

# **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

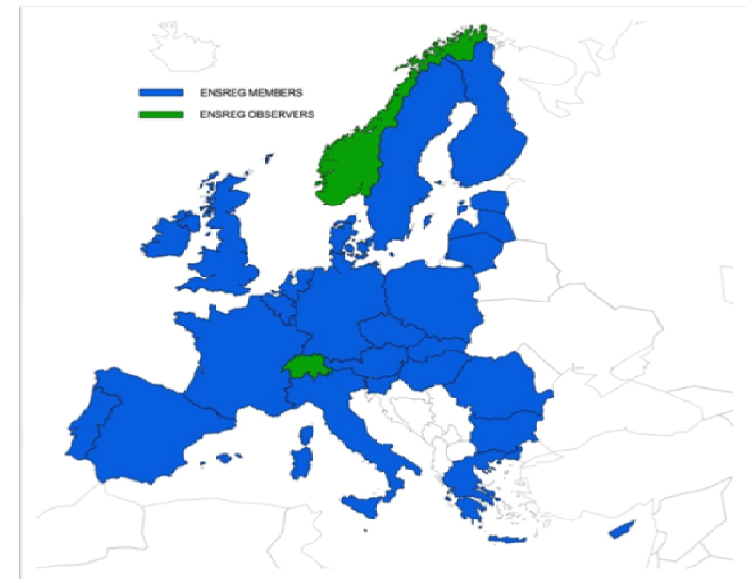
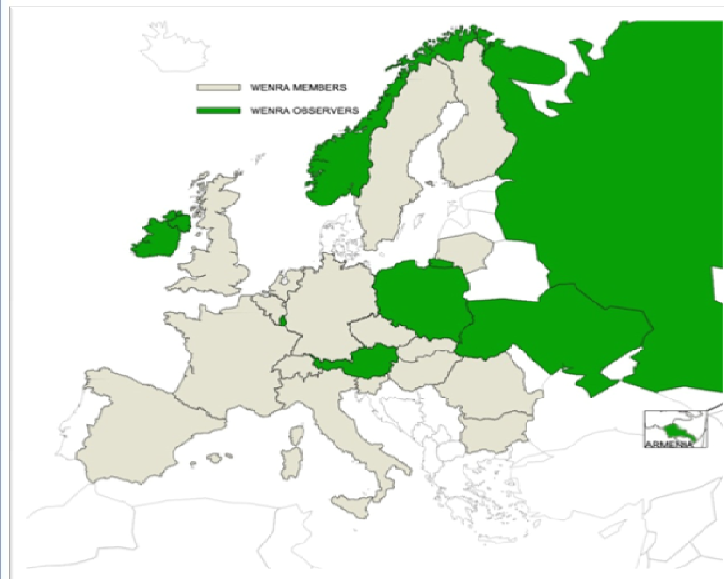
- **ENSREG:** European Nuclear Safety Regulators Group + European Commission
  - European policy advisory group
- **WENRA:** Western European Nuclear Regulator's Association
  - Club of Regulators

# WENRA and ENSREG

Western European  
**WENRA**  
Nuclear Regulators' Association

**ENSREG**  
European Nuclear Safety Regulators Group

**ENSREG**  
European Nuclear Safety Regulators Group



Over 150 Facilities in 17 European countries