



*GNSSN – Steering Committee Meeting  
Transparency, and  
Accountability*

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Canadian Nuclear  
Safety Commission

Commission canadienne  
de sûreté nucléaire

Canada 

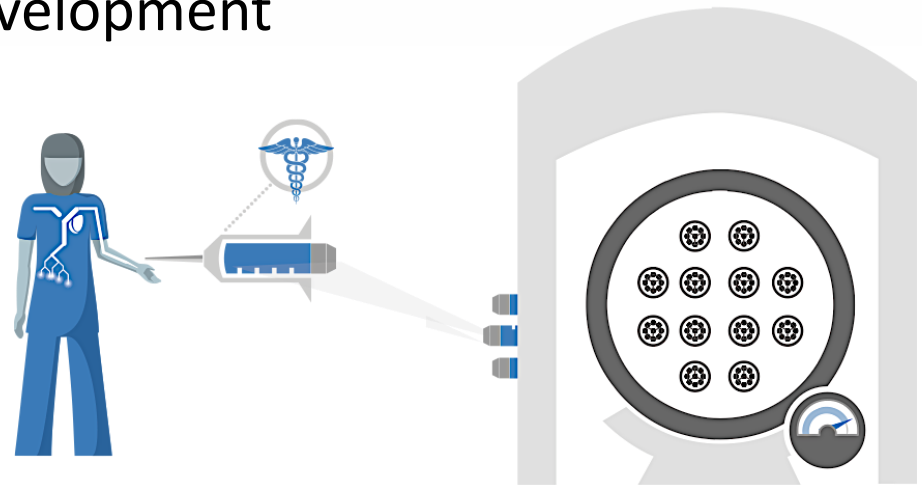
# Canada has over five decades of experience...

## ⦿ Nuclear reactor pioneer

- First country outside US to operate a reactor
- On-going research and development

## ⦿ Uranium mining

## ⦿ Medical isotopes



*...on the international nuclear scene*

# *CNSC international cooperation*

- ⊙ International Atomic Energy Agency (IAEA)
- ⊙ Nuclear Energy Agency (NEA)
- ⊙ Multinational Design Evaluation Program (MDEP)
- ⊙ International Nuclear Regulators Association (INRA)
- ⊙ International Commission on Radiological Protection (ICRP)
- ⊙ CANDU Senior Regulators

*Regulatory collaboration and support*

# *Continuous Engagement Supporting GNSSN*

- ⦿ Promotion of transparency and openness in sharing information (IRRS and IPPAS)
- ⦿ Promotion of Synergy between Safety and Security
- ⦿ Support to strength regulatory infrastructures in Safety and Security areas
- ⦿ Support IAEA Action Plan
- ⦿ Support Emergency Preparedness and Response
- ⦿ Support to Communication and disseminating objective, scientific, technical and regulatory information

*Regulatory collaboration and support*

# *Fukushima was an eye-opener*

- ⦿ Continuous improvement to safety and refurbishment meant Canada's nuclear industry was well-prepared to respond
- ⦿ Fukushima Lessons Learned
  - Strengthening defence-in-depth
  - Enhancing emergency preparedness / response
  - Improving our regulatory framework
  - Improving communication

*Our commitment to safety has never wavered*

## ***Strengthening Defence-in-Depth***

- ⦿ **Control** – reactivity
  - ⦿ Two (2) diverse and independent shutdown systems
- ⦿ **Cool** – maintain cooling of reactor core
  - ⦿ Preventing Fuel Failure: Makeup (alternate cooling) capability to steam generators
  - ⦿ Preventing Calandria Vessel Failure
    - ⦿ Makeup capability to calandria vault/shield tank
    - ⦿ Adequate overpressure relief capacity
- ⦿ **Contain** – radioactive releases
  - ⦿ Preventing Containment Failure

*...minimize the risk of extremely unlikely events*

- ⦿ Passive Autocatalytic Recombiners (PARs) to control hydrogen

# Enhancing Emergency Preparedness (Onsite)

- ⦿ Emergency plans incorporate beyond design basis accidents (BDDBA) and severe accident management guidelines (SAMG)  
Backup power and telecommunications  
Provision of portable backup cooling to critical loads  
Power to emergency response equipment
  - ⦿ Offsite interim storage of emergency mitigating equipment
- ⦿ External support and mutual aid agreement
  - ⦿ Regional Emergency Response Support Center (RERSC)
    - ⦿ Centralized emergency equipment available to all Canadian nuclear utilities
- ⦿ Station boundary monitoring and dose modelling

*...expect the unexpected*



# Enhancing Emergency Preparedness (Offsite)

- ⊙ Revision of **national-level oversight** nuclear emergency plans, programs and performance
  - ⊙ Major overhaul of Federal Nuclear Emergency Plan and integration with Federal Emergency Response Plan
  - ⊙ Improved coordination at all levels of government
- ⊙ Prioritization of full scale exercises
  - ⊙ Provincial
  - ⊙ National Level Exercise planned for 2014

*...protecting the public*



# *Improving Regulatory Framework and Processes*

- ⦿ Updating regulatory documents
- ⦿ Developing new documents
  - ⦿ Emergency preparedness
  - ⦿ Accident management
- ⦿ Supporting development of new Canadian Standard Association (CSA) to develop a National Standard in Emergency Management
- ⦿ Implementing new Licence Conditions
  - ⦿ Accident Management Program
  - ⦿ Public Information Program
  - ⦿ Periodic Safety Review (PSR) process

*...all updates consider lessons learned from Fukushima*

# *Communication and Public Education*

- ⦿ Online initiatives disseminating objective, scientific, technical and regulatory information
  - ⦿ Ongoing Web site revisions for clear and simple language
    - ⦿ Regularly updated to provide objective, scientific and technical information to counter myths and misconceptions
  - ⦿ Social media such as Facebook & YouTube

<http://www.youtube.com/cnscccsn>

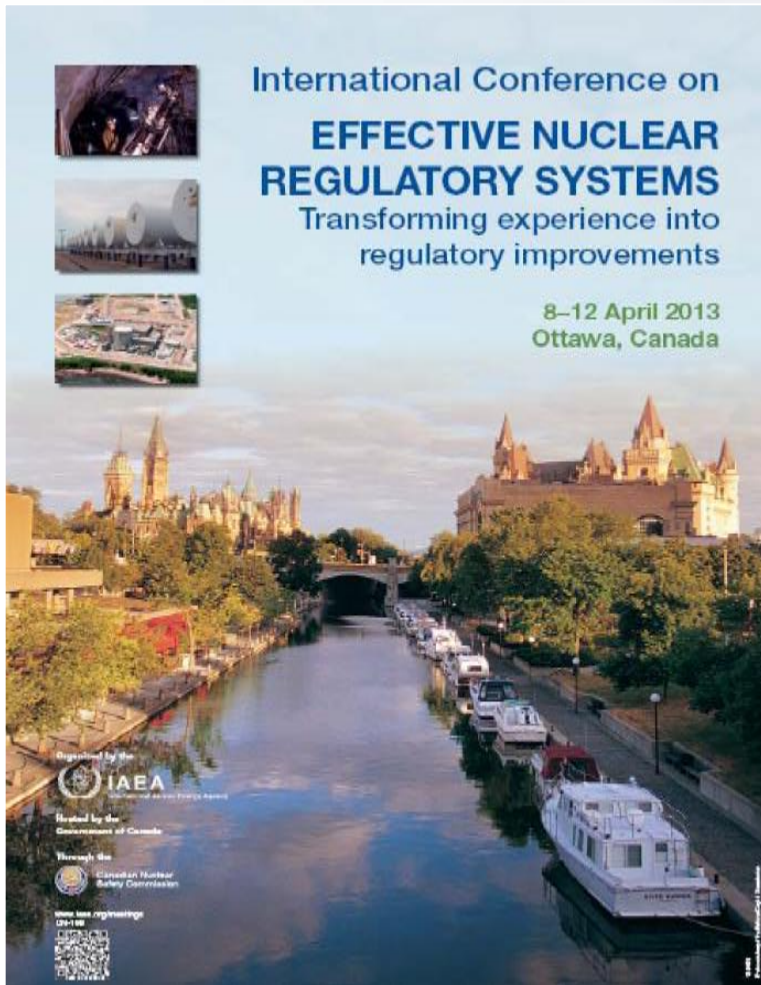
- ⦿ Crisis Web site - activated ONLY in the event of a major emergency

*...providing accurate, timely and accessible information*

# *Leadership must start at the top*

- ⊙ More aggressive IAEA / WANO
  - Whistle blowing on non-performing countries/regulators/operators
  - Transparent peer reviews (IRRS)
  - Clarify evacuation and post-accident recovery requirements
- ⊙ Integrated safety, security and safeguards
- ⊙ Consistent messaging from international bodies
- ⊙ Vendors' responsibility
- ⊙ Operators sharing off-site resources

*Collective responsibility to address accountability gaps*



**Canada hosting IAEA  
International Conference on  
Effective Nuclear Regulatory  
Systems in Ottawa,  
April 8-12, 2013**