

# Proposed Black Start Changes for Con Edison Plan

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# Proposed Changes

- ◆ **Test Procedures**
- ◆ **Test Scheduling**
- ◆ **Commitment Period**
- ◆ **Program Participation**
- ◆ **Compensation**

# Proposed Changes

- ◆ **The changes are proposed to apply to existing providers and new providers in Con Edison's Black Start Plan**
  - *If existing providers give notice within 30 days of the effective date of new tariff provisions, they may remain under the existing tariff provisions, until their next opportunity to withdraw under the existing tariff provisions*

# Proposed Test Procedure Changes

- ***30 days to remedy a failed test***
  - **Otherwise payment is forfeited from the date of the failed test**
  - **Currently a failed test results in immediate suspension of payment**
  - **30-day period may be reasonably extended if agreed upon by the Generator Owner, Con Edison and NYISO**

# Proposed Test Procedure Changes

- ***Generator Owners continue to certify annually that critical components are maintained***
- ***Gas Turbine testing remains as currently defined***

# Proposed Test Procedure Changes

- ***Combined Cycle testing requirements to be added to the tariff***
  - **Gas turbine at the site must start without external power sources and start the steam turbine, which must synchronize to the transmission system within six hours**

# Proposed Test Procedure Changes

- ***Steam unit current testing requires it to:***
  - **Be in hot condition to start the test**
  - **Start up using energy and voltage control from a black start gas turbine**
  - **Synchronize to the transmission system within six hours after isolation**
  - **Be operating at minimum load within eight hours after isolation**

# Proposed Test Procedure Changes

- ***Steam unit changes***
  - **Every three years, a comprehensive test requiring synchronization to the transmission system**
    - The test can be performed if the unit is hot from current operations or when it becomes hot on the way up from a cold start

# Proposed Test Procedure Changes

- ***Steam unit changes (cont'd)***
  - **Whether initially starting from a cold or hot condition, the steam unit must synchronize to the transmission system and be firm and operating at minimum load within eight hours of establishing its cranking path**
  - **No interim milestone times are required**

# Proposed Test Procedure Changes

- ***Steam unit changes (cont'd)***
  - If a steam unit is in a cold condition, it can start its internal light and power bus from the transmission system to come to a hot condition, isolate from the transmission system and establish a cranking path between it and a black start gas turbine to re-energize its internal light and power bus
  - If a steam unit is online and hot from current operations, it must isolate from the transmission system and establish a cranking path between it and a black start gas turbine to re-energize its internal light and power bus

# Proposed Test Procedure Changes

- ***Steam unit changes (cont'd)***
  - **Intervening years test performed during years when the comprehensive, triennial test is not performed**
  - **Intervening years test requires**
    - Switching to isolate the steam unit from the transmission system
    - Establishing a cranking path between the steam unit and an isolated black start gas turbine
    - Energizing the steam unit's internal light and power bus
    - Adding auxiliary load (e.g., boiler feed pump, fans) that would be required to introduce fire into the boiler and demonstrating ten minutes of steady operation of the loaded internal light and power bus

# Proposed Test Procedure Changes

- ***Steam unit changes (cont'd)***
  - **Intervening years test does not require fire in the boiler or synchronization to the transmission system**
  - **Intervening years test must be completed in four hours**
  - **Comprehensive, triennial test must have been completed successfully within the prior two years in order to qualify for an intervening years test**

# Proposed Test Schedule Changes

- ***Extend the black start testing period***
  - **May through April, except no tests in June, July and August**
  - **Current test period is November through April**
- ***As currently, test dates must be agreed upon by the Generator Owner, Con Edison and NYISO***
  - **Test witnesses are not required, but Con Edison and NYISO may have witnesses present**

# Proposed Commitment Period Changes

- ***Increase notification of withdrawal from one year to two years***
  - **Withdrawal from capacity and energy markets results in withdrawal from black start program, without regard for black start notification**
- ***Withdrawal effective after PSC approval***
- ***Stagger commitment periods among black start units***

# Proposed Commitment Period Changes

- ***Example Commitment Periods***

- **Group One: Initial period October 2012 through April 2015, with withdrawal notification deadline of April 2013**
- **Group Two: Initial period October 2012 through April 2016, with withdrawal notification deadline of April 2014**
- **Group Three: Initial period October 2012 through April 2017, with withdrawal notification deadline of April 2015**

# Proposed Program Participation

- *New or repowered units will be required to have black start capability and provide black start service upon a finding by Con Edison, subject to review by the NYISO, that the unit would provide a material benefit to system restoration, unless it is infeasible for the unit to have black start capability*
- *Unit owner/developer to supply information regarding suitability of the unit to provide black start service*
- *Determination will be made early in the interconnection process*
- *Full cost recovery available to units required to provide black start service*

# Proposed Compensation Changes

- ◆ **Current rates were established in 2005 and have not been updated since then**
- ◆ **The proposed changes are intended to:**
  - *Fully compensate providers for their costs using a standard rate that does not require individual rate cases*
  - *Establish just and reasonable costs for the loads that pay for black start service*
  - *Incent existing providers to remain in the program and new entrants to offer the service*

# Proposed Compensation Changes

- ◆ **With its economic consultant, NERA, the NYISO identified ISO-NE's model to be an appropriate basis**
  - *Approved by FERC*
  - *Based on an engineering cost study of incremental equipment and incremental O&M costs needed to provide Black Start service using today's technologies*
  - *Essentially Long Run Incremental Cost (LRIC), an economic concept with theoretical justification and a regulatory history*

# Proposed Compensation Changes

- ◆ **Three adjustments are applied for translating to Con Edison's Black Start Plan**
  - *Adjust capital investment by ratio of building like unit in NYC vs. Lower Hudson Valley (proxy for NE) (adjustment of 1.25 from most recent NYISO Demand Curve reset study)*
  - *Use carrying charge for 25 year life that reflects NYC 4.69% property taxes (ISO-NE study reflects lower 2% property tax rate)*
  - *Adjust O&M costs by ratio of fixed O&M for like unit in NYC vs. Lower Hudson Valley (proxy for NE) (approximate adjustment of 2.16 from most recent NYISO Demand Curve reset study)*

# Proposed Black Start Capital Payments

<b>Black Start Resource Type (Fossil Plants)</b>	<b>Station-level Blackstart Capital Payment (\$/year for the first unit)</b>	<b>Additional Resource Blackstart Capital Payment (\$/year for each additional unit)</b>
MVA ≤ 10	\$28,400	\$14,200
10 < MVA ≤ 60	\$280,000	\$14,200
60 < MVA ≤ 90	\$324,195	\$14,200
90 < MVA ≤ 300, Small Starting Requirement	\$541,480	\$14,200
90 < MVA ≤ 300, Medium Starting Requirement	\$1,249,920	\$14,200
90 < MVA ≤ 300, Large Starting Requirement	\$2,329,225	\$14,200
300 < MVA Large Starting Requirement	\$2,392,735	\$42,600

**Note: These are 2011 dollars. All payments would be adjusted by Handy Whitman Index on January 1 every year.**

# Proposed Black Start O&M Payments

<b>Black Start Resource Type (Fossil plants)</b>	<b>Station-level Blackstart O&amp;M Payment (\$/year for the first unit)</b>	<b>Additional Resource Blackstart O&amp;M Payment (\$/year for each additional unit)</b>
MVA ≤ 10	\$29,130	\$9,495
10 < MVA ≤ 60	\$84,380	\$11,650
60 < MVA ≤ 90	\$101,210	\$13,595
90 < MVA ≤ 300, Small Starting Requirement	\$214,500	\$37,120
90 < MVA ≤ 300, Medium Starting Requirement	\$491,370	\$69,050
90 < MVA ≤ 300, Large Starting Requirement	\$857,140	\$69,270
300 < MVA Large Starting Requirement	\$896,415	\$87,830

**Note:** These are 2011 dollars. All payments will be adjusted by Handy Whitman Index on January 1 every year.

## Illustration - Results for Hypothetical NYC Black Start Plants

Unit Type	Name plate Capacity of largest unit (MW)	Station Black Start Capital Payment (\$/year)	Station Black Start O&M Payment (\$/year)	Total Black Start Payment (\$/year)
Gas Turbine Station (3 units, 1 common starting facility)	20	\$308,400	\$107,680	<b>\$416,080</b>
Steam plant (2 units, 1 common starting facility)	350	\$2,435,335	\$984,245	<b>\$3,419,580</b>

**Note: The above payments are based on hypothetical plants. As LRIC varies with the number of units at the plant site that share the same starting facility, it will be necessary to consider the specific characteristics of NYC plants. Payments exclude CIP costs.**

# Proposed Compensation Changes

- ◆ **The NYISO proposes to compensate black start providers based on the size of the unit providing black start service**
  - *No adjustments will be made to account for compensation of black start equipment in other NYISO markets*

# Proposed Compensation Changes

- ***The NYISO proposes to compensate black start providers by adding together the proxy costs for all units at a site and dividing by the number of units***
  - **Steam units and gas turbines will be considered separately**
  - **This payment method is intended to incentivize Generator Owners to offer all of their black start capable units in the program**

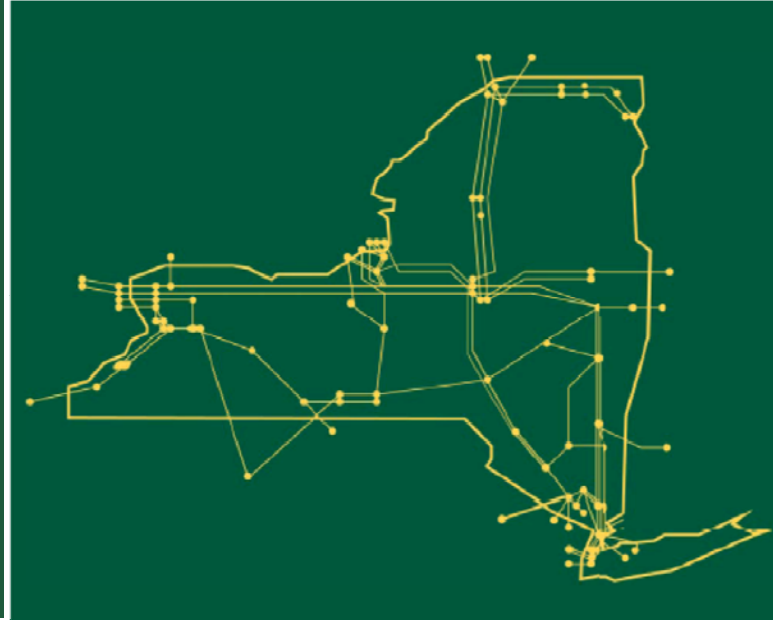
# Proposed Compensation Changes

- ◆ **The current compensation range for Con Edison's black start plan is between \$4M and \$5M**
- ◆ **Assuming all existing units remain in Con Edison's black start plan, the estimated range for the proposed compensation is between \$12M and \$20M, depending upon the specific sizes and configurations of the black start units**
- ◆ **In addition to the standard LRIC-based capital and O&M payments, black start providers could apply to recover demonstrated incremental CIP costs related to Black Start as validated by NYISO**

# Proposed Compensation Changes

- ◆ **Black start providers will have opportunity for full recovery of associated costs**
  - **A generator required to provide black start service will have opportunity to recover amount at least equal to proxy cost over full recovery period**
  - **A generator choosing to discontinue providing black start service will not be eligible for further cost recovery**
- ◆ **A generator required to provide black start service may file cost-based rate at FERC if proxy costs are non-compensatory**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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