

## **Entity: Planning Advisory Committee (PAC) Submit Feedback Submit Feedback**

In the July 20 meeting of the Planning Advisory Committee (PAC) feedback was requested on Retirement Sensitivity Analysis in MTEP17 Reliability Assessment (Item 02b). Supporting materials may be accessed from the MISO website ([www.misoenergy.org](http://www.misoenergy.org)).

Specifically, the following questions from slide 7 of the posted presentation:

- **What retirement scenarios should be considered in MTEP17 reliability assessment?**
  - o **In addition to 5 year out assessment, should MISO perform assessment for any other time period? e.g. 10 year**
  - o **Should MISO consider any other retirements above and beyond age-based retirements. e.g. public information, policy regulations (similar to MTEP futures)**
- **How should the study results of sensitivity analysis be incorporated in the long term transmission planning?**

### **General Comment**

The OMS Transmission Planning Work Group offers the following comments per your request for feedback by August 3 to Neil Shah MISO Energy.

We offer some high level perspectives for MISO's consideration.

Pro-actively considering the retirement of large fossil stations by age is a good starting point in long-range planning of the system. The proposal to identify long lead-time transmission needs will be informative to all the stakeholders. The ability to propose non-transmission alternatives is something that the current process does not allow. The coordinated planning information could identify regional reliability needs potentially offsetting the need for the Attachment Y process in certain situations. The energy replacement planning would also be informative for the generation interconnection queue.

The presentation at the July 20 PAC meeting did not have any details about the work process. Our comment should help all of us communicate what the effort is going to produce. The number of fossil generation stations, the MW, the MWh, and locations were not included in the introduction of this concept.

We note that the NERC criteria will be likely violated when doing sensitivity analysis. We caution MISO that the information provided should be discussed in a forum of engineering knowledge of the electrical response of the network as opposed "we have a problem to fix now." The detailed output will likely contain CEII related information and should not be shared in a public manner to raise fears or a misunderstanding of network planning processes. The stakeholders won't violate NERC criteria while discovering the system's capabilities.

In the proposal document on slide 3, one of points is to “Identify low cost upgrades that could be implemented in advance of retirements.” This was questioned during the PAC meeting on the intent. The response was an example of a breaker upgrade at a substation for accommodating retirement. Simple and relatively inexpensive. But it was an announced retirement. The proposal should say “announced” or “noticed” retirements. It would be inappropriate to authorize transmission upgrades on some unknown date, potential retirement.

### **What retirement scenarios should be considered in MTEP17 reliability assessment?**

The scenarios should be planned in significant detail and shared with stakeholders as soon as possible. Too many scenarios will be less informative and may diminish the work effort. Some questions to consider:

- Would it be better do analysis under one future, for example the Policy Regulations future?
- When retiring a fossil station, where does the replacement energy come from?
  - Dispersed, and distant?
  - Local TO? Local Resource Zone?
- Do you consider nearby (100 miles) fossil stations on the EHV system sequentially?
- What will be the sequence of study?
  - Thermal?
  - Steady state voltage collapse?
  - Transient?
- Should transmission elements be added to the generation station/area to meet NERC P1-P7 contingencies? Will they be cumulative? In sequence of age?

### **In addition to 5-year out assessment, should MISO perform assessment for any other time period? e.g. 10 year**

- Is it appropriate to start at 5 years and then drive out the age related retirements on that system for the age retirements of announced and years 5 through year nine? And then jump to year 10 for the age bin of 10+? One could check the age formula to find the “bin” number and test at 5 and/or 10 year increments.
- What will be the energy replacement mix with cumulative retirements? Gas Combined Cycle, Wind, PV? Utility scale? DER? Use the Futures siting criteria in this assessment.

### **Should MISO consider any other retirements above and beyond age-based retirements. e.g. public information, policy regulations (similar to MTEP futures)**

- At this time, no. Let's get the first round of network information about the AC EHV's capabilities and the remaining fossil fleet. Other sensitivities can be performed in Retirement Sensitivity Analysis (ReSA) 2.

**How should the study results of sensitivity analysis be incorporated in the long term transmission planning?**

- With the cautions noted above, the information should be a continuum of report outs with confidential appendices as necessary. A process that would be similar to RGOS. The reports would inform all the planning processes.

Below are some other aspects to consider, but would have to be weighed against the capability, effort and timeline:

- Would the retirement of large steam fossil generation stations further decrease frequency response?
- Would large DER deployment, including Behind the Meter require:
  - More transmission?
  - More robust distribution system?
  - Storage?
- The Scoping presentation indicates full set of contingencies including P1-P7 and extreme events for Summer Peak and Shoulder conditions. That is an aggressive work level for all the possible fossil generation stations. That detail could miss different issues concerning high voltage events at extremely low load periods, such as Sunday early mornings in May.
  - Wouldn't including a system intact run at very low loads help discover if there are any issues with maintain less than 1.05 per unit voltage on the EHV system?
  - Are there enough synchronous generators to take in Vars at the last model year and no synchronous fossil running? Or assuming some other complementary technology replacement for Var management at EHV substations.
  - Is there any tendency for the generators taking in Vars to become unstable in steady state or transient condition?