

# **Nova Scotia Power System Operator (NSPSO)**

## **Market Procedure**

### **MP-10**

## **Emergency and System Restoration Planning**

**Issue: 01**

Effective Date: 2012-12-31

# Emergency and System Restoration Planning

## Contents

1	Document Control and General Provisions.....	3
1.1	Issue and revision History .....	3
1.2	Contact for queries and submissions.....	3
1.3	Incorporation of general provisions .....	3
1.4	Document approval .....	3
2	Overview of this procedure.....	4
2.1	Purpose of this Market Procedure .....	4
2.2	Purpose of Emergency and System Restoration Planning .....	4
2.3	Market Rules References.....	4
2.4	Scope and Application .....	5
2.5	Responsibilities of Parties under this Market Procedure.....	5
2.6	Other Market Procedures .....	6
2.7	Forms and Means of Communications .....	6
2.8	Confidentiality .....	6
3	Emergency and System Restoration Planning and Execution .....	7
3.1	Designation of Emergency Planning Participants .....	7
3.2	Preparation of Plans.....	7
3.3	Preparation, Review and Approval of Participant Emergency Plans.....	9
3.4	Revisions to Participant Emergency Plans .....	10
3.5	Training and Systems .....	10
3.6	Declaration of Emergency and Execution of Plans .....	10

### Appendices

None

### Forms

None

## 1 Document Control and General Provisions

### 1.1 Issue and revision History

Issue	Date	Reason for Issue
01	2012 12 31	Initial release.

### 1.2 Contact for queries and submissions

For queries concerning the application or interpretation of this Market Procedure, and for submission of documents required under this procedure (unless noted otherwise)

Contact:

Name: Market Administrator  
Phone: 902 428 7719  
Address: 5 Long Lake Drive  
Halifax, Nova Scotia  
B3S 1N8  
E-mail: nspsadmin@nspower.ca

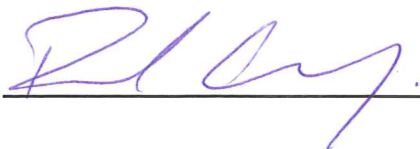
### 1.3 Incorporation of general provisions

The general provisions set out in part 3 of MP-01, General Provisions Referenced by other Market Procedures, are incorporated into this Market Procedure (unless superseded by explicit wording to the contrary in this Market Procedure).

### 1.4 Document approval

Paul Casey, Director Reliability & Control Centre Operations

Signature: \_\_\_\_\_



## **2 Overview of this procedure**

This Market Procedure sets out the processes through which the NSPSO identifies which Market Participants are required to participate in planning for response to electricity system emergencies and or electric system restoration activities in order to mitigate damage and optimize restoration of the Bulk Electricity Supply System.

NSPSO shall designate such Market Participants as Emergency Planning Participants, shall advise each such Emergency Planning Participant, and shall maintain a list of such Emergency Planning Participants.

### **2.1 Purpose of this Market Procedure**

The purpose of this Market Procedure is to describe:

- The emergency planning restoration procedures that are required by the NSPSO and designated Emergency Planning Participants.
- The factors that NSPSO uses to determine which Market Participants or Transmitters are required to participate in coordinated emergency planning and restoration.
- The processes and documentation required to prepare, review and update emergency planning and restoration.
- Training participation that is required to support emergency planning and restoration.

### **2.2 Purpose of Emergency and System Restoration Planning**

Emergency and system restoration planning is required to limit the impact on the Electric System during an emergency and to guide the operation of the Electric System such that the impact is minimized. Market Participants or Transmitters designated as Emergency Planning Participants may be required to assist in the restoration of the Electric System under the direction of responsible parties within NSPSO. It is important to note that this Market Procedure covers both local system emergencies and system black out events (complete or partial.)

Training may be required to effectively implement plans as required.

### **2.3 Market Rules References**

This Market Procedure is established in accordance with the Market Rules and Published by the NSPSO in accordance with paragraph 1.5.1.1 of the Market Rules.

The requirements described in this Market Procedure comply with the requirements of section 3.6 of the Market Rules.

## 2.4 Scope and Application

This Market Procedure applies to all designated Emergency Planning Participants that are required to effectively operate the Electric System in a safe and secure manner and assist in the restoration process during local and system emergencies. This Market Procedure may contain provisions which exclude certain parties as Emergency Planning Participants.

## 2.5 Responsibilities of Parties under this Market Procedure

The NSPSO is responsible to:

- develop emergency and restoration plans to maintain the integrity of the Bulk Electric System and recover from emergencies and complete or partial blackouts
- identify those Market Participants or Transmitters who are designated as Emergency Planning Participants and are required to develop Emergency/Restoration Plans
- liaise with Emergency Planning Participants to ensure that the Emergency/Restoration Plans are appropriately designed and interfaced with the Electric System
- review Emergency Planning Participants' Emergency/Restoration Plans for integration with the Electric System and approve the plans or request changes as appropriate
- initiate and coordinate any Emergency Planning Participants' training that may be required, and determine the extent of information that it is appropriate to Publish, and to effect such publication

Emergency Planning Participant/s is/are responsible to:

- identify their obligations under the Market Rules and under this Market Procedure,
- identify the responsible personnel and the level of authority that they possess in the Emergency/Restoration Plan in the event of a system emergency or complete or partial blackout
- describe the means by which NSPSO and other responsible personnel may establish communication with the responsible personnel of the Emergency Planning Participants
- set out the actions to be taken immediately by the responsible personnel in the event of a declared electricity system emergency or of a complete or partial system black out
- set out standard operating procedures to be implemented by responsible personnel in the event of a declared electricity system emergency or of a complete or partial system black out

- liaise with NSPSO and others to ensure its plans and procedures are adequate and are coordinated appropriately
- make any changes as recommended by the NSPSO and to advise same on any updates or required changes to the plans and procedures
- ensure its staff are trained to implement the Emergency/Restoration Plans

## **2.6 Other Market Procedures**

There are no other related Market Procedures.

## **2.7 Forms and Means of Communications**

Emergency Plans and associated procedures are to be signed and delivered to the NSPSO in person, by courier or mail. NSPSO may accept other forms of communication in advance but will only recognize the document having been submitted on the date of receipt of signed original and in hard copy.

Communications used during system events and during implementation of Emergency/Restoration Plans in actual emergencies shall be in accordance with the processes and protocols set out in the relevant emergency plans.

## **2.8 Confidentiality**

Participant Emergency Plans as submitted to the NSPSO are considered confidential, subject to any special provisions as defined by the NSPSO. This may include sharing such plans with other Emergency Management Agencies or with the Reliability Authorities if required.

### **3 Emergency and System Restoration Planning and Execution**

#### **3.1 Designation of Emergency Planning Participants**

- a) All Market Participants or Transmitters who maintain control of transmission breakers or reactive power resources are required to participate.
- b) Market Participants or Transmitters who have Black Start Facilities are required to participate.
- c) Market Participants or Transmitters who own and operate generation facilities that are directly connected to the NSPI Transmission or Distribution System are required to participate unless notified otherwise by NSPSO. In the event of a blackout Market Participants or Transmitters are required to isolate their facilities from the system and await instructions from the NSPSO.
- d) Market Participants or Transmitters with load facilities that are directly connected to the NSPI Transmission or Distribution System are required to participate unless notified otherwise by NSPSO. In the event of a blackout Market Participants are required to isolate their facilities from the system and await instructions from the NSPSO.
- e) Market Participants or Transmitters described above who have been identified by the NSPSO as required to participate must actively participate in planning, training and execution of plans as required by the owner or operator of the facilities and relevant staff.
- f) Market Participants or Transmitters may not be required to participate, if the Market Participant does not have control of breakers or other system elements required for system restoration.

#### **3.2 Preparation of Plans**

The NSPSO shall prepare and maintain System Emergency Plans and include individual Emergency Planning Participants' plans as attachments, which include response to the following conditions:

- a) Disabling of its normal control room operations, communications or evacuation the control room;
- b) Major damage or degradation to the assets connected to the NSPI Transmission or Distribution system;
- c) Loss of generating capability on the NSPI system;
- d) Response to local emergencies that affect its facilities or that of the local NSPI Transmission or Distribution System.

The NSPSO shall include in its System Emergency Plans the following:

- a) Include the specific authority of the NSPSO to direct or to approve any actions taken by the Emergency Planning Participants in circumstances of an emergency or system restoration;
- b) Include the communication channels and any back up communication arrangements for communication between the NSPSO and Emergency Planning Participants;
- c) Any requirements under government regulations, local and provincial EMO notifications and obligations;
- d) The requirements for staff call-outs, notifications and the identification of additional staff that may be required in the event of an emergency;
- e) Actions to be taken by the NSPSO System Operators to take actions without delay to preserve the stability of the system as well as any actions required by specific Market Participant's or Transmitters during such events;
- f) Procedure to identify and isolate the cause of the blackout and include black start restoration paths with the priority to re-establishing the interconnection with New Brunswick;
- g) Restoration priorities, critical loads required to be restored in priority will be identified in the procedures considering such aspects as station service to thermal plants, major substations and priority feeders. Other considerations are to re-energize transmission facilities attached to generation facilities, voltage control equipment, communication facilities, hospitals and emergency services and other critical infrastructure that may be identified by emergency management agencies;
- h) The Emergency Plan shall include diagrams where necessary and switching plans may be included where circumstances provide for a specific path for restoration
- i) At all times any requirements of the NERC Standards are to be followed including all Reliability Coordinator directives and notifications, subject to specific conditions outlined in each of the requirements.

The Emergency Planning Participants shall prepare and maintain Emergency Plans to be included in NSPSO System Emergency Plans and shall include the following:

- a) Plans shall be concise and definitive and in a form that may used by system operators during system emergencies or during situations of full or partial blackout;
- b) The specific authority of the NSPSO to direct or to approve any actions taken by the Emergency Planning Participants in circumstances of an emergency or system restoration;
- c) Identify key personnel with specific authority to take actions under the direction of the NSPSO or who are responsible for independent actions required under the plan;



- d) The requirements for staff call-outs, notifications and the identification of additional staff that may be required in the event of an emergency, including current contact information;
- e) The circumstances under which the Emergency Planning Participants may declare an emergency specific to its own facilities and how that will be communicated to the NSPSO;
- f) The communication channels, and any back up communication arrangements, for communication identified by the NSPSO;
- g) Any requirements under government regulations, local and provincial EMO notifications and obligations;
- h) Diagrams where necessary and switching plans may be included where circumstances provide for a specific path for restoration;
- i) Facilities included in the black start path or a restoration plan will include instructions for key personnel to act independently so as to facilitate restoration and will consider such items as; battery banks, diesel start up generators, generator and boiler emergency shutdown procedures, generator ancillaries and preparation for receiving station service and preparing to reconnect facilities under the direction of the NSPSO;
- j) Provisions for emergency supplies, fuel plans, communications and other support during system restoration activities;
- k) Emergency Planning Participants under the authority of more than one control authority shall identify arrangements that may apply under emergency conditions.

### **3.3 Preparation, Review and Approval of Participant Emergency Plans**

- a) The Emergency Planning Participants identified by this procedure shall prepare and maintain Emergency Participant Plans for any new or modified facility, unless not required by the NSPSO, prior to synchronization of the facility to the NSPI Transmission or Distribution systems.
- b) The Emergency Planning Participant may meet with the NSPSO for the purpose of guidance in developing their plan and provide for integration into NSPSO System Emergency Plans.
- c) Market Participants and Transmitters should liaise with one another to ensure that their plans coordinate with the other and to allow for changes that may be required to existing plans. NSPSO will facilitate such interactions if requested by the Emergency Planning Participants.
- d) The NSPSO will review the draft plan and respond with comments within a reasonable time frame.
- e) Market Participants and Transmitters will revise their plans to accommodate changes as directed by the NSPSO and resubmit for additional review by the NSPSO within the time frame specified by the NSPSO at the time of the request.

- f) The NSPSO shall integrate the approved plan into its own System Emergency Plans and include the Emergency Planning Participant's plan as an attachment to the relevant plan.
- g) The NSPSO will advise all relevant parties of the effective date of the plans.

### **3.4 Revisions to Participant Emergency Plans**

- a) Emergency Planning Participants shall at least annually review their plans or whenever changes are made to facilities that require changes to the plan and update such plan without delay. Such changes are required to be submitted to the NSPSO per section 2.7.
- b) The NSPSO will review the draft plan and respond with comments within 60 days.
- c) Market Participants and Transmitters will revise their plans to accommodate changes as directed by the NSPSO and resubmit for additional review by the NSPSO within the timeframe specified by the NSPSO at the time of the request.
- d) The NSPSO shall integrate the approved, revised plan into its own System Emergency Plans and include the Emergency Planning Participant's plan as an attachment to the relevant plan.
- e) The NSPSO will advise all relevant parties of the effective date of the plans.

### **3.5 Training and Systems**

- a) Each Emergency Planning Participants shall train all responsible personnel and shall maintain all communication and other systems required to support execution of its Participant Emergency Plan in good working condition.
- b) Emergency Planning Participants shall keep records of their respective training programs and the implementation of training for personnel required to carry out the functions listed in the plans. NSPSO may review and audit such training records.
- c) Participation in joint training may be required by NSPSO System Operators and relevant Emergency Planning Participants staff to ensure that coordinated planning is effective and to ensure knowledge of the implementation of the Emergency Plans. NSPSO will coordinate any such joint training activities.

### **3.6 Declaration of Emergency and Execution of Plans**

- a) NSPSO may declare an electricity system emergency as conditions dictate and may require execution of the Emergency Planning Participants' Emergency Plans. The NSPSO may or may not suspend the Standards of Conduct during such events.
- b) In the event of a partial or total system blackout the Emergency Planning Participants may be required to independently put into effect their respective Emergency Plans or procedures.
- c) The Participant Emergency Plans take precedence over the Market Rules only to the extent required for the execution of those Participant Emergency Plans.