NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Project 2015-09 – System Operating Limits
Technical Conference

Wednesday, May 4, 2016 | 1:00 P.M. – 5:30 P.M. EST
Thursday, May 5, 2016 | 8:30 A.M. – Noon EST

NERC Atlanta Office
3353 Peachtree Road NE, Suite 600
Atlanta, GA 30326

Technical Conference: Questions for Discussion

Topic 1: Definitions

1. Is every BES Facility required to have a System Operating Limit (SOL)?
2. Should the definition include a reference to the time-horizon in which the limit is being used (i.e., "used for operations")?
3. Currently operating criteria are defined as thermal, voltage and stability. Are there other types of operating criteria or limits? Equipment limits?
    a. What limitations are there? (Phase angle limitations; sub-synchronous oscillation/SSO; short circuit ratio/SCR; fault interrupting capability of breakers; transient voltage limitations on equipment; geomagnetic induced currents on equipment)
    b. Definitions of RTA and OPA include "and identified phase angle and equipment limitations"
4. Do you allow use of "proxy" limits?
5. Is there a need to define SOL Exceedance?
    a. At what point in time does an exceedance occur?
    b. Is an exceedance a violation after a certain amount of time or is it reaching a certain unacceptable condition as a result of the exceedance?
    c. If your calculated post-Contingency flow exceeds the highest available Facility Rating, this constitutes unacceptable system performance, and thus an SOL exceedance?
6. Is there a need to revise the definition of SOL?
7. Is there a need to revise the definition of Interconnection Reliability Operating Limit (IROL)?

Topic 2: Establishing SOLs (in the Planning Horizon)

1. What is the role of SOLs established in the planning horizon?
2. Do you believe FAC-010-3 is needed for reliability, or can it be retired?
    a. Given TPL-001-4, does retirement of FAC-10-3 leave a gap in planning?
    b. Given TPL-001-4, does retirement of FAC-10-3 leave a gap in operations?
    c. What, if any, FAC-010 requirements should be maintained?
    d. What revisions, if any, should be made to ensure that operating limit information is exchanged between planning and operating entities?

3. How does the PC (and TP) consider the RC SOL methodology today? Is it considered?
4. How does the RC consider the PC (and TP) methodology today?
5. What if PC (and TP) were required to follow the RC methodology?

Topic 3: Establishing SOLs (in the Operations Horizon)

1. Should FAC-011 include a table of applicable contingencies and acceptable system performance requirements (similar to TPL-001-4)?
    a. How are studied contingencies different between Planning and Operations time horizons? Do the differences impact reliability?
2. Where is the appropriate place to define acceptable performance criteria for operations?
3. When establishing different types of operating limits, how do you consider the following:
    a. Facility Ratings
        i. Is there a need for uniformity in establishing ratings?
        ii. What happens if the Facility has multiple owners?
        iii. Facility Ratings used in operations should be predetermined and consistent between the TOP and RC. What happens if the TOP and RC are not using the same limit? (e.g., 2 hour vs. 4 hour)
        iv. Where is the best place to address the use of Facility Ratings in operations? In the requirement of a standard (SOL methodology) or through a definition?
        v. How are ratings communicated?
    b. Voltage limits
        i. Is a definition needed for "System Voltage Limits?"
        ii. Do you believe that VAR-001 addresses voltage limits?
        iii. Is there a need to have requirements for establishing voltage limits?
            1. Who establishes voltage limits?
            2. How does the TOP consider equipment voltage ratings provided by the owner (TO or GO)?
        iv. Should voltage limits be required to contain normal and emergency, high and low limits?
        v. How are voltage limits communicated?
    c. Stability limitations (transient stability and voltage stability)
        i. Currently, there is no industry-wide stability limit criteria. Is greater specificity needed?
        ii. Currently, the standard gives the RC flexibility to define what acceptable stability performance is for its RC Area. Does this flexibility support reliability?
        iii. What is the best way to maintain RC flexibility, but yet create some uniformity or minimum criteria that must be identified by the RC?
        iv. How are stability limitations communicated?

Topic 4: Establishing IROLs

1. Currently, RC has flexibility to identify IROLs to meet the unique characteristics of their particular system. (FAC-011-3 Requirements R1 and R3 allow the RC to identify which specific SOLs qualify as IROLs.) Does this flexibility support reliability?
2. Do you believe that the current definition of IROL could be construed to mean that *any* instability would require the establishment of an IROL?
3. Does all instability warrant establishing an IROL? If no, what type of instability is not an IROL?
4. Should pre-Contingency mitigation action be required for any type of instability, up to and including load shed?
5. Are there regional differences or variances in the formulation of IROLs? What are the potential reliability impacts of such differences?
6. What, if any, value is there to providing a uniform approach or methodology to defining and identifying IROLs?

Topic 5: Communicating SOLs and IROLs

1. How are SOLs or IROLs that are determined in Real-time communicated to other entities?

Topic 6: Using SOLs

1. How are SOLs used in the new TOP and IRO standards, including Operational Planning Analysis, Operating Plans, Real-time Assessments, and requirements to implement operating plans to prevent or mitigate SOL exceedances?