

EISPC Proposed Scenario and Sensitivities

General Description and Premise:

It is EISPC's intention to suggest a ***heat wave and drought scenario and sensitivities*** that are realistic but will also stress the electric system in the Eastern Interconnection and most – if not all – of the various markets within the EI. This scenario and sensitivities are intended to result in large power transfers throughout the Eastern Interconnection, intra PA, and increased transfers among adjoining PAs. This would also likely entail stresses necessitating additional natural gas infrastructure build-out. EISPC offers the following suggested scenario.

1. **A general narrative description of the scenario, including the overall objective.**

EISPC proposes a severe and pervasive ***heat wave and drought scenario*** in year 10 of the Study. Subject to discussions with the Planning Coordinators and Stakeholder Steering Committee, EISPC believes examining the potential ramifications such as significant transfers of power over large geographic distances which might necessitate new large (maybe HVDC) transmission facilities, would be valuable.

2. **For transfer studies, the source and sink of power transferred should be identified as specifically as possible.** Use of a map showing the general region is preferred, particularly for the source information. EIPC will implement transfers consistent with regional system operations and planning practices.

The source would be the areas not as severely affected by the persistent high temperatures and protracted drought. The sink would be the areas that are severely affected. Again, subject to the perspectives of Planning Coordinators and the SSC, EISPC suggests that the geographic region most severely affected by the draught would be from the Southern Plains, parts of the Midwest, and parts of the Southeast (Alabama, Arkansas, Georgia, Kansas, Kentucky Louisiana, Mississippi, Missouri, North Carolina, Oklahoma South Carolina, Southern Illinois Southern Indiana, Southern Ohio, Tennessee, Texas, Virginia). This is intended to affect RTO and non-RTO markets and a very diverse generation fleet.

3. **The addition or removal of resources should be identified as specifically as possible.**

Identification of a specific technology to be added or deleted from the base data is acceptable. For the addition of new resources (e.g. solar generation), the expected MW (energy or capacity) contribution should be specified initially, consistent with the scenario being presented, as well as the reactive capability of the resource. Whether resources are added or removed, the scenario should specify how a corresponding amount of generation in the base data should be removed or added, based on the assumption that the rolled up base case represents a balance between load and resources. For a scenario in which resources are being removed, the Stakeholders should initially identify an equivalent replacement resource, including the location of the replacement. If no location is specified, replacement power will be assumed to be available at the location of the retired resource (effectively negating the impact). For a scenario

in which resources are being added, the Stakeholders should identify the location and amount of resources to be removed or displaced.

The base scenario would use the resources in the EIPC build-out for 2023. Ideally, the 2023 infrastructure would reflect an aggressive environmental regulations– including carbon regulation. However, some of the capacity (primarily nuclear and coal but some combined cycle and hydro-electric) in the drought affected areas would be de-rated due to environmental conditions such as low cooling water and discharge water concerns). This would result in heavy reliance on wind and natural gas and the remaining coal and nuclear fleet that was unaffected by drought related issues.

4. Scenarios that include storage technologies should identify the location, size, and mode of operation (source or sink depending on the scenario). Additional advanced technologies will be considered on a case-by-case basis.

EISPC is not proposing any additional storage or advanced technologies beyond those already in the build-out. The Scenario would be consistent with the relevant reliability/ adequacy requirements for each region.

5. Changes to the peak demand forecast should be specified as a change to the aggregate demand in the Base Plan or in sufficient detail to allow modeling by the EIPC.

EISPC proposes using a high peak demand forecast; particularly for the drought affected areas. Sensitivities might be considered that has higher demand forecasts throughout much or all of the Eastern Interconnection. By order of magnitude the percentage difference between the highest summer demand (2009?) and the average demand over the last ten years might serve as a reasonable proxy. The level of water in rivers and other water sources would be consistent with the most severe conditions over the last 10 years.

Possible Sensitivities on the Scenario might include

- 1) Subject to the same parameters, having the drought be widespread in half (or so) of the Eastern Interconnection. [This might be the Scenario and limiting the heat wave – drought to a specific region of the EI might be a better sensitivity.]**
- 2) Reduced wind resources from not only the affected states but also from other wind rich areas at the time of the estimated interconnection wide coincident peak demand.**