

# Interconnection System Impact Study

## Methodology and Criteria

### 1. Loadflow – Local Interconnection Area Study

(Four buses at 500-kV, Ten buses at voltages below 500-kV)

- Modeling
  - Latest VST cases with detailed TVA system added
  - Merchant plants dispatched off-system, TVA resources dispatched to serve TVA load
- Goals
  - Identify overloaded facilities for all ties closed, single contingencies, and certain double contingencies.
  - Identify impact on reactive power resources
- Criteria
  - Loading increase >3% and
  - Loading >100%

### 2. Fault Analysis – Local Interconnection Study

- Modeling
  - Latest internal TVA fault case
  - All generation on
- Goal
  - Identify overstressed breakers
- Criteria
  - Symmetrical fault current increase >5% and
  - Fault current >95% of breaker interrupting capability

### 3. Stability – System Wide Study

- Modeling
  - Latest dynamically reduced external case with detailed TVA system
  - Merchant plants dispatched off-system, TVA resources dispatched to serve TVA load
- Goal
  - Identify local and cascading stability problems
- Criteria
  - No new stability problems and
  - No negative impact on existing stability problems