Fukushima Ministerial Conference on Nuclear Safety
15-17 December 2012

ENSEI’s actions taken after Fukushima –
From Emergency Response to Lessons Learned

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WENRA Chair
Switzerland’s response to the Fukushima accident
ENSI approach in three steps

- In accordance with the Swiss legal and regulatory framework
- New findings added subsequently, as they emerge

1. Is there an immediate threat for the Swiss population?
   ▶ If yes: immediate plant shutdown

2. Criteria for a provisional shutdown fulfilled?
   For any INES > 1 worldwide: design reassessment
   ▶ If statutory dose constraints are not complied with:
     Provisional plant shutdown ▶ corrective measures

3. Any measures to improve safety?
   Detailed analysis, improvement measures as appropriate
   ▶ NPP stays in operation
Actions at the national level

- Immediate actions
- First analyses
- Examination of the designs
- Focused inspections
- Backfitting
Learning from Fukushima
4 ENSI reports and an Action Plan

- Event analysis (2 reports)
- Radiological consequences (1 report)

Running Action Plan Fukushima

- Lessons learned (1 report) ► 37 checkpoints

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Measures taken since Fukushima

- **External storage facility** for emergency equipment (by 1 June 2011)
- Diverse **ultimate heat sink**
- Improvement of **spent fuel pool cooling** system
- **Design reassessments** of Swiss NPPs with respect to earthquakes (by March 2012), external flooding (by June 2011) and the combination of both events (by March 2012)
- Participation in the **EU Stress Tests**
- Review of **protection measures** for the Swiss population

**SAFETY IS NOT A STATE – SAFETY IS A PROCESS**
External storage facility

- Located at approx. 50km from the Swiss NPPs
- Operational since 1 June 2011
- Transport by helicopter < 2000 kg
- Bunkered army depot
  - Diesel generators incl. fuel
  - Pumps
  - Cables / piping
  - Boric acid
  - Radioprotection equipment
  - Documentation / tools
# Measures taken since Fukushima

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<td>Back-fitting of accident-proof level and temperature instrumentation for the SFPs</td>
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<td>Back-fitting of a new SFP cooling system</td>
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<td>Improvement of earthquake resistance of the SFP storage building</td>
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ENSIs involvement at international level

- IAEA’s IRRS mission at ENSI in 2011
- EU Stresstests (incl. Follow-Up)
- IAEA Action Plan
  - OSART Mission for Mühleberg NPP in October 2012
- 2nd Extraordinary Meeting of the CNS in August 2012
  - Request for Amendments to the CNS
- Western European Nuclear Regulators Association WENRA
  - 5 new Technical Working Groups
  - Update of Safety Reference Levels
ENSi’s commitment at the international level to strengthen Nuclear Safety
After Fukushima we must

- establish **internationally harmonized state of the art standards**
- encourage **international Peer Reviews and Periodic Safety Reviews**
- make sure that **regulatory authorities are *de facto* and *de jure* independent**
To strengthen Nuclear Safety
we must not rest!