

Appendix-A: PMA Criteria

1.0 Critical Problem: Priority Level I

- Any anomaly that is identified as a safety hazard, or an immediate threat to grid reliability.
- Identified with diagnostic analysis and inspections.

Table CBM-1: Priority Level I

Equipment	Infrared	Visual	Acoustical	Due Within
Transformers and Regulators				
Bushings's pin, cap, rod, or bolted connection	Any heating compared to references	No oil level indication	—	72 hr/21 Days
LTC	>3°C Rise from main tank/May be Equipment Specific	—	—	72 hr/21 Days
	>3°C Rise from top to bottom	—	—	72 hr/21 Days
Circuit Breakers				
Bushing's pin, cap, rod, or bolted connection	>=75°C Rise or any heating compared to references	No oil level indication	—	72 hr/21 Days
Main Tank; Oil	>3°C Rise from top to bottom or tank to tank (3 tank CB)	—	—	72 hr/21 Days
Vacuum Bottle	—	—	Arcing from high voltage cabinet	72 hr/21 Days
Mechanism	>=75°C Rise	—	—	72 hr/21 Days
DC Systems				
Batteries/Chargers	—	Active acid leaking from cell(s)	—	72 hr/21 Days
	—	Battery voltage at or below: (50/126/252 VDC respectively)	—	72 hr/21 Days
	—	Station/Battery Voltage ±5 V from normal reading	—	72 hr/21 Days
	—	Battery Amps readying ±3 A from normal reading	—	72 hr/21 Days
Switchrack				
Disconnects/Bolted Connections	>=75°C Rise	—	—	72 hr/21 Days
Clevis Pin/Bolt	—	Worked out of seated position due to missing/broken cotter key	—	72 hr/21 Days
PT's and CT's				
Bushing	>=75°C Rise	No oil level indication	Arcing	72 hr/21 Days
Main Tank	>3°C Rise from top to bottom	No oil level indication	Arcing	72 hr/21 Days
Secondary Wiring				
MEER/Switchrack	—	Excessive Corrosion, burnt, loose	—	72 hr/21 Days
Roto's	>=2°C Rise	—	—	72 hr/21 Days
All other secondary connections	>=6°C Rise	—	—	72 hr/21 Days
Substation Yard/Perimeter				
Substation Fencing/Wall	—	Perimeter fence or wall with a hole (including erosion)	—	72 hr/21 Days
Vegetation	—	Visible vegetation (weeds/plants/bushes/brush/trees) in or around energized electrical equipment	—	72 hr/21 Days
Grounding	—	Broken/Missing Grounding	—	72 hr/21 Days
Fuses				
Primary fuses	>=75°C Rise	Damaged	—	72 hr/21 Days
Rodents/Birds				
Substation Apparatus	—	Deceased on or beside equipment. On ground inform switching center	—	72 hr/21 Days

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2.0 Serious Problem: Priority Level II

- Any anomaly that has the potential to develop into a hazardous condition and affect grid reliability.
- Identified with diagnostic analysis and inspections.

Table CBM–2: Priority Level II

Equipment	Infrared	Visual	Acoustical	Due Within
Transformers and Regulators				
Bushing's pin, cap, rod, or bolted connection	Any heating compared to reference shall be a P1	Low oil indication or Active Oil Leak	—	1 yr
Main Tank	Low oil indication	Low oil indication or Active oil leak	—	1 yr
Fans	—	Fan(s) inoperable	—	90 Days approaching Summer/180 Days in Fall/Winter
Pumps	—	No oil flow indication / Active Oil Leak	Excessive vibration	90 Days
Desiccant	—	Expired desiccate with discoloration	—	180 Days
LTC	—	Low oil indication or Active Oil Leak	—	1 yr
Mechanism	>=20°C Rise<75°C Rise	Oil at bottom of mechanism. Broken terminal board insulation	—	2 yr
Temperature Gauges	Improper Calibration	Disconnected/Missing	—	180 Days
Nitrogen	—	Negative/0 pressure in warm/hot weather not OK. Negative in cold months OK	—	90 Days
Circuit Breakers				
Bushing's pin, cap, rod, or bolted connection	>=20°C Rise<75°C Rise	Low oil indication or Active Oil Leak	—	1 yr
Main Tank; Oil	>3°C Rise from top to bottom or tank to tank (3 tank CB)	Low oil indication or Active Oil Leak	—	1 yr
	>3°C Rise from adjacent CB = Loading	Low oil indication or Active Oil Leak	—	1 yr
Vacuum	Heater not working	Heater not working	—	1 yr
SF ₆	—	—	SF ₆ Leak	90 Days
Mechanism	>=20°C Rise<75°C Rise	Oil at bottom of mechanism. Broken terminal board insulation. Heater not working	Air Leak	2 yr
Counter	—	Counter non-operational or can't read counter.	—	90 Day on Capacitor CBs/All other CBs 1 yr
DC Systems				
Batteries/Chargers	—	Low water (below the low line), excessive post corrosion	—	90 Days
Disconnects/Bolted Connection				
—	>=20°C Rise<75°C Rise	—	—	2 yr
—	—	Improper latched disconnect, broken parts, out of alignment	—	90 Days
PT's and CT's				
Bushing's pin, cap, rod, or bolted connection	>=20°C Rise<75°C Rise	Low oil indication or Active Oil Leak	Acoustical activity	1 yr
Main Tank	—	Low oil indication or Active Oil Leak	—	1 yr
Substation Yard/Perimeter				
Vegetation	—	Visible vegetation (weeds/plants/bushes/brush/trees) in or around facility	—	90 Days
Grounds	—	Straps frayed	—	6–12 months
Switchrack Structure				
Equipment/Structures	—	Excessive Corrosion	—	2 yr
Substation Labeling/ Equipment Signage	—	Worn Out, faded or difficult to read	—	90 Days
Critter Guard	—	Missing/Damaged	—	1 yr
Cotter Key	—	Walking out	—	1 yr
Cotter Key	—	Missing	—	6 months
Metal Clad Enclosure				
—	—	Excessive Corrosion	—	2 yr
Capacitors				
Cap Unit	>=20°C Rise<75°C Rise	—	—	—
—	—	Leaking oil	—	1 yr
—	—	broken insulators, broken fuses/holders	—	6 months

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3.0 Intermediate Problem: Priority Level III

- Any anomaly that is identified as no immediate threat to personnel or grid reliability. Identified with diagnostic analysis and inspections.

Table CBM-3: Priority Level III

Equipment	Infrared	Visual	Acoustical	Due Within
Transformer and Regulators				
Bushing	—	Approaching low level indication	—	Reassess at next scheduled PMA Inspection
LTC	—	Approaching low level indication	—	Reassess at next scheduled PMA Inspection
Mechanism	>10°C Rise<20°C Rise	—	—	Reassess at next scheduled PMA Inspection
Circuit Breakers				
Bushings	>10°C Rise<20°C Rise	Approaching low level indication	—	Reassess at next scheduled PMA Inspection
Main Tank; oil	—	Approaching low level indication	—	Reassess at next scheduled PMA Inspection
Mechanism	>10°C Rise<20°C Rise	—	—	Reassess at next scheduled PMA Inspection
Disconnects/Bolted Connection	>10°C Rise<20°C Rise	—	—	Reassess at next scheduled PMA Inspection
PT's and CT's				
Bushing	>10°C Rise<20°C Rise	Approaching low level indication	—	Reassess at next scheduled PMA Inspection
Main Tank	—	Approaching low level indication	—	Reassess at next scheduled PMA Inspection