

# **ELECTRICITY BUSINESS RULES**

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## **Appendix E**

### **Ancillary Services**

### **Operational Requirements**

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**PART 1 INTRODUCTION**

1.1 **Background:** To ensure the reliable operation of the Integrated Electricity System, those Facilities in NB and in the case of Capacity Based Ancillary Services, the NB Balancing Area, seeking to provide Ancillary Services (AS Provider) must meet the necessary operational requirements. These requirements enable the SO to account for and activate the necessary Ancillary Services as may be required for system conditions to ensure the reliable operation of the Integrated Electricity System.

1.2 **Purpose:** To provide the following:

- a) a potential or existing AS Provider the necessary operational requirements to qualify as a provider of an Ancillary Service; and
- b) to the SO, the AS Provider's capabilities for the purpose of planning, activation, testing and monitoring of the particular Ancillary Service.

1.3 **Scope and Application:** With the exception of Reactive Supply and Voltage Control Service, these operational requirements are applicable to all AS Providers in the NB Balancing Area. Reactive Supply and Voltage Control Service can only be provided by those synchronous generators in NB qualified to provide this service in accordance with these requirements.

AS Providers external to NB, but within the NB Balancing Area may be subject to the associated Interconnection Agreements between the AS Provider's local control center and the SO. AS Providers external to NB may also be subject to those provisions in the Tariff Generation Connection Agreement that are applicable to the particular Ancillary Service the Facility is seeking to provide.

## PART 2 PROVISION OF ANCILLARY SERVICES

- 2.1 **Operating Procedure(s):** The SO may require an operating procedure with the AS Provider for the purpose of the planning, activation, testing and monitoring of the particular Ancillary Service.
- 2.2 This section is not used.
- 2.3 **Scheduling:** Subject to section 2.6, the SO may (but shall not be obliged to) at any time and from time to time, issue a schedule or Dispatch Instructions to the AS Provider calling for the provision of the Ancillary Service. Any such schedule or Dispatch Instructions shall be issued in accordance with the Electricity Business Rules and using such communications protocols as may be specified in Table 1 or applicable operating procedure in section 2.1.
- 2.4 **Activation:** Where the Ancillary Services include one or more of Regulation Service, Load Following Service or Operating Reserve Service, the SO may (but shall not be obliged to) at any time and from time to time issue control instructions or Dispatch Instructions to the AS Provider calling for the provision of energy.
- 2.5 **AS Provider Response:** Subject to section 2.6, the AS Provider shall comply, and shall ensure that the AS Provider Facilities comply, with a schedule, Dispatch Instructions or control instructions issued under section 2.3 or 2.4.
- 2.6 **Black Start:** The following apply to the provision of Black Start Capability Service in lieu of sections 2.3 and 2.5:

- a) the SO may issue instructions to the AS Provider to provide Black Start Capability Service in the circumstances and manner specified in the Integrated Electricity System restoration plan; and
  - b) the AS Provider shall use all reasonable endeavors consistent with Good Utility Practice to ensure that the Facilities comply with such instructions.
- 2.7 **Performance Standards:** The AS Provider shall provide each Ancillary Service in accordance with the Performance Standards for the Ancillary Service as specified in Part I of the applicable Appendix E Attachment.
- 2.8 **Performance Requirements:** The AS Provider shall ensure that the Facilities used to provide an Ancillary Service are maintained and operated in such a manner as to enable them to meet the performance requirements for that Ancillary Service as specified in Attachment 1. The AS Provider shall also ensure that the AS Facilities comply with all applicable technical requirements of the Electricity Business Rules, including the applicable Reliability Requirements pertaining to communications and to operational reporting and monitoring referred to in Chapter 3 of the Electricity Business Rules.
- 2.9 **Notice of Unavailability of Service:** The AS Provider shall promptly notify the SO:
- a) if the AS Provider considers that the Facilities used to provide an Ancillary Service are or will become incapable of meeting the performance requirements for that Ancillary Service or of providing the Ancillary Service in accordance with the Performance Standards for that Ancillary Service; or
  - b) of the failure or inability of the AS Provider or the Facilities to comply with a schedule, Dispatch Instruction, control instruction or instruction issued to the AS Provider under section 2.3, 2.4 or 2.6(a).

Such notice shall indicate the nature and cause of the existing or forecasted unavailability and its expected duration. The SO shall promptly notify the AS Provider in

the event that there has been a deficiency in the provision of a Ancillary Service, that there has been a failure to comply with a schedule, Dispatch Instruction, control instruction or instruction issued to the AS Provider under section 2.3, 2.4 or 2.6(a) or that the Ancillary Service has been provided other than in accordance with the Performance Standards for that Ancillary Service.

- 2.10 **Changes to AS Provider Facilities:** The AS Provider shall promptly notify the SO if a change or modification to any of the Facilities has been or will be made in a manner that could reasonably be expected to affect the ability of the Facilities to be capable of meeting the Performance Requirements for an Ancillary Service or of providing an Ancillary Service in accordance with the Performance Standards for that Ancillary Service.
- 2.11 **Recordkeeping:** The AS Provider shall maintain accurate and complete Records in written or electronic form relating to the provision of each Ancillary Service provided including records:
- a) of the procedures used in conducting, and the results of, any tests conducted under Part 3 or section 4.1;
  - b) of the periods in which the AS Facilities are not capable of providing the Ancillary Service;
  - c) of any maintenance performed on the AS Facilities;
  - d) of the results of any in service performance monitoring required under the Electricity Business Rules or in any applicable Performance Requirements; and
  - e) of any notifications transmitted to or received from the SO for the supply of Ancillary Services other than electronic commands received from the SO that activate the Ancillary Service(s).

- 2.12 **Retention Period:** A Record referred to in section 2.11 shall be retained by the AS Provider for a period that is no less than seven years from the date on which the Record was created or received by the AS Provider.

### **PART 3 MAINTENANCE AND TESTING**

- 3.1 **Maintenance:** An AS Provider shall maintain its Facility in accordance with Good Utility Practice and shall comply with all applicable provisions of Chapter 3 of the Electricity Business Rules pertaining to the notification, scheduling and coordination of Outages pertaining to the Facility.
- 3.2 **Testing:** The AS Provider shall, in respect of each Ancillary Service that it is providing, conduct the tests described in Part II of the applicable Attachment. Such tests shall be conducted at the time and in the manner specified in such applicable Attachment or, in the absence of such detail, at such time and in such manner as may be agreed between the AS Provider and the SO. Failing such agreement, they must be conducted at the time and in the manner specified by the SO.
- 3.3 **Additional Testing:** Where the SO believes on reasonable grounds that the AS Facilities are incapable of meeting the performance requirements for an Ancillary Service or of providing an Ancillary Service in accordance with the performance standards for that Ancillary Service, the SO may require that the AS Provider conduct:
- a) one or more of the tests described in Part II of the applicable Attachment; and/or
  - b) such other tests as the SO may reasonably require.

Such testing may be required notwithstanding any limitation contained in Part II of the applicable Attachment as to the number of tests that may be required. Without limiting the generality of the foregoing, the SO may require such testing where notice of

- unavailability has been given under section 2.9, where notice of a change or modification has been given under section 2.10 or where the AS Facilities have failed a test. Tests required under this section 3.3 shall be conducted at such time and in such manner as may be agreed between the parties, failing which agreement they shall be conducted at the time and in the manner specified by the SO.
- 3.4 **AS Provider Notice and SO Attendance:** The AS Provider shall give the SO reasonable notice of the date and time of any test to be conducted under section 3.2 or 3.3. The SO is entitled to have its representative(s) attend at and witness the test. If the SO gives notice to the AS Provider of its intention to witness a test the AS Provider shall provide sufficient access to permit the SO's representative(s) to witness the test in order to verify that the test is correctly carried out.
- 3.5 **Reporting Results:** The AS Provider shall provide the SO with evidence that a test required under section 3.2 or 3.3 has been conducted and with written results of the test within ten (10) Business Days of the completion of the test.
- 3.6 **AS Provider Testing:** Nothing in sections 3.2 and 3.3 shall be construed as limiting the right of the AS Provider to conduct any other tests at any time during the term of the Ancillary Service provided. Such other tests shall be scheduled with the SO and shall comply with all applicable provisions of Chapter 3 of the Electricity Business Rules pertaining to the notification, scheduling and coordination of Outages pertaining to the Facilities.
- 3.7 **Failure to Test:** Where the AS Provider fails to conduct a test required by section 3.2, 3.3 or 4.1; the SO may request an explanation as to why the test was not carried out. The AS Provider shall provide such an explanation within two (2) Business Days of receipt of the SO's request, together with an indication of when the test will be conducted. The SO may also request that the AS Provider provide evidence satisfactory to the SO that the AS Facilities meet the performance requirements specified in Attachment 1 for such Ancillary Service and are capable of providing the Ancillary

Service in accordance with the applicable performance standards. If evidence satisfactory to the SO is not so provided, the failure to conduct the test shall be deemed to be the failure of such test and section 3.8 shall apply.

**3.8 Deficiency Period:** Subject to section 3.9, where section 3.7 applies or where a test conducted in accordance with this Appendix fails to demonstrate that the AS Facilities meet the performance requirements set forth in Attachment 1, the AS Facilities shall be deemed to be incapable of providing the Ancillary Service in accordance with the applicable performance standards for the period:

- a) commencing half way between:
  - i. the date of the test or, where section 3.7 applies, the date of the request for evidence made by the SO under that section;
  - ii. the most recent to occur of:
    - A. the last time a test was conducted that demonstrated that the AS Facilities met the applicable performance requirements;
    - B. the last time the Ancillary Service was successfully provided to the SO using the AS Facilities in accordance with all performance standards and performance requirements applicable to that Ancillary Service; and
    - C. the date of the commencement of the applicable Ancillary Service from the AS Facility; and
- b) concluding on the date that the AS Provider demonstrates to the satisfaction of the SO that the AS Facilities meet the performance requirements for the applicable Ancillary Service.

- 3.9 **Exception:** Where the AS Provider can demonstrate to the satisfaction of the SO, or the SO can demonstrate, that the AS Facilities commenced to fail to meet the performance requirements set forth in Attachment 1 on a specified date, that date shall be the date on which the AS Facilities are deemed to have commenced to be incapable of providing the Ancillary Service in accordance with the applicable performance standards.
- 3.10 **Cost of Testing:** Subject to section 3.11, each of the SO and the AS Provider shall bear their own costs and expenses relating to the conducting of tests under these requirements.
- 3.11 **Exception:** The AS Provider shall pay for the SO's reasonable costs and expenses in conducting and reviewing the results of any test:
- a) conducted under section 3.2 or 3.3 that fails to demonstrate that the AS Facilities meet the applicable performance requirements or the applicable performance standards in a material respect; or
  - b) conducted under section 4.1.

#### **PART 4 REMEDIAL MEASURES**

- 4.1 **Obligation to Take Remedial Measures:** Where:
- a) the AS Facilities are deemed to be incapable of providing an Ancillary Service under section 3.8;
  - b) the AS Provider or the SO has given notice under section 2.9; or
  - c) the SO has made a request under section 3.7;
- the AS Provider shall promptly take such remedial measures as may be required to ensure that the AS Facilities meet all applicable performance requirements and can provide the Ancillary Service in accordance with the applicable performance standards.

The AS Provider shall notify the SO of the remedial measures and shall keep the SO apprised of the status and progress of their implementation. The AS Provider shall conduct such additional tests and provide the SO with such evidence satisfactory to the SO as the SO may require in order for the SO to determine that the AS Facilities can meet all applicable performance requirements and provide the Ancillary Service in accordance with the applicable performance standards. Section 3.4 shall apply to any test conducted under this section 4.1.

4.2 **No Scheduling:** Subject to section 4.3, where:

- a) the AS Facilities are deemed to be incapable of providing an Ancillary Service under section 3.8;
- b) the AS Provider or the SO has given notice under section 2.9; or
- c) the SO has made a request under section 3.7,

the SO shall not issue a schedule, Dispatch Instructions or control instructions referred to in section 2.3 or 2.4 in respect of the applicable Ancillary Service until such time as the SO is satisfied that the AS Facilities meet the performance requirements for that Ancillary Service and are capable of providing the Ancillary Service in accordance with the applicable performance standards.

4.3 **Scheduling to Reduced Capability:** Where one or more of sections 4.2(a) to 4.2(c) apply and the SO considers that the AS Facilities are nonetheless capable of:

- a) providing an Ancillary Service at a reduced level;
- b) meeting some but not all of the performance requirements for that Ancillary Service; or
- c) providing the Ancillary Service otherwise than in accordance with the applicable performance standards;

the SO may issue a schedule, Dispatch Instructions or control instructions referred to in section 2.3 or 2.4 in respect of that Ancillary Service that reflects the reduced capability of the AS Facilities.

**ATTACHMENT 1**

**AS FACILITIES – SPECIFIC INFORMATION**

**Part A: Scope**

- A.1 Each Ancillary Services Provider will submit to the SO the applicable Ancillary Services data as required by Table 1 as described in Part B.

**Part B: Quantity**

- B.1 Other than in exceptional circumstances, the quantity of an Ancillary Service identified in Table 1 for a given AS Facility shall not exceed the maximum of the quantities of the Ancillary Service that the AS Facility is capable of providing at a various operating ranges.
- B.2 The quantity of Automatic Generation Control Service and Load Following Service are expressed in Table 1 as the quantity above or below the dispatched output level for energy such that the AS Facility shall be required to respond to activation signals to adjust its output to any value within the range thus defined.
- B.3 The quantities of Capacity-Based Ancillary Services are expressed in Table 1 on a cumulative basis such that the total quantity expressed for each such Ancillary Service is the total that can be dispatched for the then concurrent combination of all such Ancillary Services.
- B.4 The quantities of Capacity-Based Ancillary Services are expressed in Table 1 on the basis of an assumption that the AS Facility is not being ramped for energy dispatch purposes.

**Part C: Operating Range**

- C.1 The operating range for an Ancillary Service is expressed in Table 1 in a manner that reflects that the actual quantities of the Ancillary Service that can be provided at any time will depend on the level of output to which the AS Facility is dispatched, the ramp limits at that level of output and any concurrent ramping of the energy output.
- C.2 Each Table 1 specifies, in respect of operating range information, the maximum combined ramping capability of the AS Facility in the provision of each Ancillary Service at each level of output, averaged over the relevant period and using a maximum of 10 ranges for the AS Facility. The term “N/A” when used in Table 1 in respect of operating range information shall mean that the applicable Ancillary Service cannot be provided by the AS Facility over a particular range of output.

**Part D: Amendments to Table 1 Data**

- D.1 The Parties acknowledge that the data of Table 1 may need to be amended from time to time to reflect changes in the performance capabilities of the AS Facilities over time:
- a) the quantity of an Ancillary Service; and
  - b) the operating ranges and ramping capabilities for the AS Facilities.
- D.2 Where the AS Provider wishes to amend data in Table 1 referred to in section D.1, the AS Provider shall provide to the SO an amended version of the Table 1 data for approval.
- D.3 The SO shall approve an amendment proposed by the AS Provider under section D.2 unless the SO considers that:
- a) the proposed amendment is frivolous; or
  - b) the proposed amendment was submitted in bad faith, including for the purpose of allowing the AS Provider to avoid its commitments in circumstances where

- c) there has been no decrease in the performance capabilities of the AS Facilities or where the proposed amendment is out of proportion with the decrease in the performance capabilities of the AS Facilities.
- D.4 The SO shall consider a proposed amendment submitted to it under section D.2 as soon as reasonably practicable. The SO shall:
- a) accept the amendment as proposed by the AS Provider, in which case it will provide to the AS Provider an amended version of Table 1 in question. The amendment will come into effect on the day on which the amended version of Table 1 is sent to the AS Provider or such later date as the Parties may agree; or
  - b) reject the proposed amendment, in which case it will so notify the AS Provider, together with reasons for its decision.

**Ancillary Services Capabilities**  
**Table 1**  
**AS Facilities - Specific Information**

Facility:   
Facility Owner:

Ancillary Service	AGC	Load Following	Operating Reserve			Reactive Pwr/ Voltage Supp	Black Start
			10 min spin	10 min NS	30 min		
Last Updated date							
Quantity of AS <i>(cumulative for AGC and LF)</i> <i>(cumulative for all OR)</i>	+/-	+/-	+	+	+		
	MW	MW	MW	MW	MW	MVAR	unit
<b>Operating Ranges</b>						<b>No Load:</b> from ( - MVAR)	
output from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =	N/A	N/A	N/A	N/A	N/A		
1 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
2 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
3 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
4 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =						<b>Full Load</b> from ( - MVAR)	
5 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
6 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
7 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
8 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
9 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =							
10 from 0 MW to <span style="background-color: yellow;">    </span> MW ramp rate in MW / min =						<b>Nominal MVAR</b>	
<b>Communications</b> means of activation title of contact person							
<b>Special Conditions</b> <i>(eg, permitted subcontracting physical operating constraints, etc)</i>							

- Notes: 1 use one Table per AS Facility
- 2 complete highlighted areas

## ATTACHMENT 2

### REACTIVE POWER/VOLTAGE SUPPORT SERVICE

#### Part I: Performance Standards

Reactive Power/Voltage Support Service is provided when a Generation Facility is operated in accordance with automatic voltage regulator (“AVR”) Dispatch Instructions or other Dispatch Instructions with respect to reactive power or voltage regulation.

The following performance standards apply when the SO has issued a Dispatch Instruction to provide such Reactive Power/Voltage Support Service:

- a) the AS Facilities’ AVRs shall be in service and in automatic mode unless the AS Provider is specifically directed by the SO to operate the automatic voltage regulators in manual mode;
- b) the AS Facilities’ AVR voltage settings shall be in accordance with the Dispatch Instructions issued by the SO;
- c) the AS Facilities shall operate in an under- or over-excited state as directed by the SO;
- d) the AS Facilities shall operate in the condense mode or shall reduce real power output when so directed by the SO;
- e) the AS Facilities shall respond to voltage or reactive power schedules immediately upon activation;
- f) following a contingency event, the AS Facilities shall automatically respond to provide or absorb reactive power in accordance with the AS Facilities’ maximum and minimum reactive power capabilities as specified in Table 1; and

- g) the AS Provider shall immediately notify the SO upon the Forced Outage of the AS Facilities' automatic voltage regulators.

**Part II: Tests**

<b>Parameters to be Tested</b>	<b>Method of Testing</b>	<b>Timing of Tests</b>
Capability to provide Reactive Power/Voltage Support Service	Issuance by SO of unannounced Dispatch Instructions requiring the AS Facilities to provide reactive power	At any time, at the discretion of the SO, but no more than twice in any consecutive twelve-month period

**ATTACHMENT 3**  
**AUTOMATIC GENERATION CONTROL SERVICE**  
**AND LOAD FOLLOWING SERVICE**

**Part I: Performance Standards**

**1.1 Automatic Generation Control Service:**

- a) the AS Facilities shall achieve at least the ramp rate specified in Table 1;
- b) the maximum change in the output of the AS Facilities in response to a single raise or lower signal from the SO must be no more than specified in Table 1; and
- c) the control range must be capable of activation in blocks of 1.0 MW.

**1.1.1 Load Following Service:**

- a) the AS Facilities shall achieve at least the ramp rate specified in Table 1; and
- b) the AS Facilities shall be capable of supplying the quantity of Load Following Service specified in Table 1, less any quantities of Automatic Generation Control Service concurrently provided, subject to the operating limits specified in Table 1 and to the total output and ramp rate capabilities of the AS Facilities identified in Table 1.

**Part II: Tests**

<b>Parameters to be Tested</b>	<b>Method of Testing</b>	<b>Timing of Tests</b>
Ramp rate	Issuance by the SO of unannounced AGC pulse signals in accordance with the ramp rate applicable to AGC as specified in Table 1.	Annually, if not demonstrated to the satisfaction of the SO by performance.

Increase/decrease of output to maximum/minimum ramp rate	Issuance by the SO of unannounced AGC pulse signals to test the AGC operation over the full AGC range specified in Table 1	Annually, if not demonstrated to the satisfaction of the SO by performance
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## ATTACHMENT 4

### OPERATING RESERVE SERVICE

#### Part I: Performance Standards

##### 1.1 10-Minute Spinning

- a) the AS Facilities that are scheduled or dispatched to provide 10-minute spinning Operating Reserve shall be available for activation in accordance with the Performance Requirements of Table 1;
- b) the AS Facilities shall be capable of supplying the quantity of 10-minute spinning Operating Reserve specified in Table 1, less any quantities of Automatic Generation Control Service and/or Load Following Service concurrently provided, subject to the operating limits specified in Table 1 and to the total output and ramp rate capabilities of the AS Facilities identified in Table 1; and
- c) when activated by the SO, the energy in respect of the 10-minute spinning Operating Reserve quantity shall be available for dispatch for at least one hour.

##### 1.2 10-Minute Non-Spinning

- a) the AS Facilities that are scheduled or dispatched to provide 10-minute non-spinning Operating Reserve shall be available for activation in accordance with the Performance Requirements of Table 1;
- b) the AS Facilities shall be capable of supplying the quantity of 10-minute non-spinning Operating Reserve specified in Table 1, less any quantities of Automatic Generation Control Service and/or Load Following Service and/or 10-minute spinning Operating Reserve concurrently provided, subject to the operating limits specified in Table 1 and to the total output and ramp rate capabilities of the AS Facilities identified in Table 1; and

- c) when activated by the SO, 10-minute non-spinning Operating Reserve shall be available for dispatch for at least one hour.

### **1.3 30-Minute**

- a) the AS Facilities that are scheduled or dispatched to provide 30-minute Operating Reserve shall available for activation in accordance with the Performance Requirements of Table 1;
- b) the AS Facilities shall be capable of supplying the quantity of 30-minute Operating Reserve specified in Table 1, less any quantities of Automatic Generation Control Service and/or Load Following Service and/or 10-minute Operating Reserve (spinning and non-spinning) concurrently provided, subject to the operating limits specified in Table 1 and to the total output and ramp rate capabilities of the AS Facilities identified in Table 1; and
- c) when activated by the SO, 30-minute Operating Reserve shall be available for dispatch for at least four hours.

**See next page for Part II: Tests**

**Part II: Tests**

<b>Class of Operating Reserve</b>	<b>Parameters to be Tested</b>	<b>Method of Testing</b>	<b>Timing of Tests</b>
10-minute spinning	Ramp rate (average over 10 minutes from activation)	Issuance by the SO of unannounced Dispatch Instructions requiring the AS Facilities to ramp up to their ten-minute capability	At any time, at the discretion of the SO, but no more than twice in any consecutive twelve-month period
10-minute non-spinning	Ramp rate (total ramping over 10 minutes from activation, including any period for synchronization)	Issuance by the SO of unannounced Dispatch Instructions requiring the AS Facilities to ramp up to their ten-minute capability	At any time, at the discretion of the SO, but no more than twice in any consecutive twelve-month period
30-minute	Ramp rate (total ramping over 30 minutes from activation, including any period for synchronization)	Issuance by the SO of unannounced Dispatch Instructions requiring the AS Facilities to ramp up to their thirty-minute capability	At any time, at the discretion of the SO, but no more than twice in any consecutive twelve-month period

## ATTACHMENT 5

### BLACK START CAPABILITY SERVICE

#### Part I: Performance Standards

- a) the AS Facilities shall be capable of starting without external energization for a period of at least 30 minutes following a failure of the Integrated Electricity System, and of extended operation thereafter in an islanded condition pending energization of the Integrated Electricity System as set out below;
- b) following the start-up referred to in paragraph (a), the AS Facilities shall be capable of energizing a portion of the Integrated Electricity System in accordance with the Integrated System Restoration Plan for the purpose of energizing and starting other Generation Facilities. Energization of the Integrated Electricity System should be effected so as to enable the energization of the other Generation Facilities in accordance with the Integrated System Restoration Plan and within 20 minutes of receipt of the black start instructions from the SO;
- c) the AS Facilities shall be capable of maintaining frequency control and voltage within emergency voltage limits over a range of loading from start-up to full external load in accordance with the requirements of the SO and of all applicable Standards Authorities;
- d) the AS Facilities shall be capable of producing reactive power necessary for implementation of the Integrated System Restoration Plan;
- e) the AS Provider shall use all reasonable endeavors consistent with Good Utility Practice to comply with instructions from the SO to deliver power without assistance from the Integrated Electricity System unless (i) all relevant generation units forming part of the AS Facilities are on an Outage, other than an Outage caused by the de-energization of the electrical network to which the AS Facilities are connected; or (ii) to do so would

- f) endanger the safety of any person, damage equipment, harm the environment or violate any Applicable Law;
- g) the AS Facilities shall be capable of providing start-up power for the period of time that it takes to restore the Integrated Electricity System to a stable operating condition in accordance with the Integrated System Restoration Plan;
- h) the AS Facilities shall be capable of initiating repeated attempts at energizing the Integrated Electricity System; and
- i) the AS Facilities and the AS Provider shall comply with any other performance standards for Black Start Capability Service as may be specified in the Integrated System Restoration Plan.

**See next page for Part II: Tests**

**Part II: Tests**

<b>Parameters to be Tested</b>	<b>Method of Testing</b>	<b>Timing of Tests</b>
Auxiliary and control equipment	As specified in the Integrated System Restoration Plan	As specified in the Integrated System Restoration Plan
Ability to energize transmission path within the specified time, to maintain voltage limits, to provide reactive power and to energize other Generation Facilities	Line energization tests as directed by the SO	At any time, at the discretion of the SO, but no more than an average of once per year over the Contract Period
Ability to initiate black start for up to 30 minutes after isolation, and to initiate repeat attempts	As specified in the Integrated System Restoration Plan	At any time, at the discretion of the SO, but no more than an average of once per year over the Contract Period
Ability to operate for extended periods in an islanded condition	As specified in the Integrated System Restoration Plan	At any time, at the discretion of the SO, but no more than an average of once per year over the Contract Period
Other, as specified in the Integrated System Restoration Plan	As specified in the Integrated System Restoration Plan	As specified in the Integrated System Restoration Plan