



NUCLEAR EMERGENCY MANAGEMENT IN CANADA AND THE UNITED STATES

PRESENTATION TO THE 42ND INRA MEETING
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Nuclear Emergency Management in Canada

Responsibilities in Canada During an Emergency

Licensee **Responsible for on-site management**

- Regain and maintain control; mitigate the effects; provide information to relevant federal, provincial and regional authorities along with the public; etc.

Provincial **Responsible for off-site management**

- Provincial nuclear emergency response plans
- Provides notification alerts and takes protective actions (e.g. shelter/evacuation, health, food, temp housing, etc.)

Federal **Responsible for support to the province for off-site, when requested**

- Federal Emergency Response Plan and Federal Nuclear Emergency Plan (FNEP)
- Coordinates more than 18 federal organizations in support of the impacted province

CNSC **Responsible for oversight of licensee actions and for providing support to provincial and federal authorities (Details on slide 6)**

Canada's Emergency Management Regulatory Updates

Enhancements Post-Fukushima

- CNSC licensees have fully implemented all actions required under the CNSC Integrated Action Plan On the Lessons Learned From the Fukushima Daiichi Nuclear Accident

Provincial Updates

- Ontario updated the Provincial Nuclear Emergency Response Master Plan (December 2017)
 - Updated Pickering and Bruce Power Site-specific Implementing Plans (March 2018)
 - Darlington and Amherstburg in development
- New Brunswick updated Point Lepreau Off-site Emergency Plan (August 2017)

Nuclear Liability Regime

- *Canada's Nuclear Liability and Compensation Act and Nuclear Liability and Compensation Regulations* entered into force on January 1, 2017
 - Strengthened the compensation and civil liability regime for damages that result from a nuclear accident
 - Increased a nuclear operator's liability for damage from \$75 million to \$1 billion

Framework for Recovery

- CNSC published Discussion Paper DIS-17-01, Framework for Recovery in the Event of a Nuclear or Radiological Emergency (public comment period closed January 2018)
 - The draft REGDOC will be posted this spring for public consultation

Health Canada Guidelines

- Health Canada is currently revising the *Canadian Guidelines for Intervention during a Nuclear Emergency* and the *Canadian guidelines for the restriction of radioactively contaminated food and water following a nuclear emergency*
 - These documents will be incorporated this spring in a new document: *Generic Criteria and Operational Intervention Levels for Nuclear Emergency Planning and Response*

IAEA Emergency Preparedness Mission (EPREV) – Spring 2019

- Will look at operators' and all levels of governments' nuclear emergency preparedness plans and procedures for Canadian nuclear facilities

CNSC's Role During an Emergency

The CNSC maintains a comprehensive Nuclear Emergency Management program

The CNSC's role during a nuclear emergency is to:

- Activate its Emergency Operations Centre (EOC)
- Monitor the response of the licensee
- Evaluate response actions
- Provide technical advice and regulatory approval when required
- Provide field response to assist local authorities as needed
- Advise the government and inform the public on its assessment of the situation

The CNSC's emergency website is always ready to go live and provide plain language information and updates to the public

CNSC's Role During an Emergency (continued)

Emergency preparedness activities:

- Licensees: five drills per year; a full-scale integrated exercise once every three years
- CNSC Site Offices: participate in the licensees' full-scale integrated exercises
- CNSC Headquarters: participate in the licensees' full-scale integrated exercises

The CNSC also assists in implementing Canada's international agreements, including:

- *Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency*
- *Convention on Early Notification of a Nuclear Accident or Radiological Emergency and CNSC's web page on Emergency Management and Nuclear Security*
- *Convention on Supplementary Compensation for Nuclear Damage*

Nuclear Emergency Management in the United States

Responsibilities in the U.S. During an Emergency

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|-------------------------------------|--|
| Licensee | Responsible for on-site management <ul style="list-style-type: none">• Limit consequences to public health and safety; notifications and information to Federal, State, and local government; and recommendations on protective actions |
| State/
Local/
Tribal | Responsible for off-site management <ul style="list-style-type: none">• Determine and implement protective measures outside the facility boundary |
| Federal | Responsible for overall U.S. Government response <ul style="list-style-type: none">• National Response Plan (NRP)• Department of Homeland Security or its organizational agencies (e.g. FEMA) |
| NRC | Responsible for oversight of licensee actions, independent assessment of plant conditions and recommended actions, and support to Federal, State, local, and tribal governments |

NRC's Role During an Emergency

The NRC maintains a comprehensive Incident Response Plan (NUREG-0728)

The NRC's role during a nuclear emergency is to:

- Independently assess plant conditions and potential offsite consequences, and, as appropriate, confirm or provide recommendations concerning public protective measures
- Perform oversight of the licensee including monitoring, evaluation of protective action recommendations, advice, assistance, and in rare circumstances, direction
- Dispatch, if appropriate, an NRC site team of technical experts to the licensee's facility
- Support and coordinate with offsite officials including State, local, and Federal partners (FEMA, EPA, DOE, DoD, DHS, HHS, USDA)
- Coordinate release of information to Congress and the public

Agency response decisions, including the activation of its Headquarters Operations Center, are based on the NRC's independent assessment of an event.

NRC Emergency Management Activities

The NRC's Headquarters Operations Officers and Headquarters Emergency Response Officers work in the Operations Center 24 hours a day, 7 days a week. NRC maintains teams of staff responders in a variety of technical disciplines, including:

- Reactor Safety
- Protective Measures
- Safeguards
- Liaison (communication with government partners, international community)
- Communications/public affairs

Emergency preparedness activities are as follows:

- Licensees: ~6 drills per year
- NRC Regional Offices: ~6 drills per year
- NRC Headquarters: ~4 drills per year with the Regional Offices; 1 national-level exercise per year

Canada / U.S. Nuclear Emergency Management Coordination

Canada / U.S. Context

Proximity of nuclear power plants

- All of Canada's operating nuclear power plants are located near the border with the U.S.
- The U.S. has 6 operating nuclear power plants located near the border with Canada

Transboundary planning zones

- Public safety concerns on both sides of the border (e.g. Fermi II and Pickering)
- Public interest on both sides of the border in emergency management



Cross Border Collaboration Efforts

Between Nuclear Regulators

- MOU in place that covers information sharing during an emergency
- Participate in each other's emergency exercises
- Exploring inspector exchanges on emergency management

Between Federal Governments

- Canada/U.S. Joint Radiological Emergency Response Plan
 - Provides for early notification, coordination of activities, and provision of mutual aid in the event of a nuclear emergency (Department of Homeland Security/Federal Emergency Management Agency and Public Safety Canada)

Between Provinces and States

- Under the Province of Ontario's Implementing Plan for a Transborder Nuclear Emergency the province is contacting the affected U.S. State Emergency Operations Centres to discuss the option of deploying liaison teams in a nuclear emergency



Canadian Nuclear
Safety Commission

Commission canadienne
de sûreté nucléaire



Thank You

Questions?