|  |  |  |  |
| --- | --- | --- | --- |
| NPRR Number | [1110](https://www.ercot.com/mktrules/issues?id=9b3918dc-0769-36e5-9774-25229cf2964d) | NPRR Title | Black Start Requirements Update |
|  | |  | |
| Date | | April 1, 2022 | |
|  | |  | |
| Submitter’s Information | | | |
| Name | | Isabel Flores | |
| E-mail Address | | [isabel.flores@ercot.com](mailto:isabel.flores@ercot.com) | |
| Company | | ERCOT | |
| Phone Number | | 512-248-6531 | |
| Cell Number | |  | |
| Market Segment | | Not applicable | |

|  |
| --- |
| Comments |

ERCOT submits these comments to Nodal Protocol Revision Request (NPRR) 1110 in response to discussions had and comments received at the Black Start Working Group (BSWG) and the Wholesale Market Working Group (WMWG).

|  |
| --- |
| Revised Cover Page Language |

|  |  |
| --- | --- |
| Revision Description | This Nodal Protocol Revision Request (NPRR) modifies the Black Start Service (BSS) confidential information, contract period, and back-up fuel requirements. Specific changes including the following:   * The information contained in Section 1B. and Exhibit 1 in the Standard Form Black Start Agreement, not including the Hourly Standby Price, Notice and Certification sections, is added to the items considered ERCOT Critical Energy Infrastructure Information; * The BSS procurement period is increased from two to three years; * Black Start Back-up Fuel requirements add an on-site 72-hour priority fuel requirement that can be waived in whole or in part in order procure a sufficient number or preferred combination of Resources; and * Also included is an associated Black Start Back-up Fuel attestation, fuel switching test, and a Black Start Back-up Fuel cost recovery opportunity as part of the BSS bid. |

|  |
| --- |
| Revised Proposed Protocol Language |

**1.3.2.1 Items Considered ERCOT Critical Energy Infrastructure Information**

(1) ECEII includes but is not limited to the following, so long as such information has not been disclosed to the public through lawful means:

(a) Detailed ERCOT System Infrastructure locational information, such as Global Positioning System (GPS) coordinates;

(b) Information that reveals that a specified contingency or fault results in instability, cascading or uncontrolled separation;

(c) Studies and results of simulations that identify cyber and physical security vulnerabilities of ERCOT System Infrastructure;

(d) Black Start Service (BSS) test results, individual Black Start Resource start-up procedures, cranking paths, and ERCOT and individual TSP Black Start plans;

(e) Information contained in Section 1.B. and Exhibit 1 to the Standard Form Black Start Agreement, except for the Hourly Standby Price, Notice, and Certification sections. This includes, without limitation, the following information that could identify a Generation Resource as a Black Start Resource:

(i) Resource name;

(ii) Resource ID;

(iii) County where the Resource is located;

(iv) Interconnected substation;

(v) Resource MW capability; and

(vi) Tested next start units;

(f) ERCOT, TDSP, and Resource emergency operations plans;

(g) Detailed ERCOT Transmission Grid maps, other than maps showing only small portions of the ERCOT Transmission Grid such as those included in Regional Planning Group (RPG) Project ERCOT Independent Review reports;

(h) Detailed diagrams or information about connectivity between ERCOT’s and other Entities’ computer and telecommunications systems, such as internet protocol (IP) addresses, media access control (MAC) addresses, network protocols, and ports used; and

(i) Any information that is clearly designated as ECEII in writing by the Disclosing Party at the time the information is provided to Receiving Party, subject to the procedures set forth in paragraph (3) of Section 1.3.2.2, Submission of ERCOT Critical Energy Infrastructure Information to ERCOT.

## 2.1 DEFINITIONS

**Black Start Service (BSS) Back-up Fuel**

Fuel that is stored on site at the location of a Black Start Resource and that is available at all times and contracted with ERCOT for the purpose of powering the Resource when following ERCOT or the local Transmission Operator instruction to start without support of the ERCOT Transmission Grid in response to a Blackout or Partial Blackout.

***3.14.2 Black Start***

(1) Each Generation Resource providing BSS must meet the requirements specified in North American Electric Reliability Corporation (NERC) Reliability Standards and the Operating Guides.

(2) Each Generation Resource providing BSS must meet the technical requirements specified in Section 8.1.1, QSE Ancillary Service Performance Standards, and Section 8.1.1.1, Ancillary Service Qualification and Testing.

(3) Bids for BSS are due on or before February 15th of each three-year period. Bids must be evaluated based on evaluation criteria attached as an appendix to the request for bids and contracted by December 31st for the following three-year period. ERCOT shall ensure BSSs are arranged, provided, and deployed as necessary to reenergize the ERCOT System following a Blackout or Partial Blackout.

(a) Resources shall disclose any weather-related limitations that could affect the Resource’s ability to provide BSS using the form provided in Section 22, Attachment M, Generation Resource Disclosure Regarding Bids for Black Start Service, as part of a bid to provide BSS.

(b) BSS bids shall include the hourly stand-by price and the BSS Back-up Fuel costs where applicable.

(c) When a Resource is selected to provide BSS, the Black Start Resource shall be required to complete all applicable testing requirements as specified in Section 8.1.1.2.1.5, System Black Start Capability Qualification and Testing.

(d) ERCOT shall provide a list of all prospective Black Start Resources that responded to the Request for Proposal for BSS to the impacted TSPs no later than seven days after the date on which bids for BSS are due. Any feedback from affected TSPs shall be limited to the identification of transmission constraints that may adversely impact the ability of the Black Start Resource to energize the Next Start Resource and shall be due to ERCOT by March 1st of that year. ERCOT shall share the feedback with the QSE representing the prospective Black Start Resource as soon as practicable. The QSE representing the Black Start Resource shall have the option to provide a response to any feedback provided by an affected TSP.

(4) ERCOT may schedule unannounced Black Start testing, to verify that BSS is operable as specified in Section 8.1.1.2.1.5, System Black Start Capability Qualification and Testing.

(5) QSEs representing Generation Resources contracting for BSSs shall participate in training and restoration drills coordinated by ERCOT.

(6) ERCOT shall periodically determine and review the location and number of Black Start Resources required, as well as any special transmission or voice communication needs required. ERCOT and providers of this service shall meet the requirements as specified in the Operating Guides and in NERC Reliability Standards.

(7) A Resource Entity representing a Black Start Resource may request that an alternate Generation Resource which is connected to the same black start primary and secondary cranking path as the original Black Start Resource be substituted in place of the original Black Start Resource during the three year term of an executed Standard Form Black Start Agreement (Section 22, Attachment D, Standard Form Black Start Agreement) if the alternate Generation Resource meets testing and verification under established qualification criteria to ensure BSS.

(a) ERCOT, in its sole discretion, may reject a Resource Entity’s request for an alternate Generation Resource and will provide the Resource Entity an explanation of such rejection.

(b) If ERCOT accepts the alternative Generation Resource as the substituted Black Start Resource, such acceptance shall not affect the original terms, conditions and obligations of the Resource Entity under the Standard Form Black Start Agreement. The Resource Entity shall submit to ERCOT an Amendment to Standard Form Black Start Agreement (Section 22, Attachment I, Amendment to Standard Form Black Start Agreement) after qualification criteria has been met.

(8) For the purpose of the Black Start Hourly Standby Fee as described in Section 6.6.8.1, Black Start Hourly Standby Fee, the Black Start Service Availability Reduction Factor shall be determined by using the availability for the original Black Start Resource and any substituted Black Start Resource(s), as appropriate for the rolling 4380 hour period of the evaluation.

(9) Each Generation Resource selected to provide BSS shall be prepared and able to provide BSS at any time as may be required by ERCOT, subject only to the limitations described in ERCOT Protocols or the Black Start Agreement.

(10) Each Generation Resource selected to provide BSS shall be able to utilize BSS Back-up Fuel for BSS and shall maintain a contracted amount of BSS Back-up Fuel to run the Black Start Resource for a minimum of 72 hours at its maximum output. The Generation Resource shall maintain the contracted amount of BSS Back-up Fuel at all times during the duration of the BSS contract term unless performing a BSS Back-up Fuel Switching Test or the Generation Resource is operating pursuant to a Black Start deployment event. This requirement does not apply to Resources that do not rely on purchased fuel.

(11) A Black Start Resource may utilize the contracted amount of BSS Back-up Fuel outside of BSS if ERCOT determines it is necessary during an EEA event.

(12) A Black Start Resource is not obligated to contract its full on site fuel storage capability for BSS Back-up Fuel. On site backup fuel in excess of the contracted BSS Back-up Fuel amount may be used by the Generation Resource at the discretion of the Generation Resource and ERCOT shall not prevent the Black Start Resource from utilizing the excess fuel, nor shall the Black Start Resource be required to request permission from ERCOT to utilize fuel in excess of the contracted BSS Back-up Fuel amount.

(13) ERCOT may, at its discretion, waive the BSS Back-up Fuel requirement stated in this section, in whole or in part, if ERCOT deems necessary in order to procure a sufficient number or preferred combination of Generation Resources to provide BSS.

(14) A Resource Entity that submits a bid or is contracted to provide BSS or serve as an alternate to provide BSS with a Switchable Generation Resource (SWGR):

(a) Shall not nominate the SWGR to satisfy supply adequacy or capacity planning requirements in any Control Area other than the ERCOT Region during the term of the BSS contract;

(b) Shall submit a report to ERCOT in compliance with paragraph (2) of Section 16.5.4, Maintaining and Updating Resource Entity Information, indicating that the SWGR does not have any contractual requirement in a non-ERCOT Control Area during the term of the BSS contract; and

(c) Shall take any further action requested by ERCOT to ensure that ERCOT will be classified as the “Primary Party” for the SWGR under any agreement between ERCOT and another Control Area Operator during the term of the BSS contract.

(15) If a Resource Entity with a SWGR is contracted to provide BSS or designated as an alternate to provide BSS, the Resource Entity shall have its Black Start plan procedures approved by ERCOT. In the event of a partial Blackout or Blackout of the ERCOT System, the Resource Entity with a SWGR shall immediately:

(a) Effectuate its Black Start plan procedures to be available to provide BSS; and

(b) Provide BSS as directed by ERCOT or the local Transmission Operator (TO).

**8.1.1.2.1.5 System Black Start Capability Qualification and Testing**

(1) A Resource is qualified to be a Black Start Resource if it has met the following requirements:

(a) Verified control communication path performance;

(b) Verified primary and alternate voice circuits for receipt of instructions;

(c) Passed the “Basic Starting Test” as defined below;

(d) Passed the “Line-Energizing Test” as defined below;

(e) Passed the “Load-Carrying Test” as defined below;

(f) Passed the “Next Start Resource Test” as defined below;

(g) Provided an attestation, in the form required by ERCOT, of BSS Back-up Fuel that will support the Resource for a minimum of 72 hours at maximum output, except to the extent ERCOT has waived this requirement;

(h) Passed the “BSS Back-up Fuel Switching Test” as defined below, unless ERCOT has waived the BSS Back-up Fuel requirement;

(i) If not starting itself, has an ERCOT-approved firm standby power contract with deliverability under Blackout circumstances from a non-ERCOT Control Area that can be finalized upon selection as a Black Start Resource;

(j) If not starting itself, has an ERCOT approved agreement with the necessary TSPs for access to another power pool, for coordination of switching during a Blackout or Partial Blackout, for coordination of maintenance through the ERCOT Outage Scheduler for all non-redundant transmission startup feeds;

(k) If dependent upon non-ERCOT transmission resources, agreements providing this Transmission Service have been provided in the proposal; and

(l) Demonstrated to ERCOT’s satisfaction that the Resource has successfully completed remediation to any weather-related limitation disclosed as part of the Black Start Service (BSS) bid.

(2) On successful demonstration of system BSS capability, ERCOT shall certify that the Black Start Resource is capable of providing system BSS capacity and shall provide a copy of the certificate to the Resource Entity of the Black Start Resource. Qualification shall be valid for the time frames set forth below. Except under extenuating circumstances, as reasonably determined by ERCOT, all qualification testing for the next year of BSS must be completed by June 1st of each year.

(3) ERCOT may limit the number of qualification retests allowed. Qualification retesting is required only for the aspect of system BSS capability for which the Black Start Resource failed. If a Black Start Resource under an existing Black Start Agreement does not successfully re-qualify within two months of failing a test described herein, ERCOT shall decertify the Black Start Resource for the remainder of the calendar year as described in Section 7, Black Start Decertification, of Section 22, Attachment D, Standard Form Black Start Agreement. The following tests are required for BSS qualification:

(a) The “Basic Starting Test” includes the following:

(i) The basic ability of the Black Start Resource to start itself, or start from a normally open interconnection to another provider not inside the ERCOT interconnection, without support from the ERCOT System;

(ii) Annual testing, either as a stand-alone test or part of the Line Energizing and Load-Carrying Tests, and the test is performed during a one-week period agreed to in advance by the Black Start Resource and ERCOT and must not cause outage to ERCOT Customer Load or the availability of other Resources to the ERCOT market;

(iii) Confirmation of the dates of the test with the Black Start Resource by ERCOT;

(iv) Isolation of the Black Start Resource, including all auxiliary Loads, from the ERCOT System, except for the transmission that connects the Resource to a provider not inside the ERCOT interconnection if the startup power is supplied by a firm standby contract. Black Start Resources starting with the assistance of a provider not inside the ERCOT interconnection through a firm standby agreement will connect to provider not inside the ERCOT interconnection, start-up, carry internal Load, disconnect from the provider not inside the ERCOT interconnection if not supplied through a black-start capable Direct Current Tie (DC Tie), and continue equivalently to what is required of other Black Start Resources;

(v) The ability of the Black Start Resource to start without assistance from the ERCOT System, except for the transmission that connects the Resource to a provider not inside the ERCOT interconnection if the startup power is supplied by a firm standby contract;

(vi) The ability of the Black Start Resource to remain stable (in both frequency and voltage) while supplying only its own auxiliary Loads or Loads in the immediate area for at least 30 minutes;

(vii) The Black Start Resource must have verified that its Volts/Hz relay, over-excitation limiter, and under-excitation limiter are set properly and that no protection devices will trip the Black Start Resource within the required reactive range. The Resource Entity for the Black Start Resource shall provide ERCOT with data to verify these settings; and

(viii) Each Black Start Resource must pass a Basic Starting Test once each calendar year.

(b) The “Line-Energizing Test” must be conducted at a time agreed on by the Black Start Resource, TSP or Distribution Service Provider (DSP), and ERCOT and includes the following:

(i) Energizing transmission with the Black Start Resource when conditions permit as determined by the TSP or DSP but at least once every three years;

(ii) De-energizing sufficient transmission in such manner that when energized by the Black Start Resource it demonstrates the Black Start Resource’s ability to energize enough transmission to deliver to the Loads the Resource’s output that ERCOT’s restoration plan requires the Black Start Resource to supply. ERCOT shall be responsible for transmission connections and operations that are compatible with the capabilities of the Black Start Resource;

(iii) Conducting a Basic Starting Test;

(iv) Energizing transmission with the Black Start Resource of the previously de-energized transmission, while monitoring frequency and voltages at both ends of the line. Alternatively, if ERCOT agrees, the transmission line may be connected to the Black Start Resource before starting, allowing the Resource to energize the line as it comes up to speed;

(v) Stable operation of the Black Start Resource (in both frequency and voltage) while supplying only its auxiliary Loads or external Loads for at least 30 minutes;

(vi) This test may be performed together with the Basic Starting Test in one 30 minute interval; and

(vii) Each Black Start Resource must pass a Line-Energizing Test once every three years.

(c) The “Load-Carrying Test” shall utilize the Load agreed to between ERCOT, TSP and the Black Start Resource. Testing shall occur as conditions permit, at a time agreed on by the Black Start Resource, TSP or DSP, and ERCOT, and includes the following:

(i) Stable operation of the Black Start Resource (in both frequency and voltage) while supplying restoration power to Load that is not identified as auxiliary Load of the Resource and is allowed to be auxiliary Load of adjacent facilities;

(ii) Conducting a Basic Starting Test;

(iii) Conducting a Line-Energizing Test when required;

(iv) Under the direction of ERCOT or the TSP operator, the Black Start Resource shall demonstrate the Black Start Resource’s capability to supply the required Load, while maintaining voltage and frequency for at least 30 minutes;

(v) This test may be performed together with the Basic Starting Test and Line Energizing Test when required in one 30 minute interval; and

(vi) Qualification under the Load-Carrying Test is valid for five years.

(d) “Next Start Resource Test”:

(i) The ability of a Black Start Resource to start up the next start unit’s largest required motor while continuing to remain stable and control voltage and frequency shall be tested. This test shall be repeated when a new next start unit is selected;

(ii) To pass the test:

(A) The potential Black Start Resource must start the next start unit (as determined by ERCOT), or start the next start unit’s largest required motor and satisfied the next start unit’s minimum startup Load requirements; or

(B) The Resource Entity shall demonstrate to the satisfaction of ERCOT through simulation studies conducted by the Resource Entity or a qualified third party, that the potential Black Start Resource is capable of starting the next start unit’s largest required motor while meeting the next start unit’s minimum startup Load requirements.

(iii) Potential Black Start Resources may request from ERCOT the information detailed in paragraph (B) above of the next start unit prior to the satisfaction of this requirement. ERCOT shall request this information from the designated next start unit. Such data, if requested by ERCOT, shall be provided by the QSE or Resource Entity representing the next start unit to ERCOT within 30 days. Such information shall be considered Protected Information by the requesting Resource Entity;

(iv) If a physical test is performed, the test shall commence with a Basic Starting Test, followed by a Line Energizing Test when required and a Load-Carrying Test as a stand-alone test or part of the Next Start Resource Test;

(v) If a physical test is performed, the Black Start Resource must remain stable (in both voltage and frequency) and controlling voltage for 30 minutes;

(vi) If a physical test is performed, this test may be performed together with the Basic Starting Test, Line Energizing Test when required, and Load-Carrying Test in one 30 minute interval; and

(vii) Each Black Start Resource must pass the Next Start Resource Test once every five years.

(e) The “BSS Back-up Fuel Switching Test” shall:

(i) Demonstrate a Black Start Resource’s ability to successfully switch to a BSS Back-up Fuel source;

(ii) Demonstrate the ability of the Black Start Resource to start itself, or start from a normally open interconnection to another provider not inside the ERCOT interconnection, without support from the ERCOT System and while operating on the BSS Back-up Fuel source. The Black Start Resource may start on its primary fuel source, if necessary, but must transition to the BSS Back-up Fuel source within the timeframe indicated in its proposal;

(iii) Demonstrate the ability of the Black Start Resource to remain stable (in both frequency and voltage) while operating on BSS Back-up Fuel source and supplying only its own auxiliary Loads or Loads in the immediate area for at least ten minutes; and

(iv) Demonstrate that there is a sufficient amount of BSS Back-up Fuel to satisfy the requirement in paragraph (10) of Section 3.14.2, Black Start.

(f) The BSS Back-up Fuel Switching Test will be conducted on odd numbered years and may, at ERCOT’s discretion, also be

(i) Performed as part of the Basic Starting Test while operating on BSS Back-up Fuel; or

(ii) As a stand-alone test.

(4) Each qualified Black Start Resource shall perform a Black Start Resource Availability Test quarterly unless the Black Start Resource has successfully started and operated at LSL or higher for at least four consecutive Settlement Intervals during the quarter. The Black Start Resource’s cost to perform a Black Start Availability Test may be a component of the overall bid for BSS but ERCOT will not separately compensate QSEs representing Black Start Resources for such testing. ERCOT, at its sole discretion, may grant an exemption of the Black Start Resource Availability Test for QSEs whose Black Start Resources have responded as instructed by ERCOT during an EEA event.

(5) The Black Start Resource Availability Test shall be scheduled by ERCOT. Upon receipt of notification for a Black Start Resource Availability Test, the QSE representing the Black Start Resource shall send confirmation to ERCOT of its intent to comply with the test or submit a request to reschedule along with justification for the request.

(6) ERCOT shall provide the QSE representing the Black Start Resource two-hour notice in order to allow the QSE time to update its COP. The QSE representing the Black Start Resource shall show the Resource as “ONTEST” in its COP and through its Real-Time telemetry for the duration of the test. As part of the Black Start Resource Availability Test, the QSE representing the Black Start Resource shall start the Black Start Resource and operate it at or above its LSL for at least four consecutive Settlement Intervals. After completion of the Black Start Resource Availability Test the QSE will update its COP to reflect their current status.

(7) Upon completion of the Black Start Resource Availability Test, the QSE representing the Black Start Resource shall complete and file a Black Start Resource Availability Test report with ERCOT. If the Black Start Resource wants to use a successful start and normal operation to satisfy the quarterly reporting requirement, it must provide the necessary information for the start and normal operation on a Black Start Resource Availability Test report. The report form shall be provided by ERCOT.

(8) A Black Start Resource Availability Test is deemed to be successful if the Black Start Resource comes On-Line within the time specified in the Black Start Resource’s Request for Proposal response submitted to ERCOT and operates at a minimum level as agreed to by ERCOT and the QSE representing the Black Start Resource for at least four consecutive Settlement Intervals.

(9) If the Black Start Resource fails to successfully start during the Black Start Resource Availability Test, the QSE representing the Black Start Resource shall immediately update its Availability Plan for that Black Start Resource showing zero availability. The QSE representing the Black Start Resource shall not receive the Hourly Standby Fee for BSS effective from the date of the failed Black Start Resource Availability Test. The QSE representing the Black Start Resource may schedule a second Black Start Resource Availability Test, subject to ERCOT approval, to be completed within ten Business Days of the date of the failed Black Start Resource Availability Test unless a later date is agreed to by ERCOT. The cost of the second Black Start Resource test will be borne solely by the QSE representing the Black Start Resource.

(10) If the Black Start Resource successfully passes the second Black Start Resource Availability Test, the QSE representing the Black Start Resource shall resume receipt of the Hourly Standby Fee beginning on the date of the successful Black Start Resource Availability Test.

(11) If the Black Start Resource fails a second Black Start Resource Availability Test within the quarter, it shall immediately be disqualified from providing BSS and shall receive no further compensation under the Black Start Service Agreement. In addition, ERCOT shall claw-back all Hourly Standby Fee payments made to the QSE representing the Black Start Resource since its last successful Black Start Resource Availability Test or its last successful start and operation under normal system conditions, whichever is later. The clawed-back Hourly Standby Fee payments shall be uplifted by ERCOT to Loads on a Load Ratio Share (LRS) basis. ERCOT may, at its sole discretion, consider allowing the Black Start Resource to perform an additional Black Start Resource Availability Test. ERCOT may also, at its sole discretion, seek to procure additional Black Start Resources to replace the disqualified Black Start Resource.

(12) A QSE representing the Black Start Resource shall update its Availability Plan for a Black Start Resource to show zero if the Black Start Resource fails to perform when ERCOT has issued a Dispatch Instruction to come On-Line any time other than for a Blackout. The Black Start Resource shall continue to be shown as unavailable until it successfully starts under normal operations or completes a successful Black Start Resource Availability Test.

(13) If the Black Start Resource fails to perform successfully during an actual Blackout and the Black Start Resource has been declared available, as defined in Section 22, Attachment D, ERCOT shall:

(a) Decertify the Black Start Resource for the remainder of the Black Start Agreement contract term, and

(b) Claw-back 100% of the Hourly Standby Fee paid to the QSE representing the Black Start Resource for all the Operating Days since its last successful Black Start Resource Availability Test or its last successful start and operation under normal system conditions, whichever is later.

**ERCOT Nodal Protocols**

**Section 22**

**Attachment M: Generation Resource Disclosure Regarding Bids for Black Start Service**

**TBD**

**Generation Resource Disclosure Regarding Bids for Black Start Service**

**Resource Entity:**      

**Qualified Scheduling Entity (QSE) representing the Resource Entity:**

**Generation Resource (list by Resource Site Code):**

**Operational Weather limitations:**

(1) Minimum Ambient Operation Temperature (°F)

(2) Maximum Ambient Operation Temperature (°F)

(3) Relative Humidity (%)

**Weather Related Limitation Disclosure:**

Please list any weather-related limitations to the Generation Resource’s start-up/operation capabilities (include a brief description of the limitation(s), planned remediation for the limitation, and an associated target completion date for the remediation): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Weatherization affirmation – please affirm by checking the box:**

I hereby affirm that all disclosed weather-related limitations listed above and weatherization preparations for equipment critical to providing Black Start Service (BSS) are complete or will be completed prior to the beginning of Black Start qualification testing.

**Black Start Service (BSS) Back-up Fuel capability:**

(1) Contracted number of hours at maximum output utilizing BSS Back-up Fuel

**BSS Back-up Fuel affirmation – please affirm by checking the box:**

I hereby affirm that the Generation Resource will maintain sufficient BSS Back-up Fuel to operate at its maximum output for the number of hours disclosed above prior to the beginning of Black Start qualification testing and for the duration of the BSS contract term.

By signing below, I certify that I am an officer or authorized executive of each Resource Entity listed above, that I am authorized to execute and submit this declaration on behalf of each Resource Entity listed above, and that the statements contained herein are true and correct.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Title

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date