Facility Ratings Recommendation Questionnaire
Due by January 18, 2011

1. Provide the total number of bulk power system transmission circuit miles on your system. Include all facilities that are: (i) operated at 100 kV and above, (ii) lower voltage as defined by the Regional Entity necessary to provide for the reliable operation of the interconnected transmission grid, or (iii) included on a critical facilities list that is defined by the Regional Entity.

   Answer:

Voltage	Circuit Miles
500kV (i)	1330
230kV (i)	5330
115kV (i)	5880
60kV (ii)	20
60 & 70kV (iii)	NA

2. Provide the total number of bulk power system transmission circuits on your system.

   Answer:

Voltage	# of Circuits
115kV	556
230kV	225
500kV	21
60kV	1
Total	803

3. Has your organization already adequately addressed this Recommendation to confirm that any differences observed between design and actual field conditions are within design tolerances as defined by your Facility Ratings Methodology?

   Answer:

   No

4. If your answer to Question #3 was "no", explain your plans to complete the assessment of your facilities, including the methods to be used and the length of time necessary to complete the assessment?

Recommended method to complete the assessment –

1. Complete a review of design criteria to determine the existing clearance buffers.
2. Evaluate Conductor Clearance to Ground Conditions
    a. Evaluate conductor sag characteristics for the conductors for each voltage classification.
    b. Determine critical span length at which conductor sag at maximum operating temperature may exceed the design buffer.
    c. Use GIS data to determine the circuits and structures that exceed the critical span length.
    d. Evaluate critical spans (and random sampling of non-critical spans) to determine candidate spans with potential conductor to ground clearance condition
        i. Review existing profiles to verify terrain features
        ii. Engineering reports potential clearance infraction
        iii. Prepare work order to correct potential clearance issue
        iv. Perform detailed field inspection of candidate spans with potential ground clearance problems using appropriate technology
            1. Laser range finders or other appropriate height measuring device, or
            2. LiDAR
        v. Perform engineering to verify if there is a clearance infraction
    e. If a clearance problems exist with conductor at maximum operating temperature take the following action:
        i. Document discrepancy
        ii. Develop and implement corrective action plan
3. Evaluate Circuit to Circuit Clearance Conditions
    a. Perform detailed inspection of all spans with distribution underbuilt and other circuit crossings
    b. Use appropriate tools to determine conductor to conductor clearance
        i. Laser range finders or other appropriate height measuring device, or
        ii. LiDAR
    c. Prepare work order to correct potential clearance issue
    d. Perform engineering to verify if there is a clearance infraction
    e. If a clearance problems exist with conductor at maximum operating temperature take the following action:
        i. Document discrepancy
        ii. Develop and implement corrective action plan

Circuit Prioritization Criteria

High Priority (potential for system stability issues)
Mileage – 2700 circuit miles (approximate)
Schedule – Complete Assessment by December 31, 2011

1. WECC transfer path circuits
2. Circuits critical to reliability or stability
    a. All remaining 500kV circuits
    b. Selected 115kV & 230kV circuits

Medium Priority (heavily loaded circuits)
Mileage – 5500 circuit miles(approximate)
Schedule – Complete Assessment by December 31, 2012

3. Major Generation (400 MW or greater) outlets
4. Circuits re-rated (3 or 4 fps; short-term ratings)
5. Circuits scheduled for reconductoring
6. Planned re-rates
7. Circuits with Operation Contingency Plans

Low Priority (all remaining circuits)
Mileage – 4350 circuit miles (approximate)
Schedule – Complete Assessment by December 31, 2013

8. 115kV wood pole circuits with distribution underbuilt
9. 115kV wood pole circuits with communication underbuilt
10. Circuits with known underbuilt crossings
11. All reconductored circuits
12. Circuits built prior to 1999
    a. 230kV circuits (not included elsewhere)
    b. 115kV circuits (not included elsewhere)
13. All remaining circuits