

## **Part V: Transmission Planning Assessment Practices**

Platte River annually updates its Ten Year System Plan Report (“Report”) with completion around June 1 each year. The Report includes but is not limited to the following: load forecasts, proposed transmission facilities, underfrequency load shedding coordination, and a transmission system database.

### **Powerflow Analysis**

Powerflow Studies are typically conducted each year using an operating base case and a ten-year planned system base case for summer peak conditions, or winter peak conditions, or both. If problems are discovered in the ten-year studies, then the time between the operating and the ten-year scenario is studied to determine when the problem needs correction.

N-0: System Intact conditions are simulated in the base case. Overloaded transmission elements and voltages that exceed the limits given in Part 4 of this filing are identified as criteria violations. The criteria violations are evaluated and possible solutions are recommended.

N-1: Single contingency (N-1) outages are simulated for every transmission line, transformer, and generator in the Platte River system. Terminals with shunt capacitors or shunt reactors are evaluated with the shunt devices on and off. The criteria violations are evaluated and possible solutions are recommended.

Prior Outage N-1: Additional powerflow studies are conducted when necessary to evaluate the performance of the system during planned outages of generation or transmission facilities. N-1 outages are simulated in addition to the planned prior outage(s) on the particular case studied. The criteria violations are evaluated and possible solutions or operating procedures are recommended for the temporary condition studied.

N-2: Common-mode double contingency (N-2) outages are simulated. The criteria violations are evaluated and possible solutions or operating procedures are recommended for the condition studied.

### **Stability Analysis**

Transient Stability studies are conducted occasionally, primarily to verify previously defined transmission limits and the critical clearing times for three-phase faults, with and without breaker failure. Transient Stability studies are also performed to determine if sufficient transmission outlets are exiting a generating plant.

Voltage Stability studies are conducted occasionally for the Foothills Area to determine compliance with WECC recommended reactive power margins.