



# 2022 Focus FAC-008 Facility Ratings

February 9, 2022



# Importance of Facility Ratings

- The crux of developing accurate System Operating Limits
- Without accurate ratings...
  - Real-time situational awareness is impacted
    - Interface MW Flow
    - Transient Stability
    - Voltage Stability
    - System Voltage Limits
    - Interconnection Reliability Operating Limits
  - System Operator response during contingencies could make things worse
  - Planning studies are inaccurate
  - Protection system and relay loadability settings are impacted
  - Equipment is damaged





# Best Practices – Establish a Robust Process

Develop robust documented processes related to transmission and substation equipment change management that includes:

- A methodology that is annually reviewed with clear instructions and defined roles and responsibilities and obligations by department
  - Planned, Unplanned, Acquired Facilities
- Establishment of an accurate baseline of ratings and equipment
- A mature data management process to ensure continued accuracy
- Annual training for Staff of all involved departments
- Proposed and actual changes are reviewed by Subject Matter Experts
- Required pre-change approvals and notifications
- Periodic reviews/comparisons with internal and external models
- Periodic reviews with others (e.g., construction/maintenance crews, protection and control, Control Center Energy Management System support, coordination with Reliability Coordinator and Transmission Operator, coordination of rating with the neighboring system)
- Process for ad-hoc review to occur if a major event has occurred



## Best Practices – Tool and Actions

- Ensure that inventory tools allow write access that is dictated by defined roles in the facility ratings methodology
- Automated notifications to affected groups of Facility Ratings changes
  - Protection Engineering
  - Transmission Planning
  - System Operations
  - EMS Support Team
- Validate through periodic field verification of ratings or annually – percentage/quantity determination can be based on legacy, post-event review, and new installations
- Develop a checklist for equipment changes that include:
  - Data provision obligations (internally and externally)
  - Require the need to review impacts to SOLs, protection system settings, EMS/GMS alarming impacts
- Develop a complete Facility Rating database that include all series elements and identifies the most-limiting series element(s) and includes jointly owned Facilities



## Most Root Causes – Lack of Controls

### Implement Defense in Depth Practices

- Change management practices
  - Communication between departments
  - Peer Reviews
  - Contractor Management
- Facility/Element/Asset database management practices
  - Establish a baseline of elements for each Facility
  - Include regular verification and validation to ensure accuracy
- Staff training – establish obligations and refresh



## Aim of NPCC

- Increased entity awareness of this ERO-wide issue
- Reduce risk to the BES
  - Earlier discovery by the entity
  - Corrective and preventative mitigation starts earlier
- Adjustments to entity processes and controls result
- Entity resultant actions lend themselves to being sustainable

If not already not self-aware, NPCC recommends:

Perform a Self-Assessment