JUNE 15, 2023

NERC Lessons Learned and Alerts

Harish Vijay Kumar
Compliance Assurance

Link: Lessons Learned (nerc.com)

ieso
Connecting Today. Powering Tomorrow.

NERC Lessons Learned

Combustion turbine Anti-Icing control strategy

Initial Distribution: April 19, 2022

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.

ieso
Connecting Today. Powering Tomorrow.

NERC Alerts

Inverter based resource performance issues

Initial Distribution: March 14, 2023

Interest Groups:	GO, GOP (Solar and BESS Owners)
Problem Statement:	NERC analysed multiple large-scale disturbances on the bulk power system (BPS) involving widespread loss of inverter-based resources (IBRs), as a result, NERC issued a level 2 alert with a set of the recommendations that should also be reviewed and implemented by owners of all BPS-connected solar PV resources. The alert also seeks to gather from solar PV asset owners to understand whether additional actions are necessary to mitigate possible BPS performance risks. Applicable GOs are strongly encouraged to consult their inverter- and plant-level controller manufacturers, review inverter settings and controls currently installed in the field, and implement the recommendations described herein, and review this information with the associated Generator Operators (GOPs) as applicable. Responses to the questions in the questionnaire are to be submitted via the NERC Alert System by June 30, 2023, Midnight Eastern.
Recommendations :	Recommendations mention changing inverter protection setting to satisfy certain criteria mentioned in the alert, collector system and substation protection settings, mitigating inadvertent protection system operation for normally cleared BPS faults, Coordinate with inverter manufacturers and power plant manufacturer for facility control modes, fault ride through modes and parameters, proactively implement corrective actions to mitigate IBR failing ride through and not artificially limit dynamic reactive power capability delivered to the point of interconnection during normal operations and BPS disturbances.

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca

@IESO_Tweets

facebook.com/OntarioIESO

linkedin.com/company/IESO

ieso
Connecting Today. Powering Tomorrow.