

Attachment I

15.5 Rate Schedule 5 - Payments and Charges for Black Start and System Restoration Services

Black start and system restoration services (“Restoration Services”) are provided under the ISO’s black start and system restoration plan (“ISO Plan”) or an individual Transmission Owner’s black start and system restoration plan by generating units that are capable of starting without an outside electrical supply or are otherwise integral to the restoration of the NYS Transmission System after an outage. This Rate Schedule establishes the terms under which a Generator shall provide, and be paid by the ISO for providing, Restoration Services under the ISO Plan or an individual Transmission Owner’s plan. This Rate Schedule also establishes the terms under which the ISO shall recover the costs of Restoration Services payments from Customers. Provisions specific to the Consolidated Edison Company of New York, Inc. (“Consolidated Edison”) black start and system restoration plan (“Consolidated Edison Plan”) are set forth in Section 15.5.4.

15.5.1 Requirements

The ISO shall develop and periodically review the ISO Plan. The ISO may amend the ISO Plan and may solicit offers for additional resources if it determines that additional Restoration Services are needed. The ISO shall establish procedures for acquiring Restoration Services and requiring that the selected Generators test their units providing Restoration Services (“Black Start Capability Test”). The ISO shall make Restoration Services payments only to those selected Generators that have appropriate equipment installed and available for service at the request of the ISO.

A Transmission Owner shall develop and periodically review its black start and system restoration plan. A Transmission Owner shall designate generating units with the capability to provide Restoration Services to be included in its plan if it determines that the Restoration

Services are needed. The ISO will make payments for such local Restoration Services to the Generators that provide them under the terms of this Rate Schedule. Generators that are obligated to provide Restoration Services as a result of divestiture contract agreements will not receive Restoration Services payments from the ISO for those services if they are already compensated as part of those divestiture contracts. Customers in the local Transmission Owner service territories will be charged for those services by the ISO under the terms of this Rate Schedule. Customers may not Self-Supply Restoration Services.

15.5.2 Payments to Generators for Provision of Restoration Services Under the ISO Plan and Transmission Owners' Plans, Excluding the Consolidated Edison Plan

By May 1st of each year, Generators selected to provide Restoration Services under the ISO Plan and under the plans developed by individual Transmission Owners, except for under the Consolidated Edison Plan, must provide the following cost information to the ISO based upon FERC Form No. 1 or equivalent data:

- Capital and fixed operation and maintenance costs associated with only that equipment which provides Restoration Services capability;
- Annual costs associated with training operators in Restoration Services; and
- Annual costs associated with Black Start Capability Tests in accordance with the ISO Plan or the plan of an individual Transmission Owner.

Each Billing Period, the ISO shall pay each Generator on the basis of its costs filed with the ISO. The daily rate for Restoration Services payments will be determined by dividing the Generator's annual cost by the number of days in the year from May 1st through April 30th of the following year.

Generators that provide Restoration Services shall conduct Black Start Capability Tests that are deemed necessary and appropriate for providers of these services under the ISO Procedures or local Transmission Owner procedures, as applicable. Any Generator that is awarded Restoration Services payments and fails a Black Start Capability Test shall forfeit all

payments for such services since its last successful test. Payments to that Generator shall resume upon its successful completion of the test.

15.5.3 Charges to Support Payments to Generators Under the ISO Plan and Individual Transmission Owners' Plans, Excluding the Consolidated Edison Plan.

Each Billing Period, the ISO shall charge, and each Customer shall pay based on its supply of Load that is *not* used to supply Station Power as a third-party provider under Part 5 of the ISO OATT, a charge for the recovery of the costs of the ISO's payments to Generators providing Restoration Services under the ISO Plan. The charge shall be equal to: (A) the product of: (i) the Customer's share of Load in the NYCA that is *not* used to supply Station Power as a third-party provider for each hour in the Billing Period, and (ii) the ISO's total payments to Generators providing Restoration Services under the ISO Plan under Section 15.5.2 to this Rate Schedule for the Billing Period, divided by the total number of hours in the Billing Period, (B) summed for all hours in the Billing Period.

Each Billing Period, the ISO shall charge, and each Customer shall pay based on its supply of Load that is used to supply Station Power as a third-party provider under Part 5 of the ISO OATT, a charge for the recovery of the costs of the ISO's payments to Generators providing Restoration Services under the ISO Plan. The charge shall be equal to: (A) the product of: (i) the Customer's share of Load in the NYCA that is used to supply Station Power as a third-party provider for each day in the Billing Period, and (ii) the ISO's total payments to Generators providing Restoration Services under the ISO Plan under Section 15.5.2 to this Rate Schedule for the Billing Period, divided by the total number of days in the Billing Period, (B) summed for all days in the Billing Period. The ISO shall credit these daily charge amounts to Customers based on their share of the Load in the NYCA that is not used to supply Station Power as a third-party provider for that day. The ISO shall sum these daily credits for all days in the Billing Period.

A Customer will be responsible for the following additional charge if the Transmission Owner in whose Transmission District the Customer is located maintains a Restoration Services plan, except with respect to the Consolidated Edison Plan, the cost recovery requirements of which are set forth in Section 15.5.4.2 to this Rate Schedule. Each Billing Period, the ISO shall charge, and each Customer in the local Transmission Owner's Transmission District shall pay, a charge for the recovery of the costs of the ISO's payments to Generators providing Restoration Services under the Transmission Owner's local Restoration Services plan. This charge shall be equal to: (A) the product of: (i) the Customer's share of Load in the Transmission Owner's Transmission District for each hour in the Billing Period, and (ii) the ISO's total payments to Generators providing Restoration Services under the Transmission Owner's Restoration Services plan under Section 15.5.2 to this Rate Schedule for the Billing Period, divided by the total number of hours in the Billing Period, (B) summed for all hours in the Billing Period.

15.5.4 Payments to Generators Providing Restoration Services Under the Consolidated Edison Plan and Recovery of Associated Costs

A Generator that provides Restoration Services under the Consolidated Edison Plan shall provide, and be paid for providing, Restoration Services under the terms set forth in Section 15.5.4.1 and Appendices I and II to this Rate Schedule. If Consolidated Edison determines that additional Restoration Services are needed, it may from time to time designate for inclusion in the Consolidated Edison Plan: (i) an existing generating unit that is capable of providing Restoration Services but that is not currently doing so, or (ii) a generating unit for which the Generator has provided notice to withdraw from the Consolidated Edison Plan pursuant to Section 15.5.4.1.1. A generating unit designated by Consolidated Edison may elect to participate in the Consolidated Edison Plan; otherwise it shall be required to participate in the Consolidated Edison Plan unless the ISO determines that: (i) the generating unit would not provide a material

benefit to system restoration in Zone J, or (ii) the Generator shows good cause that it would be unduly burdensome or unreasonable to require it to provide Restoration Services from the designated generating unit.

The provision of Restoration Services will be deemed to provide a material benefit to system restoration in Zone J if, among other things, it would materially improve the speed, adequacy, or flexibility of the Consolidated Edison Plan for restoring electric service in Zone J in a safe, orderly, and prompt manner following a major system disturbance.

To facilitate the ISO's determination regarding material benefit, Consolidated Edison shall provide a study and/or other documentation, performed at its own expense, supporting the conclusion that the designated generating unit would provide a material benefit for system restoration in Zone J. Consolidated Edison's documentation must: (i) include its assessment of the adequacy of resources already committed to provide Restoration Services under the Consolidated Edison Plan and the need for additional resources, (ii) describe the manner in which the designated generating unit would provide a material benefit for system restoration in Zone J, and (iii) summarize alternative solutions evaluated, if applicable, and indicate whether other generating units would provide the particular material benefit identified. Consolidated Edison shall provide its documentation to the ISO and the relevant Generator, subject to appropriate confidentiality protections. Upon request, Consolidated Edison shall provide the documentation to other parties that have a direct interest in this matter, subject to appropriate confidentiality protections.

If the Generator asserts that good cause exists for not requiring its generating unit to participate in the Consolidated Edison Plan, it must seek an exemption from the ISO. The Generator shall provide a study or other documentation demonstrating the engineering, technical,

financial, environmental, and/or other reasons that provision or continued provision of Restoration Services by the designated generating unit would be unduly burdensome or unreasonable. The Generator shall provide its documentation to the ISO and Consolidated Edison, subject to appropriate confidentiality protections. The Generator may provide the documentation to other parties that have a direct interest in this matter as well, subject to appropriate confidentiality protections. In making its determination, the ISO may rely on the supporting documentation provided by the Generator and Consolidated Edison, along with any information developed by the ISO.

If the ISO determines that good cause exists to grant a requested exemption, the designated generating unit will not be required to participate in the Consolidated Edison Plan. Otherwise, the designated generating unit will be required to participate in the Consolidated Edison Plan and will be assigned by the ISO to a Commitment Group under Section 15.5.4.1.1. The ISO shall inform NYSRC of a designated generating unit's request for an exemption and the ISO's determination under this Section 15.5.4.

A Generator's unit that is designated by Consolidated Edison to participate in the Consolidated Edison Plan, and is not granted an exemption under this Section 15.5.4 shall provide, and be paid for providing, Restoration Services under the terms set forth in Section 15.5.4.1 and Appendices I and II to this Rate Schedule.

The ISO shall recover the costs of the payments established in Section 15.5.4.1 from Customers in the Consolidated Edison Transmission District under the terms set forth in Section 15.5.4.2.

Within thirty (30) days of receipt of an updated Consolidated Edison Plan, including changes to unit designations as described in this section, the ISO will file a copy with FERC on an informational basis with a non-public Critical Energy Infrastructure Information designation.

15.5.4.1 Payments to Generators that Provide Restoration Services Under the Consolidated Edison Plan

15.5.4.1.1 Commitment Requirements for Restoration Services

Each generating unit committed to provide Restoration Services under the Consolidated Edison Plan before November 1, 2012, was included in one of three groups (“Commitment Groups”) with the following initial commitment periods:

Commitment Group 1: November 1, 2012, through April 30, 2015.

Commitment Group 2: November 1, 2012, through April 30, 2016.

Commitment Group 3: November 1, 2012, through April 30, 2017.

The ISO shall assign a generating unit subsequently designated to provide Restoration Services under the Consolidated Edison Plan to one of these Commitment Groups.

At the conclusion of each commitment period, a generating unit shall begin a new three (3) year commitment period to provide Restoration Services under the Consolidated Edison Plan; provided, however, that the unit shall not begin a new commitment period if the Generator or Consolidated Edison provides the ISO with notice at least two years prior to the conclusion of the previous commitment period that the unit will no longer be a part of the Consolidated Edison Plan following the conclusion of that commitment period

Notwithstanding the foregoing, a unit previously designated under Section 15.5.4 shall be required to begin a new commitment period if: (i) Consolidated Edison provides the ISO and the Generator with notice at least one year prior to the conclusion of the previous commitment period that the unit continues to be required to provide a material benefit to system restoration in

Zone J, (ii) and the ISO determines that the unit should continue to provide service in accordance with the designation requirements in Section 15.5.4, including the opportunity for the Generator to request an exemption.

Consolidated Edison shall not remove from the Consolidated Edison Plan a new or repowered unit that was required to provide Restoration Services in the Consolidated Edison Plan pursuant to Section 30.2.5 of Attachment X to the ISO OATT before the Generator recovers the incremental capital costs it incurred in installing the Restoration Services capability for its unit. The Generator shall be deemed to have recovered these costs: (a) twenty-five years from the start of the unit's provision of Restoration Services if the Generator is taking payment pursuant to Section 15.5.4.1.3.1 to this Rate Schedule, or (b) over the period set forth in the Generator's unit-specific rate approved by FERC pursuant to Section 15.5.4.1.3.2 to this Rate Schedule. If a Generator withdraws its unit from the Consolidated Edison Plan before the completion of this time period, it will forfeit its entitlement to recover its incremental capital costs.

If a Generator withdraws a unit from the ISO's energy and capacity markets, the unit may cease its provision of Restoration Services at the same time without completing its commitment period. If the Generator returns the unit to the ISO's energy and capacity markets within three years of its withdrawal, the unit shall be required to provide Restoration Services for that portion of its commitment period that it had not completed.

15.5.4.1.2 Generator Testing and Training Requirements

A Generator shall conduct an annual Black Start Capability Test of each unit committed to provide Restoration Services under the Consolidated Edison Plan in accordance with the test protocols set forth in Appendix I to this Rate Schedule. A Generator shall also identify its unit's critical Restoration Services equipment, maintain this equipment and perform tests to verify the

condition of this critical equipment in accordance with good utility practice. Upon the performance of a Black Start Capability Test for its unit, the Generator shall submit a certification to the ISO each year – in the form provided in Appendix II to this Rate Schedule – indicating whether its unit has successfully completed its annual Black Start Capability Test and certifying that it maintains and tests the unit’s critical Restoration Services equipment in accordance with good utility practice. The Generator shall also ensure that all appropriate personnel are trained in Restoration Services operations.

15.5.4.1.3 Payments to Generators for Providing Restoration Services Under the Consolidated Edison Plan

15.5.4.1.3.1 Standard Compensation

Except as set forth in Section 15.5.4.1.3.2 to this Rate Schedule, the ISO shall pay a Generator each Billing Period the pro rata share of the sum of the annual payment amounts for the provision of Restoration Services under the Consolidated Edison Plan at each of the Generator’s facilities, as determined for each facility as follows.

By May 1st of each year, the ISO shall calculate the annual Restoration Services payment amount for each Generator’s facility for the compensation period of May 1 of that year through the following April 30; *provided, however*, the ISO shall recalculate the annual Restoration Services payment amount if, during the May 1 through April 30 compensation period, one of the Generator’s units withdraws from the Consolidated Edison Plan pursuant to Section 15.5.4.1.1 to this Rate Schedule or fails a Black Start Capability Test pursuant to Section 15.5.4.1.3.4 to this Rate Schedule.

The annual Restoration Services payment amount for each Generator’s facility shall be equal to the sum of the annual payment amounts, calculated according to the following formula, for: (i) each unit at a Generator’s facility providing Restoration Services under the Consolidated

Edison Plan that is the sole user of equipment necessary to black start the unit and is not designated with other units as a group by the ISO (“Sole Black Start Unit”), and (ii) each group of units at the Generator’s facility providing Restoration Services under the Consolidated Edison Plan that share the equipment necessary to black start the units or are otherwise designated as a group by the ISO (“Black Start Unit Group”). The ISO shall designate a Generator’s unit as a Sole Black Start Unit or as part of a Black Start Unit Group at the start of the unit’s commitment period, and this designation shall not be subject to change for the duration of the unit’s commitment period.

$RSPayment_{AnnBSU} =$

$$ActRSUnits_{BSU} \times \left[\frac{RSSICap_{Ann} + RSSIO\&M_{Ann} + RSAddCap_{Ann} + RSAddO\&M_{Ann}}{DesRSUnits_{BSU}} \right]$$

Where:

BSU = The Sole Black Start Unit or the Black Start Unit Group.

$RSPayment_{AnnBSU}$ = The annual amount, in \$, that the ISO shall pay a Generator for the Sole Black Start Unit or the Black Start Unit Group providing Restoration Services under the Consolidated Edison Plan.

$DesRSUnits_{BSU}$ = The number of units in the Sole Black Start Unit or the Black Start Unit Group designated by Consolidated Edison as participants in the Consolidated Edison Plan.

$ActRSUnits_{BSU}$ = The number of units in the Sole Black Start Units or the Black Start Unit Group actually participating in the Consolidated Edison Plan, which shall not include any unit designated by Consolidated Edison as a participant in the Consolidated Edison Plan that has withdrawn from the plan pursuant to Section 15.5.4.1.1 to this Rate Schedule or has failed a Black Start Capability Test pursuant to Section 15.5.4.1.3.4 to this Rate Schedule.

$RSSICap_{Ann}$ = The station-level capital payment amount, in \$, for the Sole Black Start Unit or for one unit of the Black Start Unit Group, as specified in the “Station-level” column of Table A, below, on the basis of that unit’s size.

$RSSIO\&M_{Ann}$ = The station-level operating and maintenance amount, in \$, for the Sole Black Start Unit or for one unit of the Black Start Unit Group, as specified in the “Station-level” column of Table B, below, on the basis of the unit’s size.

$RSAddCap_{Ann}$ = The sum of the incremental capital payment amounts, in \$, for the remaining units in the Black Start Unit Group, as specified in the “Additional Resource” column of Table A, below, on the basis of the remaining units’ sizes.

$RSAddO\&M_{Ann}$ = The sum of the incremental operating and maintenance payment amounts, in \$, for the remaining units in the Black Start Unit Group, as specified in the “Additional Resource” column in Table B, below, on the basis of the remaining units’ sizes.

Table A - Restoration Services Capital Payments

Resource Type	Station-level Capital Payment	Additional Resource Capital Payment
$MVA \leq 10$	\$21,770	\$10,880
$10 < MVA \leq 60$	\$214,570	\$10,880
$60 < MVA \leq 90$	\$248,460	\$10,880
$90 < MVA \leq 300$, Small Starting Requirement	\$414,980	\$10,880
$90 < MVA \leq 300$, Medium Starting Requirement	\$957,920	\$10,880
$90 < MVA \leq 300$, Large Starting Requirement	\$1,785,080	\$10,880
$300 < MVA$, Large Starting Requirement	\$1,833,750	\$32,650

Table B - Restoration Services O&M Payments

Resource Type	Station-level O&M Payment	Additional Resource O&M Payment
$MVA \leq 10$	\$22,335	\$6,040
$10 < MVA \leq 60$	\$42,295	\$8,200
$60 < MVA \leq 90$	\$49,850	\$10,140
$90 < MVA \leq 300$, Small Starting Requirement	\$118,255	\$33,665
$90 < MVA \leq 300$, Medium Starting Requirement	\$252,265	\$65,600
$90 < MVA \leq 300$, Large Starting Requirement	\$388,865	\$65,820
$300 < MVA$, Large Starting Requirement	\$414,540	\$77,685

The figures in Tables A and B are determined as of 2011. The ISO shall adjust these figures annually using the “Gas Turbogenerators” subcategory of the “Other Production Plant” category of the Handy Whitman Index for the North Atlantic Region.

15.5.4.1.3.2 Unit-Specific Compensation

A Generator shall be entitled to recover through this ISO Services Tariff the actual, incremental cost of its unit’s or units’ provision of Restoration Services under the Consolidated Edison Plan. If the Generator determines that its actual, incremental cost of providing Restoration Services to the ISO from its unit(s) exceeds the payment amount determined under Section 15.5.4.1.3.1 to this Rate Schedule, the Generator shall submit to the ISO actual incremental cost documentation showing: (1) that the actual, incremental costs are reasonably and prudently incurred, (2) that the actual incremental costs are incurred solely for the purpose of providing Restoration Services, and (3) that the actual incremental costs exceed the payment amount determined under Section 15.5.4.1.3.1 to this Rate Schedule. Within thirty (30) days of receipt of all necessary documentation, or longer if the parties agree, the ISO will file at FERC, jointly with the Generator, the information provided by the Generator along with the proposed tariff appendix. The Generator will retain the burden to show that its unit(s)-specific rate request meets the cost showing requirements outlined in this section. NYISO may subsequently comment on the substance of the proposed filing during the FERC noticed comment period. Upon approval by FERC, the Generator’s unit(s)-specific rate shall be included as an appendix to this Rate Schedule. In such case, the ISO shall pay a Generator each Billing Period the pro rata share of the FERC-approved annual rate for its unit(s), except as set forth in Section 15.5.4.1.3.4 to this Rate Schedule. The ISO shall recover the costs of these payments from Customers in the Consolidated Edison Transmission District under Section 15.5.4.2 to this Rate Schedule.

15.5.4.1.3.3 Eligibility for Additional Cost Recovery

The ISO shall reimburse Generators for equipment damage if the ISO reasonably finds: (1) the damage resulted from operating such equipment in response to operational orders from the ISO, or Consolidated Edison, pursuant to the ISO Tariffs, (2) that reasonably available and customary insurance was not available for the damages incurred, and (3) the damage would not have occurred but for the Generator's provision of Restoration Services. The burden of making such showings shall be upon the Generator.

The payments for each Billing Period shall also include compensation for legitimate, verifiable, and adequately documented costs incurred solely as a result of a Generator's compliance with NERC critical infrastructure protection ("CIP") reliability standards applicable to the provision of Restoration Services, *i.e.*, a CIP cost that would not have been incurred if it were not providing Restoration Services. The Generator shall provide such invoices to the ISO, which will review and determine if compensation is appropriate.

15.5.4.1.3.4 Forfeiture of Payments As a Result of Failed Black Start Capability Tests

If a Generator's unit fails a Black Start Capability Test, the Generator shall forfeit all Restoration Service payments for that unit under Sections 15.5.4.1.3.1 and 15.5.4.1.3.2 from the date of the failed test; provided, however, that if the Generator's unit successfully completes the Black Start Capability Test within thirty days of the failed test, the Generator shall not forfeit its payments. This thirty-day period may be extended if agreed upon by the ISO, the Generator, and Consolidated Edison. If the Generator does not successfully complete its Black Start Capability Test within this thirty day, or extended, period and successfully completes the test at a later date, it shall receive its Restoration Services payments only from the date of the later, successful test going forward.

15.5.4.2 Charges to Support Payments to Generators Under the Consolidated Edison Plan

Each Billing Period, the ISO shall charge, and each Customer in the Consolidated Edison Transmission District shall pay based on its supply of Load in that Transmission District that is *not* used to supply Station Power as a third-party provider under Part 5 of the ISO OATT, a charge for the recovery of the ISO's payments to Generators providing Restoration Services under the Consolidated Edison Plan under Section 15.5.4.1 to this Rate Schedule. This charge shall be equal to: (A) the product of : (i) the Customer's share of Load in the Consolidated Edison Transmission District that is not used to supply Station Power as a third-party provided for each hour in the Billing Period, and (ii) the ISO's total payments to Generators for Restoration Services under the Consolidated Edison Restoration Plan under Sections 15.5.4.1 for the Billing Period, divided by the total number of hours in the Billing Period, (B) summed for all hours in the Billing Period.

Each Billing Period, the ISO shall charge, and each Customer in the Consolidated Edison Transmission District shall pay based on its supply of Load in that Transmission District that is used to supply Station Power as a third-party provider under Part 5 of the ISO OATT, a charge for the recovery of the ISO's payments to Generators providing Restoration Services under the Consolidated Edison Plan under Section 15.5.4.1 to this Rate Schedule. This charge shall be equal to: (A) the product of: (i) the Customer's share of Load in the Consolidated Edison Transmission District that is used to supply Station Power as a third-party provided for each day in the Billing Period, and (ii) the ISO's total payments to Generators for Restoration Services under the Consolidated Edison Restoration Plan under Section 15.5.4.1 for the Billing Period, divided by the total number of days in the Billing Period, (B) summed for all days in the Billing Period. The ISO shall credit these daily charge amounts to Customers based on their share of

Load in the NYCA that is not used to supply Station Power as a third-party provider for that day.

The ISO shall sum these daily credits for all days in the Billing Period.

Note: A clean version of the filed version of MST 15.1 Appendix I is non-existent due to its complete deletion of it as part of this filing.

Rate Schedule 5. Appendix I
Testing Criteria for Black Start Capability Tests Pursuant to Section 15.5.4.1 of Rate
Schedule 5

I. General

1. A Generator shall perform a Black Start Capability Test annually for each of its units providing Restoration Services in accordance with the test protocols described below.
2. A Black Start Capability Test will be considered successful if it is completed in accordance with the test protocols described below.

II. Scheduling a Test

1. A Generator shall perform the annual Black Start Capability Test for its unit(s) between May 1st to April 30th, as may be reasonably extended by mutual agreement among the Generator, Consolidated Edison and the ISO, without financial penalty; *provided, however*, that the Generator shall not perform a Black Start Capability Test in June, July, or August.
2. The test date must be agreed upon by Consolidated Edison, the Generator and the ISO. The agreed upon test date shall be deemed firm as of 48 hours prior to the scheduled beginning of the test. A firm test may not be called off or deferred except by the ISO for system or local reliability reasons. As is the case for any ISO-approved outage, the Generator shall not offer the unit into the Day-Ahead Market for operation during the Black Start Capability Test that day, and such non-offering into the market shall be deemed not to diminish the unit's availability.

3. An annual Black Start Capability Test may be performed prior to a maintenance outage only if there is no other scheduling option within the test period.
4. If the annual Black Start Capability Test is unable to be completed during the test period due to a forced outage or force majeure event, Consolidated Edison and the Generator will conduct the test outside the test period without a *pro rata* reduction in annual payments.
5. If a Black Start Capability Test is not successful, the Generator will have a reasonable opportunity to reschedule and conduct a subsequent test.
6. Consolidated Edison and the ISO may have representatives present to witness the annual Black Start Capability Test. However, witnesses are not required for the Generator to perform the test.

III. Gas Turbine Unit Testing Requirements

A Generator shall perform the following test for a gas turbine unit that is designated by Consolidated Edison to participate in the Consolidated Edison Plan as a gas turbine unit and not as part of a combined cycle facility.

A. Test of Gas Turbine Unit That Is a Sole Black Start Unit

1. A Generator shall perform the following Black Start Capability Test each year for its gas turbine unit that is a Sole Black Start Unit.
2. A qualifying Black Start Capability Test of the gas turbine unit must be conducted when the unit is in a cold condition, *i.e.*, the unit will be off line and will be brought on line specifically to conduct the test.

3. The gas turbine unit to be tested will be off line at the start of the Black Start Capability Test and will be isolated from all external Consolidated Edison light and power sources.
4. The Black Start Capability Test must demonstrate that the designated gas turbine unit can be started and can energize the isolated light and power bus.
5. Once isolated from Consolidated Edison's light and power bus, the Generator will have 80 minutes to ready the gas turbine unit and to request permission to synchronize the unit to a live bus on the Consolidated Edison transmission system. When authorized by the Consolidated Edison System Operator, the Generator will be asked to close the breaker for the gas turbine unit. Once the gas turbine unit has synchronized and its breaker has closed onto the transmission bus, the test will be considered successful.

B. Test of Gas Turbine Units that Are Part of a Black Start Unit Group

1. A Generator shall perform the following Black Start Capability Test each year for one of the units of a Black Start Unit Group. Once the Generator has successfully completed an annual Black Start Capability Test of one of the units of the Black Start Unit Group, it should perform in subsequent years an annual test of the remaining units of the Black Start Unit Group.
2. A qualifying Black Start Capability Test of a gas turbine unit must be conducted when the unit is in a cold condition, *i.e.*, the unit will be off line and will be brought on line specifically to conduct the test.
3. The gas turbine unit to be tested will be off line at the start of the Black Start Capability Test and will be isolated from all external Consolidated Edison light and power sources.

4. The Black Start Capability Test must demonstrate that (i) an isolated gas turbine unit can be started and can energize the isolated light and power bus; and (ii) that the light and power source is adequate for the purpose of bringing the other units on line. Part (ii) must be demonstrated by starting up an additional gas turbine unit from the light and power bus that has been energized through Part (i) of the test.
5. Once isolated from Consolidated Edison's light and power bus, the Generator will have 90 minutes to ready the equipment and to request permission to synchronize the additional generating unit to a live bus on the Consolidated Edison transmission system. When authorized by the Consolidated Edison System Operator, the Generator will be asked to close the breaker for the additional gas turbine unit. Once the additional gas turbine unit has synchronized and its breaker has closed onto the transmission bus, the test will be considered successful.

IV. Combined Cycle Unit Testing Requirements

1. A Generator shall perform each year a Black Start Capability Test for its gas turbine and steam turbine units that are designated by Consolidated Edison to participate in the Consolidated Edison Plan as part of a combined cycle facility.
2. A qualifying Black Start Capability Test must be conducted when the combined cycle unit is isolated from the transmission system. The combined cycle unit must demonstrate that the designated gas turbine(s) unit can be started and can energize the isolated light and power bus; and that the light and power source is adequate for the purpose of bringing the steam turbine(s) on line. For a successful

Black Start Capability Test, the steam turbine(s) must synchronize to the transmission system within 6 hours of the start of the Black Start Capability Test.

V. Steam Turbine Unit Testing Requirements

A Generator shall perform the following test for a steam turbine unit that is designated by Consolidated Edison to participate in the Consolidated Edison Plan as a steam turbine unit and not as part of a combined cycle facility.

A. Comprehensive Black Start Capability Test

1. A Generator shall perform a “Comprehensive Black Start Capability Test” at least once every three years for its steam turbine unit(s) providing Restoration Services.
2. A qualifying Comprehensive Black Start Capability Test of a steam turbine unit may be conducted while the unit is in a cold condition or in a hot condition. If the steam turbine unit is in a cold condition its internal light and power bus may remain connected to the transmission system until it reaches a hot condition at which point it will separate from the transmission system and commence its test.
3. The steam turbine unit must be isolated from the transmission system and an isolated cranking path between it and a black start gas turbine unit must be established. The steam turbine unit is required to start up using energy and voltage control from the gas turbine unit to energize its internal light and power bus, and be ready to synchronize to an energized transmission system when directed by the Consolidated Edison System Operator.
4. A Comprehensive Black Start Capability Test shall be considered successful if, after isolation from the Consolidated Edison transmission system, the hot steam unit is synchronized to the transmission system, and is firm to the system and

operating at minimum load in no more than 8 hours after the completion of the isolation.

5. Upon successful completion of the Comprehensive Black Start Capability Test, Consolidated Edison shall SRE the unit until midnight of the test day or until the unit's reference minimum run time has elapsed, whichever is earlier.

B. Intervening Years Black Start Capability Test

1. To meet its annual steam turbine unit test obligation, a Generator may perform an "Intervening Years Black Start Capability Test" for its steam turbine unit(s) providing Restoration Services if it has successfully completed a Comprehensive Black Start Capability Test of that unit within the prior two years.
2. The steam turbine unit must be isolated from the transmission system and a cranking path between it and a black start gas turbine unit must be established. The steam turbine unit is required to use energy and voltage control from the gas turbine unit to energize the internal light and power bus. The steam turbine unit is then required to add the auxiliary load that is required to introduce fire into its boiler, *e.g.*, boiler feed pump, fans, etc, except that no fire is required to be introduced into the boiler.
3. An Intervening Years Black Start Capability Test shall be considered successful if the gas turbine unit demonstrates ten minutes of steady operation supplying its load at the internal light and power bus within four hours after the completion of the isolation.

VI. Reporting and Additional Testing Requirements

1. If an ISO representative is not onsite, a representative from the Generator will initiate calls to ISO operations personnel to signal the start time, completion time and outcome of the Black Start Capability Test.
2. Following its performance of a Black Start Capability Test for its unit, the Generator shall submit a certification form to the ISO – in the form provided in Appendix II to this Rate Schedule – indicating whether its unit successfully completed its annual Black Start Capability Test. Consolidated Edison shall acknowledge to the ISO its acceptance of a Generator's successful completion of the Black Start Capability Test.
3. A Generator will perform tests of its unit's critical Restoration Services equipment, including monthly tests of standby diesel generators, black start gas turbines and UPS/battery back up systems. As part of its annual certification to the ISO, the Generator shall certify – in the form provided in Appendix II to this Rate Schedule – that it maintains and tests its unit's critical Restoration Services equipment in accordance with good utility practice. If any of these critical systems are found to be non-operational or otherwise unavailable, the Generator will notify Consolidated Edison and the ISO within 36 hours and provide a schedule for their repair and return to service.

Rate Schedule 5. Appendix II
Restoration Services Certification Form

[Name of Generator] hereby certifies that the [name/location of unit] performed a Black Start Capability Test on [date] in accordance with the ISO Procedures and [successfully completed/did not complete] this test in accordance with the test protocols set forth in Appendix I of Rate Schedule 5 of the ISO Services Tariff.

[Name of Generator] further certifies that it has identified a list of critical components in its units providing Restoration Services (e.g., batteries, diesel back-up generators, inverters etc.), maintains such critical components, and has performed tests to verify the condition of these critical components in accordance with good utility practice.

Signature of Officer