

# **Nova Scotia Wholesale and Renewable to Retail Electricity Market Rules**

## **Chapter 4: Wholesale Market Operations**

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## Document Control and General Provisions

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## **4, Wholesale and Renewable to Retail Market Operations**

### **4.0, Description**

*This chapter sets out the rules relating to the Day Ahead and real time operation of the system. These rules apply to the NSPSO and to Market Participants who are responsible for Generating Facilities registered in the market, who are scheduling energy or Ancillary Service transactions over the Transmission System, or who are providing Ancillary Services to the NSPSO.*

### **4.1, Scheduling and dispatch objectives**

4.1.1.1, The NSPSO shall, in scheduling and dispatching energy transactions and Ancillary Services, pursue the following objectives in descending order of priority:

- a) maintain safety and the Reliability of the Bulk Electricity Supply System in accordance with the requirements of the General Reliability Standards;
- b) undertake congestion management of interconnection transactions in accordance with the interconnection agreement between NSPI and the NBSO;
- c) complete firm energy transactions and unit-contingent firm energy transactions scheduled by Market Participants;
- d) minimise Control Actions except those that only impact non-firm energy transactions energy transactions other than those scheduled by Market Participants or as Ancillary Services, such as purchasing emergency energy and inadvertent exchange;
- e) complete non-firm energy transactions scheduled by Market Participants;
- f) in instances when the NSPSO is required to Re-dispatch resources in order to fulfil the above objectives, the NSPSO shall make the most

economical use of the resources available for such Re-dispatch, based on the information provided by Market Participants.

4.1.1.2, In pursuing the above objectives, the NSPSO shall have regard for the capabilities of the Transmission System and of each Facility.

## **4.2, Information**

### **4.2.1, Daily forecasts**

4.2.1.1, The NSPSO may set out in a Market Procedure the information required from Market Participants for the NSPSO's preparation of its daily forecast, and the time by which such information shall be submitted.

4.2.1.2, Market Participants shall provide in a timely manner all information thus specified in a Market Procedure.

4.2.1.3, The NSPSO shall Publish by 10:00 each Business Day its forecast of the net system daily peak demand for each of the following five Dispatch Days.

### **4.2.2, System status**

4.2.2.1, Market Participants may access certain Transmission System status information and messages on the NSPI OASIS.

## **4.3, Submission of energy schedules**

### **4.3.1, Transmission Customer responsibilities for Bundled Service, Unbundled Service, and Partially Unbundled Service**

4.3.1.1, NSPI PP is the Transmission Customer in respect of all Bundled Service and in respect of the bundled portion of Partially Unbundled Service.

4.3.1.2, The Load Market Participant for a Facility taking Unbundled Service or Partially Unbundled Service may be the Transmission Customer for the delivery of the

Unbundled Service or the unbundled portion of Partially Unbundled Service, or may designate another Market Participant as the Transmission Customer

4.3.1.3, In executing or amending a service agreement for Network Integration Transmission Service in accordance with the Transmission Tariff, the Transmission Customer for the unbundled portion of Partial Unbundled Service shall designate either:

- a) that the unbundled portion is the primary service (as described in paragraph 4.3.1.4); or
- b) that the bundled portion is the primary service (as described in paragraph 4.3.1.4).

4.3.1.4, In either case all energy flows and demands up to the MW values scheduled for whichever is the primary service in accordance with section 4.3 shall be attributed to the primary service, and all amounts in excess thereof shall be attributed to the secondary service.

#### **4.3.2, Schedules for Bundled Service, including the bundled portion of Partially Unbundled Service**

4.3.2.1, NSPI PP shall submit a single schedule in respect of all Bundled Service, including the bundled portion of Partially Unbundled Service.

4.3.2.2, Each such schedule shall identify in respect of each hour:

- a) withdrawals:
  - i) for individual consumers over 25 MW peak gross demand, the individual withdrawal net of the output of any Load Displacement Generating Facilities, and
  - ii) for all other customers, the aggregated balance of system wide total withdrawal, net of the output of Load Displacement Generating Facilities; and

- b) injections:
  - i) import transactions, and
  - ii) individual Generating Facility injections recognising the requirements or permissions of the NSPSO in accordance with paragraphs 2.2.1.5 and 2.2.1.6 and including any net injections from Facilities aggregated in accordance with paragraph 2.2.1.7, but excluding the output from Load Displacement Generating Facilities.

4.3.2.3, Bundled Service schedules shall exclude exports.

4.3.2.4, The Bundled Service schedule in respect of any Generating Facility shall not exceed the capability of that Generating Facility minus any provision for Ancillary Services to be provided from that Generating Facility, and minus any export or Unbundled Service to be scheduled from that Generating Facility.

### **4.3.3, Schedules for Unbundled Service, including the unbundled portion of Partially Unbundled Service**

4.3.3.1, Each Transmission Customer shall submit a schedule in respect of Unbundled Service, including the unbundled portion of Partially Unbundled Service.

4.3.3.2, A Transmission Customer for more than one Load Market Participant shall submit no more than one schedule in respect of each such Load Market Participant in any hour, and may chose to consolidate schedules for service to more than one such Load Market Participant, subject to; each such schedule shall identify in respect of each hour:

- a) withdrawals:
  - i) individual net withdrawal for each Load Market Participant and Point of Delivery net of the output of any Load Displacement Generating Facilities; and
- b) injections:
  - i) import transactions, and

- ii) individual Generating Facility injections recognising the requirements or permissions of the NSPSO in accordance with paragraphs 2.2.1.5 and 2.2.1.6 and including any net injections from Facilities aggregated in accordance with paragraph 2.2.1.7, but excluding the output from Load Displacement Generating Facilities.

4.3.4.1, Import schedules may be integrated with either Bundled Service or Unbundled Service schedules as appropriate and as noted above.

4.3.4.2, Export transactions shall be scheduled as Point to Point transactions separately from imports and service to Nova Scotia loads.

4.3.4.3, Multiple export transactions may be consolidated into a single schedule reflecting a single nominal Point of Receipt for export service, and identifying the amount of supply from individual Generating Facilities.

4.3.4.4, All import and export schedules are subject to NERC e-tagging requirements.

4.3.4.5, Licenced Retail Supplier Market Participants do not qualify for Import and Export transactions.

### **4.3.5, Classes of import and export schedules**

4.3.5.1, The Market Participant scheduling an import shall designate its class with respect to firmness of energy:

- a) Firm imports are subject to curtailment only in accordance with the interconnection agreement between NSPI and the NBSO as a result of inter-tie constraint, general New Brunswick system shortfall or impactive Transmission Loading Relief.
- b) Unit-contingent imports are also subject to curtailment in the event of a shortfall in the output of the generating facility designated as the source
- c) Other recallable provisions to be specified and subject to acceptance by the NSPSO.



4.3.5.2, The Market Participant scheduling an export shall designate its class with respect to firmness of energy:

- a) Firm exports are subject to curtailment only in accordance with the interconnection agreement between NSPI and the NBSO as a result of inter-tie constraint, general Nova Scotia system shortfall or impactive Transmission Loading Relief.
- b) Unit-contingent exports are also subject to curtailment in the event of a shortfall in the output of the Generating Facility designated as the source.
- c) Other recallable provisions to be specified and subject to acceptance by the NSPSO.

4.3.5.3, The rules relating to schedules for an import or export of an Ancillary Service are set out in subsection 4.5.4.

#### **4.3.6, Submission of Energy Schedules for the Renewable to Retail Market**

4.3.6.1, The Licenced Retail Supplier Market Participant is the Transmission Customer in respect of their aggregate Renewable to Retail generation resources.

4.3.6.2, The Licenced Retail Supplier as the Transmission Customer shall submit a schedule in respect of its aggregate generation resource injections.

4.3.6.3, A Licenced Retail Supplier as the Transmission Customer shall submit no more than one schedule in respect of that Licenced Retail Supplier's Generating Facility(ies) (whether owned or contracted) in any hour; such schedule shall identify in respect of each hour:

- a) injections:

the aggregate of all individual Generating Facility injections (whether owned or contracted) recognising the requirements or permissions of the NSPSO in accordance with paragraphs 2.2.1.5 and 2.2.1.6.

4.3.6.4 The Licenced Retail Supplier as the Transmission Customer is not required to provide hourly schedules of its aggregate net withdrawals related to supply of its Renewable to Retail customer load. Such withdrawals are included in the NSPI PP hourly system load schedule.

#### **4.3.7, Loss factors**

##### **NSPI PP Bundled Service scheduling**

4.3.7.1, NSPI PP shall in scheduling its Generating Facilities and import transactions for Bundled Service take account of its best estimates of actual energy losses in transmission, including the application of any Special Locational Loss Factor.

##### **Unbundled Network Integration Transmission Service scheduling**

4.3.7.2, Any Market Participant submitting a schedule for unbundled Network Integration Transmission Service shall take account of the system average loss factor published by the NSPSO for this purpose, and of any Special Locational Loss Factors applicable in respect of Generating Facilities.

##### **Point to Point Transmission Service scheduling**

4.3.7.3, Any Market Participant submitting a schedule for Point to Point Transmission Service shall take account of the path-specific loss factor published by the NSPSO for this purpose, and of any Special Locational Loss Factors applicable in respect of Generating Facilities.

#### **4.3.8, Day Ahead scheduling**

4.3.8.1, NSPI PP and any other Market Participant scheduling energy under Network Integration Transmission Service (including for Bundled Service) shall submit a complete schedule for each Dispatch Day no earlier than 07:00 and no later than 11:00 on the Day Ahead.

- 4.3.8.2, NSPI PP and any other Market Participant wishing to schedule energy under firm Point to Point Transmission Service are required by the Transmission Tariff to submit such a schedule for each Dispatch Day by 11:00 on the Day Ahead.
- 4.3.8.3, NSPI PP and any other Market Participant wishing to schedule energy under non-firm Point to Point Transmission Service are permitted by the Transmission Tariff to submit such a schedule for each Dispatch Day by 11:00 on the Day Ahead, and are requested but not required so to do.
- 4.3.8.4, NSPSO shall review those schedules that are submitted by 11:00 on the Day Ahead, and shall by 12:00 notify the Market Participant of any identified problems and of any changes required for purposes of system security.
- 4.3.8.5, Any Market Participant receiving such notification shall address the identified problems and any required changes for purposes of system security and shall by 13:00 submit a revised complete schedule.
- 4.3.8.6, Following review and internal approval of such schedules, the NSPSO is required to provide the schedules to the Reliability Coordinator as required for security coordination.
- 4.3.8.7, In the event that the Reliability Coordinator identifies security concerns with such schedules to the NSPSO, the NSPSO shall advise the relevant Market Participants of such problems, and the Market Participant shall promptly address those problems and submit such schedule revisions as may be required.
- 4.3.8.8, Any rescheduling of Generating Facility output required and carried out in accordance with paragraphs 4.3.8.4 to 4.3.8.7 shall, unless associated with Point to Point Service, be considered as Re-dispatch for purposes of settlement in accordance with paragraph 5.4.1.1.

#### **4.3.9, Additional schedules and updates**

- 4.3.9.1, Any Market Participant may submit additional or updated schedules between the times prescribed in sub-section 4.3.8 and sub-section 4.3.10.

### **4.3.10, Dispatch Day scheduling**

4.3.10.1, NSPI PP shall before the start of each hour submit an update to the schedule for Bundled Service (including the aggregate net withdrawals related to supply of all Renewable to Retail customer load) that:

- a) confirms the last previously submitted schedule for the hour about to start (hour 1) except in the event that the NSPSO has directed a change as a result of Control Actions or in response to a Forced Outage or other activation of operating reserve;
- b) confirms the last previously submitted schedule for the next hour (hour 2) unless unforeseen circumstances have caused the need for change; and
- c) updates without restriction the last previously submitted schedule for the next two hours (hours 3 and 4).

4.3.10.2, NSPI PP, except in respect of the schedule for Bundled Service, and other Market Participants may in accordance with the tariff submit new or revised schedules in respect of any hour until 30 minutes before the start of that hour, but are requested to make such submissions no later than 60 minutes before the start of the hour in order to facilitate and provide better assurance of checkout of any import or export transactions.

4.3.10.3, NSPSO shall promptly notify any Market Participant whose schedule is not accepted or which fails checkout in respect of import or export.

### **4.3.11, Late changes**

4.3.11.1, Schedule changes after the times prescribed in sub-section 4.3.10 are not permitted except in the event that the NSPSO has directed a change as a result of Control Actions or in response to a Forced Outage or other activation of Operating Reserve, or except in the event that the NSPSO grants special authorisation.

## **4.4, Intermittent Generating Facility operations**

4.4.1.1, The Market Participant for an Intermittent Generating Facility shall submit and update schedules in respect of such Facility operation in accordance with section 4.3.

4.4.1.2, In submitting such schedules, the Market Participant shall undertake commercially reasonable efforts to forecast the hourly output of such Facilities, in accordance with a protocol to be established by agreement with the NSPSO recognising that:

- a) the need for forecast accuracy depends on the size of the Intermittent Generating Facility; and
- b) the need for forecast accuracy may vary according to the location of the Facility connection and the condition of the Transmission System. Accuracy is particularly critical if transmission constraints would require the re-dispatch of other Generating Facilities to accommodate the output of an Intermittent Generating Facility.

4.4.1.3, Subject to the approval of the NSPSO, the protocol for scheduling output of a particular Intermittent Generating Facility may reflect its aggregation in accordance with paragraph 2.2.1.6 with other Generating Facilities, including with other Intermittent Generating Facilities, and if applicable its aggregation in accordance with paragraph 2.2.1.7.

4.4.1.4, Subject to the approval of the NSPSO, the protocol for scheduling output of a particular Intermittent Generating Facility may provide for a Wholesale Customer to utilise Generator Balancing Service by others as permitted under the Transmission Tariff.

## **4.5, Ancillary Service scheduling**

### **4.5.1, Energy imbalance service**

4.5.1.1, The NSPSO may re-dispatch any available Dispatchable Generating Facility in accordance with section 4.8 in order to provide energy imbalance service.

### **4.5.2, Reactive Power and Voltage Support**

4.5.2.1, The NSPSO shall determine the reactive power or voltage set-points for all Generating Facilities with reactive power or voltage control capability, taking account of scheduled and actual grid conditions. In determining the set-points of each generating facility the NSPSO shall:

- a) give primacy to the security of the grid;
- b) within any region of the grid, generally and over time allocate reactive power service obligations on a non-discriminatory basis in proportion to the Facility Reactive Power Capability of each Generating Facility; and
- c) seek to minimise control adjustments.

4.5.2.2, The NSPSO may provide an initial schedule of VAR requirements to Market Participants in advance, or may provide directions for immediate implementation at any time.

4.5.2.3, Market Participants for Generating Facilities shall promptly adjust the dispatch of their Facilities to comply with the direction of the NSPSO, and shall promptly notify the NSPSO of any inability to comply or any delay in compliance.

### **4.5.3, Other Nova Scotia Ancillary Services**

4.5.3.1, In accordance with the provisions of the Transmission Tariff, Transmission Customers may self-supply Ancillary Services otherwise covered by schedules 3, 4, 5 and 6 of the Transmission Tariff.

4.5.3.2, Any Market Participant that is providing self-supplied Ancillary Services shall submit its schedule for the provision of such self-supplied Ancillary Services, and shall update such schedules, at the same times as it submits its energy schedules as set out in section 4.3.

4.5.3.3, NSPI PP is the sole provider to the NSPSO of Ancillary Services from generation other than those that are self-supplied by Transmission Customers.

4.5.3.4, NSPI PP shall submit its schedule for the provision of such Ancillary Services, and shall update such schedules, at the same times as it submits its Bundled Service schedules as set out in section 4.3.

#### **4.5.4, Ancillary Service import and export schedules**

4.5.4.1, The self-supply of certain Ancillary Services in accordance with paragraph 4.5.3.2 may, subject to activation arrangements satisfactory to the NSPSO include import of such Ancillary Service.

4.5.4.2, The supply by NSPI PP of certain Ancillary Services in accordance with paragraph 4.5.3.4 may, subject to activation arrangements satisfactory to the NSPSO include import of such Ancillary Service.

4.5.4.3, A Transmission Customer may subject to paragraph 4.5.4.4 and to the provisions applicable to export schedules for energy submit an export schedule for Ancillary Services.

4.5.4.4, A Transmission Customer may only submit an export schedule for an Ancillary Service if the Transmission Customer has secured prior approval from the NSPSO of the process for communicating activation of the Ancillary Service and for adjustment to energy schedules to reflect such activation.

## **4.6, Data setting out estimated marginal costs, energy limits, and environmental restrictions**

- 4.6.1.1, Each Market Participant for a Dispatchable Generating Facility shall submit marginal cost estimates for use by the NSPSO in Re-dispatch of such Dispatchable Generating Facilities.
- 4.6.1.2, Each Market Participant for a Generating Facility that is subject to a limit on the total energy production in a given Dispatch Day shall submit to the NSPSO details of such limit.
- 4.6.1.3, Each Market Participant for a Generating Facility that is subject to firm environmental restrictions on its operations in a given Dispatch Day shall submit to the NSPSO details of such restrictions.
- 4.6.1.4, Market Participants shall make the submissions identified in this section no later than the first submission of the schedule to which they relate.
- 4.6.1.5, The NSPSO shall issue a Market Procedure setting out the form, content and other details of the submissions required in accordance with this sub-section.

## **4.7, Synchronization and De-synchronization**

- 4.7.1.1, The Market Participant for a Generating Facility other than a Minor Generating Facility may not Synchronize or De-synchronize such Generating Facility or any unit thereof without prior authorization of the NSPSO except in the event of a Forced Outage.
- 4.7.1.2, The Market Participant for a Generating Facility shall make all reasonable efforts to request authorization to Synchronize or to De-synchronize with at least one hour's notice.
- 4.7.1.3, The NSPSO shall respond within one hour of a Market Participant's request to Synchronize or De-synchronize.



4.7.1.4, The NSPSO may direct or authorise Synchronization or De-synchronization of a Generating Facility or unit thereof at such shorter notice as may be required for Reliability of the Bulk Electricity Supply System.

## **4.8, Real time operation and Re-dispatch**

### **4.8.1, Market Participant obligations**

4.8.1.1, The Market Participant for a Dispatchable Generating Facility or for a non-Dispatchable Export Generating Facility shall either establish a protocol with the agreement of the NSPSO for ramping the Generating Facility between its scheduled output levels in successive hours, or shall secure approval each hour for such ramping.

4.8.1.2, The Market Participant for a Dispatchable Generating Facility or for a non-Dispatchable Export Generating Facility shall make all reasonable efforts to operate the Generating Facility in accordance with approved schedules or subsequent Re-dispatch instructions from the NSPSO, recognising the ramping provisions of paragraph 4.8.1.1, and particularly to operate the Facility so as not to deviate therefrom by more than the control dead-band established as part of the Facility registration process.

4.8.1.3, The Market Participant for a Generating Facility including an Intermittent Generating Facility shall make all reasonable efforts to operate the Generating Facility exactly in accordance with and with the reactive power or voltage control directions of the NSPSO.

4.8.1.4, The Market Participant for a Generating Facility shall immediately advise the NSPSO of any unforeseen event that limits or is expected to limit the capability of the Generating Facility to provide energy or Ancillary Services (whether scheduled or not), or that impairs the operation of protection or communications systems. Any such event shall be designated as a Forced Outage, and shall be subject to the reporting provisions of sub-section 4.8.5.

4.8.1.5, To the extent reasonable practical, the Market Participant for a Generating Facility subject to a Forced Outage shall not remove the Generating Facility from service until after it has advised the NSPSO of the Forced Outage event and any requirement to remove the Generating Facility from service.

4.8.1.6, The NSPSO may request that the Market Participant retain the Generating Facility in service for sufficient time, recognising what is reasonably practical in the circumstances, to mitigate impact on the Bulk Electricity Supply System.

4.8.1.7, The Market Participant shall reasonable consider any such request and, subject to overriding considerations of safety and prevention of damage, shall seek to comply with such request.

## **4.8.2, NSPSO Re-dispatch instructions**

### **Reasons for Re-dispatch**

4.8.2.1, In the event that:

- a) the actual system load varies from the forecast reflected in schedules;
- b) a transmission constraint precludes the implementation of schedules as submitted;
- c) voltage support or reactive power requirements require Re-dispatch;
- d) a Generating Facility suffers a Forced Outage or otherwise fails to fulfill its schedule;
- e) the actual output of Intermittent Generating Facilities varies from the scheduled output;
- f) the NSPSO needs to correct accumulated inadvertent energy flows on the interconnection with New Brunswick; or
- g) the New Brunswick System Operator initiates activation of Operating Reserve, or requests emergency support, in accordance with the

interconnection agreement between NSPI and the New Brunswick System Operator;

the NSPSO may Re-dispatch one or more Dispatchable Generating Facilities as required.

#### **Selection of Generating Facilities for Re-dispatch**

4.8.2.2, The NSPSO shall select Generating Facilities for Re-dispatch taking account of:

- a) the capability of the Generating Facility to serve the requirement (particularly with respect to transmission constraints and voltage control / reactive power);
- b) ramping capability (particularly in the activation of Operating Reserve in response to a contingency event);
- c) election by the Market Participant for any Generating Facility to be preferentially constrained-off in the event of particular transmission constraints; and
- d) the most economic fulfillment of the need, based on the marginal cost estimates provided by Market Participants and any energy limits and environmental restrictions advised by Market Participants, and taking account of marginal locational loss factors if relevant.

4.8.2.3, In the event that the Re-dispatch of Dispatchable Generation Facilities will not completely resolve the event identified in paragraph 4.8.2.1, then the NSPSO may issue a Re-dispatch instruction to a Market Participant for the reduction of the output of an Intermittent Generating Facility. In the event of a need to Re-dispatch Intermittent Generating Facilities, the NSPSO shall do so on a non-discriminatory basis, having regard for any environmental considerations and, in the event that a single Market Participant is responsible for more than one impacted Intermittent Generating Facility, the preferences of that Market Participant with respect to those Facilities.

### **Issue of Re-dispatch instructions**

4.8.2.4, The NSPSO shall issue Re-dispatch instructions to the person so designated by each Market Participant.

### **4.8.3, NSPSO operation of Generating Facilities**

4.8.3.1, A Market Participant may with the agreement of the NSPSO assign to the NSPSO the direct control of certain Generating Facilities.

4.8.3.2, The NSPSO shall use all reasonable efforts to operate such Generating Facilities in accordance with the schedule provided by the Market Participant, subject to Re-dispatch in accordance with sub-section 4.8.2.

4.8.3.3, If the NSPSO operator initiates any deviation from schedule in respect of such Generating Facilities, it shall be considered as an instructed Re-dispatch.

### **4.8.4, Regulation service**

4.8.4.1, The NSPSO shall have the ability for direct and automatic control of Generating Facilities providing regulation and frequency response service.

### **4.8.5, Forced Outage reporting**

4.8.5.1, The Market Participant for any Generating Facility, other than a Load Displacement Generating Facility, that suffers a Forced Outage shall within two Business Days of the start of such Forced Outage submit a report in a form acceptable to the NSPSO describing the Forced Outage, its cause, and any remedial actions undertaken or planned.

4.8.5.2, To the extent that the information is incomplete at that time, the Market Participant shall make a complete report promptly on the information becoming available.

4.8.5.3, The NSPSO may require sufficient additional information to determine nature of the Forced Outage, the root and proximate causes, and the appropriate remedial actions, and may request such information from the Market

Participant, from NSPI Customer Operations and any other Market Participant who may have relevant information.

4.8.5.4, NSPI Customer Operations or the Market Participant receiving any such request shall promptly provide such additional information, as well as subsequent confirmation of the completion of any remedial actions.

4.8.5.5, The NSPSO shall advise the Market Participant of any findings it makes with respect to the cause of a Forced Outage.

## **4.9, Control Actions and special operating states**

### **4.9.1, NSPSO responsibilities and authority**

4.9.1.1, The NSPSO is responsible to preserve the security of the Nova Scotia Transmission System and to take actions determined by the Reliability Coordinator for the preservation of security of the transmission system in the Maritime region.

4.9.1.2, The NSPSO is responsible, subject to paragraph 4.9.1.1, to undertake congestion management of interconnection transactions in accordance with the interconnection agreement between NSPI and the NBSO.

4.9.1.3, In order to complete its responsibilities under paragraphs 4.9.1.1 and 4.9.1.2, and to minimise disruption of firm energy transactions and unit-contingent firm energy transactions scheduled by Market Participants the NSPSO has the authority to take Control Actions including:

- a) interruption of transactions utilising non-firm transmission service;
- b) operation of the system in accordance with emergency or high risk operating state limits or with reduced operating or supplementary reserves;

- c) mobilisation of all available generation resources, including requests that Market Participants seek temporary waiver of environmental restrictions on Generating Facility operations;
- d) recall of transmission equipment and Generating Facilities from Outages, where practical;
- e) interruption of all non-firm load;
- f) interruption of firm exports;
- g) load reduction through 5% voltage cuts;
- h) declaration of an electrical system emergency operating state and purchase of emergency energy; and
- i) interruption of firm load.

4.9.1.4, Subject to the applicable provisions of the interconnection agreement between NSPI and the NBSO, the sequencing of Control Actions is a matter for the NSPSO operating personnel operating in accordance with guidelines established by the NSPSO and taking account of the circumstances as they arise.

4.9.1.5, The NSPSO shall seek to give reasonable notice of conditions that may lead to the use of Control Actions and of the invocation of particular Control Actions, recognising that circumstances may limit or preclude notice.

4.9.1.6, When issuing any directive to a Market Participant for implementation of a Control Action, the NSPSO shall identify this as a Control Action requirement either:

- a) by a prior general notice of an actual or expected emergency operating state;
- b) in any prior notice of the expected Control Action requirement; or
- c) in issuing the directive to the Market Participant.

4.9.1.7, The NSPSO shall initiate interruption of all supply designated as economically interruptible in advance of, and in every case no later than, initiating any Control Action.

#### **4.9.2, Market Participant obligations**

4.9.2.1, A Market Participant receiving a directive for a Control Action shall use all efforts to comply, and shall immediately advise the NSPSO of any actual or expected delay or problems in compliance.

### **4.10, Confidential Information and Publication**

#### **4.10.1, Confidential Information**

4.10.1.1, Confidential information includes the following categories of information:

- a) Generating Facility and Load Facility operating status and current capability;
- b) Generating Facility and Load Facility environmental data not otherwise in the public domain;
- c) Generating Facility and Load Facility operating plans;
- d) schedules for energy transactions and the provision of Ancillary Services;
- e) estimated and actual cost data;
- f) re-dispatch instructions;
- g) Forced Outage reports;
- f) communications relating to the above matters; and
- i) Facility data except as listed in paragraph 4.10.2.1.

## **4.10.2, Publication**

### 4.10.2.1, The NSPSO shall Publish:

- a) Transmission System data:
  - i) system data, and
  - ii) emergency or high risk states, beginning and end:
- b) forecast data:
  - i) short term forecasts as set out in section 4.2.1:
- c) current (10 minute average) estimated data:
  - i) total net Nova Scotia load,
  - ii) net energy flow to / from New Brunswick,;
  - iii) net energy flow "Cape Breton Export", and
  - iv) net energy flow "Onslow South";
- d) historic data, to be published within 10 business days of the end of each month:
  - i) hourly total net Nova Scotia load,
  - ii) hourly net energy flows to / from New Brunswick, Cape Breton Export, and Onslow South, and
  - iii) hourly New Brunswick intertie TTC & ATC; and
- e) historic data, to be published within 2 months of the end of each year:
  - i) monthly Generating Facility energy output, and
  - ii) annual Generating Facility reliability and availability data in the form and detail requiring to be filed with NERC or NPCC.