



Market Manual 7: System Operations

Part 7.10: Ontario

Electricity Emergency

Plan

Issue 9.0

This document describes the Ontario electricity sector's emergency management program, and how the IESO coordinates with market participant and government stakeholders.

PLAN

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For history prior to 2011, please refer to versions 8.0 and prior.		
5.0	Various updates throughout including: <ul style="list-style-type: none"> • Removal of Priority 2 Customer Load and adding electrically-driven gas pipeline compressors to the list of Priority Customer Loads examples in the Critical Power System and Priority Customer Load table, • A number of changes to reflect the CMST's Guiding Principles, and • Updates to the CMST and EPTF rosters. Issued for Baseline 25.1	June 1, 2011
6.0	Changes throughout to reflect an All Hazards Approach Issue released for Baseline 27.0	March 7, 2012
7.0	Industrial Consumer load shedding planning guidance added. Emergency Preparedness Plan requirements examples added for market participant guidance.	December 4, 2013
8.0	Issued released in advance of Baseline 33.1 to update the IESO logo.	March 31, 2015
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Related Documents

Document ID	Document Title
MDP_PRO_0040	Market Manual 7.1: System Operating Procedures
IMO_PLAN_0001	Market Manual 7.8: <i>Ontario Power System Restoration Plan</i>
IMO_MAN_0001	Emergency Drills and Exercises Guide
IMO_GDE_0001	Market Participant Emergency Planning Guidelines
	Canadian Standards Association's Emergency Management and Business Continuity standard CSA Z1600
	Canadian Standards Association's Emergency Management and Business Continuity standard CSA Z731
	Emergency Management Glossary of Terms (Interim) 2011
	Ontario Provincial Hazard Identification and Risk Assessment Report ("HIRA")

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Table of Changes

Reference (Section and Paragraph)	Description of Change
All	Revised content to note that OEEP includes the IESO market participants and other relevant stakeholders.
Section 4.1	Revised key term definitions as per the Emergency Management Community Glossary of Terms.
Section 5.5.1	Added bullet related to CMST representatives from industries such as natural gas distribution/transmission or telecommunications
Section 5.8 and Appendix D	Added content and an appendix related to past events for which CMST was activated, along with guidance to be considered when deciding on whether to activate the CMST.
Appendix A and B	Updated the CMST and EPTF rosters.
Appendix B	Added a subsection for PowerStream (Section B1.12).
Appendix C	Moved the planning guidelines from section 4.6.1 to Appendix C.

1. Executive Summary

This *Ontario Electricity Emergency Plan* (OEEP) describes the coordinated actions required of the *Independent Electricity System Operator (IESO)*, *market participants* and other relevant stakeholders to plan for and respond to *emergencies* affecting the reliable supply of electricity to Ontario. It supports the principles outlined in the Ontario government's Provincial Emergency Response Plan (PERP).

The OEEP:

- Describes how we meet the *emergency* planning requirements of the *Electricity Act (1998)* and the *market rules*.
- Provides the framework for how we plan for and respond to threats, incidents, or *emergency* situations among relevant stakeholders including the *IESO*, *market participants*, the Ministry of Energy (MoE), and Emergency Management Ontario (EMO) within the Ministry of Community Safety and Correctional Services.
- Describes how we collaborate to test and exercise our plans, and take corrective actions in a spirit of continuous improvement.

– End of Section –

2. About This Manual

This document is Part 7.10: *Ontario Electricity Emergency Plan* of the *IESO Market Manual 7: System Operations*.

2.1 Purpose

The OEEP describes:

- The *emergency* planning requirements of the *IESO* and *market participants*, and
- How the *IESO*, *market participants* and other relevant stakeholders work together to coordinate their *emergency* planning and *response* activities

2.2 Scope

This document describes the overall framework for how Ontario's electricity sector coordinates its *emergency* planning and responds to situations, events, or incidents affecting electricity *reliability*.

The OEEP:

- Describes the coordinated actions required of the *IESO*, *market participants* and other relevant stakeholders to plan for and respond to *emergencies* affecting the reliable supply of electricity to Ontario.
- Describes how to meet the *emergency* planning requirements of the *Electricity Act, 1998* and the *market rules*.
- Supports the principles outlined in the Ontario Provincial Emergency Response Plan (PERP).
- Establishes the framework to share information related to situation assessments and recovery strategies among *market participants*, the *IESO*, MoE, EMO, and Public Safety Canada (PS).

The OEEP focuses on *emergencies* affecting a large segment of Ontario's power system with the potential for significant adverse impact on public health and safety, or economic disruption. Such an event may also affect *market participants* or jurisdictions outside Ontario and involve senior management and government officials to return the situation to normal.

In addition to providing the overall framework for responding to these types of significant events, the OEEP takes an all-hazard, all-threats approach that includes physical and cyber *security* and critical infrastructure protection.

The OEEP requires the electricity sector to be prepared to respond to all hazards affecting grid *reliability*, and it recommends that all *market participants* also be prepared to respond to hazards to their own operations and businesses. The OEEP adopts the EMO list of Hazards (see [Table 4-1](#)) for operations in Ontario, and recommends that *market participants* consider corresponding local hazards for critical supplies, equipment, and services sourced from other jurisdictions.

The OEEP is consistent with the program elements laid out in the Canadian Standards Association's Z1600 Emergency and Continuity Management program, and addresses program management, planning, implementation, evaluation, and management review.

2.3 Who Should Use This Manual

The OEEP provides context for all *market participants* and other relevant stakeholders including government with roles in *emergency* preparedness. It describes how Ontario's electricity sector coordinates actions to support a timely and coordinated *response* to any emergency affecting the supply and delivery of electricity to *consumers*.

2.4 Conventions

Conventions for this *market manual*:

- 'We' means the *IESO* and *market participants* and other relevant stakeholders
- 'Program' means the initiatives and actions the *IESO* takes in collaboration with *market participants* and government officials to help ensure our *emergency preparedness plans* and *response* are coordinated and effective
- 'Grid' means the *IESO-controlled grid*
- Italicized words have meanings ascribed to them in Chapter 11 of the *market rules*.

2.5 List of Acronyms

Table 2-1: List of Acronyms

AMPCO	Association of Major Power Consumers of Ontario
BOMA	Building Owners and Managers Association
CIP	Critical Infrastructure Protection
CMCC	Crisis Management and Communications Centre
CMST	Crisis Management Support Team
EDA	Electricity Distributors Association
EIC	Emergency Information Centre
EMO	Emergency Management Ontario
EPTF	Emergency Preparedness Task Force
<i>IESO</i>	Independent Electricity System Operator
MoE	Ministry of Energy
NERC	North American Electric Reliability Corporation
NPCC	Northeast Power Coordinating Council

OEEP	<i>Ontario Electricity Emergency Plan</i>
OPG	Ontario Power Generation
OPSRP	<i>Ontario Power System Restoration Plan</i>
PEOC	Provincial Emergency Operations Centre
PERP	Provincial Emergency Response Plan
PNERP	Provincial Nuclear Emergency Response Plan
PS	Public Safety Canada
THES	Toronto Hydro-Electric System

– End of Section –

3. Program Management

This section describes how the *IESO's* emergency management program is organized and managed, and how it is enhanced by the active contribution and cooperation of *market participants* and other relevant stakeholders.

3.1 Leadership and Commitment

This OEEP expects that senior leaders and qualified staff from the *IESO*, *market participants* and Ontario government are actively involved in this program, and adequate resources are made available.

3.2 Program Coordinator

Section 39 of the *Electricity Act, 1998* designates the *IESO* as the overall coordinator of Ontario's electricity *emergency* management program. To meet this obligation, the *IESO's* Chief Operating Officer chairs the stakeholder-represented Emergency Preparedness Task Force (EPTF) for planning initiatives, and the Crisis Management Support Team (CMST) for *response* actions.

3.3 Emergency Preparedness Task Force

The *IESO* established the stakeholder-represented EPTF to help coordinate Ontario's electricity sector *emergency* planning activities.

The EPTF plays an important role by providing a forum for participants to share information and approaches to address *emergency* management issues, and to provide input and advice to the *IESO*. The *IESO* and all *market participants* are responsible for maintaining their own company's emergency management program that addresses their own needs, and supports this coordinated approach.

The current roster of EPTF participants is listed in [Appendix A](#).

3.3.1 Market Participant Involvement

The EPTF benefits from broad and inclusive participation of all types of *market participants* and other relevant stakeholders – *generators*, *transmitters*, local distribution companies, industrial and commercial *consumers*, government and representatives of other infrastructure elements such as natural gas transmission/distribution. It is important that stakeholder representatives on the EPTF have accountability and senior management support from their own organizations for emergency management matters.

EPTF participants provide input on behalf of their organizations in the context of our mutual goal of minimizing the impact of electricity *emergencies* on public health and safety and the economy. EPTF participants benefit by helping ensure our planning and exercise initiatives are effective and are of

value to their own organizations. Participants are also able to keep abreast of developments within Ontario and abroad.

While all *market participants* are welcome to participate on the EPTF, those who have a greater impact on electricity *reliability* (especially *market participants* who are *restoration participants*¹) are encouraged to participate on a regular and sustained basis. Others may participate periodically at the EPTF's discretion, (for example, to plan and participate in workshops and exercises, or identify lessons from real events). In addition, the membership has expanded in recent years to include representatives from other infrastructure sectors such as natural gas distribution/transmission and telecommunications, reflecting the increased interdependency between these sectors and electricity.

While there is a need for face-to-face meetings to build strong collaborative relationships conference calls and the Internet may be utilized to share information in order to minimize travel time, costs and encourage stakeholder participation, The [Emergency Preparedness](#) page of the *IESO* website provides an overview of our emergency management program, and a password-secured section to coordinate the EPTF's work program with participants.

3.3.2 Government Involvement

Government representatives from MoE, EMO and PS are also key stakeholders on the EPTF. The EPTF provides an important forum to ensure that the OEEP and the EPTF's activities are consistent with the PERP. The EPTF also serves as the Electricity Sector Working Group under the provincial government's Critical Infrastructure Assurance Program.

3.4 Program Administration

The *IESO* chairs the EPTF and provides support to organize meetings, draft agendas, prepare minutes, and produce reports. An EPTF Work Plan, that addresses each of the program elements under the CSA's Z1600 standard, provides the planning framework for the EPTF's initiatives. To meet the program requirements set out, the EPTF meets regularly.

Periodically, the EPTF establishes working groups to take on specific EPTF initiatives. Subject matter experts from various participants provide the knowledge and experience needed. Examples:

- Plan and coordinate workshops and exercises
- Review and revise the *Ontario Power System Restoration Plan*
- Share information related to *cyber security*
- Develop *emergency* planning guidance documents

3.4.1 Program Goals and Objectives

The goal of Ontario's electricity emergency management program is to coordinate the efforts of the *IESO*, *market participants* and other relevant stakeholders to prevent or mitigate incidents that could affect the reliable supply of electricity and threaten people, property or the environment.

¹ The *IESO* identifies "Restoration participants" using the criteria in Section 3 of the *Ontario Power System Restoration Plan*. In general, they are *market participants* who own or operate the assets needed to restore Ontario's grid in the event of a large-scale system blackout.

To achieve this goal, the emergency management program's objectives are to:

- Provide a forum to encourage and facilitate information-sharing among participants.
- Provide subject matter expertise to identify and address hazards and threats to Ontario's *electricity system*.
- Carry out work programs to improve our overall readiness to anticipate and respond.
- Inform, advise, and support *market participants* and government.

3.4.2 Program Plan

The EPTF prepares a two-year work plan annually that is endorsed by participants at the EPTF's first meeting of the year. Program areas include each of the elements in the CSA Z1600 standard:

- Program management
- Planning
- Implementation
- Exercises
- Evaluations and corrective actions
- Management review

We review the status of the work plan at EPTF meetings to ensure work is on-track and to consider if we need to revise or re-prioritize plans.

3.4.3 Program Budget

The *IESO* commits resources to support the maintenance and implementation of the OEEP through its business planning process. The *IESO's* business plan is approved by the Minister of Energy and the Ontario Energy Board, and is available on the *IESO* website.

As described above, the success of Ontario's electricity emergency management program depends heavily on the contribution of *market participants* and other relevant stakeholders. While *market participants* and other relevant stakeholders contribute to the work of the EPTF at their own expense, the *IESO* strives to ensure that EPTF activities are well-organized, effective, and continue to evolve according to need.

3.4.4 Program Review

At each EPTF meeting, actions are tracked against expected completion dates. At the last meeting of each year, the EPTF work plan is reviewed from a strategic perspective to determine if program areas or resources need to change which are then reflected in next year's work plan.

3.5 Laws and Authorities

The *Electricity Act, 1998*, and the *market rules* provide the "policies" for *emergency* planning in Ontario's electricity sector and set out the legal requirements. The *market rules* describe the obligations of the *IESO* and all *market participants*, supported by a compliance monitoring function that reports directly to the *IESO's* President and Chief Executive Officer.

The *Electricity Act, 1998, Section 39*, designates MoE and the *IESO* as the organizations responsible for *emergency* planning among *market participants* and assuring that electricity *emergencies* can be coordinated effectively.

Section 39 of the Act states:

- 1 The *Minister* shall require the *IESO* to prepare and file with the Minister such *emergency* plans as the Minister considers necessary
- 2 The *Minister* may require a *market participant* to prepare and file with the Minister such *emergency* plans as the *Minister* considers necessary
- 3 The *IESO* shall assist in coordinating the preparation of plans under subsections (1) and (2)
- 4 The *Minister* may direct the *IESO* or a *market participant* to implement an *emergency* plan filed under subsection (1) or (2), with such changes as the Minister considers necessary
- 5 Every *generator* that owns or operates a nuclear *generation facility* shall file with the *Minister* a copy of any *emergency* plans relating to the *facility* that are filed with the Canadian Nuclear Safety Commission.

To meet this legal requirement, Chapter 5, Section 11 of the *market rules* describes the Emergency Preparedness and System Restoration requirements of the *IESO* and *market participants*:

- All *market participants* are required to maintain *emergency preparedness plans*, and submit them to the *IESO* for review
- In addition, *restoration participants* are required to prepare *restoration participant attachments*, and submit them to the *IESO* for review

These *market rule* requirements are consistent with *NERC* emergency operations (EOP) standards.

The Emergency Management and Civil Protection Act includes the provision that the Minister of Community Safety and Correctional Services may formulate plans respecting *emergencies*. This need is fulfilled by the PERP and the PNERP. While the PERP does not specifically apply to non-government entities, the OEEP is intended to support the goals of the PERP. On the other hand, the PNERP does place requirements on owners and operators of nuclear facilities in Ontario. Therefore, to ensure optimal coordination, *market participants* who own or operate nuclear facilities need to keep the *IESO* advised of any changes to the PNERP that could be relevant to the OEEP.

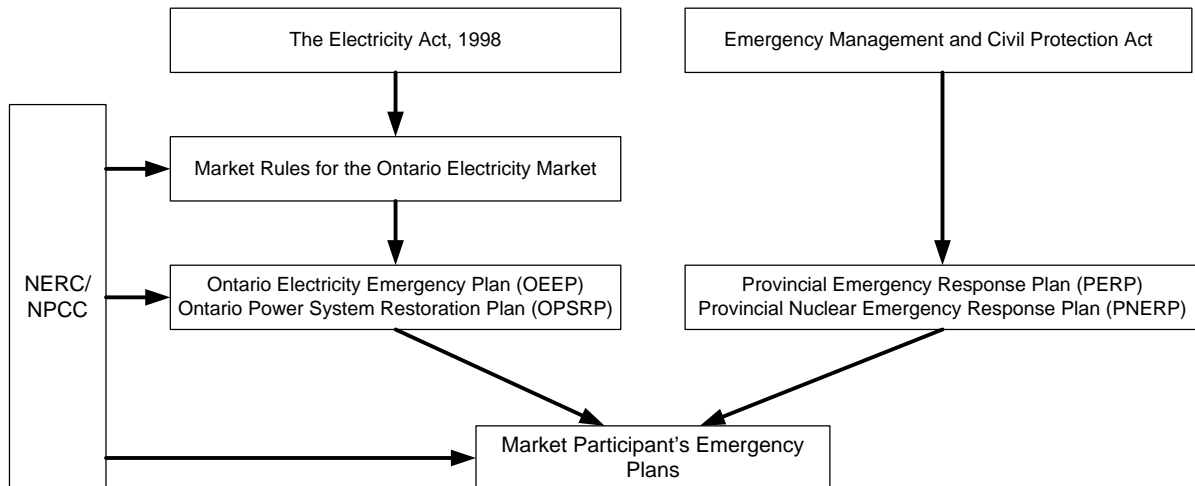


Figure 3-1: Laws and Authorities

3.5.1 Compliance

The *IESO's* Reliability Compliance Program monitors *IESO* and *market participant* compliance with the *market rules*. Relative to the OEEP market participant obligations, the *IESO* may request that a *market participant* perform an independent audit of its own plans, and provide the results to the *IESO*. The *IESO's* plans are subject to audit by the *NPCC* against *NERC* standards.

Market participants who breach the *market rules*, relative to OEEP requirements, may be subject to sanctions. These sanctions could be a directive instructing the *market participant* to rectify a breach of the *market rules*, financial penalties, suspension, or termination from the market, depending on the nature of the breach or instance of non-compliance.

3.5.2 Non-regulatory Initiatives

While industry standards and mandatory compliance mechanisms are useful, not all aspects of a comprehensive and effective emergency management program lend themselves to “*regulation*”. Regulatory processes can be inflexible, overly prescriptive, slow to change, and can stifle innovative solutions. Threats and hazards that face the industry today are ever-changing. The spirit of the OEEP for the *IESO*, *market participants* and other relevant stakeholders, understand the risks we face and keep those risks at an acceptable level.

– End of Section –

4. Planning and the EPTF

This section describes our *emergency* planning framework, which takes a risk management approach to ensure planning requirements and EPTF initiatives are comprehensive, effective and reasonable.

4.1 Key Definitions

When discussing elements of an All Hazards approach with other emergency management professionals it is important to have a consistent understanding of each of the terms. For the purposes of consistency the EPTF has adopted the EMO definitions as provided in the [Emergency Management Community Glossary of Terms](#)

- **Hazard:** A phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. These may include natural, technological or human-caused incidents or some combination of these,
- **Risk:** The product of the probability of the occurrence of a hazard and its consequences,
- **Threat:** A person, thing or event that has the potential to cause harm or damage,
- **Vulnerability:** The susceptibility of a community, system or asset to the damaging effects of a hazard, and
- **Incident:** An occurrence or event that requires an *emergency response* to protect people, property, the environment, the economy and/or services.

4.2 Threat and Hazard Identification

Threats and hazards that may affect the *reliability* of Ontario's *electricity system* include natural, technological, and human-caused events. The *IESO* and *market participants* need to be aware of how these risks are changing, from both a local and global perspective. The OEEP has adopted Emergency Management Ontario's list of hazards from the Ontario Provincial Hazard Identification and Risk Assessment Report or "HIRA" as depicted in Table 4-1 below.

Table 4-1: EMO List of Hazards

<p><u>Technological Hazards:</u> Building/ Structural Collapse Critical Infrastructure Failure Dam Failure Energy Supply Emergencies Explosions/ Fires Hazardous Materials Incident Human-Made Space Object Crash Mine Emergencies Nuclear Facility Emergencies Oil, Natural Gas Emergencies Radiological Emergencies Transportation Emergencies</p> <p><u>Human-Caused Hazards:</u> Civil Disorders Cyber Attack Sabotage Special Events Terrorism/CBRNE War/International or Provincial/Territorial Emergency Financial/Economic Crisis*</p>	<p><u>Natural Hazards:</u> Agriculture and Food Emergencies Drinking Water Emergency Drought/Low Water Earthquake Erosion Extreme Heat/Cold Flood Fog Forest/Wildland Fire Freezing Rain Geomagnetic Storm Hailstorms Human Health Emergency Hurricanes/ Tropical Storms Land Subsidence Landslide Lightning Storms Natural Space Object Crash Snowstorm/Blizzard Tornado Windstorm</p>
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*Note: Financial/economic crisis is not on the EMO list, but has been added here. The impacts of this hazard to the electricity sector include:

- Underinvestment in infrastructure, and
- Companies going out-of-business.

The EPTF plays a valuable role by providing a forum of experts who monitor these ever-changing threats and hazards, and share information promptly in order to understand likelihood, potential impacts, and to initiate any necessary action.

4.3 Risk Assessment

There is a need to assess threats and hazards to determine the likelihood and potential impact on electricity infrastructure, people, property and the environment.

Given the large number and great diversity of *market participants* in Ontario, individual risk assessments may vary widely, and should ensure that risks resulting from all hazards to business and operations are assessed. It is important to also perform a risk assessment from an integrated *electricity system* perspective regarding grid *reliability* as a whole. The *IESO* and *market participants* use these risk assessments to determine their own ability to maintain electricity *reliability* and take any necessary operational actions. The EPTF plays an important role by providing input and advice to the *IESO* in preparing these risk assessments.

While many different risk assessment methodologies are available, many are complex or best-suited to specific applications. For the purposes of the EPTF, a simple qualitative model meets the needs of the EPTF. A “commonly used approach to risk management”² takes the following steps:

1. Identification of assets and loss impacts.
 - 1.1 Determine the critical assets that require protection.
 - 1.2 Identify possible undesirable events
 - 1.3 Prioritize the assets based on consequence of loss.
2. Identification and characterization of the threat
 - 2.1 Identify threat categories and potential adversaries.
 - 2.2 Assess intent and motivation of the adversary.
 - 2.3 Assess capability of adversary or threat.
 - 2.4 Determine frequency of threat-related incidents based on historical data.
 - 2.5 Estimate degree of threat relative to each critical asset and undesirable events.
3. Identification and analysis of vulnerabilities using a realistic threat
 - 3.1 Identification and analysis of vulnerabilities using a realistic threat.
 - 3.2 Identify potential vulnerabilities related to specific assets or undesirable events.
 - 3.3 Identify existing countermeasures and their level of effectiveness in reducing vulnerabilities.
 - 3.4 Estimate the degree of vulnerability relative to each asset.
4. Assessment of risk and the determination of priorities for the protection of critical assets
 - 4.1 Estimate the degree of impact relative to each critical asset.
 - 4.2 Estimate the likelihood of an attack by a potential adversary.
 - 4.3 Estimate the likelihood that a specific vulnerability will be exploited. The estimate can be based on factors such as prior history or attacks on similar assets, intelligence, and warning from law enforcement agencies, consultant advice, the company’s own judgment, and additional factors.
 - 4.4 Prioritize risks based on an integrated assessment.
5. Identification of risk reduction measures, costs and trade-offs.
 - 5.1 Identify potential countermeasures to reduce the vulnerabilities.
 - 5.2 Identify potential facility changes that reduce the consequences from an event
 - 5.3 Estimate the cost of the countermeasures.
 - 5.4 Conduct a cost-benefit and trade-off analysis.
 - 5.5 Prioritize options and recommendations for senior management.

² Ref. “Risk Assessment Methodologies for Use in the Electric Sector”, North American Electric Reliability Corporation

4.4 Operational Impact Assessment

The grid is designed and operated to respond to *contingency events* that may occur without notice at any time. System operators are trained to manage the impact of unanticipated equipment failures, and respond to changes in *demand* while maintaining electricity *reliability*. The vast majority of these contingencies are managed without any disruption of supply to *consumers*, as part of everyday business. By building on this capability, we are well-positioned to evaluate and respond to more unusual events that could have a very significant impact on *reliability*.

Ontario's residential, commercial and industrial *consumers* are served by one of the most reliable *electricity systems* in the world. Under normal conditions, they enjoy a virtually uninterrupted supply of electricity, and there is no need to prioritize delivery to one *consumer* over another. However, under *emergency* conditions, it becomes critically important to be able to prioritize quickly and effectively under very challenging circumstances.

The following definitions provide a framework to ensure that *market participants* make the difficult decisions regarding priorities before an *emergency* occurs. They also ensure that overall system needs that benefit large portions of Ontario are not compromised by local concerns to the detriment of the Ontario *electricity system*. *Market participants* need to apply these definitions as part of their emergency planning.

4.4.1 Definitions Related to Priorities

Critical Power System Loads

Critical power system loads are those needed to restore the grid. Without these loads, the ability to restore the grid and reliably supply customer loads is significantly compromised. Supplying critical power system loads is the highest priority.

Critical power system loads include AC and DC *station service* loads necessary to operate power system auxiliaries at *control centres*, transmission, generating, and step-down transformer stations. In some cases, these loads are also found within *distribution systems*. Examples of the types of auxiliaries supplied as critical power system loads include telecommunications, protective relaying, monitoring and control systems.

Priority Customer Loads

Priority customer loads are important *consumer* loads that need to be restored promptly to mitigate the impact on public health and safety, the environment, or the economy. *Market participants* who are local distribution companies and *connected wholesale customers* need to identify their priority customer loads.

The urgency for restoring any one *consumer* load may vary depending on circumstances, such as the duration of the interruption, time of day or season, weather conditions, geographical location, or other circumstances related to the nature of the *emergency*. Local distribution companies need to identify these loads as part of their planning efforts in consultation with *consumers*, *transmitters*, local government or emergency management officials. Local distribution companies need to design their rotational load shedding procedures with these priorities foremost in mind.

Despite the best set of plans, priorities could change under *emergency* conditions. *Market participants* need to be flexible and ready to revise priority strategies according to ever-changing circumstances. The following table summarizes the definitions for critical power system and priority customer loads.

Table 4-2: Critical Power System and Priority Customer Loads

	Critical Power System	Priority Customer Load ³
Possible that load may be interrupted without warning?	Yes	Yes
Load is essential for system restoration?	Yes	No
Load is subject to rotating blackouts?	No	No
Examples	<ul style="list-style-type: none"> ▪ <i>Station service</i> at grid facilities ▪ Control systems ▪ Telecommunications ▪ Protective relaying ▪ Monitoring 	<ul style="list-style-type: none"> ▪ Hospitals ▪ Water treatment and sewage plants ▪ Police Station and Fire Station <i>Response</i> facilities ▪ Oil refineries and pipelines ▪ Electrically-driven gas pipeline compressors

4.4.2 Emergency Load Reduction Guidance for Industrial Consumers

Following a significant system event, there are circumstances when industrial *consumers* may be required to reduce *demand* to maintain system *reliability*. For example, during *emergency operating states*, the *IESO* will take actions that could include implementing rotational or block load shedding to return the system to a reliable state. As a result, industrial *consumers* may be directed to reduce their load.

When load reductions are required, the *IESO* will either call industrial *consumers* directly or send a recorded broadcast message. For this purpose, industrial *consumers* need to ensure that the *IESO* is kept informed of any changes to their 24/7 *emergency operations* contacts. The *IESO* shall alert *market participants* of an *emergency operating state* using appropriate communication methods.

Prior to *emergency* events, it is important that industrial *consumers* perform risk assessments of their internal processes to segregate essential and non-essential loads so they can implement *IESO*-directed load shedding actions immediately to prevent any delays and to help mitigate impacts to their *facilities* and equipment.

³ Previously referred to as "Priority 1 Customer".

In addition to developing plans to reduce load immediately, industrial *consumers* need to consider how they would reduce load for multi-day events. Options could include:

- Deferring production
- Shifting production from peak periods to periods of lower *demand*,
- Reducing load to the bare minimum to support safety and environmental issues.

4.5 Emergency Planning Process

The *IESO* and all *market participants* are required to prepare *emergency preparedness plans* to ensure grid *reliability*. As part of the emergency planning process, the *IESO* and *market participants* should ensure that the risks associated with the hazards listed in Table 4-1 are assessed. If existing *market rules* and *NERC* or other industry standards are not adequate to prevent or mitigate, then the *IESO* may issue additional guidance through the EPTF. *Market participants* should assess the resulting residual risks based on *market rules*, *NERC* or other standards and for residual risks to grid *reliability* that are deemed unacceptable, should develop emergency preparedness, *response*, and recovery plans. It is recommended that *market participants* similarly address the hazards and risks to their businesses and operations.

This OEEP is aligned with the Canadian Standards Association’s Z1600 Emergency Management and Continuity standard. As represented in the figure below, this standard is a management system, and provides a broad yet comprehensive framework for all aspects of *emergency* management – program management, planning, implementation, evaluation, and management review. CSA’s Z731 Emergency Preparedness and Response standard provides additional “how-to” detail for some elements of the Z1600 standard.



Figure 4-1: “Plan-Do-Check-Act” (PDCA) continual improvement model

4.6 Plan Requirements

Market participants are not obliged to use any one standard to develop and maintain their emergency management program, but are required to address the key planning requirements described in Chapter 5, Section 11 of the *market rules*. See [Appendix C: Planning Guidelines for Market Participants](#).

4.7 Ontario Power System Restoration Plan (OPSRP)

The OPSRP describes the objective, strategy and priorities for restoring the grid following a worst case scenario contingency – a partial or complete system blackout. In addition to providing their *emergency preparedness plan*, *restoration participants* need to prepare a plan describing how they support the OPSRP (ref. Market Manual 7.8: *Ontario Power System Restoration Plan*). These plans are known as *restoration participant attachments*.

– End of Section –

5. Planning and the CMST

This section describes *responses* to threats and *emergency* situations, and distinguishes between the **operational response** needed to manage grid *reliability*, and **crisis** response activities coordinated through the Crisis Management Support Team (CMST).

5.1 Prevention and Mitigation

The Ontario grid is planned and designed according to industry standards, and is continuously monitored by the IESO's control room operators supported by control systems and reliable communications. Automated alarm systems help experienced operators identify problems on the system so they can take immediate action to contain incidents that might otherwise have a more severe impact on the grid. *Market participants* are required to inform the IESO of local events or incidents that could affect grid *reliability*. In a worst case scenario, operators are ready to implement the *Ontario Power System Restoration Plan* to restore reliable operation.

A fundamental tenet of effective *emergency* planning and *response* is that *emergencies* are best resolved at the most local level possible. In the context of the *electricity system*, emergencies affecting a single municipality are best addressed by the local distribution company by their own planning and operational resources. If necessary, they activate mutual aid arrangements with their neighbours.

For this reason, the OEEP focuses on situations or events that extend beyond the local level and have the potential for wide-spread, multi-regional, or long-term electricity disruptions. Under these circumstances, the Crisis Management Support Team (CMST) helps coordinate *crisis response* activities during larger-scale events.

5.2 Resource Management

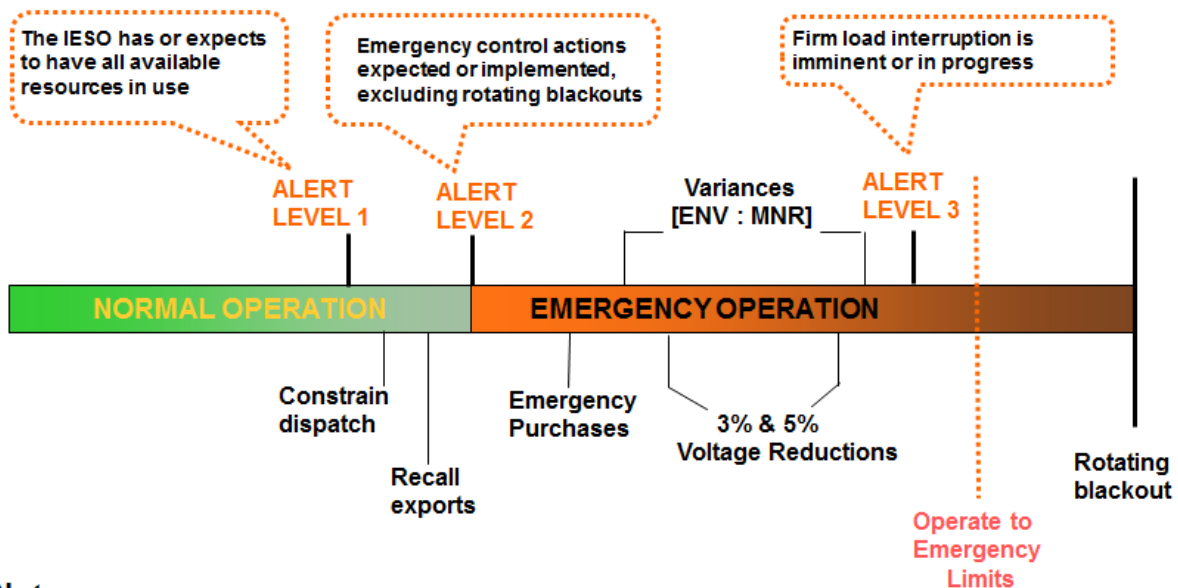
In addition to the resources needed to conduct normal operations, *emergency preparedness plans* need to consider what additional resources are required to respond effectively to credible scenarios. Aside from managing operational processes, this needs to include staffing and resources to support crisis communications activities.

5.3 Mutual Aid and Assistance

It is important that *emergency preparedness plans* consider ways to increase human and material resources when needed. This may include mutual assistance arrangements with others outside the area affected by the emergency. Local distribution companies maintain and operate similar infrastructure, equipment and work practices and have a long history of cooperation during *emergencies*.

5.4 Emergency Operational Response

As described in section 5.1, *emergency response* is not a separate activity from normal day-to-day grid operation. It is an integrated part of operational activities that reinforces normal operational roles, accountabilities and processes. For example, control room operators have the authority to decide on and implement emergency control actions, including immediate load shedding if needed, to balance electricity *demand* with available generation supply. The following diagram illustrates emergency response as a continuum from normal operations.



Note:

Actual system conditions and market dynamics may not allow executing Control Actions sequentially.

Figure 5-1: IESO Emergency Operations Framework

This does not mean to suggest that electricity *emergencies* are treated as business-as-usual. In addition to the *IESO* and *market participants'* operational efforts to respond to the *emergency*, we need to activate crisis management resources to maintain situation awareness, support operational *response*, and inform government, *consumers* and other stakeholders. With an Ontario perspective in mind, the CMST fulfills this role.

5.5 Crisis Management Support Team

The CMST is chaired by the *IESO* and composed of key representatives from *market participants*, industry associations, other industries that are closely integrated with *electricity system reliability* (e.g., natural gas distribution/transmission) and the MoE. Participation on the CMST is not intended to be exclusionary but is based on the ability of participants to contribute and their ability to influence positive outcomes. [Appendix B](#) provides a current roster of the organizations participating on the CMST.

The purpose of the CMST is to provide an environment for Ontario's electricity *market participants* and other relevant stakeholders to share information and co-ordinate crisis management activities leading up to and through a wide spread electricity *emergency*. The CMST maintains high-level situation awareness, and helps address issues that are not being addressed through operational means. It is important to emphasize that the CMST takes no operational decision-making accountabilities (e.g. directing the operation of the power system) away from participating organizations. **The CMST informs, but does not direct operations or crisis response actions.**

Although the outcomes of CMST conference calls may be considered public, the CMST often needs to share information that may be sensitive in nature and discussions are therefore conducted under non-disclosure agreements (NDA). CMST representatives need to respect the source of any information they receive from other CMST representatives and share it only to the extent necessary within their own organizations. For example, CMST Situation Reports may be shared within a CMST representative's own organization but not more broadly.

5.5.1 Guiding Principles

- The CMST does not deal with localized electricity *emergencies*. However, CMST calls may be initiated for triage purposes when the impact of an event are not clear,
- CMST coordinates actions and provides input into official communication channels. CMST is not the communication conduit/medium itself,
- CMST representatives benefit from their participation by exchanging timely information from authoritative and credible sources,
- Industry associations provide an efficient means to engage a significant number of load customers and *generation facilities* through a single point of contact. Their participation enables them to understand the *emergency* and, through dialogue with their constituents, take coordinating actions to help mitigate its impact on public health and safety,
- CMST representatives from other industries such as natural gas distribution/transmission or telecommunications provide an effective means of understanding the state of other infrastructure elements that are interdependent with *electricity system reliability*,
- CMST representatives are appointed by their companies, and need to have the authority to share information with the CMST, and influence decision-making on behalf of their organization,
- CMST representatives or their alternates need to sign an NDA and be accessible at any time, and
- Depending on the situation, the CMST Chair may invite organizations not normally represented on the CMST to participate, according to their ability to contribute.

Note. Nuclear operators are required to notify the PEOC of "Reportable" nuclear incidents under the Provincial Nuclear Emergency Response Plan (PNERP). Although this reporting process is outside the CMST process, we expect that CMST representatives of nuclear operators would provide the CMST with information related to any nuclear-specific *emergency*.

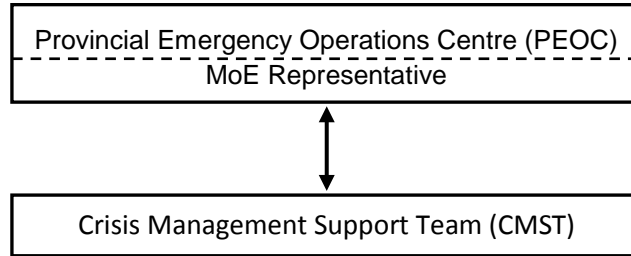


Figure 5-2: Crisis Management Support Team

5.5.2 Role of the CMST

Gather and share information

- Gather information related to the incident or event,
- Analyze the information to understand potential impacts on the power system, public health and safety, the environment, and the economy,
- Maintain overall situation awareness and estimate recovery times,
- Develop situation reports,
- Develop key messages to support consistent official messaging and local communications,
- *Distribute* information to *market participants* and the Provincial Emergency Operations Centre (PEOC) via the MoE representative, as appropriate.

Identify issues

- Identify unresolved issues, ensure responsible entities are aware, and escalate as necessary.

Develop solutions

- Consider options and alternatives to mitigate the impact on the power system, public health and safety, the environment and the economy, and
- Provide analysis, information and advice to the Ministry of Energy.

5.6 Communications and Warning

As described above, the *IESO* continuously monitors the *reliability* of the grid, and receives information from *market participants* regarding events at a local level that could disrupt their operation. While local incidents are managed by the affected participants within the scope of their accountability, the *IESO* directs any actions required of *market participants* to manage overall grid *reliability*.

In parallel with these operational activities, the *IESO* uses its internal management call chain to quickly identify issues that appear to be significant, and decide what actions need to be taken. As well, early warning of an incident or event may come from any number of other sources – other critical infrastructures (e.g., telecommunications, oil, natural gas), the media, law enforcement or other government agencies.

Regardless of the source of information, the CMST Chair (the *IESO* Chief Operating Officer) will consider the circumstances and the guiding principles, consult with CMST representatives, and decide whether to notify or activate the CMST.

CMST representatives are provided with the contact information for the *IESO*. If the CMST is not activated during an incident, a CMST representative can request activation, or request incident status by contacting the *IESO*.

5.7 Public Communications

The development of key messages is an important output of the CMST, and CMST representatives provide valuable input from their own unique perspectives.

As usual, it is the responsibility of each *market participant* to communicate with their own stakeholders and customers, and CMST representatives are encouraged to use these key messages as part of their own outreach. This will help ensure that the public receives consistent and accurate information from the appropriate entities.

5.8 CMST Activation

CMST members stand ready to notify the *IESO*, or be notified by the *IESO*, of incidents or events that may be of interest to the CMST. The extent of CMST activation depends on the situation.

[Appendix D: Past Events when CMST was Activated](#) provides some historical examples of significant events affecting Ontario's *electricity system* and the extent to which the CMST was activated. While the CMST has considered developing structured activation criteria, these historical examples provide practical guidance that can be considered according to current circumstances.

5.8.1 CMST Notification

The *IESO* uses an emergency notification system to alert CMST representatives of incidents or events.

With the support of the EPTF, the *IESO* maintains the CMST roster, and tests the notification system regularly. The system is web-based and can be activated immediately from any location with web access. Within approximately five minutes, the system simultaneously calls business, home, and cell numbers, sends an email with a recorded message describing the incident, and instructs the CMST representative of action required.

If the incident or event is informational and does not require immediate action from CMST representatives, the *IESO* posts this information to the CMST password-secured website. A notification email is sent to CMST representatives to advise them of the new posting.

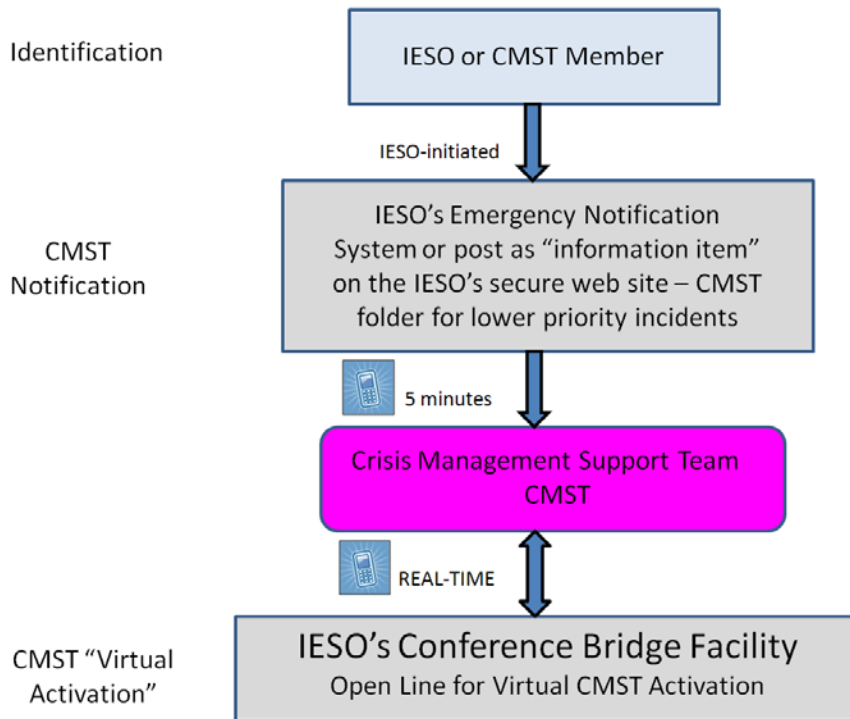


Figure 5-3: CMST Notification

5.8.2 CMST Participation When Activated

The CMST typically conducts its business by conference call or by posting information. CMST representatives can participate from any location, which allows them to maintain close contact with their own organizations. If the CMST Chair decides to activate the CMST, the *IESO* uses their emergency notification system to inform CMST representatives of the situation, and the time of the conference call. The *IESO* provides a dedicated conference bridge *facility* for the CMST, ready for immediate use. Typically, the first conference call is arranged within an hour of initial notification.

Conference calls begin with an introduction from the Chair and an update from the *IESO*. CMST representatives provide additional information from their own sources, and have the opportunity to ask questions and discuss issues. The CMST focuses on issues at a strategic level and does not get into operational details. The *IESO* prepares a situation report to record the results of the conference call and posts it on the CMST website.

5.9 Facilities

The *IESO* provides the emergency notification system, a password-secured website, and a conference bridge.

CMST representatives provide their own means to participate on conference calls and connect to the web.

5.10 Training

CMST representatives have a number of training opportunities to become familiar with their roles. The *IESO* provides an orientation for newly-appointed representatives that includes an overview of the OEEP, how to access the secure website, and references to procedures. Periodically, a CMST workshop is held to provide CMST representatives with an opportunity to meet each other face-to-face, review CMST procedures, and walk-through how the CMST responds to an *emergency* scenario. The CMST exercises its role as part of the large-scale integrated exercises that involve the *IESO*, *market participants*, and government stakeholders.

5.11 Operational Continuity

While the CMST does not have an operational role, their actions support operational continuity by addressing crisis communications and consequence management needs.

– End of Section –

6. Exercises, Evaluations, and Corrective Actions

While the *IESO* and *market participants* are responsible for training their own staff, all agree there is great value in learning together how we coordinate to respond to real events. Every year, the *IESO* and *market participants* plan and execute training sessions, workshops, and exercises. The *IESO's* [Emergency Drills and Exercises Guide](#) provides advice on how to plan and conduct drills and exercises. It also provides a framework for evaluating lessons-learned, and deciding on corrective actions.

6.1 Exercises

The *IESO* and *market participants* need to train staff and exercise their plans and procedures. Exercises are a prominent part of the EPTF Work Plan. Since 2001, large-scale integrated exercises have helped the *IESO* and *market participants* test their own internal plans and ensure they are well-coordinated with others. As well, workshops are held periodically across Ontario to reinforce reliable operations and simulate *response* to a local scenario in detail.

6.2 Evaluations

The *IESO* and *market participants* review the results of training and exercises to assess their effectiveness, take corrective action, and plan to improve them in future. Feedback from individuals helps determine if the overall objectives were achieved, and if the presentation format could be improved. The *IESO* summarizes this feedback and determines in consultation with the EPTF ways to continuously improve the value and effectiveness of these workshops and exercises.

For large-scale exercises, the *IESO* asks participants to identify their findings and lessons-learned. In consultation with the EPTF, these findings are documented in an exercise evaluation report.

6.3 Corrective Actions

Workshops and exercises have greater value if they identify specific and actionable areas for improvement. While it is important not to gloss over errors or deficiencies that occur during an exercise, care should be taken to acknowledge them openly in the spirit of continuous improvement. To evaluate the results of large-scale exercises, the *IESO* uses the following ranking criteria.

Table 6-1: Crisis Management Support Team

Rank	Description
Observation	Finding has little direct impact on <i>emergency response</i> or restoration, but should be considered as an improvement to emergency response processes.
Gap	Finding has some measurable impact on timeliness of restoration or effectiveness of <i>emergency response</i> .
Significant Gap	Finding has a significant impact on timeliness of restoration or effectiveness of <i>emergency response</i> , with a significant impact on public health and safety.

As part of its work planning activities, the EPTF periodically reviews the status of actions needed to address exercise findings.

– End of Section –

7. Management Review

7.1 OEEP Maintenance

The *IESO* is responsible for maintaining the OEEP, filing any revisions with the *Minister*, and making the OEEP publicly available on the *IESO* website.

7.2 Annual Review

The *IESO* periodically reviews the OEEP, and consults with the EPTF regarding any changes.

Market participants are encouraged to conduct internal reviews, peer reviews, self-audits or external audits to assess their own plans and state of readiness. These independent assessments benefit *market participants* and the industry.

7.3 Independent Audit

If directed by the *Minister*, the *IESO* will arrange for an audit of the OEEP by the *IESO*'s internal auditors or a peer review team composed of diverse industry or emergency preparedness experts.

- End of Section -

Appendix A: EPTF Roster

Table A-1: EPTF Roster

Entity Type	Entity Name
EPTF Chair	Independent Electricity System Operator (<i>IESO</i>)
Generators	Bruce Power Ontario Power Generation Brookfield Renewable Power
Transmitters	Hydro One Great Lakes Power Transmission
Local distribution companies	Toronto Hydro Hydro One Hydro Ottawa PowerStream
Industry associations	Association of Major Power Consumers of Ontario (AMPCO) Electricity Distributors Association (EDA) Association of Power Producers of Ontario (APPrO)
Government	Ministry of Energy (MoE) Office of the Fire Marshal & Emergency Management - Emergency Management Ontario Public Safety Canada (PS)
Other Industries	Enbridge Gas Distribution

- End of Section -

Appendix B: CMST Roster and Responsibilities

Table B-1: CMST Roster

Entity Type	Entity Name
CMST Chair	Independent Electricity System Operator (<i>IESO</i>)
Generators	Bruce Power Ontario Power Generation Brookfield Renewable Power
Transmitters	Hydro One Great Lakes Power Transmission
Local distributing companies	Toronto Hydro Hydro One Hydro Ottawa PowerStream
Industry Associations	Association of Major Power Consumers of Ontario (AMPCO) Electricity Distributors Association (EDA) Association of Power Producers of Ontario (APPrO) Building Owners and Managers Association (BOMA)
Other Industries	Enbridge Gas Distribution Inc Union Gas Ltd.
Government	Ministry of Energy

B.1 CMST Representative Responsibilities

Each CMST representative has specific responsibilities and assigned tasks when the CMST is activated.

B.1.1 Independent Electricity System Operator (IESO)

The *IESO's* Chief Operating Officer chairs the CMST, decides when to activate and stand-down, and provides the resources needed to activate and support the operation of the CMST. As well, the *IESO* is a primary source of information such as:

- The status of Ontario's *electricity system* and market operation
- Affected areas
- Estimates of time to restore

- Status of interconnected operation with jurisdictions outside of Ontario
- Restoration priorities
- Prognosis for future operation
- Forecasts of weather, *consumer demand* and *system adequacy*

B.1.2 Ministry of Energy (MoE)

The MoE representative ensures that the CMST, PEOC and MoE communicate effectively during an *emergency*. The Ministry of Energy representative:

- Ensures that MoE is kept informed of the status of the *emergency*, including actions being taken by the *IESO* and *market participants* to ensure that power is restored as quickly as possible
- Ensures that issues related to public policy are referred to the MoE
- Ensures the PEOC's information needs regarding the electricity sector are met
- Identifies *IESO* or *market participants'* needs for provincial or federal government support
- Requests additional support from CMST, when necessary, to support the MoE representative at the PEOC
- Ensures the CMST's key public messages are shared with the PEOC Information Group so that CMST and government public messages are consistent

The PEOC is active 7/24 so that it can respond immediately to *emergencies*. The PEOC is a multi-agency *facility*, and includes an MoE representative. It is designated by the province to coordinate provincial *emergency* operations and to provide support to affected communities. Representatives of ministries, federal agencies and other organizations provide status reports and coordinate *response* activities.

B.1.3 Emergency Information Centre (EIC)

The EIC presents coordinated *emergency* information from all involved levels of government to the media and the general public.

In a provincial *emergency*, local, provincial and, in some cases, federal emergency information resources may be combined to create an Emergency Information Centre (EIC). Depending on the nature of the emergency event, this could be located at or near the PEOC, or could be deployed close to the area affected by the emergency. For nuclear, the Provincial Nuclear Plan defines these areas.

B.1.4 Ontario Power Generation (OPG)

The OPG representative is responsible for:

- Reporting to the CMST
- Notifying the OPG Director Emergency Operations – CMCC at the OPG Crisis Management and Communications Centre (CMCC) of CMST activation
- Requesting activation of the OPG Crisis Management and Communications Centre, if necessary

- Establishing and maintaining contact with the OPG Director Emergency Operations – CMCC
- Providing status reports on OPG resources to the CMST
- Providing feedback to the OPG Director Emergency Operations – CMCC on the status of the *emergency* situation and CMST planned actions

B.1.5 Bruce Power

The Bruce Power representative is responsible for:

- Reporting to the CMST
- Notifying Bruce Power’s internal *emergency response* organization of CMST activation
- Requesting activation of the internal *emergency response* organization, if necessary
- Establishing and maintaining contact with the Bruce Power *response* efforts
- Providing status report on Bruce Power resources to the CMST
- Providing feedback to the Bruce Power *emergency response* organization on the status of the emergency situation and planned CMST actions

B.1.6 Electricity Distributors Association (EDA)

The primary responsibility of the EDA representative is to provide a link between the CMST and Electricity Distributors Association (EDA) member electric utilities in the affected area. The *market rules* require all *market participants* to prepare and implement their own *emergency preparedness plans* independently or with support through their own mutual aid arrangements. It is expected that EDA member utilities will coordinate directly with local community *emergency response* personnel. Similarly, it is expected that community emergency response personnel will coordinate directly with the PEOC to mitigate impacts on public health and safety.

The Electricity Distributor representative, through liaison with EDA members, either directly or via district field representatives:

- Arranges for surveys of municipal utilities and provides an estimate of damage and geographical identification of the affected areas
- Assists in identifying high priority areas in need of assistance and provides details regarding the nature of assistance required
- Identifies assistance that is available from municipal electric utilities to assist other *market participants* in an *emergency*
- Informs the EDA regarding the status of the *emergency* and CMST actions

B.1.7 Hydro One

The Hydro One representative at the CMST helps other *market participants* to coordinate *emergency response* and recovery actions across the province, and to formulate recovery strategies for the bulk *electricity system*. In this capacity, the Hydro One representative reports on the status of the grid, load and *generator* connections, and the estimated time required to restore service to affected areas. The Hydro One representative also:

- Conveys Hydro One requests to the CMST for additional resources in support of Hydro One restoration activities
- Reports on the status of restoration activities on their distribution and *retail* operations
- Reports on the availability of Hydro One resources for deployment in support of other *market participants*

B.1.8 Great Lakes Power Transmission

The Great Lakes Power Transmission representative at the CMST helps other *market participants* to coordinate *emergency response* and recovery actions across the province, and to formulate recovery strategies for the bulk *electricity system*. In this capacity, the Great Lakes Power Transmission representative reports on the status of the grid, load and *generator* connections, and the estimated time required to restore service to affected areas. The Great Lakes Power Transmission representative also:

- Conveys Great Lakes Power Transmission requests to the CMST for additional resources in support of Great Lakes Power Transmission restoration activities
- Reports on the status of restoration activities on their *distribution* and *retail* operations
- Reports on the availability of Great Lakes Power Transmission resources for deployment in support of other *market participants*

B.1.9 Brookfield Renewable Power

The Brookfield Renewable Power representative is responsible for:

- Reporting to the CMST
- Providing status report on Brookfield Renewable Power resources to the CMST
- Providing feedback to the Brookfield Renewable Power *emergency response* organization on the status of the emergency situation and planned CMST actions

B.1.10 Toronto Hydro-Electric System (THES)

The THES representative at the CMST:

- Provides information and cooperation to the CMST to assist in developing a long-term electricity sector recovery strategy and helps with other CMST responsibilities
- Ensures that THES resources, facilities, infrastructure and personnel are adequate to comply with *emergency response* and system restoration requirements
- Provides reports to the THES Emergency Operations Center Coordinator and provides the THES Restoration Planning Coordinator with reports regarding the status of the system and CMST actions
- Requests a declaration of *emergency* for the THES service area, if necessary
- Informs the CMST of the availability of THES resources to assist other *market participants* in restoring services in the affected areas

B.1.11 Hydro Ottawa

The Hydro Ottawa representative at the CMST:

- Provides information and cooperation to the CMST to assist in developing a long-term electricity sector recovery strategy and help with other CMST responsibilities
- Ensures that Hydro Ottawa resources, facilities, infrastructure and personnel are adequate to comply with *emergency response* and system restoration requirements
- Provides reports to the Hydro Ottawa Emergency Operations Center Coordinator and provides the Hydro Ottawa Restoration Planning Coordinator with reports regarding the status of the system and CMST actions
- Requests a declaration of *emergency* for the Hydro Ottawa service area, if necessary
- Informs the CMST of the availability of Hydro Ottawa resources to assist other *market participants* in restoring services in the affected areas

B.1.12 PowerStream

The PowerStream representative at the CMST:

- Provides information and cooperation to the CMST to assist in developing a long-term electricity sector recovery strategy and help with other CMST responsibilities
- Ensures that PowerStream resources, facilities, infrastructure and personnel are adequate to comply with *emergency response* and system restoration requirements
- Provides reports to the PowerStream Emergency Operations Center Coordinator and provides the PowerStream Restoration Planning Coordinator with reports regarding the status of the system and CMST actions
- Requests a declaration of *emergency* for the PowerStream service area, if necessary
- Informs the CMST of the availability of PowerStream resources to assist other *market participants* in restoring services in the affected areas

B.1.13 Association of Major Power Consumers of Ontario (AMPCO)

The primary responsibility of the AMPCO representative is to provide a communications link between the CMST and AMPCO member companies in the affected area. We recognize that an electricity *emergency* would have a significant impact on industrial *consumers*, and AMPCO participation on the CMST provides a valuable two-way flow of information regarding the scope and extent of any electricity disruption as well as any mitigating measures being implemented.

As required by the *market rules*, all AMPCO members who are *market participants* are required to prepare and implement their own *emergency preparedness plans*, including coordination with local community *emergency response* personnel. It is recognized through this arrangement that AMPCO does not have operational control or authority over its member companies. The AMPCO representative, through liaison with AMPCO members:

- Participates in CMST discussions and provides input to the CMST from the perspective of industrial *consumers*

- Informs AMPCO members regarding the status of the *emergency* and CMST actions and decisions
- Respects the confidentiality of information shared at the CMST by limiting information shared with AMPCO members on a need-to-know basis
- Identifies issues of critical interest to industrial *consumers* and proposes suitable solutions (e.g., sustained conservation or *curtailment* options)
- Assists in developing key public messages

B.1.14 Building Owners and Managers Association (BOMA)

The primary responsibility of the BOMA representative is to provide a communications link between the CMST and BOMA member companies in the affected area.

The BOMA representative at the CMST:

- Participates in CMST discussions and provides input to the CMST from the perspective of BOMA *consumers*
- Informs BOMA members regarding the status of the *emergency* and CMST actions and decisions
- Respects the confidentiality of information shared at the CMST by limiting information shared with BOMA members on a need-to-know basis
- Identifies issues of critical interest to commercial *consumers* and proposes suitable solutions (e.g., sustained conservation or *curtailment* options)
- Assists in developing key public messages

B.1.15 Natural Gas Companies

The Natural Gas Company⁴ CMST representative during an *emergency* event:

- Acts as the primary liaison between the CMST and the Gas companies
- Provides information and status updates to the CMST regarding impacts to the gas systems and *emergency response* or recovery activities that may affect other CMST members organizations
- Requests information and cooperation from the CMST and its individual members as may be necessary to sustain or recover gas systems
- Informs the CMST of the availability and readiness of gas systems to assist other *market participants* in restoring electrical services in the affected areas

- End of Section -

⁴ Natural Gas Company representatives: Union Gas and Enbridge

Appendix C: Planning Guidelines for Market Participants

Recognizing that *market participants* have different roles in supporting reliable market and system operations, emergency management programs need to address the questions posed below under the relevant subsection of Market Rule Chapter 5, Section 11 .

C.1 Planning

Reference: Market Rule, Chapter 5, Section 11.2. 4

- What *operating agreements* or service arrangements do you have with others to manage the supply or delivery of electricity to or from your *facility*?
 - **Examples:** Do you have processes in place to quickly reduce load when directed by the *IESO*? Do you have a back-up electricity supply for essential internal loads? Do you have alternate fuel supply arrangements for your backup electricity supply?
- What arrangements do you have in place to respond to an electricity *emergency*, including coordination with government and local emergency responders such as police, fire and ambulance?
 - **Examples:** Do you have *emergency* communication protocols in place and phone numbers for your electricity provider(s), government and first responders?
- What mutual aid arrangements are in place with others to support *response* to an electricity *emergency*?
 - **Examples:** Do you have any *emergency response* mutual aid agreements with neighbouring and partnering industries or contracting firms for personnel, equipment or spare parts?
- Do your plans identify critical and priority loads, and how do you mitigate the impact of an electricity *emergency* on public health and safety?
 - **Examples:** Have you performed a risk-based assessment of your internal loads to segregate essential versus non-essential loads? If you are requested to promptly reduce your load, can it be executed immediately while considering the impacts to your employees, equipment and/or the environment? On a complete loss of grid supply, how will your processes and/or equipment respond? What other public health and safety issues have been considered during such *emergencies*?

C.2 Testing

Reference: Market Rule, Chapter 5, Section 11.7

- How do you test your plans through training, drills, and exercises?
 - **Example:** How are your personnel trained about your emergency preparedness and *response* plans and how often?

C.3 Communication

Reference: Market Rule, Chapter 5, Section 11.2. 4

- What is your company's operational contact telephone number, available 24/7?
- What is the telephone number and title of your senior manager who would be contacted in the event of an electricity *emergency*?

- End of Section -

Appendix D: Past Events when CMST was Activated

The following table provides some historical examples of events for which CMST was activated.

Table D-1: Past Events when CMST was Activated

Incident or Event	Extent of CMST Activation
Weather Event – Freezing rain (Mar, 2016)	CMST representatives notified via notification portal that IESO is monitoring event.
Shooting on Parliament Hill (Oct 2014)	CMST representatives notified via notification portal that IESO is monitoring event..
Richview/Manby flooding (July 2013)	CMST representatives notified as event evolved. Included a CMST conference call with update.
G20 Summit, Toronto (June 21-28, 2010)	CMST calls were initiated daily starting the week prior to and through the G20 event for the purpose of situational updates.
H1N1 influenza outbreak (April 27 – May 12, 2009)	CMST representatives notified as outbreak evolved. Included a CMST conference call on April 27, at least daily updates through May 12, and periodically thereafter.
Preparation for Earth Hour activities (March 28, 2008)	CMST representatives notified day ahead via CMST web posting.
<i>IESO</i> anticipates a period of unprecedented hot and humid weather, and tight electricity supply conditions (August 1-2, 2006)	CMST representative's notified day ahead, six postings to CMST website as the situation evolved.
Prolonged period of hot, humid weather and very tight electricity supply conditions (Summer 2005)	CMST representatives notified periodically throughout the summer, many postings of CMST Situation Reports to CMST website as the circumstances evolved.
August 2003 Blackout (August 14-22, 2003)	CMST representatives fully activated. Conference bridge opened within 30 minutes, first conference call within an hour of the blackout. CMST operated 24x7 for first two days. Seven conference call meetings on August 14, six on August 15, two or three each day following.

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