structural Integrity	2f. Locking Mechanism Failure	Visual Inspection
3. Fails to Provide Adequate Insulation Level	3a. Insulation Oil Breakdown	Thermography
3. Fails to Provide Adequate Insulation Level	3b. Loss of Oil	Visual Inspection
3. Fails to Provide Adequate Insulation Level	3c. Solid Insulation Failure	Thermography
3. Fails to Provide Adequate Insulation Level	3d. Winding Insulation Failure	Thermography
3. Fails to Provide Adequate Insulation Level	3e. Bushing Failure	Thermography
3. Fails to Provide Adequate Insulation Level	3f. Vegetation/Animal Intrusion	Visual Inspection

TASK	DEFINITION
Thermography	Infrared inspection of electrical equipment and power path components to identify any hot spots that may exist.
Visual Inspection	External visual inspection of equipment and miscellaneous hardware that identifies broken / degraded components. Items inspected are documented via procedures posted to the Management Model under control element Conduct of Maintenance.

Distribution Transformer 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
Miscellaneous Distribution Devices Assessment Report (Gray Book)

Boundary Definition
The boundary is defined as the transformer.

Failure Experiences
Failures are subject to ACE/RCI investigation. Findings/recommended corrective actions are incorporated into the template as required.

Vendor Recommendations
N/A

Disposition of Vendor Recommendations
N/A

Basis For Template Tasks

Thermography: A primary tool for detection of hot spots and connection issues.

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.

	Revision 0	Date 08/21/2015
Writer	Dave Darji, Engineer/Intern, Distribution Standards	
Reviewer(s)	Dan Brotzman; Janine Keating, John Basten; Ken Wendt	
UFAM Approver (s)	Michael Moy (ComEd UFAM)	
Reason Written	EU Alignment on Minimum inspection cycle	

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Writer	Jimi Conway, ComEd	
Reviewer(s)	Keith Frost, ComEd; Marty Rave, ComEd	
UFAM Approver (s)	Michael Moy (ComEd UFAM)	
Reason Written	Three-year review cycle. No changes proposed.	