

# Integrated NEA Response to the Fukushima Dai-ichi Accident

**Javier Reig**  
Director Nuclear Safety

NRC Regulatory Information Conference 2013

© 2013 Organization for Economic Co-operation and Development

## OECD/NEA Membership



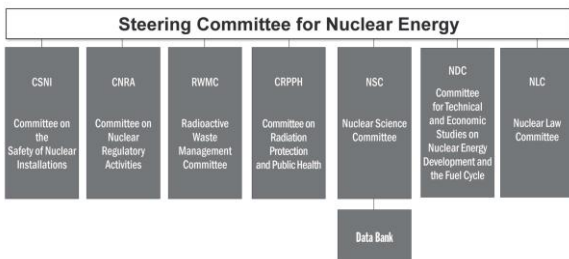
- Australia
- Austria
- Belgium
- Canada
- Chile
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Germany
- Greece
- Hungary
- Iceland
- Ireland
- Israel
- Italy
- Japan
- Korea
- Luxembourg
- Mexico
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Russia
- Slovak Republic
- Slovenia
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States

OECD and NEA member  
OECD member, not NEA  
NEA member, not OECD

© 2013 Organization for Economic Co-operation and Development

2

## NEA Committees



© 2013 Organization for Economic Co-operation and Development

3

## Integrated NEA Fukushima Actions for Safety Enhancements (INFASE)

- **3 standing technical committees:**
  - ✓ Committee on Nuclear Regulatory Activities (CNRA),
  - ✓ Committee on the Safety of Nuclear Installations (CSNI),
  - ✓ Committee on Radiation Protection and Public Health (CRPPH).
- **9 areas being examined:**  
Accident management and progression; Crisis communications; Reassessment of defence-in-depth; Methodologies for defining and assessing initiating external/internal events; Reassessment of operating experience; Balancing deterministic and probabilistic approaches; Regulatory infrastructure; Radiological protection (RP) and emergency response; and RP aspects of decontamination and recovery.
- **Comprehensive report** to be published, summer 2013.

---

---

---

---

---

---

---

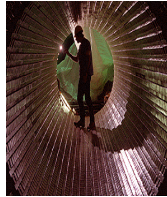
---

---

---

## Committee on Nuclear Regulatory Activities (CNRA)

- Fukushima-related:
  - ✓ STG-Fukushima: Recommendations to the CNRA, CSNI; information exchange and co-ordination inside and outside the NEA
  - ✓ New Task Group on Accident Management
  - ✓ Task on International Aspects of Crisis Communication
  - ✓ Siting re-evaluation for new reactors
  - ✓ Task on Precursor events



---

---

---

---

---

---

---

---

---

---

### ❖ New Task Group on Accident Management

- Enhancements of on-site accident management procedures
- Decision-making and guiding principles in emergency situations
- Guidance for instrumentation, equipment and supplies for addressing long-term aspects of accident management
- Guidance when taking extreme measures for AM

### ❖ Task on pre-cursor events

- Evaluation of various initiators and situations for new lessons in light of the Fukushima Daiichi accident and improvements in implementing lessons learnt. Risk considerations to be included



---

---

---

---

---

---

---

---

---

---

## Committee on the Safety of Nuclear Installations (CSNI)



- Fukushima-related activities: new tasks
  - Human and organizational factors
  - Electrical systems
  - Accident analysis and accident management
  - Integrity of structures and materials
  - Risk assessment
  - Safety research

---

---

---

---

---

---

---

---

---

---

### ❖ Accident Management and Analysis

- Position paper on filtered containment venting
- International benchmarking on fast-running software tools used to model fission product releases during accidents
- Position paper on hydrogen generation and mitigation

### ❖ Human and Organisational Factors

- Human performance and intervention under extreme conditions

### ❖ Integrity of Components and Structures

- Metallic component margins under high seismic loads

### ❖ Risk Assessment

- Workshop on PSA of natural external events including earthquakes

### ❖ Other ongoing work within CSNI

- Electrical system robustness in light of Fukushima

---

---

---

---

---

---

---

---

---

---

## Safety Research Projects

- BSAF: **Benchmark Study on the Accident of Fukushima**
  - Run by Japan - Duration 1.5 years (1<sup>st</sup> phase of an anticipated multi-phase project)
  - Objectives: analyse accident progression and current status inside RPVs and Primary Containment Vessels (PCV) of units 1-3; improve methods and models of codes and reduce uncertainties in SA analysis
  - 8 countries will participate: France, Germany, Japan, Korea, Russia, Spain, Switzerland and USA
  - Kick-off meeting: 6-8 November 2012 (Tokyo)

---

---

---

---

---

---

---

---

---

---

### NEA Review of CSNI products related to Japan safety research needs

- To review of the main areas of CSNI work with respect to their relevance to Fukushima accident
- To identify the most relevant CSNI products produced in the last 3 decades , with special emphasis on:
  - SOAR
  - ISPs
  - TOP and
  - Joint Research Projects
- Several areas of work already identified, e.g. « Ex-vessel phenomena »:
  - **SOAR**: Core melt ejection (1996), Steam explosion (2007), *MCCI*...
  - **ISPs**: ISP-24 (SURC4, 1987), ISP-30 (BETA, 1990)
  - **Joint Projects**: *MCCI*, *MCCI2* (2001-2010), SERENA (2008-2012)

---

---

---

---

---

---

---

---