

Draft 1 2018 BP&B Comments Sent via Email by David Bardin

I recommend adding to base case the \$1.5M for Geomagnetic Disturbances in Slide 12 of 16 (for Draft 1 overview, May 25 conference call) as a contingent contribution to a cost-effective, reliable solution to satisfying the FERC Order. [Slide 12 attached.]

NERC has submitted a preliminary GMD Research Plan consisting of nine tasks to FERC for FERC review. NERC's estimated cost of these nine tasks is \$2.7M over three years.

During the next few months, FERC will examine adequacy of the Plan. And NERC management will seek off-budget funding sources, including directed research co-participation by electric utilities and federal government agencies.

-- Results of management's funding efforts may not be known definitively in August when NERC submits its proposed 2018 budget to FERC for review.

-- There could be several reasons for uncertainty. (For example, pertinent federal agencies are facing budget uncertainties of their own).

On the other hand, FERC may well add tasks that were omitted from the nine in the Plan. One omitted task would complete U.S. collection of ground conductivity data which electric utilities in the southern half of the country will need to learn whether past estimates (upon which NERC's Reliability Standard TPL-007-1 has had to rely) overstate or understate risks from solar storms to their particular service areas. Estimated cost of that omitted task is \$4M over four years. Federal agency funding has secured such data for northern service areas (or will do so shortly). NERC management could be expected to seek federal agency funding to complete the data collection.

A "contingent" add to the 2018 base case for the GMD Plan would tell electric utilities and FERC that NERC will have access to such budgeted funding if needed, but will endeavor to achieve co-funding agreements before 2018 in order to minimize need to collect and use budgeted funds.

Please let me know if you have any questions.

- 2018 spend projected to be \$1.5M
 - FERC Order requested NERC to submit a study plan for GMD
 - Ongoing discussions with EPRI on analytical work spanning multiple years
 - Additional technology needs (~\$250k) for database management
 - Plan to submit filing on R&D plan, while requesting time to finalize the project structure and funding options