Blackstart Service Cost Estimates

System Restoration
Strategy Task Force
October 17, 2012
Black Start Balancing (B.S. vs. C.L.)
with Retirement Impacts

Data Legend:
• Critical Black Start (B.S.)
• Critical Load (C.L.)
• Classic Methodology focuses ratio of B.S. to C.L.

Current B.S. Buffer = 64% surplus
Post-retirements B.S. Buffer = 15% surplus
Assumptions
1. 2,725 MWs Retire in 2015
2. Replaced with:
   A. 60% Upgrade Existing Units
   B. 30% Refurbish Existing Units
   C. 10% New Unit Construction
Assumptions
Additional Black Start MWs procured by:
A) 60% Upgrade Existing Units
B) 30% Refurbish Existing Units
C) 10% New Unit Construction

- $11,409,165
- $22,818,330
- $131,392,332

$/MWh

2012 Cost of Black Start Service
Appendix
Hypothetical Cumulative Generation Restoration

Black Start at Every Unit: 26 Hrs
Current Black Start: 35 Hrs
Black Start 50%: 43 Hrs
Black Start 200%: 27 Hrs

Key Assumptions:
• No damage to BES or Generators
• No delays for transmission switching nor transmission constraints
• All CT, CC, Steam and Hydro generation fully staffed. No nuclear or wind generation included
• Hot restart for all units, Unit Min Down times not considered
• Ramp Rates from Unit Market Data