

**ALARM / ANNUNCIATOR
MAINTENANCE TEMPLATE**

AM-CE-P034-R1030
Rev. 1

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.

Alarm/Annunciator Systems							
Component Classification Categories							
Criticality	I	X					Nuclear switchyards ≥ 220 kV as defined in the respective Nuclear Plant Interface Requirements (NPIRs)
	II		X				DC, SS, TDC, TSS locations that serve O'Hare & Midway Airports
	III			X			ComEd locations exclusive of Criticality I & II, DC, and ≤34 kV ESS locations
	IV				X		DC locations
	V					X	≤ 34 kV ESS locations
Duty Cycle	Heavy Load	N/A	N/A	N/A	N/A	N/A	
	Normal Load	N/A	N/A	N/A	N/A	N/A	
Service Condition	In Service	X	X	X	X	X	
	Spare	N/A	N/A	N/A	N/A	N/A	
Condition Monitoring Tasks		Task Frequencies				Failure Codes	Comments
None		N/A	N/A	N/A	N/A	N/A	
Time Directed		Task Frequencies				Failure Codes	Comments
None		N/A	N/A	N/A	N/A	N/A	
Failure Finding Tasks		Task Frequencies				Failure Codes	Comments
Visual Inspection		5W	5W	10W	3M	6M	1a-c
Condition Directed Tasks		Task Frequencies				Failure Codes	Comments
None		N/A	N/A	N/A	N/A	N/A	

**ALARM / ANNUNCIATOR
FAILURE MODES**

	FAILURE MODE	FAILURE CAUSES		MAINTENANCE TASKS
1. Fails to alarm 1. Fails to alarm 1. Fails to alarm		1a. No power to system 1b. Component failure 1c. Computer failure	Visual Inspection Visual Inspection Visual Inspection	

**ALARM / ANNUNCIATOR
MAINTENANCE TASK DEFINITION**

TASK	DEFINITION
Visual Inspection	Visually assess operation of annunciator system; report defects by exception. Items to check may include: -- Check for loss of power -- Verify annunciator is functional

ALARM / ANNUNCIATOR MAINTENANCE BASIS

Alarm/Annunciator Systems 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:

1. None

Boundary Definition

The boundary of the Alarm/Annunciator Systems for the purpose of this document is defined to include the Substation Alarm/Annunciator Display Systems only. This device can be a legacy lighted window annunciator or a more modern panel display device. Any internal wiring or components that support the system as a standalone unit is included. The maintenance of the wiring leading to external devices that provide input to or output from the Alarm/Annunciator Systems is expected to be monitored and tested by the clients utilizing the Alarm/Annunciator System. Maintenance of substation computers used for alarming purposes is determined by ownership of the computer. At ComEd, substation computer Field Interface Gateways (FIGs) are owned by IT and thus their maintenance is not included in this template.

Excluded from this treatment are: The associated external devices that initiate the alarms are not included as part of this maintenance program nor is the associated cabling. Commercial alarm systems used for Fire or Burgler Protection are not included in this template. Alarming systems/displays that are specific to one piece of substation equipment are not included in this template. For example, an annunciator inside the control cabinet of an IPO circuit breaker.

Failure Experiences

N/A

Vendor Recommendations

N/A

Disposition of Vendor Recommendations

N/A

Basis for Template Tasks

Visual Inspection: Annunciators provide local indication of monitored alarm conditions. Alarm indication facilitates determination of problems with substation equipment.

**ALARM / ANNUNCIATOR
TEMPLATE DEVELOPMENT HISTORY**

Revision 0		Date 08/06/2015
Writer	Chris Stefanski (Exelon Utilities)	
Reviewer(s)	Ken Wendt, Hugo Castaneda	
Approver(s)	Mike Moy (UFAM ComEd)	
Reason Written	Revised criticality definitions and modified document to serve as the ComEd maintenance standard.	

Revision 1		Date 06/29/2018
Writer	Kevin Swiat (Material Condition)	
Reviewer(s)	Martin Copello (Relay & Protection Engineering)	
Approver(s)	Michael Moy (UFAM ComEd)	
Reason Written	Revised criticalities to align with AM-CE-P034-R0001; Removed statement from Boundary Definition on PECO T&S ownership of substation automation computers; Completed 3 Year Review.	