Canadian Nuclear Safety Commission

Nuclear Emergency Response Plan - Master Plan

May 2013

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Authority

In accordance with the Strategic Emergency Management Plan (SEMP), this document is promulgated under the authority of the President and Chief Executive Officer of the Canadian Nuclear Safety Commission (CNSC) and is approved by the undersigned.

Dr. Michael Binder
President and Chief Executive Officer
Canadian Nuclear Safety Commission

Date

Document Approval

Name and title	Role	Signature	Date
Luc Sigouin, Director EMPD	Division approval	On original	
Raoul Awad, DG DSS	Directorate approval	On original	
Terry Jamieson, VP TSB	Branch approval	On original	
Dr. Michael Binder, President and CEO	CNSC approval	On original	

Amendments

The approved, official version of this document is retained by the Emergency Management Programs Division (EMPD), under the Directorate of Security and Safeguards (DSS). This document shall be evergreen, and shall be reviewed every two years by EMPD, or as required. Unless there have been major structural, organizational or legislative changes, changes to this document will be approved by the Director of EMPD.

This section identifies the revision history of this key document.

Version	Date of change	Section	Amended by	Date of implementation

Acronyms Used in This Document

Acronym/Abbreviation	Meaning
CBRNE	Chemical Biological Radiological Nuclear Explosive
CNSC	Canadian Nuclear Safety Commission
CRL	Chalk River Laboratories
CRO	Chief Regulatory Officer
CSB	Corporate Services Branch
CSIS	Canadian Security Intelligence Service
DAA	Directorate of Assessment and Analysis
DERPA	Directorate of Environmental and Radiation Protection and Assessment
DFAIT	Department of Foreign Affairs and International Trade
DG	Director General
DNCFR	Directorate of Nuclear Cycle and Facilities Regulation
DNSR	Directorate of Nuclear Substances Regulation
DO	Duty Officer
DPRR	Directorate of Power Reactor Regulation
DRIMPM	Directorate of Regulatory Improvement and Major Project Management
DSM	Directorate of Safety Management
DSS	Directorate of Security and Safeguards
EET	Emergency Executive Team
EM BCP	*Emergency Management Business Continuity Plan*
EMPD	Emergency Management Programs Division
EOC	Emergency Operations Centre
ERO	Emergency Response Organization
EVP	Executive Vice-President
FERP	*Federal Emergency Response Plan*
FNEP	*Federal Nuclear Emergency Plan*
G2	Gentilly-2
GEOCC	Government Emergency Operations Coordination Centre
GC	Government of Canada
GOC	Government Operations Centre
HC	Health Canada
HQ	Headquarters
HR	Human Resources
HRD	Human Resources Directorate
IAEA	International Atomic Energy Agency
ICS	Incident Command System
INES	International Nuclear Event Scale
LMS	Learning Management System
MOU	Memorandum of Understanding
NEO	Nuclear Emergency Organization

Acronym/Abbreviation	Meaning
NERP	*Nuclear Emergency Response Plan*
NPP	Nuclear Power Plant
NRU	National Research Universal
NSC	National Support Centre
NSCA	Nuclear Safety and Control Act
PL	Point Lepreau
PS	Public Safety Canada
Q&As	Questions and answers
RAB	Regulatory Affairs Branch
RCMP	Royal Canadian Mounted Police
ROB	Regulatory Operations Branch
RPD	Regulatory Planning Directorate
SCD	Strategic Communications Directorate
SEMP	Strategic Emergency Management Plan
SitRep	Situation Report
SOP	Standard Operating Procedure
SPD	Strategic Planning Directorate
TC	Transport Canada
TSB	Technical Support Branch
U.S.	United States (of America)
USNRC	United States Nuclear Regulatory Commission
VP	Vice-President

Table of Contents

1.0   Introduction

1.1   Purpose and scope

The *Nuclear Emergency Response Plan - Master Plan* (NERP Master Plan) describes the CNSC's tactical response to emergencies that fall within its mandate.

It supports the requirements established in the CNSC *Strategic Emergency Management Plan* (SEMP), and demonstrates how the CNSC will fulfill its legislative requirements regarding the tactical response to – and recovery from – emergencies.

Specifically, the NERP:

- identifies the role and responsibilities of the CNSC, as they relate to emergency response
- defines the CNSC's capabilities and organizational structure during an emergency response
- describes CNSC response and recovery activities at the tactical level
- describes the training requirements of staff, to ensure that the CNSC is in a state of response readiness

1.2   Legal authority

The CNSC regulates the use of nuclear energy and materials to protect the health, safety and security of Canadians and the environment; and implements Canada's international commitments on the peaceful uses of nuclear energy.

Under the *Nuclear Safety and Control Act* (NSCA), the CNSC's mandate involves four major areas:

- regulation of the development, production and use of nuclear energy in Canada, to protect health, safety and the environment
- regulation of the production, possession, use and transport of nuclear substances, and the production, possession and use of prescribed equipment and prescribed information
- implementation of measures respecting international control of the development, production, transport and use of nuclear energy and substances, including measures respecting the non-proliferation of nuclear weapons and nuclear explosive devices
- dissemination of scientific, technical and regulatory information concerning the activities of CNSC, and the effects on the environment, on the health and safety of persons, of the development, production, possession, transport and use of nuclear substances

The NSCA makes no distinction between normal and abnormal situations. The CNSC is the federal regulator before, during and after emergencies.

The NERP Master Plan is prepared under the authority of the CNSC's President and Chief Executive Officer.

1.3 Relationship to other documents

The NERP Master Plan is developed in accordance with the CNSC SEMP, and complies with the following regulatory and policy documents:

- the *Nuclear Safety and Control Act* and associated regulations
- the *Emergency Management Act*
- Treasury Board guidelines for emergency expenditures
- Treasury Board guidelines for assistance for next-of-kin

The NERP Master Plan also complements, and is compatible with, the following emergency preparedness documents from other organizations, jurisdictions and CNSC licensees:

- the CNSC *Emergency Management Business Continuity Plan* (EM BCP)
- licensee emergency plans and operating documents (e.g., procedures, maps, etc.)
- provincial emergency plans and operating documents
- the *Federal Emergency Response Plan* (FERP) and *Federal Nuclear Emergency Plan* (FNEP)
- International Atomic Energy Agency (IAEA) Incident and Emergency Centre procedures and the *International Nuclear Event Scale (INES) User's Manual*
- foreign regulators' plans

1.4 Supporting response plans and documents

The NERP Master Plan is the CNSC's tactical response master plan that describes how CNSC generally operates and responds to any and all emergencies. It may be supported by other documents, as follows:

- NERP supporting plans provide additional details for response to a specific emergency. They allow for emergency-specific response requirements and instructions. For emergencies without NERP supporting plans, the NERP Master Plan is able to address the response requirements and becomes the standalone plan.
- Standard operating procedures (SOPs) contains specific instructions for the core positions and key tasks within the Emergency Operations Centre (EOC), while guides cover areas that are not covered in the SOPs, and are generic in nature.
- Response reference materials are any materials that may assist the CNSC response, and may include facility maps, drawings and response plans.

See Figure 1 for a visual representation of the NERP document structure.

Figure 1: NERP document structure[1]
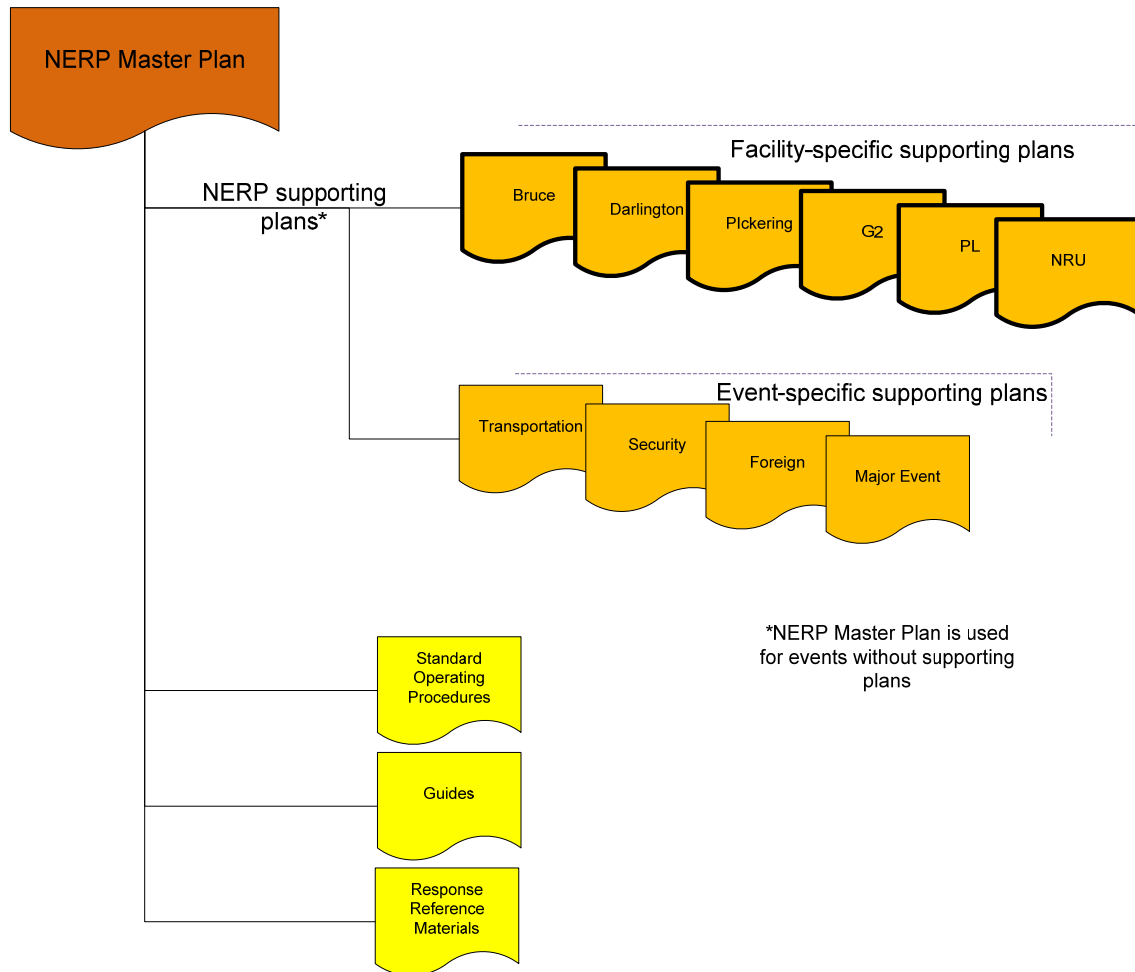
It is possible that the NERP may be activated simultaneously with the CNSC EM BCP, to ensure the continuity of critical services.

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[1] The NERP supporting documents shown in Figure 1 are currently under development, and are expected to be finalized by the end of fiscal year 2013. The *Major Event Supporting Plan* exists as it was developed for the 2010 Vancouver Olympic Games.

1.5 Definitions

Following are key terms used within the NERP Master Plan:

- An **emergency** is an abnormal situation which requires prompt action beyond normal procedures from the CNSC, to reduce the risk to persons, to limit damage to properties or the environment. CNSC prompt action and response are based on event severity, impact and uncertainty.

- A **licensee** is the holder of a licence issued under the NSCA.

- Appropriate **responsible authority** refers to an organization that is responsible for decisions related to onsite or offsite nuclear emergency response.

- **Onsit**e is the area surrounding the nuclear facility within the designated property marker (i.e., security perimeter, fence, etc.). It can also be the controlled area around a radiography source or contaminated area. This area is under the immediate control of the licensee or the appropriate responsible authority.

- **Offsite** is the area beyond the designated onsite area.

- **Safety significance** refers to the onsite impact, offsite impact and defence in depth degradation resulting from an emergency.

- **Risk** refers to the probability of a specific impact on health, safety, security or the environment.

- **Role** refers to the purpose or mandate of an organization and position within the Nuclear Emergency Organization.

- **Response objectives** are the main actions an organization must accomplish to perform its role.

- **Performance objectives** are assigned to positions within the EOC. They describe what individual positions must accomplish to achieve the response objectives of the organization.

2.0   Planning Basis

In the event of a nuclear emergency at a licensed facility and/or involving CNSC-licensed nuclear substances, the main responder is the licensee. The CNSC monitors the licensee's response; it also provides support to the whole-of-government response for nuclear emergencies involving non-licensees (such as malevolent acts and foreign emergencies).

The NERP Master Plan is based on the following types of nuclear emergencies, and uses them as guides in the development of the concept of operations for CNSC response:

- emergencies at CNSC-licensed facilities

- emergencies involving CNSC-licensed nuclear substances outside a licensed facility

- emergencies involving nuclear substances, but not involving a CNSC licensee

- foreign nuclear emergencies outside of Canada affecting or posing a potential risk to the health, safety and security of Canadians and the environment, or to Canadian interests at home or abroad

- major events (such as the Olympic Games and the G8/G20 summits) requiring preparation and advance planning, as well as a whole-of-government preparation for a potential response

2.1 Emergencies at CNSC-licensed facilities

2.1.1   Canadian nuclear power plants

Nuclear emergencies at Canadian nuclear power plants (NPPs) can lead to significant consequences inside and/or outside the facilities. The complexity of the required response, as well as the public interest generated and the real/potential magnitude of the consequences, will determine – and, most likely, always require – a formal CNSC response.

Other emergencies that should be considered in this category include security threats and natural disasters at the NPPs. Due to its power rating and containment design, an emergency at the National Research Universal (NRU) Reactor of Chalk River Laboratories (CRL) could lead to offsite consequences. Thus, the NRU Reactor should also be considered a part of this category of potential emergencies.

2.1.2 Other licensed facilities

Facilities in this category include:
- research laboratories
- research reactors (other than NRU)
- fuel facilities, uranium mines and mills

- radioisotope processing facilities

- commercial irradiation facilities

- various users of radioactive substances for teaching/training and radiography

The types of emergencies which could affect such facilities are outlined in IAEA *Safety Series #91*[2] and include (but are not limited to) the following:

- loss of containment of radioactive or non-radioactive hazardous substances

- loss of shielding or source integrity of radioactive substance

- loss, abandonment or theft of radioactive material

- fire

- natural or man-made external events, such as:

  a. severe storms, floods and earthquakes

  b. aircraft crashes

  c. releases of toxic, flammable or explosive material near the facility

In most cases, a radioactive release from these types of facilities would only pose consequences within the boundaries of the facility. Technical actions should aim at containing the release, establishing an effective contamination control perimeter, and initiating re-entry actions.

2.2 Emergencies involving CNSC-licensed substances outside a licensed facility

This category includes:

- transportation emergencies, which may entail:

  a. an emergency leading to severe mechanical or thermal damage to a conveyance or a radioactive material package

  b. apprehended disaster (e.g., sunk or capsized ship)

  c. loss, theft or abandonment of the radioactive material

- other emergencies involving field-use of radioactive substances outside of a licensed facility environment, such as:

  a. pipeline radiography

  b. moisture and density measurements devices (i.e., portable gauge at construction sites)

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[2] *Emergency Planning and Preparedness for Accidents Involving Radioactive Substances Used in Medicine, Industry, Research and Teaching*, 1989

All transportation emergencies require prompt actions to assess the presence and/or extent of the consequences, confine the hazard and prevent the spread of contamination. In the case of lost or abandoned radioactive material, prompt action is required to locate and/or retrieve the radioactive material. In all of these cases, response time is critical, whether it refers to alerting CNSC representatives or the establishment of a prompt technical link between local first responders and the appropriate response staff at CNSC Headquarters (HQ).

2.3 Emergencies involving nuclear substances, but not involving a CNSC licensee

Emergencies not involving a CNSC licensee include (but are not limited) to:

- nuclear malevolent or illicit acts

- emergencies involving abandoned or orphaned nuclear substances

These emergencies may require a whole-of-government response; prompt coordination between different organizations is required.

Dependent on the nature of the malevolent acts or threats, the response could be under:

- the *Security Offences Act* (1985), for national security and criminal activities

- the *Anti-terrorism Act* (2012), for terrorism and money-laundering

- the *Emergency Management Act* (2007), for consequence management

The CNSC will provide the necessary regulatory control, advice and guidance, and resources required to ensure public and environmental protection from the radiological/nuclear effects of the event.

2.4 Foreign nuclear emergencies

A nuclear emergency in a foreign country may require a multi-jurisdictional, multi-departmental response. In the event of nuclear emergency occurring abroad, some elements of the FERP/FNEP may be activated to support the emergency response coordinated by the Department of Foreign Affairs and International Trade (DFAIT) for:

- the protection of Canadians and Canadian interests abroad

- the management of Canada's diplomatic and consular relations

- the conduct of bilateral relations

Regardless of whether the FERP/FNEP is activated, the CNSC's primary role would be to coordinate its response operations with the federal, provincial and territorial emergency operations, and provide technical support as appropriate.

2.5 Major events

For major events such as the Olympic Games and the G8/G20 summits, where there is an increased risk of malevolent acts involving nuclear substances, the CNSC needs to be prepared in advance of the event, and plan ahead its response if a nuclear emergency was to occur.

Nuclear emergencies occurring at a major event may involve a multi-jurisdictional, multi-departmental response, and are dealt with under the national Chemical, Biological, Radiological, Nuclear and Explosives Resilience Strategy for Canada. The FERP/FNEP may also be activated.

2.6 Planning requirements

Based on the potential consequences and risks from possible nuclear emergencies, the CNSC must plan and be prepared for the following requirements:

- Prompt notification and activation of CNSC HQ and site staff

- A reliable link between the licensee and CNSC HQ at 280 Slater Street, Ottawa

- Activation of the CNSC's EOC for all emergencies which lead, or could lead, to significant onsite or offsite consequences, and where the consequences of the emergency will be strongly affected by the licensee's actions

- CNSC participation, as a regulator, in any whole-of-government response that is implemented, as well as during the recovery phase

This is concurrent with IAEA guidance GS-R-2, *Preparedness and Response or Radiological Emergency* (2002), and GS-G-2.1, *Arrangements for Preparedness for a Nuclear or Radiological Emergency* (2007).

3.0 Response Roles and Responsibilities

3.1 Licensees

In Canada, the CNSC licensees are the onsite authority responsible for the management and implementation of onsite emergency response, in accordance with their CNSC-approved emergency response plans and procedures. This means that the licensees are directly responsible for:

a) identifying and assessing the safety significance of the emergency

b) controlling and mitigating the emergency

c) notifying and coordinating with the offsite authorities and the CNSC

d) notifying the CNSC in accordance with applicable regulations and licence conditions

e) providing recommendations regarding offsite protective actions

f) informing the public about onsite actions and conditions (e.g., reactor status)

As outlined in the provincial legislation, the licensee is the primary authority for information about onsite actions and conditions during a nuclear emergency. The province is the primary authority for information about offsite actions and conditions.

To assist licensees, CNSC document G-225, *Emergency Planning at Class I Nuclear Facilities and Uranium Mines and Mills,* outlines the need for a public information and education program. CNSC document RD-99.3, *Public Information and Disclosure*, sets out the CNSC's requirements related to public information and disclosure programs which must be submitted by all applicants and licensees of Class I and Class II nuclear facilities, as well as uranium mines and mills, for all the phases of their facilities' lifecycle.

Current communications and alert strategies set in place by licensees include sirens (in the immediate vicinity of NPPs), automated phone dialing systems, vehicle-mounted mobile public address systems, media messages (radio/television), Web site information, email alerts and, in some areas, door-to-door notification.

3.2 Provincial, territorial or municipal governments

For emergencies which have an offsite impact, the provincial, territorial or municipal government is the appropriate responsible authority for offsite actions.

Provincial and territorial governments have the primary responsibility for protecting public health and safety, property, and the environment within their borders. They are also the primary authorities for informing the public about protective actions and offsite conditions.

3.3 Federal government

Under the EMA, the Minister of Public Safety is responsible for coordinating the Government of Canada's (GC) response to an emergency. The FERP is the GC's "all-hazards" response plan. The FNEP is an annex to the FERP, providing the supplemental and specific multi-departmental and inter-jurisdictional arrangements necessary to address the health risks associated with a radiological or nuclear emergency.

During an integrated GC response to a nuclear emergency under the FERP/FNEP, all levels of government and various agencies and organizations have the responsibility to develop and implement emergency response plans to deal with the consequences and impacts outside the boundaries of the nuclear facility licensed by the CNSC. The licensee is responsible for the response inside the boundaries of its facility.

An integrated GC response is required when:

- a province/territory requests federal support to deal with an emergency
- an emergency affects multiple jurisdictions and/or government institutions, and requires a coordinated response
- an emergency directly involves federal assets, services, employees, statutory authority or responsibilities, or affects confidence in government
- an emergency affects other aspects of the national interest

DFAIT is also responsible for liaisons with the international community and their diplomatic missions in Canada, for assisting Canadians abroad, and for coordinating the national response to nuclear emergencies that occur in foreign countries, but have an impact on Canada.

3.4 The CNSC

The CNSC's role is to provide assurance that appropriate actions are taken by the licensee and response organizations to limit the risk to health, safety, security of the public and the environment.

For nuclear emergencies involving licensed facilities and substances, the CNSC:

- performs regulatory oversight of the licensee's activities (monitoring, evaluation of protective action recommendations, advice, assistance, and, when appropriate, direction in the form of directives and orders)
- performs an independent assessment of the onsite conditions and potential offsite consequences, to provide or confirm the licensee's recommendations concerning any protective measures that may be needed

For nuclear emergencies not involving licensed substances, the CNSC plays a supporting role to the response under the FERP/FNEP. This includes (but is not limited to) providing technical assistance and support to the lead organization, in accordance with CNSC's authorities and responsibilities.

The CNSC also provides support to the whole-of-government response for nuclear emergencies involving non-licensees, such as foreign emergencies and malevolent acts.

4.0   CNSC Nuclear Emergency Organization

The Nuclear Emergency Organization (NEO) is activated when the need for a coordinated response from the CNSC is identified. The President leads the NEO and is ultimately responsible for the CNSC emergency response. The President reports to Parliament on the CNSC response, through the Minister of Natural Resources.

The NEO is composed of two groups: the Emergency Executive Team (EET) and the Emergency Response Organization (ERO).

The EET is responsible for setting the strategic direction of the CNSC response, while the ERO translates the strategic direction provided by the EET into tactical response actions.

4.1 The EET

The EET provides strategic support and advice to the President on the CNSC emergency response. It reports directly to the President, and consists of the following executives:

- EVP-ROB, Chair
- VP-TSB
- VP-RAB
- Director General (DG) of affected facility
- DGs of DAA, DERPA, SPD and SCD
- EOC Director

Based on the direction of the President, the EET provides strategic and management direction to the ERO. Upon delegation from the President, the EET leads the CNSC emergency response at the strategic level.

EET positions are staffed as long-day shifts only (12 hours, not 24 hours).

The EOC Director is selected by EET; the person chosen is normally a DG from ROB or TSB who is not a current member of the EET. For example, in the case of an NPP emergency, the candidates would typically be the DGs of DSM, DSS, DNCFR, DNSR or DRIMPM.

The EOC Director receives directions from the EET, and leads the ERO in fulfilling their functions and responsibilities. With the assistance of the EOC Command section (sections chiefs and legal advisor, as required), the EOC Director translates EET directions into EOC

tactical response objectives, and reports on the ERO response and emergency situation to the EET.

The EOC is staffed on a 24-hour basis, using two 13-hour shifts, which allow one-hour overlaps for staff transition.

4.2 The ERO

The ERO is responsible for the tactical operations of the CNSC response within the EOC, under the leadership of the EOC Director. The ERO is composed of the following sections, organized in accordance to their response functions:

- EOC Command
- EOC Coordination
- Technical Assessment
- Regulatory Operations
- Liaison
- Communications
- Logistics

Each of these sections is led by a section chief. The EOC Command section consists of the section chiefs and a legal advisor (as required). Refer to Appendix A for the description of the roles and responsibilities of the Command section.

4.3 NEO response structure

The NEO structure is based on the Incident Command System (ICS), modified to adapt to CNSC's regulatory and highly technical response requirements. The structure at full activation is displayed in the organizational chart in Figure 2.

Figure 2: CNSC NEO structure at full activation
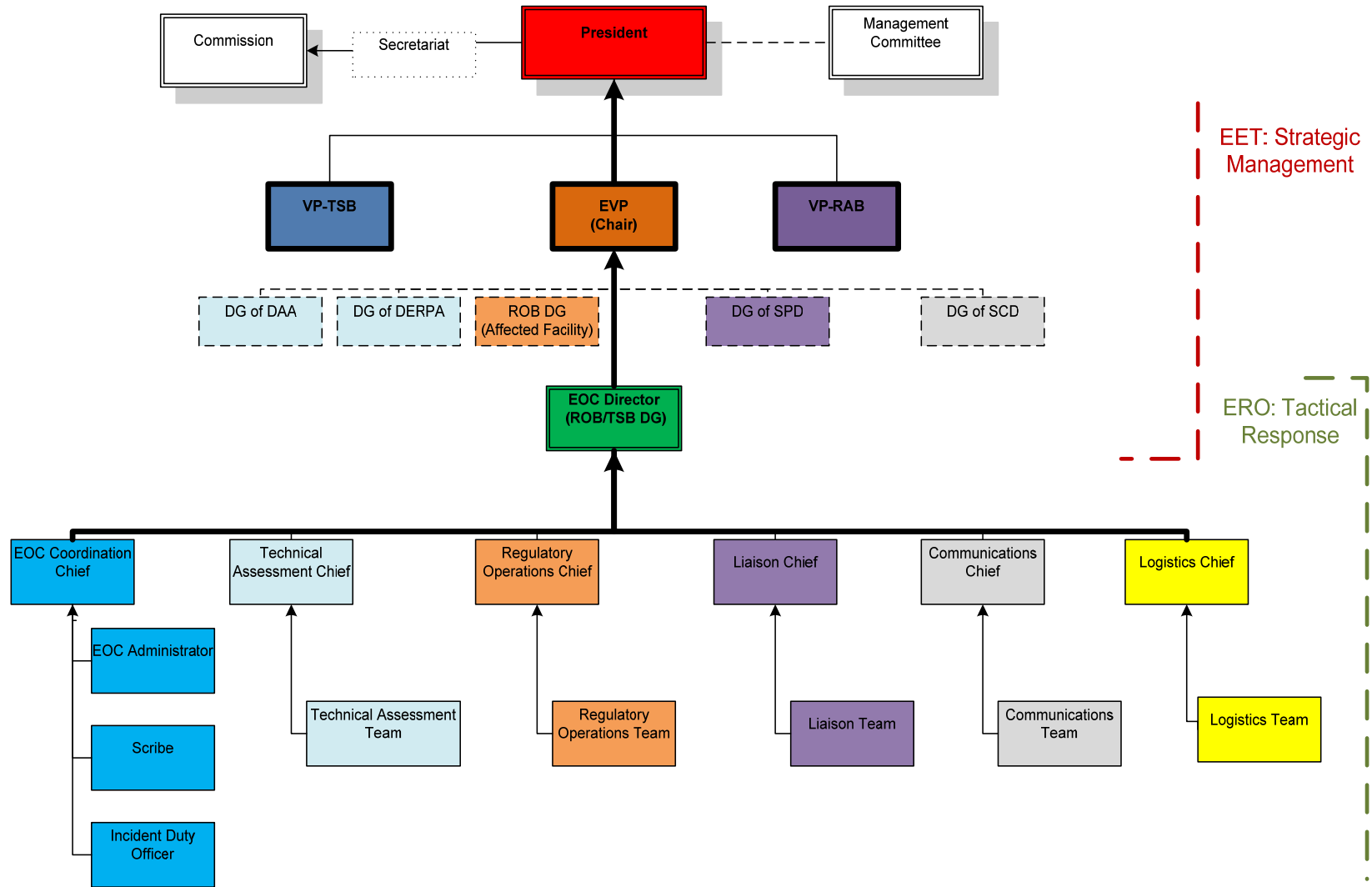
4.4 NEO sections

The NEO is organized by sections:

- EET:

  1. Management

- ERO:

  2. EOC Command

  3. EOC Coordination

  4. Technical Assessment

  5. Regulatory Operations

  6. Liaison

  7. Communications

  8. Logistics

The roles and responsibilities of each of these sections are described in Table 1:

Table 1: NEO sections and their roles and responsibilities

NEO section	Role	Lead	Members	Receives direction from	Provides direction to	Staffing
Emergency Executive Team (EET)						
Management	Provides: • support to the President • strategic direction and oversight to the ERO response	EET Chair (EVP-ROB)	EVP-ROB VP-TSB VP-RAB DG of affected facility DGs of DAA, DERPA, SPD and SCD EOC Director	The President	EOC Director	Long-day shift: 12 hrs.
Emergency Response Organization (ERO)						
EOC Command	Manages the ERO	EOC Director (Operations DG, who is not supporting the EET)	EOC Director Section chiefs Legal Advisor (as required)	EET through the EOC Director	ERO	24 hrs. (two 13-hour shifts)

NEO section	Role	Lead	Members	Receives direction from	Provides direction to	Staffing
EOC Coordination	Coordinates the EOC operating cycle Collects section status reports in order to prepare EOC situation reports and action plans Consults on future priorities and actions to be taken or implemented Tracks and documents the progression of the CNSC response	EOC Coordination Chief (Emergency Preparedness Officer from EMPD)	EOC Coordination Chief EOC Administrator Scribe Incident Duty Officer	EOC Coordination Chief	N/A	24 hrs. (two 13-hour shifts)
Technical Assessment	Provides: • technical subject matter expertise • technical basis for long term planning • technical information and analysis as requested	Technical Assessment Chief (Director or senior staff from DERPA or DAA)	Technical Assessment Chief Emergency dependent	Technical Assessment Chief	N/A	24 hrs. (two 13-hour shifts)
Regulatory Operations	Maintains direct contact with the site(s) and coordinates the overall response by the CNSC site staff Gathers current situation information from the site and shares it with the EOC Command section Develops and issues emergency orders and/or directives, under the direction of the EOC Director that has been authorized by the EET Normally acts as Deputy EOC Director	Regulatory Operations Chief (Affected RPD for day shift, other RPDs or senior staff for night shift)	Regulatory Operations Chief Emergency Dependent	Regulatory Operations Chief	N/A	24 hrs. (two 13-hour shifts)

NEO section	Role	Lead	Members	Receives direction from	Provides direction to	Staffing
Liaison	Coordinates and disseminates information between the CNSC's EOC and other organizations (i.e., federal, provincial, international, other regulators, etc.)	Liaison Chief (Director from SPD)	Liaison Chief Emergency dependent	Liaison Chief	N/A	24 hrs. (two 13-hour shifts)
Communications	Proactive, ongoing and reactive communications with media, other government departments, stakeholders, licensees, staff and other audiences as needed, including message development, coordination and public dissemination of information Produces and issues communications products	Communications Chief (Director from SCD or senior staff)	Communications Chief Emergency dependent: • Communications Coordinator • Account Executive(s) • Media Relations • Editorial Unit • Web Representative • Administrative Support	Communications Chief	N/A	24 hrs. (two 13-hour shifts)
Logistics	Ensures that the EOC is operational and providing/obtaining facility services, personnel, equipment and materials Responsible for cost accounting, travel, compensation and other financial activities of the EOC	Logistics Chief (Director from CSB)	Logistics Chief Emergency dependent	Logistics Chief	N/A	24 hrs. (two 13-hour shifts)

5.0   Concept of Operations

5.1 CNSC response levels

The CNSC monitors and responds to event(s) in accordance with the levels of tactical response described in Table 2:

Table 2: Response level criteria

Response level	Criteria	Authority	Duty Officer role	Response structure
0: Routine monitoring	No event that requires prompt action beyond normal CNSC procedures	N/A	Provides an initial point of contact between callers and the CNSC Responds to the event in accordance with the response process and procedures detailed in the *CNSC Duty Officer Program Manual* Passes the call to the appropriate CNSC responder Ensures that the NERP Master Plan and applicable supporting plan(s) can be activated at any time	24/7 routine monitoring by the CNSC Duty Officer
1: Enhanced monitoring	A situation which requires careful monitoring in case of escalation or media/public attention	DG of affected directorate	Sends relevant Duty Officer reports to the Enhanced Monitoring Team	Ad hoc group monitoring the situation (Enhanced Monitoring Team) Coordinated by the lead directorate EOC is not activated
2: Partial activation	An emergency which may have a direct or indirect impact on the CNSC's regulatory role, and requires response coordination	Event dependent (refer to Table 3)	Incident Duty Officer supports the ERO response	Core ERO positions in the EOC EET on the 12th floor for briefings
3: Full activation	An emergency that requires a fully staffed EOC to effectively and efficiently respond to the event situation	Event dependent (refer to Table 3)	Incident Duty Officer supports the ERO response	Full ERO in the EOC EET on the 12th floor for briefings

5.2 EOC activation

Normally, the CNSC is notified of an emergency through the CNSC Duty Officer (DO) 24/7 emergency telephone line. Once notified, the DO follows the procedures defined within the *CNSC Duty Officer Program Manual* to determine whether the response level needs to be elevated.

It is possible that a licensee may notify their CNSC point of contact before they contact the CNSC DO. Should this occur, the affected directorate will notify the CNSC DO. At that time, they may also indicate that the response level should be elevated from routine monitoring. Once the decision has been made to activate the EOC, the CNSC DO conducts the notification of NEO staff that are to be activated, based on the emergency level.

At partial activation, only the following core ERO positions are activated:

- EOC Director
- six section chiefs
- Incident Duty Officer
- EOC Administrator
- EOC Scribe
- subject matter experts (as required)

Full activation requires the full notification and activation of the NEO structure shown in Figure 2.

Table 3 is a summary of the activation triggers for the different types of emergencies to ensure a prompt and coordinated CNSC response.

Table 3: Activation trigger for various emergencies

Trigger	Recommended response level	Duty Officer action	Authority	Possible plan(s) to activate
Abnormal incident at a Canadian NPP or CRL	Emergency dependent	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan Facility-specific supporting plan
Declared onsite emergency at a Canadian NPP or CRL (nuclear-related)	Partial activation	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan Facility-specific supporting plan
Declared general emergency at a Canadian NPP or CRL	Full activation	Activates NEO	CNSC Duty Officer	CNSC NERP Master Plan Facility-specific supporting plan
Declared general emergency at a U.S. NPP near the Canadian border (within 80 km) or a release at a U.S. NPP	Partial activation	Consults with VP (ROB, TSB, or RAB)	VP (ROB, TSB, or RAB)	CNSC NERP Master Plan *Foreign Emergency Response Plan*
Declared general emergency at a U.S. NPP (beyond 80 km)	Enhanced monitoring, or partial activation	Consults with VP (ROB, TSB, or RAB)	VP (ROB, TSB, or RAB)	CNSC NERP Master Plan *Foreign Emergency Response Plan*
Far field country emergency	Enhanced monitoring, or partial activation	Consults with VP (ROB, TSB, or RAB)	VP (ROB, TSB, or RAB)	CNSC NERP Master Plan *Foreign Emergency Response Plan*
Transportation emergency with radiological release	Emergency dependent Depends on the severity of impact and risk Risk-informed approach	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan *Transportation Response Plan*

Trigger	Recommended response level	Duty Officer action	Authority	Possible plan(s) to activate
Natural disaster affecting nuclear facility	Emergency dependent Depends on the severity of impact and risk Risk-informed approach	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan Facility-specific supporting plan
CBRN/Malevolent radiological incident/Cyber attack	Emergency dependent Depends on the severity of impact and risk Risk-informed approach	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan *Security Response Plan* Facility-specific supporting plan
Major event (i.e., Olympic Games)	Enhanced monitoring	N/A	N/A	*Major Event Response Plan*
All other nuclear events in Canada (i.e., uranium mines and mills, Class II nuclear facilities, etc.)	Emergency dependent Depends on the severity of impact and risk Risk-informed approach	Consults with DG of affected directorate	DG of affected directorate	CNSC NERP Master Plan
Activation of FERP by PS with no nuclear impact	Enhanced monitoring	Consults with VP (ROB, TSB, or RAB)	VP (ROB, TSB, or RAB)	CNSC NERP Master Plan
Activation of FNEP by HC	Emergency dependent Depends on the severity of impact and risk Risk-informed approach	Consults with VP (ROB, TSB, or RAB)	VP (ROB, TSB, or RAB)	CNSC NERP Master Plan

5.3   Response objectives

Once the EOC is activated, the CNSC's response is based on the following six response objectives:

- manage the CNSC EOC response

- assess the safety significance of the emergency

- enforce relevant regulatory and licence conditions

- provide technical advice and support

- coordinate and cooperate with external organizations

- communicate on the CNSC's response

5.3.1   Manage the CNSC EOC response

This response objective involves the following key activities to ensure effective and efficient EOC operations:

5.3.1.1   Establish a CNSC EOC

The CNSC EOC is the control centre for the CNSC's tactical response to an emergency. It is the location where the CNSC emergency response objectives are determined, and information is collected, displayed, shared and stored.

The CNSC's main EOC is located at 280 Slater Street, Ottawa. The alternate EOC is located at 1601 Telesat Court, Ottawa. Regional offices could also be used if the main and alternate EOCs are not available.

5.3.1.2   Staff the EOC

Staffing levels must be monitored and maintained continuously throughout the activation, to ensure that all necessary response objectives and actions are met in a timely manner. The EOC is prepared to schedule staff for 24/7 operations, if required.

Depending on the emergency, it may be necessary to staff the EOC with two shifts per 24-hour period for several days or even weeks. The morning shift is from 7:00 to 20:00 Eastern Standard Time (EST), and the night shift covers the 19:00 to 08:00 EST timeframe, which provides an hour overlap for staff transition.

In order to sustain effective operations, all personnel deemed not immediately required can return to their normal business position (to maintain organizational capacity for day-to-day operations) or may be sent home to rest (if they are likely to be recalled back to the EOC for another shift).

The EOC Director and the section chiefs, in conjunction with the Logistics section, are responsible for ensuring that shift schedules are established for the staff under their direction.

The Logistics section maintains a current staffing schedule based on the staffing information obtained from the EOC Command section. If there is a shortage of available personnel to staff the EOC, the Logistics section assesses the positions that are currently staffed, to look for other

possible rearrangements. When determining staffing requirements, it is important to focus on function rather than the individual. Depending on the severity of the event and the adopted EOC structure, there may be positions which can be combined, to reduce the need for additional personnel. It is also possible to request assistance from other government departments to fill in positions at the EOC.

5.3.1.3 Manage information

Information in the EOC is documented and shared with the personnel and other stakeholders, as needed. Key tools for gathering, documenting, and distributing information may include the following:

a) Position logs: A legal and administrative document that is maintained for all activated positions. It is a permanent record of key functional activities. Refer to Appendix B1 for a detailed description.

b) Emergency reports: A record of onsite information/reports to the Regulatory Operations section. This includes station parameters and response information. Refer to Appendix B2 for a detailed description.

c) Status reports: A tool used by each section chief to collect and report their respective response status for their section. The EOC Coordination Chief is responsible for integrating all the section status reports into one EOC status report, prior to EOC Command section briefings. Refer to Appendix B3 for a detailed description.

d) Briefings: A method used to convey and share important information and intelligence. Discussion is usually limited to clarification of information. Refer to Appendix B4 for a detailed description of the various types of briefings.

e) Action plans: A tool used to outline the objectives of the EOC for a specified period of time, as well as the specific tasks/actions required to meet those objectives. Refer to Appendix B5 for a detailed description.

f) Situation reports: A tool used to provide internal and external audiences (when applicable) of the status of the CNSC's response, including:

  o a situational overview

  o statistical information

  o   a projected outlook regarding the emergency, its impact and consequences.

Refer to Appendix B6 for details.

Information regarding onsite emergencies is received primarily through the Regulatory Operations section from CNSC onsite representatives. While the primary responsibility for gathering emergency information rests with the Regulatory Operations section, the Technical Assessment, Communications and Liaison sections will often provide information from their external sources as well. Primary sources of information may include:

- onsite CNSC staff and licensee (via Regulatory Operations section)

- response agencies (via Regulatory Operations or Liaison sections)

- technical experts (via Regulatory Operations, Technical Assessment or Liaison sections)

- media/internet, other government departments (via Communications section)

- general public/community reports (via Communications, Regulatory Operations or Liaison sections)

All information must be verified as factual. If unconfirmed information is included in a report for information purposes, it must be clearly identified as "unverified".

Information is shared with internal stakeholders through:

- EOC information displays

- status reports

- briefings

- informal discussions

- posting copies of EOC situation reports

Situational information is exchanged externally with appropriate external agencies through:

- situation reports

- briefings

- informal discussions

It is important to note that situation information should only be shared with the media or general public through an approved public information strategy coordinated through the Communications Chief and approved by the EOC Director. Information sharing may also be subject to agreements made with other federal departments.

5.3.1.4   Set operational period and operating cycle

The EOC must work under an operating cycle at full activation. The operating cycle is based on an operational period (time) set by the EOC Director, according to the CNSC response objectives. At partial activation, the decision to work under an operating cycle is left at the discretion of the EOC Director. Working under an operating cycle will ensure a coordinated response from all functional sections within the EOC. Refer to Appendix C for details regarding the conduct of an operating cycle.

The EOC operating cycle is an integral component of the NEO operating timeline (Appendix D).

5.3.1.5   Assure the health, safety and well-being of personnel

Assuring the health, safety and well-being of CNSC employees is the first priority for CNSC emergency response. CNSC staff must not take actions which may jeopardize their safety or the safety of others. Most of CNSC's emergency response staff would not be exposed to any radiation hazard. However, onsite and environmental monitoring staff may be exposed to radiation above normal levels. In those cases, regulatory limits and approval mechanisms for exposure in emergency situations apply.

CNSC employees at a NPP should adopt the same protective measures as the station personnel (i.e., relocation, sheltering, stable iodine tablets). CNSC employees who have to work in a contaminated environment must take appropriate protective measures to reduce their dose as much as possible.

CNSC response staff are required to take regular rest and meal breaks during their shift. Rest breaks are recommended at least every two hours. Meal breaks are recommended at least every four hours.

All personnel in a supervisory role must be aware of the activities of staff working within their span of control, and any potential hazards that they face. This includes monitoring their work environment, as well as their physical and emotional state. This may include morale, adequate food and rest. Section chiefs must also be in constant communication with their staff in other locations – such as the provincial EOC and the Government Operations Centre (GOC) – to ensure their occupational health and safety.

5.3.2   Assess the safety significance

Safety significance includes onsite impact, offsite impact and defence in depth degradation assessment. The CNSC assesses the safety significance of nuclear emergencies by:

- monitoring the accident progression
- understanding and predicting accident progression
- reviewing and confirming the source term estimates
- modelling and predicting health effects

The purpose of the safety significance assessment is to establish a common understanding of the event between the regulator, the licensee, the province, the municipal, the nuclear industry, the IAEA, the media and the public.

The licensee is responsible for setting the INES level; the CNSC verifies the licensee's assessment and reports the INES level to the IAEA.

5.3.3   Enforce regulatory and licence conditions

Throughout the emergency response, the CNSC continues to enforce the regulatory and licence conditions which are designed to reduce the risk (probability and severity) of the assessed impact on health, safety, security and the environment.

In addition, the CNSC monitors the licensee response to ensure that the licensee is undertaking appropriate actions to halt and/or mitigate the emergency, and – once the emergency is over or stabilized – that appropriate recovery actions are undertaken.

The CNSC does this by:

- identifying and tracking operating, emergency response and protective action issues that affect the risk to health, safety, security and the environment
- identifying relevant regulatory and licence conditions
- verifying whether or not the licensee is complying with those conditions

If the licensee is compliant and taking appropriate actions, the CNSC does not usually intervene. However, if the licensee is not compliant, the CNSC will advise and may direct the licensee to take the appropriate actions required to address certain issues and concerns.

During an emergency response, the licensee may request regulatory approval from the CNSC for changes to their operating licence conditions. The CNSC provides a response within a timeframe that allows the licensee to decide on and implement alternate actions or arrangements, if regulatory approval is not given.

The ERO provides recommendations and authorizations within their normal authority and qualifications, or refer the item to the appropriate authority. Critical information about the recommendation or authorization is logged at the time it is made. At all times, the CNSC must comply with the NSCA and its relevant regulations, CNSC policies and CNSC agreements.

5.3.4   Provide technical advice

The CNSC provides appropriate technical advice and support, as requested or required from the licensee and stakeholders. The CNSC will also review the licensee's recommendations upon request from offsite authorities.

Requests for technical advice from onsite licensee staff or the offsite authority are directed to the Regulatory Operations Chief or the Liaison Chief. Other requests are sorted and redirected to the appropriate section for action.

The CNSC may deploy CNSC staff near the emergency area, to assist in activities such as radiological monitoring.

The CNSC makes its laboratory facility and staff available to assist the licensee or other stakeholders, as required. All other technical support is provided by CNSC response staff under the direction of the Technical Assessment Chief. Therefore, all requests for assistance

(e.g., radiation protection advice) from the licensee or stakeholders are directed to the Technical Assessment Chief.

5.3.5   Coordinate and cooperate with external organizations

When the FERP/FNEP is activated, the CNSC will send representatives to:

- the Deputy Minister Emergency Management Committee
- the Assistant Deputy Minister Emergency Management Coordination Committee
- the FERP/FNEP-Technical Advisory Group at the GOC

These representatives provide links between the EOC and the GOC, and contribute to the federal response activities. The CNSC representative to the Technical Advisory Group usually acts as the chairperson of that group, until relieved by an official from the primary federal department for nuclear emergency response.

Emergency updates are provided on a regular basis during the first 12 hours of the emergency and will continue on a regular basis as long as the CNSC EOC is in full activation mode. A final message is sent when the CNSC returns to its routine monitoring mode.

In the event of a nuclear emergency abroad, the DFAIT EOC becomes operational and the CNSC will have its own representative there, to establish a communication link with the CNSC EOC and to provide technical support to the DFAIT response.

5.3.6   Report on CNSC response

GC communications planning emphasizes the need for effective risk communication, to ensure timely, clear and coordinated messages and communications activities.

Communicating within Canada's Emergency Management Framework

The CNSC is committed to clear, consistent and coordinated external and internal communications during an emergency event. To reflect a coordinated approach to crisis and emergency communications, the CNSC also takes into account the emergency management directives and/or communications practices and principles set out in several GC documents, including:

- *Nuclear Safety and Control Act* (1997)
- *Emergency Management Act* (2007)
- Federal Emergency Response Plan (2011)
- Emergency Communications Protocol, Public Safety Canada (2007)
- Federal Nuclear Emergency Plan (Part 1 Master Plan) (2002)
- Communications Policy of Canada (2006)

In addition, the CNSC adheres to the definitions of "emergency" and "crisis" outlined in the GC's *Communications Policy* (2006) as follows:

Crisis: A situation that somehow challenges the public's sense of appropriateness, tradition, values, safety, security or the integrity of government.

Emergency: An abnormal situation that requires prompt action, beyond normal procedures, in order to limit damage to persons, property or the environment.

Role of the CNSC regarding communications

The CNSC is responsible to inform the public about:

- the CNSC's role as a regulator during a nuclear or radiological emergency
- validation of the findings and actions taken by a range of parties, as they relate to the emergency
- background information on relevant legislation, regulations and licenses
- information regarding onsite conditions
- background information on the development, application and use of nuclear energy and radioactive materials

In addition, providing clear information related to the type of radioactive material and potential exposure to the public, nuclear energy workers, and the environment is a priority during the management of an accident. In such an instance, the CNSC works with FERP/FNEP and/or provincial health authorities and the nuclear operator, as needed, to develop appropriate radiation protection messages.

Coordination of communications

During a crisis where more than one federal agency or department must be engaged in the response information, sharing and cooperation is a primary focus.

A major nuclear accident at a Canadian NPP would activate the FERP/FNEP, at which time the nuclear emergency response of more than fourteen federal departments and six federal agencies (including the CNSC) would be coordinated through Public Safety.

The CNSC expects Public Safety – through the FERP/FNEP – to lead regular teleconferences with federal government departments and agencies, and to coordinate the GC response to a major nuclear accident. This is reflected in FNEP ("Informing the Public") and conducted through the Federal Public Communications Group led by Public Safety. For example:
- Public Safety would coordinate the emergency response of federal departments and agencies.
- Public Safety or the Privy Council Office would lead the teleconferences and chair meetings on the overall government response, and coordinate the approval of media lines and/or questions and answers (Q&As).
- Health Canada would coordinate the scientific and technical elements of the response and provide assessments and advice, including for public communications development.

Individual departments develop media lines and Q&As related to their areas of responsibility. These will be shared with FERP/FNEP, who will compile a master "evergreen" document. The "evergreen" document will then be distributed to all engaged federal departments and agencies, to promote consistent and complementary messaging. Communications activities are similarly coordinated through this means.

This coordination activity will likely continue until the FERP/FNEP stands down.

Audiences

The CNSC reports on its emergency response to:

- Canadian citizens

- other government departments

- special interest groups

- the Minister of Natural Resources

- the Privy Council Office

- Members of Parliament

- Commission Members

- CNSC employees and their families

- Media

- International audiences/partners

Tools

While a precise CNSC communications strategy is determined at the time of an event, it may generally include: information updates, social media updates, news conferences, media briefings, messages to staff, and (at the discretion of management) activation of the CNSC's Crisis Site.

Messaging is coordinated with other government departments, as appropriate, and would engage GC-wide tools to disseminate information as necessary (for example: 1-800-OCanada and Canada.gc.ca).

All communications products are produced in English and French.

Spokespersons

The lead spokesperson for the federal response will be confirmed by the Privy Council Office and the Prime Minister.

The CNSC's President is the lead spokesperson for the CNSC. He may designate the EVP or another member to the senior management cadre as spokesperson, if necessary. It is recommended that the President take a high profile role in providing information to CNSC employees and licensees.

Media relations and monitoring

The designated media spokesperson will continue his/her regular duties.

In the event of a major nuclear accident, media monitoring should be stepped up, to track the evolution of issues related to the CNSC's areas of responsibility. This will allow the organization to identify inaccuracies and misinformation early, so that corrective actions can be taken.

It is anticipated that other lead departments/agencies will step up their issue-specific media monitoring, and that the results will be shared with participating organizations. It is also anticipated that participating federal organizations will be expected to feed their media monitoring results to the coordinating department(s).

5.4 Performance objectives

Each of the six response objectives are supported by performance objectives. These performance objectives are captured in Table 4. Performance objectives ensure that the response objectives are met.

Table 4: CNSC response objectives with associated performance objectives

Response Objectives and Performance Objectives
Response objective: Manage the CNSC EOC response.
Performance objective: Establish an appropriate CNSC response level and change as required (upgrade or downgrade).
Performance objective: Activate appropriate CNSC response staff.
Performance objective: Establish a CNSC emergency operations centre at the primary or alternate location.
Performance objective: Set the objectives and actions for the CNSC ERO response.
Performance objective: Set the operating cycle (time for CNSC EOC Command section briefing) for the CNSC ERO.
Performance objective: Assign emergency response actions to response staff and monitor the progress and results.
Performance objective: Brief CNSC staff on the event and the CNSC response (objectives, actions, operating cycle).
Performance objective: Establish and maintain intra- and inter-organization communication links.
Performance objective: Provide documents from CNSC libraries and document collections.
Performance objective: Provide data from CNSC databases.
Performance objective: Provide corporate security at the CNSC emergency operations centre.
Performance objective: Arrange operating locations, transportation, accommodation and any other necessary support for response staff at CNSC HQ and all other CNSC operating locations.
Performance objective: Assure the health, safety and well-being of CNSC employees.
Performance objective: Gather, record, assess, display and distribute information gathered or produced as part of the CNSC response.
Performance objective: Maintain a communication and actions log.
Performance objective: Maintain a record of CNSC expenditures.
Response objective: Assess the safety significance of the emergency.
Performance objective: Gather onsite information.
Performance objective: Gather offsite information.
Performance objective: Gather meteorological data (onsite and offsite).
Performance objective: Set the INES level (onsite and offsite safety significance) for nuclear or radiological events.

Response objective: Enforce relevant regulatory and licence conditions to limit the risk to health, safety, security and the environment.
Performance objective: Identify and track technical issues that affect the risk to health, safety, security and the environment (onsite and offsite).
Performance objective: Identify the legislation, regulations and licence conditions that relate to the technical issues.
Performance objective: Verify if the licensee is complying with the relevant legislation, regulations and licence conditions.
Performance objective: Verify if the CNSC is complying with the relevant legislation, regulations, policies, plans and agreements.
Performance objective: Identify and implement actions that the CNSC must take as federal regulator, to enforce legislation, regulations and licence conditions.
Performance objective: Identify and implement actions that the CNSC must take to comply with the relevant legislation, regulations, policies, plans and agreements.
Response objective: To provide appropriate technical advice and support, as requested or required.
Performance objective: Formulate appropriate advice on technical issues that affect the risk to health, safety, security and the environment (both onsite and offsite).
Performance objective: Deliver advice on matters that affect the risk to health, safety, security and the environment to the responsible authority.
Response objective: To coordinate and cooperate with licensee, provincial, federal and international response organizations.
Performance objective: Notify appropriate external organizations about the emergency situation.
Performance objective: Coordinate CNSC response with organizations that have similar or overlapping functions.
Performance objective: Provide CNSC resources, expertise and support for other authorities.
Response objective: To communicate the CNSC response to the public, the government and the CNSC staff.
Performance objective: Identify public concerns, rumours and misinformation that relate to the CNSC role and response objectives.
Performance objective: Develop an incident-specific communications plan.
Performance objective: Prepare and disseminate communications products, in accordance with the CNSC communications strategy.
Performance objective: Organize news conferences, if and when appropriate.
Performance objective: Receive and respond to inquiries from the media and the public.
Performance objective: Provide regular information to the Minister responsible for the CNSC.
Performance objective: Provide regular information to the Government Emergency Operations Coordination Centre (GEOCC).
Performance objective: Answer inquiries from Members of Parliament and their representatives.

Performance objective: Provide regular information on the CNSC response to Commission Members, CNSC employees and their families, and the general public.
Performance objective: Answer inquiries from Commission Members.
Performance objective: Answer inquiries from Commission Members, CNSC employees and their families.
Performance objective: Provide timely information and support for the next-of-kin of a CNSC employee whose health or safety is affected during an emergency response.
Performance objective: Coordinate communications activities and messages with other government organizations.

5.5 Simultaneous emergencies

It is possible to have two simultaneous emergencies. The emergencies may differ in nature and/or may be dependent on each other (i.e., malevolent attacks at two different sites). The decision to activate a second EOC, in order to effectively respond to the emergencies, is at the discretion of the EET. Both EOCs report to the EET on its response actions.

5.6 EOC demobilization

The EOC Coordination section is responsible for developing the demobilization plan, in consultation with all sections operating in the EOC. The EOC Director approves the plan, and authorizes demobilization when the emergency no longer requires the support of an EOC. Each section and/or individual is responsible for implementing the actions assigned to them in the plan.

It is possible that the EOC may be required to transition into the recovery phase, rather than fully demobilizing. Recovery activities can often continue for weeks, months, or even years, following a major emergency. However, it is recommended that the operational activities be completely closed out and all paperwork submitted to the EOC Coordination section, to clearly separate the operational phase from the recovery phase. The EOC must ensure that records are kept in a manner that would be easily accessible during a commission of inquiry, an investigation, a whole-of-government "lessons learned" review, and/or legal proceedings.

During the demobilization phase, the CNSC may need to attend the Special Standing Committees in Parliament.

5.7 Post-demobilization activities

Following demobilization of the EOC, several actions are required before the EOC response is considered complete.

Common activities include:

- processing invoices for EOC expenses

- collecting, organizing and submitting data for cost recovery purposes

- processing timesheets for EOC personnel (i.e., calculating overtime, etc.)

- following up with EOC personnel, if critical emergency stress was a factor

- gathering, analyzing, and summarizing post-operational feedback from EOC personnel

- conducting a post-operational review/debriefing with key EOC personnel and assisting/supporting agencies, to identify and document lessons learned, as a way to improve operational effectiveness in the future

- preparing an after-action report, to summarize key actions and outcomes of the EOC activation

- preparing to attend Special Standing Committees in Parliament

The EOC Director and other key EOC personnel are responsible for these activities.

6.0   Resources

6.1 Human resources

The roster of CNSC staff assigned to the ERO roles will usually contain a minimum of three names for each position, providing sufficient resources for the organization to maintain a prolonged response, if the need arises. This applies to the site and regional offices of the CNSC as well, since it is likely that one of these offices will be requested to deploy the initial CNSC field staff, should an event occur in a remote area of Canada. The CNSC staff designated for the various ERO roles must have the appropriate authority, knowledge and skills for the ERO position to which they have been assigned.

All CNSC staff on the roster must be informed of their designated ERO position by their line manager, and will be provided appropriate compensation and protection when requested to work outside normal working hours, during the response.

EMPD staff are responsible to keep the ERO roster up to date, and verify the list at least every three months.

6.2 Facilities

The CNSC maintains an EOC that is located on the south side of the third floor of the Slater Tower at CNSC HQ building in Ottawa (280 Slater Street). The space allotted for the EOC has a dual purpose, and is primarily used for meetings on a day-to-day basis. The area is equipped with presentation and communications equipment, as well as other essential furniture and tools needed to ensure the space meets all the needs of an effective EOC. EMPD staff are responsible for ensuring that the space, equipment and resources are kept up to date, that they are secure and functional, and that the facilities are maintained in a state of readiness at all times.

Security and building management arrangements are in place to ensure the EOC is accessible and operational anytime. If the main EOC is inaccessible or inoperable (e.g., in the case of a major building fault, such as a fire) at the time of the emergency, the primary alternate EOC at Telesat could be used. Regional offices could be used if both the main and primary EOCs are unavailable. These alternate locations are maintained and adequately outfitted with the essential equipment, documentation (duplicates of essential operating documents) and furniture, so ERO staff can carry on with the response efforts.

Some CNSC response staff may be required to operate from remote locations (e.g., in the case of transportation emergencies), or from other EOCs (i.e., onsite EOCs, provincial and federal operations centers). Advanced arrangements are in place with host organizations (e.g., power reactor operators, provinces and the federal GOC) to ensure that CNSC response staff are provided with adequate and appropriate operating locations, and have access to appropriate communications resources.

6.3 Documents

EMPD staff maintain a catalogued collection of resource documents available to the response staff, to assist them during a CNSC emergency response. Some documents – including documentation from the CNSC, licensees, provinces, other federal departments, and international organizations – are stored in secure cabinets in the CNSC EOC. There is also a broad inventory of information available to the ERO staff, which is accessible electronically through the CNSC intranet, as well as from the CNSC library (also located in the CNSC HQ building).

6.4 Tools

All analysis and information tools typically available to CNSC staff during normal operations will also be available to assist response staff in carrying out their assessments and analyses during the emergency.

6.5 Equipment

The equipment required for a CNSC response during emergencies varies by ERO position. All equipment needed by the staff at the CNSC EOC is kept in secured storage areas of the EOC rooms, and can be quickly set up and be ready for the EOC staff upon their arrival.

As per CNSC approved licensee emergency plans, Memoranda of Understanding (MOUs) and other agreements for CNSC staff deployed to other EOCs (i.e., licensee, provincial and federal), arrangements are in place for these organizations to provide CNSC staff with the necessary resources and equipment, to ensure they can work independently, and can maintain open communications with the CNSC EOC. These arrangements are routinely verified and tested during joint emergency exercises.

In the event that the CNSC deploys field response staff from its headquarters, all equipment needed by the staff is available from the CNSC laboratory. In addition, all regional and site CNSC offices are outfitted with emergency kits similar to what would be available from the CNSC laboratory: personal protective equipment (with appropriate CNSC markings for identification), communications equipment, and all appropriate radiation detection equipment (such as survey and contamination meters, and personal alarming dosimeters). These kits also contain an adequate supply of disposable coveralls and booties, along with spare batteries for the electronics. Arrangements are in place to ensure that the equipment in these emergency kits is always available and is not re-assigned, taken out of service or left non-functional, without an appropriate replacement being available.

For extreme situations, arrangements are in place with other federal government departments to acquire other, less frequently needed equipment in a timely manner. This includes access to large inventories of resources, such as clothing and survival equipment (including tents, portable furniture, and so on).

The equipment used by CNSC response staff during an emergency response should be identical to that used during everyday situations, to ensure that CNSC staff are familiar with the equipment. As with all other equipment used by CNSC staff, all designated response gear is to be tested and calibrated regularly, in accordance with supplier specifications and CNSC regulations.

7.0   Training of Response Staff

7.1 Personnel and experience

Experienced personnel are selected throughout the CNSC, with the approval of their division directors, to become members of the CNSC ERO. The selected individuals should preferably work in areas that draw on their expertise or experience.

7.2 Staff qualification and commitment

As subject matter experts, the selected individuals should already possess the skills and experience necessary to carry on the assigned response function, but they can also become qualified after participating in a training and qualification program. The qualification process enables the individual to fully understand the priorities of the team, along with the technical requirements to respond to an emergency. Staff will be considered qualified upon successful completion of the required training for their assigned position.

A centralized system is established to track training activities by individuals and positions, and is maintained through the CNSC's learning management system (LMS).

The minimum requirements for participation in the CNSC ERO are the completion of an initial qualification and qualification maintenance. The initial qualification includes general response training, position-specific training, and participation in a hands-on type activity. Qualification maintenance is designed to demonstrate proficiency, through a periodic update of the general response training, and periodic participation in drills, exercises, or equivalent tabletop exercises. Details are outlined in the *Training and Qualification Program* document.

A roster of qualified staff is maintained to ensure access to necessary resources when required. This roster is kept current, to enable the CNSC DO to alert and activate the CNSC ERO as necessary.

7.3 Practice drills and exercises

Training – especially exercises – includes formal critiques to identify weak or deficient areas that need improvement or correction. Any weaknesses or deficiencies that are identified are assessed, prioritized and evaluated for improvement/corrective actions.

Procedures are in place to ensure performance assessment and to generate a mechanism for capturing the lessons learned during the exercises. Participation in the scheduled exercises reinforces and promotes a unified response with the licensees and the province.

7.4 Maintaining a qualified response organization

EMPD provides HQ/Telesat and CNSC site/regional staff with the level of training necessary to perform their assigned emergency response functions and maintain response readiness. Detailed information on the training program and support procedures are found in the *Training and Qualification Program* document.

8.0   Continuous Improvement

The NERP Master Plan and all NERP supporting plans and documents are "evergreen", which means that they will be continuously improved over time, and incorporate lessons learned. EMPD is responsible for the upkeep and maintenance of the NERP Master Plan and supporting documents.

Lessons learned from exercises and real life emergencies will be incorporated into the NERP Master Plan as required. The NERP Master Plan will be reviewed by EMPD every two years, to ensure that it is current and active.

APPENDIX A : Command Section — Roles and Responsibilities

A.1 EOC Director

The EOC Director has the overall authority and responsibility for the EOC activities and for ensuring an effective and efficient CNSC response. In consultation with the section chiefs, the EOC Director sets EOC response objectives for each operational period, and ensures they are carried out. This position is normally held by an Operations DG, who is not currently a member of the EET.

The EOC Director reports directly to the EET for strategic direction and response requirements.

The EOC Director must appoint a Deputy EOC Director to act on his/her behalf during his/her absence from the EOC. Unless specified otherwise, the Regulatory Operations Chief is normally the Deputy EOC Director, upon confirmation of appointment by the EOC Director.

A.2 Regulatory Operations Chief

The Regulatory Operations Chief leads the regulatory operations response, and is responsible for the Regulatory Operations section. This position is normally held by the Regulatory Program Director (RPD) of the affected facility. Alternately, it may be held by another RPD, or by a senior staff member with extensive regulatory understanding and knowledge of the affected facility.

The Regulatory Operations Chief position is staffed on a 24-hour basis, using two 13-hour shifts. However, the facility's RPD will always be assigned the day shift, with the night shift being covered by other RPDs or senior staff.

A.3 Technical Assessment Chief

The Technical Assessment Chief is responsible for the direction and response activities of the Technical Assessment Section. This position is normally held by a Director or senior staff member within DERPA or DAA.

This position is staffed on a 24-hour basis, using two 13-hour shifts.

A.4 Liaison Chief

The Liaison Chief is responsible for the direction and response activities of the Liaison section. In addition, the Liaison Chief is responsible for inviting required organizations, as identified by the EOC Director, and for maintaining contacts with external organizations and other EOCs. This position is normally held by a Director or senior staff member from SPD.

The Liaison Chief position is staffed 24 hours, using two 13-hour nominal shifts.

A.5 Communications Chief

The Communications Chief is responsible for the direction and response activities of the Communications section. This position is normally held by a Director or senior staff member from SCD.

The Communications Chief position is staffed on a 24-hour basis, using two 13-hour shifts.

A.6   Logistics Chief

The Logistics Chief is responsible for the direction and response activities of the Logistics Section. This position is normally held by a Director or senior staff member from CSB.

The Communications Chief position is staffed on a 24-hour basis, using two 13-hour shifts.

A.7   EOC Coordination Chief

The EOC Coordination Chief is responsible for the direction and activities of the EOC Coordination section. This position is normally held by an Emergency Preparedness Officer within EMPD.

The EOC Coordination Chief position is staffed 24 hours, using two 13-hour shifts.

APPENDIX B : Information Management

B.1   Position logs

A position log is a legal and administrative document that must be maintained for all activated functions and elements within the CNSC EOC. When an up to date log is maintained, anyone who is required to take over the position is able to easily determine previous key actions and decisions, as well as identify any outstanding actions that need to be addressed. It is a permanent record of key sectional activities; the position log can also be used for after-action reports or investigation purposes.

Completed by:	Forwarded to:	Used for:
All activated positions	EOC Coordination section, when position is demobilized	Effectively tracking and managing key section-wide decisions, actions, requests, activities, inquiries, etc.
	Remains with position until demobilization	Briefing incoming personnel at shift change
		Providing permanent and legal records of actions/activities undertaken

In addition to the above requirements, the following general principles apply when filling out a position log:

- Enter all significant decisions, actions, requests, activities, inquiries, schedule/shift changes; keep entries concise for easy review.

- Be sure to indicate beside an entry when further action is required.

- Entries should be factual in nature; do not share personal opinions or views.

- If more than one person is making entries in the position log, each entry should be initialled.

- All pages are to be numbered, and not be removed from the position log for any reason.

- Position logs remain with the section at all times.

- Make corrections by crossing out the incorrect information with a single strikethrough (-). Never use white-out/corrector tape or remove/recopy a page.

- Position logs are to be reviewed by incoming personnel at the start of all shifts, prior to the departure of the outgoing personnel.

- Submit position logs to the EOC Coordination section upon demobilization of position.

B.2   Emergency reports

The EOC emergency report is a key form used within the Regulatory Operations Section. It is used primarily to record verbal reports from onsite (licensee and CNSC site staff) regarding new emergencies (or updates of previously reported emergencies), to ensure critical information is captured.

Completed by:	Forwarded to:	Used for:
Regulatory Operations section staff	• Regulatory Operations section Chief for review • Technical Assessment section • EOC Coordination section • EOC Director	• Situation reporting • Emergency tracking • Advanced planning

B.3   Status reports

A status report is a tool used to collect situational information from all sections, for reporting purposes. The EOC Coordination section may gather internal information through the use of status reports, submitted by each section chief as required.

The information provided in each section status report includes:

- current situation (what is currently occurring in the section's area of responsibility?)

- outstanding issues/challenges (what issues within the current operational period still need to be resolved?)

- anticipated priorities/activities (what will be the priorities for the section during the next operational period?)

- other comments/issues (are there any public information, media, safety or other issues that need to be reviewed?)

The information provided in a status report is primarily used for briefing purposes or in the action planning process.

B.4   Briefings and meetings

Briefings are primarily used to convey or share essential information and intelligence regarding the emergency and operational activities relating to the EOC. During the briefing, discussion is usually limited to clarification of information. Complex action planning (or any particular topic requiring more detailed discussion or analysis) is deferred to a separate meeting for that specific purpose. For example, during the course of an EOC Command section briefing, the EOC Director may identify action items for the EOC Command section members to

implement. If any of those action items generate significant discussion during the briefing, they should be tabled for further review, and a meeting should be arranged to address any issues.

The EOC Coordination Chief is responsible for the preparation of an agenda for the briefing. When approved by the EOC Director, the agenda is distributed to EOC Command section members in advance of the briefing, to allow all participants an opportunity to prepare. Recommendations for standing agenda items include:

Agenda items	Responsible
Old business	EOC Coordination Chief
Status reports/updates	EOC Command section
Resource priorities	EOC Command section
Probabilities & predictions	Technical Assessment Chief
Public information & media issues	Communications Chief
Action plan status/priorities	EOC Director
New business	EOC Command section

In the initial stages of EOC activation, EOC Command section briefings should be held as frequently as required to support response operations. This frequency normally decreases over time, as extended operations continue.

Following is a description of the different types of briefings conducted within the EOC:

Safety/facility orientation briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
EOC Coordination Chief	All EOC personnel	Once — prior to first shift	To provide physical orientation of the facility and safety/security protocols

EOC Command section briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
EOC Director	EOC Command section	As needed — typically once per operational period	To share current information, intelligence, operational activities, priorities and challenges to facilitate common awareness, and finalize EOC action plans or situation reports.

Section/function briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
Section chiefs & EOC Command staff	Section	As required	To provide situation information and update section status/priorities.

Shift change briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
Outgoing personnel in each function/element	Incoming personnel	At every shift	To bring relief personnel up to date on current activities and outstanding action items.

Management briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
President	EET	As required	CNSC response update and provide strategic directions as required
EET Chair	EET	First morning shift, and as required	To determine CNSC response direction and strategy.
EOC Director	EET	As required	To brief the EET of the EOC response and to request required response authorization and direction.

Management situation report briefing			
Conducted by	**Delivered to**	**Frequency**	**Purpose**
EOC Director	CNSC management	End of day shift	To brief the rest of CNSC management on the status of CNSC emergency response.

Meetings are generally more detailed and interactive than briefings, and may be used by any function as the need arises. There are also more opportunities for open discussion, debate, and collaboration, depending on the purpose of the meeting.

B.5   Action plans

EOC action plans outline the priorities/objectives of the ERO for a specified period of time, as well as the specific tasks required to meet those objectives. The EOC Director is responsible for ensuring that effective action planning occurs. This is a consultative process, in which each EOC Command section member is responsible for providing direct input and ensuring that any objectives assigned to their functions are completed within the operational period.

Consultation with the EOC Command section may occur through a number of methods, but is primarily achieved by submission of status reports and emergency reports through briefings, or by holding a specific action planning meeting. The action planning meeting should be conducted immediately following an EOC Command section briefing, while the status reports are still current.

Based on the EOC Command section input, the EOC Coordination section is responsible for preparing the action plan for the EOC Director's approval, as well as facilitating monitoring and providing advice on the action planning process to the EOC Command section.

B.6   Situation reports

EOC situation reports (SitRep) are prepared by the EOC Coordination section on behalf of the EOC Director. A SitRep is used to provide the organization and higher levels of response within the government with a situational overview, along with statistical information, and a projected outlook regarding the emergency and its resulting impacts and consequences. SitRep should be generated at regular intervals, as determined by the EOC Director.

The EOC Coordination section collects situational data from a number of sources, including the Regulatory Operations section, Technical Assessment section, Logistics section, and the Communications section at the EOC. Following analysis, the EOC Coordination section prepares the SitRep for the EOC Director's approval. Once approved, the SitRep is distributed internally to the EOC and organizational personnel, as well as to external stakeholders (as deemed appropriate by the EOC Director).

Completed by:	Forwarded to:	Used for:
EOC Coordination section	- EOC Director for approval - EOC Command section - Higher response levels, as required - Other agencies or stakeholders, as determined by EOC Director - EOC personnel	- Providing situational overview/update - Reporting statistics and information on emergency impacts/consequences - Reporting projected outlook

APPENDIX C : EOC Operating Cycle

At full activation, the CNSC EOC functions under an operating cycle. For partial activations, the decision to work under an operating cycle is left at the discretion of the EOC Director. Working under an operating cycle will ensure a coordinated response from all sections within the EOC. This cycle optimizes the time available, with a clear focus on the priorities set by the EOC Director. It provides the means to share information at the same time, and allows decisions to be based on the most up to date information. The operating cycle is also a tool to manage expectations, where everyone knows when the next decision or recommendation will take place.

Figure 3 is an illustration of an operating cycle that could be used. The EOC Director can set the timeframe for the operating period; the decision is usually based on the situation, to synchronize the EOC operating cycle with other stakeholders.
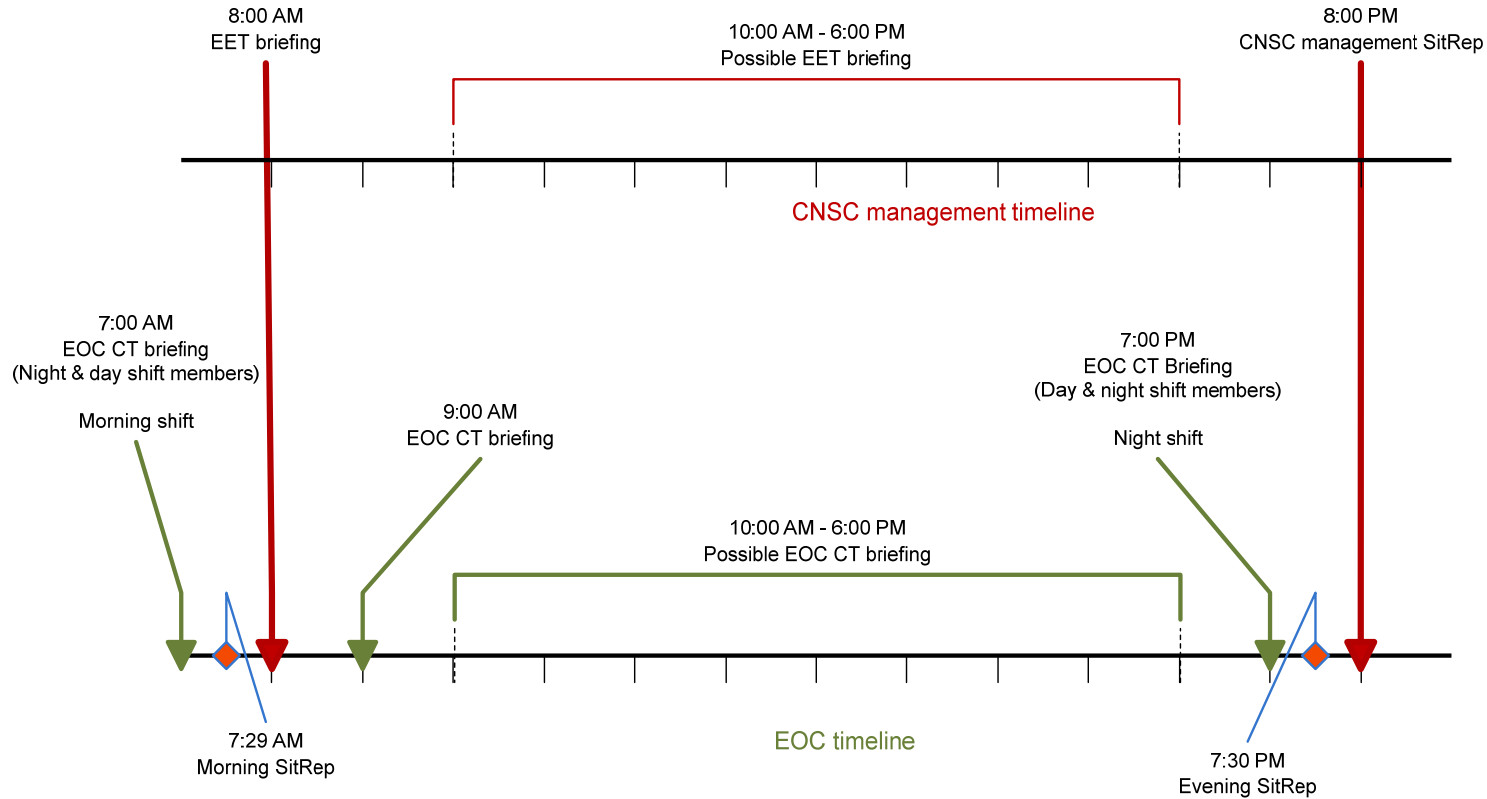
Figure 3: EOC operating cycle
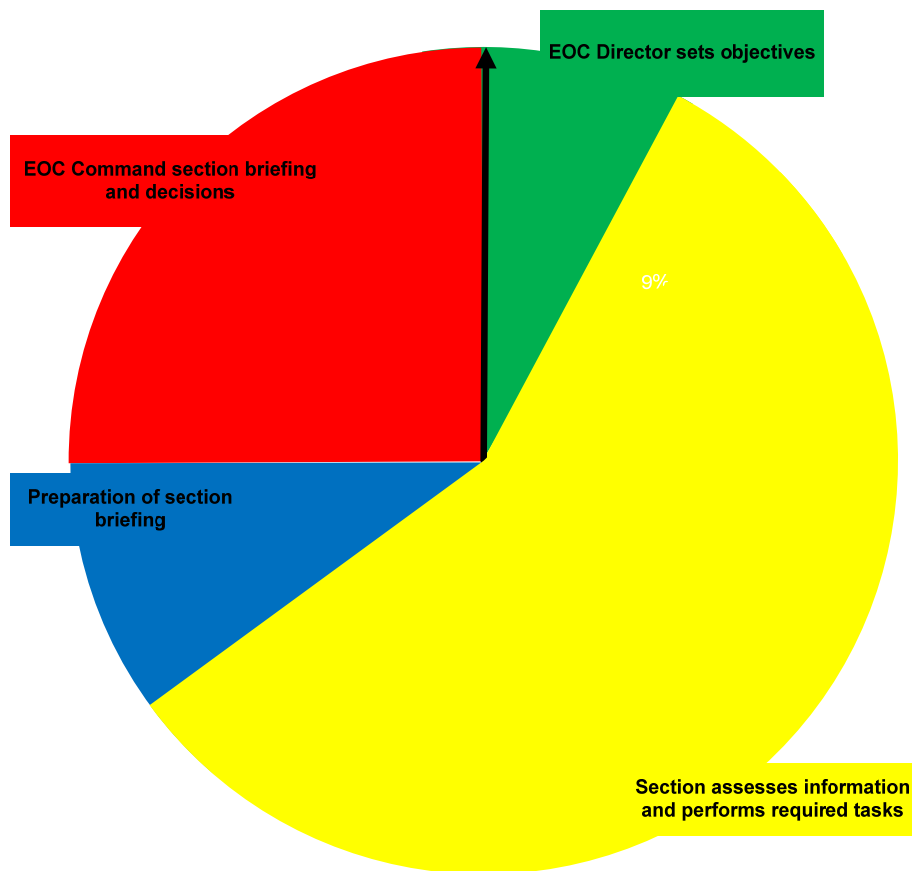
1. At the start of the first operating cycle, the EOC Director briefs the EOC Command section of the situation and decides on the operation period. The severity of the emergency and the requirements to meet will influence the decision to have a short or long operating cycle. The EOC Director initially sets out the objectives for the EOC Command section.

2. Each section assesses the information and performs the required tasks set by the EOC Director.

3. Approximately five minutes before the set coordination briefing time, the section chiefs prepare a team briefing, based on the status report and resource priorities.

4. The EOC Director starts the EOC Command section briefing at the set time. The Regulatory Operations Chief starts his/her briefing to the Command section using the status report format. The operations briefing will then be followed by the:

   a. Technical Assessment section briefing

   b. Communications section briefing

   c. Liaison section briefing

   d. Logistics section briefing

   e. Others, as required

   The purpose of the EOC Command section briefing is to inform, synchronize, identify issues and possible solutions, and make recommendations for group actions.

   The length of each briefing should be dependent on the operating cycle, the EOC Command section briefing length, and the Command section size.

5. Based on the EOC Command section briefing, the EOC Director briefs the EOC Command section and assigns specific actions/tasks to the section chiefs and others, as necessary. The EOC Director also sets a time for the next operational period. This is the start of the next operating cycle. At this point, the EOC Director may choose to conduct an EET briefing (to inform them of the current situation) and selects one of the section chiefs to take over the command in his/her absence (during the EET briefing). The EOC Director may choose to have the Communications Chief and/or others to accompany him/her to the EET briefing. Any actions required by the EET are presented to the Command section at the subsequent section briefing by the EOC Director.

6. The assigned actions/tasks are communicated to other CNSC staff via their respective section chief. Their actions are reported back to their respective section chief, who brings forth the actions completed, issues identified, and recommendations to the Command section at the subsequent EOC Command section briefing.

APPENDIX D : NEO Operating Timeline

8:00 AM
EET briefing

10:00 AM - 6:00 PM
Possible EET briefing

8:00 PM
CNSC management SitRep

CNSC management timeline

7:00 AM
EOC CT briefing
(Night & day shift members)

Morning shift

9:00 AM
EOC CT briefing

7:00 PM
EOC CT Briefing
(Day & night shift members)

Night shift

10:00 AM - 6:00 PM
Possible EOC CT briefing

7:29 AM
Morning SitRep

EOC timeline

7:30 PM
Evening SitRep

- Action Plans: To be generated after EOC CT Briefing. Outline the priorities/objectives of the EOC for a specified period of time.
- Situation Report (SitRep): To provide CNSC with a situational overview.

- EET: Emergency Executive Team
- EOC CT: EOC Command Team