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| NPRR Number | [1210](https://www.ercot.com/mktrules/issues/NPRR1210) | NPRR Title | Next Start Resource Test and Load-Carrying Test Frequency |
| Date Posted | | November 15, 2023 | |
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| Requested Resolution | | Normal | |
| Nodal Protocol Sections Requiring Revision | | 8.1.1.2.1.5, System Black Start Capability Qualification and Testing | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | This Nodal Protocol Revision Request (NPRR) changes the frequency of the Next Start Resource Test and the Load-Carrying Test respectively from once every five years to once every four calendar years. | |
| Reason for Revision | | Addresses current operational issues.  Meets Strategic goals (tied to the [ERCOT Strategic Plan](https://www.ercot.com/files/docs/2018/12/13/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board).  Market efficiencies or enhancements  Administrative  Regulatory requirements  Other: Address a potential compliance risk.  *(please select all that apply)* | |
| Business Case | | North American Electric Reliability Corporation (NERC) Standard EOP-005-3, System Restoration from Blackstart Resources, R6, requires that a Black Start Resource be tested once every five years to verify that it can meet the real and reactive requirements of a cranking path and the dynamic capability to supply initial Loads. This requirement is met via the Next Start Resource Test outlined in paragraph (3)(d)(vii) of Section 8.1.1.2.1.5.  It has become apparent that meeting the once-every-five-years testing requirement raises issues with respect to the specific deadline and can be difficult. For example, if a Next Start Resource Test is conducted on April 15, 2023 of the current year, depending on system conditions, it may be difficult for contracted Black Start Resource to test by April 15, specifically, in 2028. Accordingly, ERCOT is proposing that the once-every-five-year testing cycle for the Next Start Resource Test be changed to once every four calendar years in order to consistently be within the five year NERC-required time frame and avoid issues related to the time of year in which the deadline falls. Once every four calendar years provides flexibility to test at any point within the calendar year that the test is due.  To reduce complexity and the potential risk associated with managing different testing frequencies, the frequency of the Load-Carrying Test in paragraph (3)(c)(vi) of Section 8.1.1.2.1.5 is also changed to align with the frequency of the Next Start Resource Test. | |

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| Market Segment | Not Applicable |

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| Proposed Protocol Language Revision |

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 Black Start Service (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 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 four calendar 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 four calendar 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.