Independence Power & Light

IPL Planning Criteria

In assessing the strength and limits of its system to serve customer load, Independence Power & Light (IPL), as a member of the Southwest Power Pool (SPP), adheres to the SPP Planning Criteria (Revision 1.4, effective July 25, 2017) and system performance requirements defined in Table 1 of the North American Electric Reliability Corporation (NERC) TPL-001-4 Reliability Standard. Transmission Planning criteria applied is as follows:

Thermal Limits

For normal operations (pre-contingency), the applicable rating is defined as the Normal Rating per SPP Planning Criteria 7, Section 7.2. The thermal limit is considered 100% of Rating A.

For loss of a single element, the applicable rating is defined as the Emergency Rating per SPP Planning Criteria 7, Section 7.2. The thermal limit is considered 100% of Rating B.

Voltage Limits

For normal operations (pre-contingency), the applicable rating has the meaning of Nominal Voltage per SPP Planning Criteria 5, Section 5.2. Voltage limits are set at plus or minus five percent (+/- 5%) of Nominal Voltage (0.95 p.u. - 1.05 p.u.) for system voltages operating at 60 kV or above.

For loss of a single element, the applicable Rating shall have the meaning of Nominal Voltage per SPP Planning Criteria 5, Section 5.2. Voltage limits are set at plus five percent to minus ten percent (+5%/-10%) of Nominal Voltage (0.90 p.u. – 1.05 p.u.) for systems voltages operating at 60 kV or above.

Fault Current

Fault current levels are determined in accordance with the methodology defined in the SPP TPL-001-4 Short Circuit Planning Assessment and compared to the most limiting fault interrupt capability at each appropriate substation. The fault current duty of any existing breaker or new breaker is required to be higher than the reported maximum fault current level.

Stability Limits

Stability limits are defined by the system performance requirements within the SPP TPL-001-4 Stability Planning Assessment and SPP Disturbance Performance Requirements which include evaluation of the following:

- Rotor angle stability
- Oscillation damping
- Voltage stability
- Generator voltage ride through capability