

The European stress tests, peer review and follow-up actions

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Content

- **Summary of the Stress Tests and Peer Review process**
- Main results of the Peer Review
- Follow-up action plan
- Conclusion

European Council Request after Fukushima

- **11 March: Fukushima accident**
- **24 – 25 March: European Council Request**
 - Stress tests to be developed by ENSREG, the European Commission and WENRA
 - Review all EU plants in light of lessons learned from Japan
 - Assessments conducted by national Authorities
 - Assessments subject to a peer review

Specification of Stress Tests and Peer Review

- Methodology drafted by WENRA and approved by ENSREG
- Topics:
 - Natural hazards
 - Loss of safety systems
 - Severe accident management

Stress Tests and Peer Review Steps



- **1 June – 31 October:**
 - Assessment of plants by operators requested by national Regulators

- **31 October – 1 January:**
 - Review of operators assessments by national Regulators
 - National report to the EC

- **1 January – 26 April:**
 - Peer Review of national reports
 - Approval of results of Peer Review by ENSREG

Participants



Nuclear Member States

- Belgium
- Bulgaria
- Czech Republic
- Finland
- France
- Germany
- Hungary
- Lithuania
- Netherlands
- Romania
- Slovakia
- Slovenia
- Sweden
- Spain
- United Kingdom

European Commission

Non Nuclear Member States

- Austria
- Denmark
- Ireland
- Italy
- Luxembourg
- Poland

Nuclear Non-Member States

- Ukraine
- Switzerland

Observers

- Canada
- Croatia
- IAEA
- Japan
- UAE
- USA

Public Outreach

- Public meetings
 - 17 January on Peer Review process
 - 8 May on Peer Review results
- ENSREG web site
 - All national and Peer Review reports
 - Comprehensive information on the Stress Tests and Peer Review
- Possibility given to stakeholders to post questions for the Peer Review

Output

- Main report: Final conclusions and recommendations at European level
- 17 country reports: Specific conclusions and recommendations
- Compilation of main recommendations and suggestions

Approval of final reports of peer review by ENSREG on 26 April 2012

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Adequacy of the Assessments

- Assessments performed by utilities and Regulators generally in line with ENSREG specifications
- Evaluation of margins and cliff edge effects related to external hazards was difficult and was not always performed completely
- Regulatory approaches vary with countries

Assessment of Natural Hazards and Margins

- Recommendation that WENRA, involving the best available expertise from Europe, develop guidance on:
 - natural hazards assessment
 - assessment of margins beyond the design basis and cliff-edge effects

Periodic Safety Review

- Peer review demonstrated effectiveness of periodic safety reviews
- Recommendation that ENSREG underline the importance of periodic safety review
- Natural hazards and relevant plant provisions should be re-evaluated as often as appropriate, but at least every 10 years.

Containment Integrity

- Urgent implementation of the recognized measures to protect containment integrity is a finding of the peer review that national regulators should consider

Accidents Resulting from Natural Hazards (1)

- Necessary implementation of measure allowing prevention of accidents and limitation of their consequences, in case of extreme natural hazards is a finding of the peer review that national regulators should consider

Accidents Resulting from Natural Hazards (2)

- Typical measures:
 - Bunkered equipment including instrumentation and communication means
 - Mobile equipment protected against extreme natural hazards
 - Emergency response centers protected against extreme natural hazards and radioactive releases
 - Rescue teams and equipment rapidly available to support local operators

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Main Objectives of Action Plan

- Insure that recommendations and suggestions of peer review are addressed by national regulators in a consistent manner
- Contribute to enhancement of standards for world-wide nuclear safety
- Contribute to IAEA Action Plan

General Approach of Action Plan

- Continuous improvement of safety
- Use of further peer reviews
- Openness and transparency
- Strong connection with CNS and IAEA

**Action plan approved by ENSREG
on 1 August 2012**

Member States and ENSREG main actions

- National action plans to be developed and made public
- ENSREG workshop to peer review national action plans
- Follow-up fact-finding site visits focused on measures to improve safety

WENRA Actions

- Review of existing Reference Levels in light of the lessons learned from Fukushima
 - Natural hazards
 - Containment integrity
 - Accident management
 - Periodic safety review
- Specific task on mutual assistance between Regulators in case of an emergency

Additional actions

- Off-site emergency preparedness
 - Actions to enhance emergency preparedness robustness in Europe
- Airplane crash
 - Handled by AD-Hoc group on security
 - Possible support of ENSREG, in its area of competence

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CONCLUSION (1)

- Stress tests and peer review required exceptional resources and resulted in suggestions and recommendations focused on preliminary lessons learned from Fukushima
(about 500 men x year)
- Follow-up action plan now being implemented

CONCLUSION (2)

- **Expected to contribute to enhancing safety in Europe and worldwide through the IAEA**

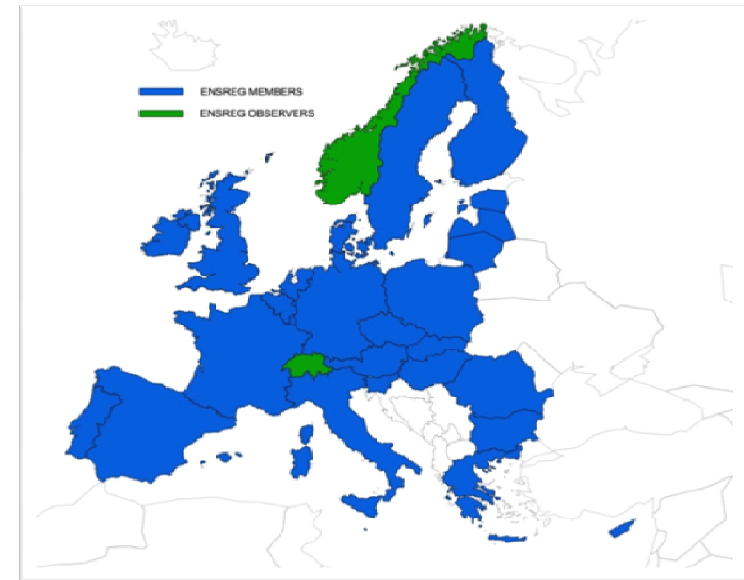
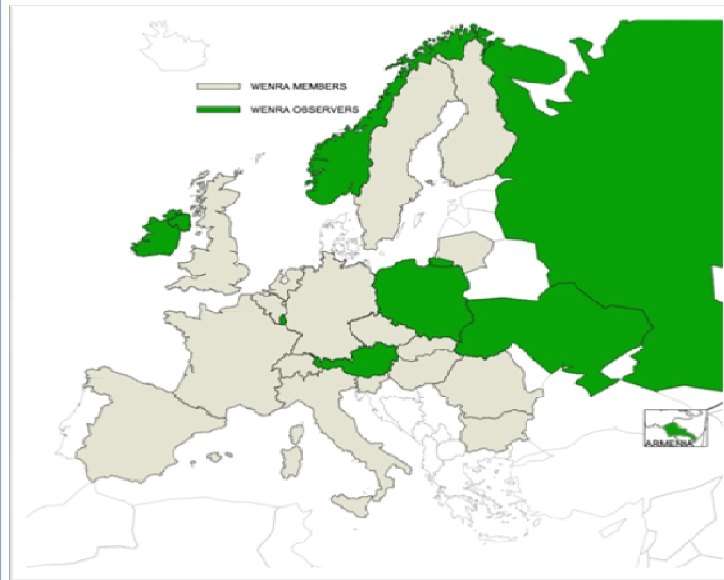
General European Context

- Safety is a national responsibility
- National Frameworks comply with General European Safety Directive
 - Compliance with IAEA Safety Fundamentals and CNS
 - Report to European Commission
 - Peer review of National Framework

European Regulators Organizations

- **ENSREG:** European Nuclear Safety Regulators Group + European Commission
 - European policy advisory group
- **WENRA:** Western European Nuclear Regulator's Association
 - Club of Regulators

WENRA and ENSREG



Over 150 Facilities in 17 European countries