



July 25, 2006

## **Additional Black Start Resources Needed**

Commonwealth Edison ("ComEd", the "Transmission Owner", or "TO") has determined that there is a need for additional black start capability in the ComEd transmission zone. Therefore, PJM is seeking bids for additional black start capability in accordance with the Black Start Replacement process documented in [PJM Manual M14D](#), Generator Operational Requirements, Section 9.

### **Black Start Requirements**

Commonwealth Edison is requesting black start service offers totaling approximately 300 MW from resources located in the ComEd transmission zone. The preference is for black start capability at sites where critical black start units do not already exist. ComEd will evaluate the offers received based on the best fit with its system restoration plan, and is open to adjusting the restoration plan if necessary. Additional technical requirements for black start resources located in Com Ed are included as Attachment A of this document.

Offers should be for resources capable of providing black start service starting early in 2008. Schedule 6A of the PJM Open Access Transmission Tariff (OATT) provides a two-year rolling commitment for black start service. Therefore, all black start service offers should clearly state the annual revenue requirements based on a two-year rolling commitment. However, ComEd is willing to consider entering into a longer term commitment, so offers can include options for reduced revenue requirements over a longer commitment period.

### **Market Window**

This posting marks the beginning of a "Market Window" which will last 90 calendar days from the date of the notification. The Market Window will therefore close on **October 24, 2006**. PJM will be reviewing pending generator interconnection projects and other projects that are received within the Market Window. Bids to provide black start service as specified above should be e-mailed to [blackstart@pjm.com](mailto:blackstart@pjm.com).

### **Submitting Black Start Replacement Bids**

All bids submitted for the replacement black start resource must be cost-based bids consistent with Schedule 6A of the PJM OATT. Details of the required cost components for each prospective black start replacement bid are provided in the sub-section on Cost-based Components for Black Start Replacement Bids documented in PJM Manual M14D.



## **Summary of Black Start Replacement Process from M14-D**

PJM will review each Generation Interconnection Request pending under Part IV of the PJM Tariff at the time a Market Window is opened (as described above) and each request from Black Start Units and each Interconnection Request it receives during such Market Window, to evaluate whether the project proposed in the request could meet the black start replacement criteria for which the Market Window was established.

The TO will also have the option of negotiating a cost based bi-lateral contract in accordance with the existing process outlined in Schedule 6A of the PJM OATT with a Generator Owner (GO) for black start services. The TO may provide the alternative as one of the bids for the black start replacement that will be evaluated by PJM pending FERC approval.

If PJM and the TO determine that more than one of the proposed projects within the 90 day market window meets the replacement criteria, the most cost-effective resource for the black start replacement will be chosen, provided the identified resource accepts and maintains designation as a market solution under Sections 36A or 41A of the PJM Tariff and executes the agreement(s) required there under. Submitted projects costs must be consistent with Schedule 6A of the PJM OATT. If no projects are received during the 90 day market window, PJM and the TO will modify the location and capability requirements for the replacement black start resource, as well as the market window, if necessary, to allow more resources to become viable as replacements, even if suboptimal. If no projects are identified after the modified search criteria and market window, PJM and the TO will investigate the cause for the absence of bids, and recommend corrective action in accordance with the existing cost based service process outlined in Schedule 6A of the PJM OATT, or addressing other barriers to entry identified by such investigation within the bounds of the existing tariff. In the process of this investigation, PJM will also identify limits for adjusting the cost of entry and other corrective actions within the bounds of Schedule 6A of the PJM OATT, beyond which, PJM will discontinue efforts to incent a replacement black start unit.

After PJM and the TO have identified the most cost-effective replacement resource, PJM and the TO will coordinate with the GO for the GO's acceptance under the PJM tariff as a black start unit. The replacement black start unit will be compensated for provision of the black start service in accordance with the existing process outlined in the PJM OATT. Schedule 6A of the PJM tariff sets forth a formula for payments to generators for black start service and the collection of such costs from transmission customers. The annual black start service revenue requirements of each generator are determined pursuant to this formula. The Schedule 6A formula includes allocation factors for fixed and variable generation costs, which are to be used "unless another value is supported by the documentation of costs." The generator owner may choose compensation under the formulaic rate by submitting the formulaic black start costs to PJM as outlined in PJM Manual M-12 Section 4, or by filing for recovery of actual costs, with accompanying documentation, to FERC.



## ATTACHMENT A

# ComEd Critical Black Start Unit Requirements

- Each black start unit must comply with all PJM black start service requirements defined in PJM Manual M-12 Section 4.
- Sufficient fuel reserve or natural gas supply must be available to run all black start units at full output for a minimum of 48 hours during the initial stages of a widespread blackout event.
- A mitigation plan is required for a common mode failure in critical starting equipment that renders all black start units inoperable. For example, install an emergency hook-up for a mobile generator to replace a failed diesel starting generator.
- The minimum load requirement for stable operation of each black start unit is determined on a site-by-site basis. Key factors in this determination are the size of the unit; the location of the black start plant within the transmission system; and the availability of internal plant or external ComEd loads to stabilize the operation of the unit. This minimum load requirement should be based on the technical requirements to maintain stable operation of the unit, and should not consider limitations imposed by air permit restrictions. The typical minimum load requirement for a black start unit in ComEd is between 1 MW and 5 MW.
- Each black start plant shall obtain appropriate air permit waivers for extended operation of black start units at reduced load levels during black start events.
- Each black start unit must be able to operate in Isochronous mode (0% droop) to automatically regulate frequency.
- When not operating in Isochronous mode, each on-line black start unit must have full governor response enabled, with a minimum responsiveness of 5% droop.
- The control systems of each black start unit must allow for setting generator output at fixed MW values and for setting generator terminal voltage to regulate at fixed voltage values.
- Each black start unit must be capable of operating in a voltage range between 95% and 105% of rated terminal voltage.
- Each black start unit must be capable of absorbing reactive power from the ComEd grid while operating within the stable under excited area of its capability curve (leading VARs). To satisfy this requirement, ComEd may require adjustments to the underexcitation limiter settings of each black start unit.
- Each black start plant must maintain a ComEd approved emergency communications system between the black start plant and ComEd's designated Control Center facility (e.g. direct ring-down phone line, radio, satellite phone).
- The black start plant must maintain a ComEd approved emergency communications plan for mobilization of plant operating personnel to meet the 90 minute response requirement stipulated in PJM Manual M-12 Section 4.