

WENRA

Improvement of nuclear safety through self-commitment of regulators

Side event

6th Review Meeting to the Convention on Nuclear Safety

Vienna, 1 April 2014

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Side event

6th Convention on Nuclear Safety

Vienna, 1 April 2013

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01

WENRA

01 WENRA

Basic facts

- Association of the Heads of nuclear regulatory authorities of the EU countries with NPP and Switzerland
- Original Terms of Reference signed on 4 February 1999
 - Revised on 14 March 2003
 - Revised on 26 March 2010
- European centre of competence for nuclear safety

www.wenra.org

01 WENRA

Policy Statements

- Commitment to continuous improvement of nuclear safety in our countries
- Develop a common, harmonized approach to nuclear safety
- Develop common safety reference levels based on IAEA standards and good practices in our countries
- Regular revision undertaken when new knowledge and experience are available

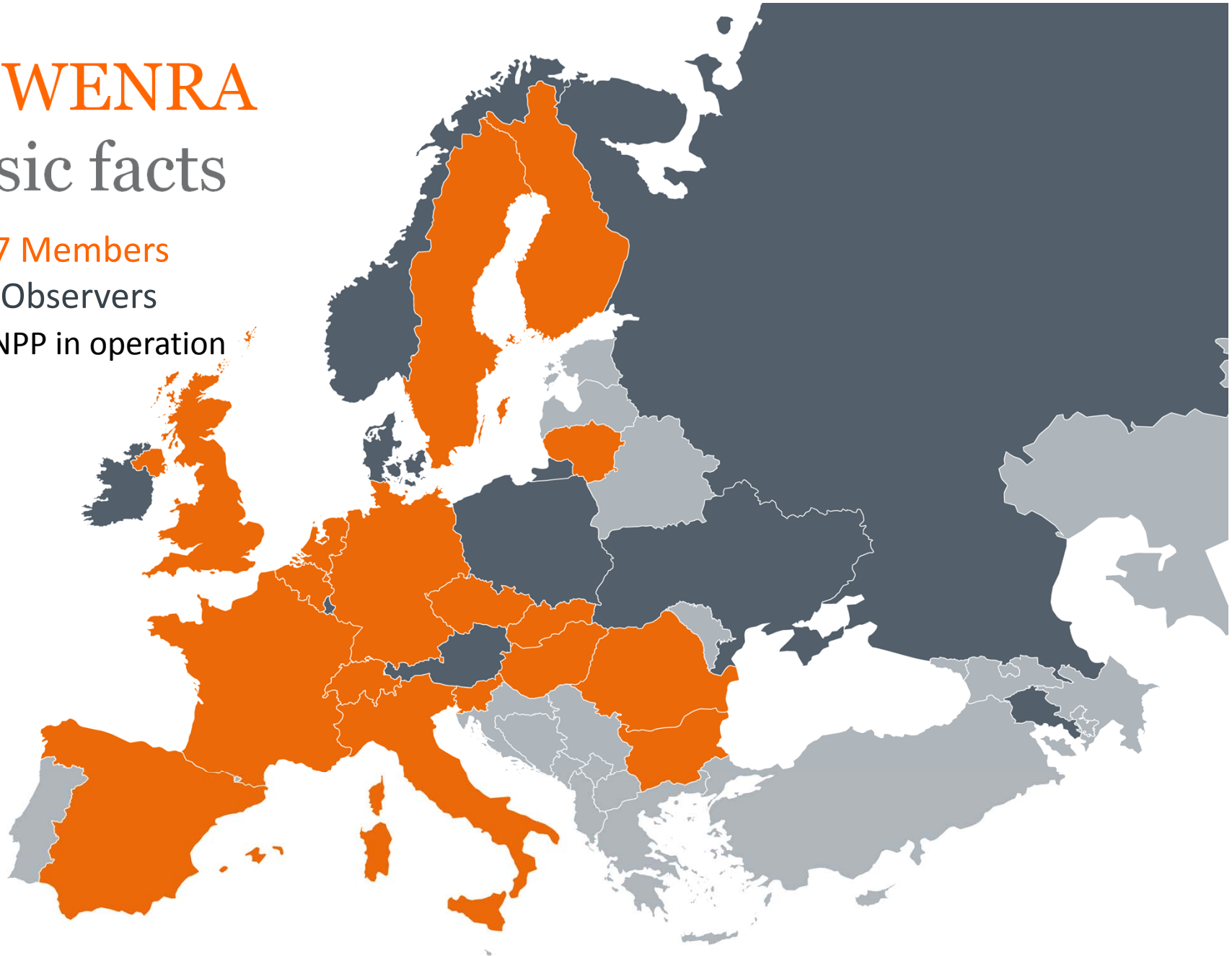
01 WENRA

Basic facts

■ 17 Members

■ 9 Observers

137 NPP in operation



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Working Groups

RHWG Reactor Harmonisation Working Group

WGWD Working Group on Waste and Decommissioning

Ad-hoc Working Groups

02

Reactor Harmonization Working Group RHWG

02 RHWG

RHWG activities

- Complete set of 284 Reactor Safety Reference Levels (SRL) published in 2006
- Revised set of 295 SRL based on stakeholder comments published in 2008
 - Implementation >80% in 14 countries, 100% in 8 countries
- Revision of SRL based on lessons from Fukushima started in 2012

03

WENRA Actions after Fukushima

03 WENRA Actions after Fukushima

Review of SRL and providing guidance

New Ad-hoc Working Groups (post Fukushima) in 2012

- Mutual assistance → Mandate fulfilled in 2013
 - Periodic safety review → Mandate fulfilled in 2013
 - Containment integrity
 - Accident management
 - Natural hazards
- } Review of SRL completed in 2014

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Mutual Assistance

Actions taken:

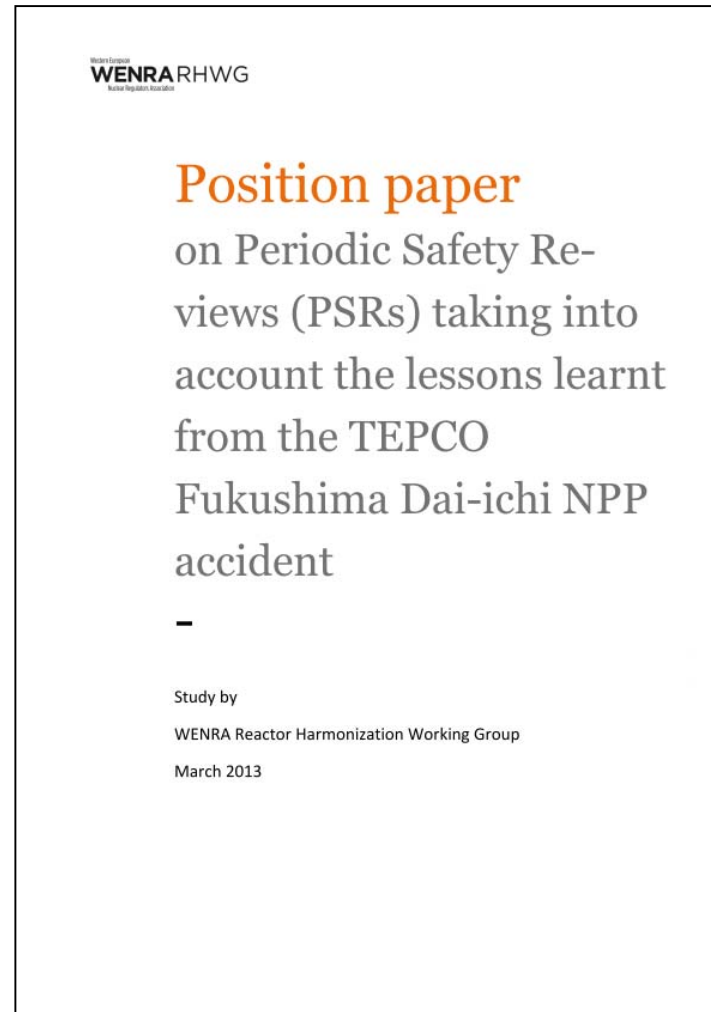
- Creation of Emergency Database DEEPER (new ad-hoc WG)
 - European reactor designs
 - SAM features
- Exchange and coordination of technical and radiological assessments → HERCA
- Several other recommendations for cooperation and exchange of expertise

03 WENRA Actions after Fukushima

Periodic Safety Review

WENRA Position Paper
March 2013

see www.wenra.org



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Review and Revision of SRL

- Review took into account explicitly:
 - safety culture
 - safety of spent fuel pools
 - sites with multiple reactors
 - conditions at the site after an accident
 - need for independent and diverse heat removal means
 - beyond design basis conditions
- A new “issue” dedicated to natural hazards has been established

03 WENRA Actions after Fukushima

Safety Management	A	Safety Policy	346 Safety Reference Levels
	B	Operating Organization	
	C	Management System	
	D	Training and Authorization of NPP staff	
Design	E	Design Basis Envelope for Existing Reactors	
	F	Design Extension of Existing Reactors	
	G	Safety Classification of Structures, Systems and Components	
Operation	H	Operational Limits and Conditions	
	I	Ageing Management	
	J	System for Investigation of Events and Operational Experience Feedback	
	K	Maintenance, In-service inspection and Functional Testing	
	LM	Emergency Operating Procedures and Severe Accident Management Guidelines	
Safety verification	N	Contents and updating of Safety Analysis Report	
	O	Probabilistic Safety Analysis	
	P	Periodic Safety Reviews	
	Q	Plant Modifications	
Emergency preparedness	R	On-site Emergency Preparedness	
	S	Protection against Internal Fires	
	T	Natural hazards (new issue after Fukushima)	

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Review and Revision of SRL

New Guidance Documents (to be published with new SRL set):

- New guidance document on natural hazards
 - Natural hazard types include earthquake, flooding, extreme values of meteorological phenomena, rare meteorological phenomena, biological and geological phenomena, forest fire
- New guidance document on design extension
 - Design extension conditions include initiating events induced by natural hazards exceeding the design basis, prolonged SBO, loss of UHS, total loss of feed water, loss of active fuel pool cooling...

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Review and Revision of SRL

Natural Hazards

Natural hazards shall be considered an integral part of the safety demonstration of the plant (including spent fuel storage). Threats from natural hazards shall be removed or minimized as far as reasonably practicable for all operational plant states. To achieve this, assessments of the design basis and design extension conditions shall be performed to identify needs and opportunities for improvement.

Design Extension of existing Reactors

As part of the defense in depth, analysis of Design Extension Conditions (DEC) shall be undertaken with the objective of improvement of the safety of the NPP by identifying ways of enhancing the plant's capability to withstand more challenging events or conditions than those considered in the design basis, minimizing radioactive releases harmful to the public and the environment as far as reasonably practicable, and ensuring sufficient margins to "cliff-edge effects".

03 WENRA Actions after Fukushima

Review and Revision of SRL

Stakeholder consultation:

- SRL published on WENRA web-page www.wenra.org for comments of stakeholders (Dec 2013 to Feb 2014)
- All important European stakeholders have been informed
- 142 comments from 12 parties
- Final approval expected in 2014

04

WENRA Recommendation of Aug 2013

04 WENRA Recommendation of Aug 2013

2-step verification of materials quality and structural integrity of reactor pressure vessels:

1. Comprehensive review of RPV manufacturing and inspection records
2. Examination of the base material of the vessels

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Summary

04 Summary

- Actions taken by WENRA due to lessons from Fukushima
 - Mutual assistance of regulators
 - Position paper on Periodic Safety Reviews (Mar 2013)
 - Review and revision of SRL with focus on containment integrity, accident management and natural hazards → 2014
 - New guidance documents on natural hazards and design extensions
- WENRA recommendation in connection with flaw indications in Belgian reactors (Aug 2013)
- Overall review of SRL to be started in 2014, including a focus on requirements for new builds

Thank you.

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