



AESO Reliability Standards Monthly Report

April 2010

EOP-005-1 – System Restoration Plans

Purpose:

Request for Interpretation by the Florida Municipal Power Agency (FMPA).

Standard:

The standard was approved by the NERC Board of Trustees on May 2, 2006 and came into effect one year later.

Request:

FMPA asks:

Question1

What is meant by the phrase "verify the restoration procedure" and by the term "simulation" in requirement R7?

Question 2

For a TOP without any blackstart facilities in its restoration plan, can exercises and tabletop drills be used to meet Requirement R7 by "verifying the restoration procedure" through tabletop "simulations?"

NERC Interpretation:

Response 1

Verifying the Restoration Procedure:

The phrase "verify the restoration procedure" means establishing that the restoration procedure will produce the desired results and can progress as planned. The requirement allows two ways to verify the restoration procedure. The first option is for a Transmission Operator or Balancing Authority to actually demonstrate that the procedure is verified through a physical test of the procedure (i.e. operate Bulk Electric System Elements in order to demonstrate the ability to establish a Cranking Path and start a generating unit using that Cranking Path). The other option is by simulation, which is an engineering analysis, using industry-accepted engineering analytical methods and practices to verify the restoration plan. The level of simulation required is dependent upon the nature of the restoration plan and may consider load flows to verify steady state conditions, transient stability analysis to verify the dynamic performance, and electromagnetic transient analysis to verify switching operations. Whichever method is chosen by the Transmission Operator or the Balancing Authority to verify the procedure, the desired outcome of the verification is to demonstrate that the restoration procedure will produce the desired results and can progress as planned.

Simulation:

NERC standard EOP-005-1 uses two different terms related to "simulation." In Requirement R6, the term "simulated exercises" is used. It is apparent to the drafting team that simulated exercise refers to a walk through of the restoration plan (and its associated procedures) by operating personnel in order to train them on the plan and familiarize them with various procedures. In Requirement R10, the term "simulation" is used in the context of providing an engineering analysis of the ability of blackstart generating units in a Transmission Operator's restoration plan to perform their intended functions as required in the regional restoration plan. The same term, "simulation," is used in Requirement R7, so that context would dictate that simulation refers to an engineering analysis and not a walk through or exercise.



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Response 2

Based on the reference document quoted above, the drafting team interprets that tabletop exercises can meet some of the requirements but cannot be used to meet the simulation requirements.

Applicability:

Transmission Operator, Balancing Authority

Current Status:

The interpretation was posted for pre-ballot review until April 21. Balloting is on hold while NERC goes through the approval process of their revised Standards Development Process.

NERC Link:

[System Restoration Plans](#)