Capability Incentives & Performance Based Restoration (PBR)

Feb 22, 2013
Issues

• Inadequate return on investment.
• As transmission operators begin incorporating black start units that respond in 3 hours, rather than the current 90 minute requirement, the PJM system and zonal restoration times could increase.
Aug 14, 2004 blackout resulted in the loss of electricity for approximately 50 million people. This was not a complete blackout

1. ICF Consulting estimated the total economic cost to be between $7-$10 billion dollars

2. Anderson Economic Group (AEG) estimated the total cost to be between $4.5 and $8.2 billion dollars.

The Economics - 2003

- U.S.-Canada Power System Outage Task Force estimated the cost to the U.S. and Canada to be between $6.3 and $12 billion dollars
A complete blackout in PJM...

- would result in approximately 60 million people impacted.
- would take many days for full restoration
- would far exceed the 2003 blackout cost estimates
Incentives

• The general concept is to provide a financial incentive for resources to become black start capable and have the ability to synchronize to the transmission grid, as soon as possible, upon receiving notice from the transmission owner or PJM.
Investment

• Does the PJM formula rate attract responses to RFPs?
  • Would an independent power producer or independent investor view providing black start as a wise investment choice?
    • Does providing investment in black start minimally provide the equivalent return on equity as other offerings, such as investment in transmission system?
Investment

• If an independent investor wanted to provide black start service, would it choose another RTO/ISO over PJM?
• What is the best method for adjustment?
  • Basis Point Adjustment
  • Z factor?
  • Other?
Faster Restoration Brings...

- Positive impacts to health, welfare, and safety
- Reduced economic losses
  - Damage to infrastructure used in manufacturing
  - Retail Losses
  - Loss of products within the manufacturing process.
Performance Based Incentives

• Resources that can synchronize to the grid in ‘t’ minutes or less receive ‘x%’ incentive for continuing to provide fast response:
  • \( t \leq 30 \text{ minutes} \); highest incentive
  • \( 30 < t \leq 60 \text{ minutes} \);
  • \( 60 < t \leq 120 \text{ minutes} \);
  • \( 120 < t \leq 180 \text{ minutes} \); lowest incentive
Performance Based Incentives

- Perhaps incentives taking into account both the probability of event and the monetary impact between time periods on slide #10.
  - An “insurance policy” evaluation for restoration
    - Actuary
Testing

• To qualify for Performance Based Restoration (PBR) incentives one must be able to show capability, via the annual black start test, to synchronize to the grid within the included timeframes.
Forfeiture of PBR

• Forfeiture of incentive factor will follow current forfeiture mechanism for black start service per the PJM OATT, Schedule 6A.