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NERC Lessons Learned and Alerts

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Link: Lessons Learned (nerc.com)

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NERC Lessons Learned

Combustion turbine Anti-Icing control strategy

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Interest Groups:	GO, GOP
Problem Statement:	An entity experienced icing over a combustion turbine steam in-let valve where the Original Equipment Manufacturer's (OEM) anti-icing logic did not detect all potential icing conditions as per design. In a few instances, unexpected icing occurred where combustion turbine air inlets were subject to intermittent interference from outside sources of warm and moist air streams. Although these outside sources are somewhat intermittent and unpredictable, they can occasionally impact the combustion turbine inlet air, depending on wind speed and direction, wind gust intensity, and plant equipment orientation. Due to the intermittent nature of these occurrences, the anti-icing instrumentation did not consistently detect these instances and icing in the inlet ductwork occurred.
Lessons Learned :	The entity instituted a more aggressive combustion turbine anti-icing strategy to prevent a reoccurrence. In addition to using the existing OEM anti-icing software package, the entity's solution proactively opens the inlet bleed heat valve to a minimum value of 10% whenever ambient temperatures drop below 45°F, ensuring a baseline level of heating is added to the combustion turbine inlet air at all times during cold weather operation.
	Ensure that manual corrective actions are proactively taken when unexpected icing may occur due to intermittent interference from outside sources of warm, moist air streams from rivers, lakes, or oceans or near artificial sources that emit warm, saturated air streams, such as cooling tower plumes, exhaust stack plumes, blowdown tank vents, or flash tank vents.

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