

# Nuclear Safety after Fukushima: the start of a Process

First Regulatory Conference "Nuclear Safety in Europe"  
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**IAEA**

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# Context

- Natural disaster
- Tragic loss of life
- Impairment of infrastructure
- Unprecedented scenario



# The start of a Process

- Mobilisation of the international Community
- Milestones in the past 3 months
- Preparatory work to the IAEA Ministerial Conference
- Objective: September Board of Governors and GC

# The IAEA Ministerial Conference

- Director General made five proposals:
  - to strengthen IAEA Safety Standards;
  - to systematically review the safety of all nuclear power plants, including by expanding the IAEA's programme of expert peer reviews;
  - to enhance the effectiveness of national nuclear regulatory bodies and ensure their independence;
  - to strengthen the global emergency preparedness and response system; and,
  - to expand the Agency's role in receiving and disseminating information.

# Major themes for strengthening nuclear safety

- The IAEA Safety Standards
- The Safety of NPPs
- Peer review mechanisms
- EPR Framework
- International cooperation
- Global nuclear safety framework

# IAEA Safety Standards 1

- There was a broad recognition that IAEA Safety Standards represent the common reference point for nuclear safety
- Not all Member States apply the Standards or fully implement them.
- Member States should be encouraged to commit to making national safety standards consistent with those of IAEA.
- Newcomers should fully implement IAEA Safety Standards before commissioning the first reactor

# IAEA Safety Standards 2

## The IAEA was encouraged

- to review and update the Standards to take account of Fukushima
- to give special attention to Standards that deal with,
  - Multiple severe hazards
  - Multiple + single Unit nuclear sites
  - Cooling of reactors + fuel storage

# Review of NPPs

- *We the Ministers [...] Encourage States with operating nuclear power plants to conduct, as a response to the accident at the Fukushima Daiichi Nuclear Power Station, comprehensive risk and safety assessments of their nuclear power plants in a transparent manner;*
- Member States to systematically review the safety of NPPs
- IAEA could lead in the harmonization of review methodologies
- Member States strongly encouraged to report results to CNS 2012

# Peer Reviews 1

- *We the Ministers [...] Underline the benefits of strengthened and high quality independent international safety expert assessments, in particular within the established IAEA framework*
- The role of international peer reviews should be reinforced as part of the process of continuous improvement of safety:-
  - National regulatory frameworks(IRRS)
  - Nuclear installations(OSART)
  - Design review services
- The conference recognized that peer reviews are voluntary but Member States with nuclear power programmes could consider giving prior consent to the IAEA

## Peer Reviews 2

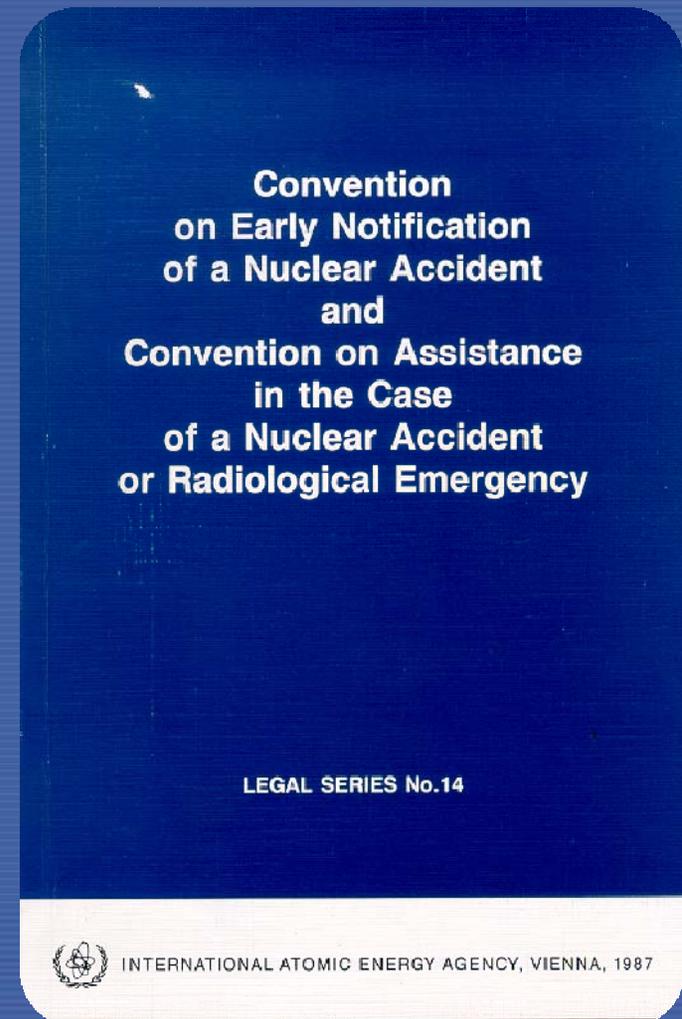
It was proposed :-

- Member States with a nuclear program to invite an IRRS every 10 years.
- IAEA to conduct an OSART of 1 in 10 NPP over a 3 year period.

These proposals would require an enhancement of existing IAEA capabilities.

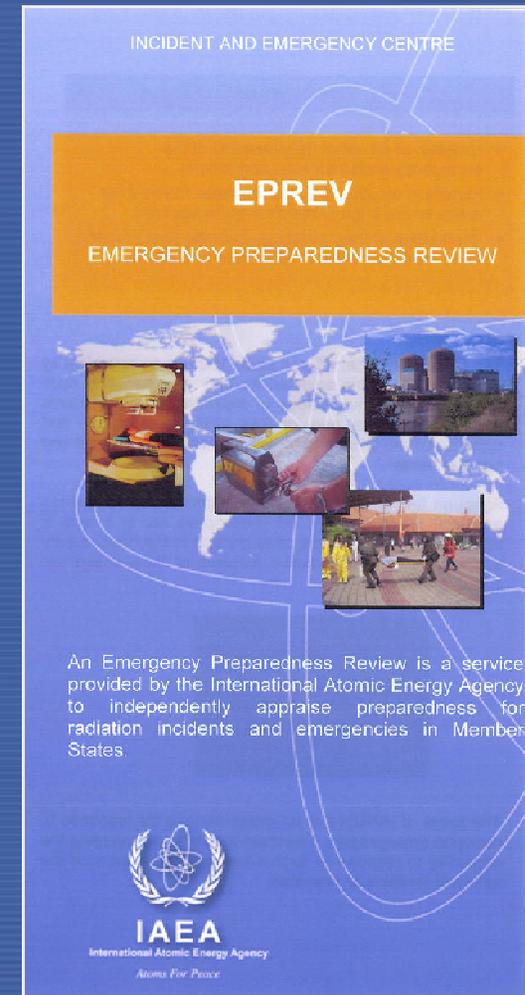
# Emergency Preparedness & Response 1

- Strengthen legal instruments, adopted 25 years ago, for international EPR framework, to address today's concerns.



# Emergency Preparedness & Response 2

- Member States should consider making use of systematic and regular **Emergency Preparedness Review (EPREV)** and follow-up missions to appraise national EPR arrangements and capabilities to ensure their continuous improvement.



# Emergency Preparedness & Response 3

- **Broaden IAEA's role** in response to a radiation emergency to enable it to conduct analysis of:
  - Emergency conditions
  - Progression
  - possible scenarios for emergency development
  - Consequences
  - associated radiological impact and response actions
- Share analysis with Member States
- Emphasize **responsibility of States** to promptly and continuously provide a broader scope of information (data, analysis and other information) to IAEA.



# Emergency Preparedness & Response 4

- Universal implementation of the IAEA Safety Standards on EPR at the national level would:
  - Improve preparedness and response
  - Facilitate communication in an emergency
  - Contribute to harmonization of national criteria for protective and other actions.
- Improvements are recommended in:
  - Cooperation among national authorities, utilities and technical support organizations.
  - Capabilities and arrangements of national authorities to communicate risk to the public.
- States may wish to consider establishing national rapid response teams that could also be available internationally.

# Receiving/Disseminating Information

- INES as a communication tool did not play its role: it should be reviewed and improved to make it more effective
- The IAEA was encouraged to institutionalize the practice of 'fact finding missions'
- Criteria might be linked to INES



# International Cooperation 1

- Experience from the Fukushima accident has shown the **Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE)** to be an effective and useful mechanism.
- The **Joint Radiation Emergency Management Plan of the International Organizations (JPLAN)** also demonstrated its usefulness but needs to be further developed.

# International Cooperation 2

- All Parties with a role in Nuclear Safety (**Research, OECD/NEA, TSOs...**) should work together
- The IAEA was encouraged to enhance its support to **operating organisations** which have the prime responsibility for nuclear safety.
- **IAEA and WANO** were encouraged to establish a mechanism to improve their cooperation.

# The Global Nuclear Safety Framework

## The need for strengthening the Global Nuclear Safety Framework was confirmed

- Primary responsibility for safety is placed on the operator with oversight from the National Regulatory Body
- Supported by an international framework
  - Intergovernmental Organizations
  - Operator Networks
  - Regulator Networks

# The Global Nuclear Safety Framework

- It was recognized that effective regulatory independence is one of the main pillars for nuclear safety,  
and
- There is a need to strengthen national regulatory systems so that they have :-
  - The necessary competence
  - Appropriate regulatory powers, and
  - The ability to respond to safety concerns in a timely manner

# The Global Nuclear Safety Framework

- The Convention on Nuclear safety
  - Review its effectiveness
  - Review its mechanisms
  - Response to Fukushima should not wait for an amendment to the CNS
- IAEA plays a central role and is the appropriate international organization for strengthening the global nuclear safety framework.

# Summary

- Now is the time to
  - Strengthen the IAEA Safety Standards and consistently implement them
  - Review the safety of NPPs and commit to report the results to the 2012 CNS
  - Work together for the benefit of the worldwide nuclear community

Thank you

