Impacts of Fukushima Daiichi Accident on Nuclear Safety

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Content

• Impacts
  – Internationally and regionally
  – On the regulatory frameworks
  – On safety of the NPPs
• Some other considerations
• Summary
Developments within the IAEA context

- IAEA Action Plan on Nuclear Safety 2011
- Developments in the Nuclear Safety Convention 2011-2017
- Vienna Declaration on Nuclear Safety 2015
- Revision of the IAEA Safety Standards 2011-2016
- IAEA Comprehensive report on the Fukushima Daiichi Accident 2015
- Development of the IAEA Peer Reviews 2011-2016
- INSAG Report on Institutional Strenght in Depth
Five Challenges at the 6th CNS Review Meeting 2014

1. How to minimize gaps between Contracting Parties’ safety improvements?

2. How to achieve harmonized emergency plans and response measures?

3. How to make better use of operating and regulatory experience, and international peer review services?

4. How to improve regulators’ independence, safety culture, transparency, and openness?

5. How to engage all countries to commit and participate in international co-operation?
Developments in the European context

• Stress tests and their follow ups 2011-2015
• Revision of the Nuclear Safety Directive 2014
  – New and updated WENRA safety reference levels
  – National updates on regulations
• HERCA-WENRA Approach on Emergencies
Enhancements in Regulatory Frameworks

- Strengthening the power and independence of national regulatory authorities
- Higher level safety objectives to prevent accidents and avoid radioactive releases, in particular concerning extreme natural events
- Enhanced utilization of peer reviews
- Increased transparency and public engagement in nuclear safety matters
- Promotion of an effective nuclear safety culture
- Enhancements in Emergency Preparedness and Response
Safety Enhancements at Nuclear Power Plants

- Additional analyses and protection against extreme natural hazards (seismicity, flooding)
- Less dependency on AC power and ultimate heat sink, increased autonomy at the sites
- Mitigation capabilities of severe accidents
- Enhanced on site emergency preparedness including multi-unit events
Further considerations

- Consequences of a severe accident (doses, sociological, psychological and economical)
- Post Accident phases and recovery, decommissioning and decontamination, Waste
- New research and development activities
- Sharing and utilisation of Operating and Regulatory experience
- Communicating radiation risks – before and during crisis
- Industry initiatives to improve safety (WANO, INPO, WNA etc.)
Summary

- Improvements within IAEA domain and regionally
- Improved safety of NPPs and enhanced regulatory frameworks
- Further learnings will follow
- But did we need to have the accident for all these improvements?