

WENRA

Harmonizing Nuclear Safety in Europe

7th GNSSN Steering Committee Meeting

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Stéphane Paillet, WENRA Head of Technical Secretariat

Director of ASN International Relations Department

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
- Working groups:
 - Reactor Harmonization Working Group (RHWG)
 - Working Group on Waste and Decommissioning (WGWD)
 - Ad-hoc Working Groups

Policy Statements

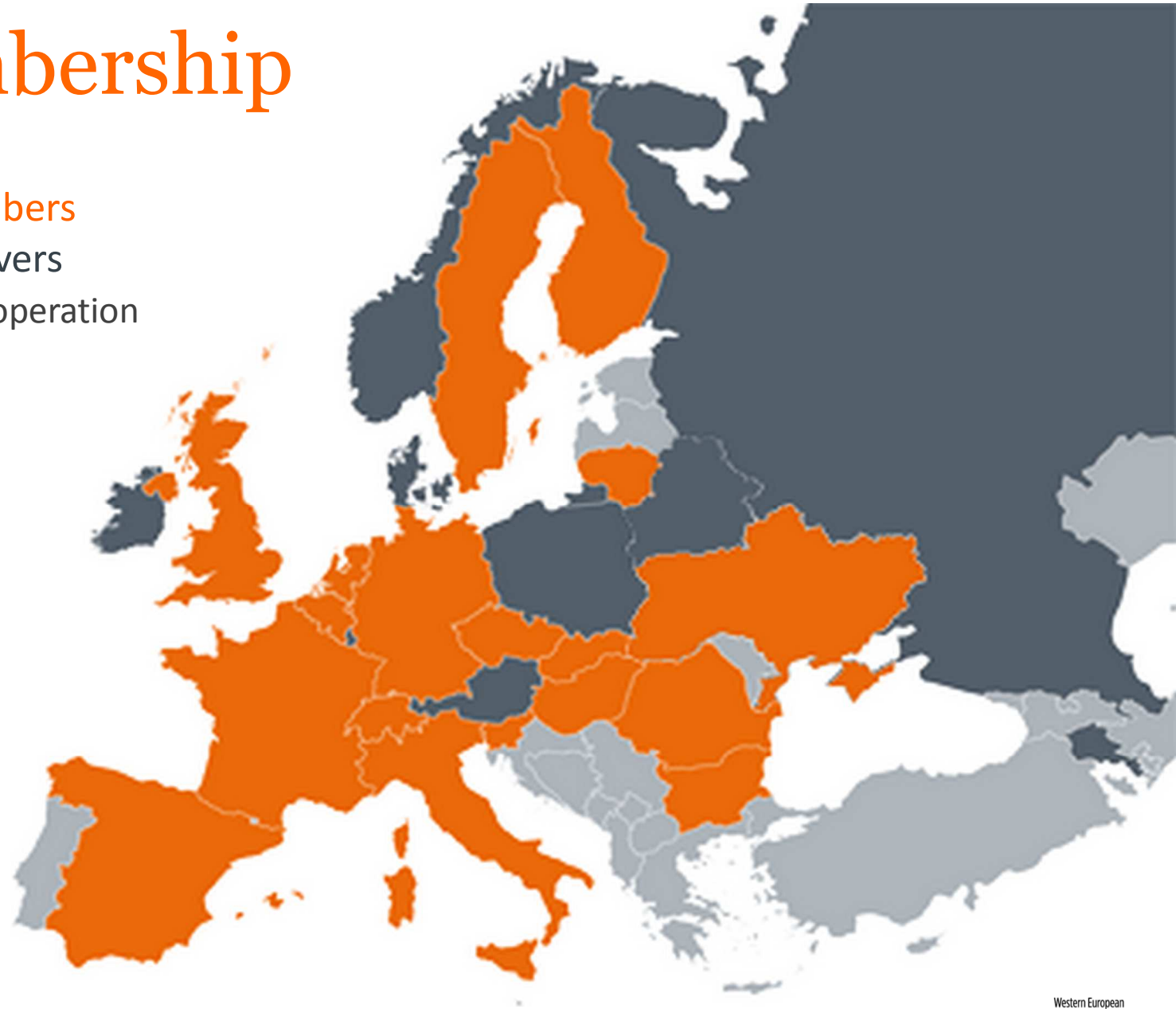
- Commitment to continuous improvement of nuclear safety in our countries
- Develop a common, harmonized approach to nuclear safety
- Develop common safety reference levels based on IAEA standards and good practices in our countries
- Regular revision undertaken when new knowledge and experience are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

Membership

■ 18 Members

■ 9 Observers

137 NPP in operation



WENRA Reference Levels

What

- The RLs are agreed by the WENRA members. They reflect expected practices to be implemented in the WENRA countries. As the WENRA members have different responsibilities, the emphasis of the RLs has been on nuclear safety, primarily focusing on safety of the reactor core and spent fuel. The RLs specifically exclude nuclear security and, with a few exceptions, radiation safety.
- As RLs have been established for greater harmonization within WENRA countries, the areas and issues they address were selected to cover important aspects of nuclear safety where differences in substance between WENRA countries might be expected. They do not seek to cover everything that could have an impact upon nuclear safety or to form a basis for determining the overall level of nuclear safety in operating NPPs.
- Given the various regulatory regimes and range of types of plants (PWR, BWR, CANDU and gas-cooled reactors) in operation in WENRA countries, the RLs do not go into legal and technical details. When needed, a reference to a relevant IAEA publication is inserted.
- There are significant interactions between some of the issues and hence each issue should not necessarily be considered self-standing and the RLs need to be considered as a whole set.

When

- Harmonization is considered fulfilled when the RLs are embedded in national regulation and enforced as such.
- Very often RLs are implemented before being included in the national regulation.

WENRA Reference Levels

History

- 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 and finished in 2014

WENRA & European Union

- *“Nuclear safety remains an absolute policy priority for the European Union”.* Dominique Ristori, Director General Energy, European Commission
- *“We, members of WENRA, decided to set up this club for different reasons. Technically, WENRA’s point of view was asked by the European Union about the status of nuclear safety in applicant countries. But from the beginning, there was a strong will of the ten initial members to increase cooperation in a European framework in the field of nuclear safety”.* André-Claude Lacoste, former Chairman of ASN, former Chairman of WENRA
- *“In parallel with harmonization of the regulations the WENRA members are committed to develop their national practices so that the agreed reference safety level will truly be achieved in each country”.* Dana Drábová, Chairperson of SÚJB (Czech Republic), former Chairman of WENRA

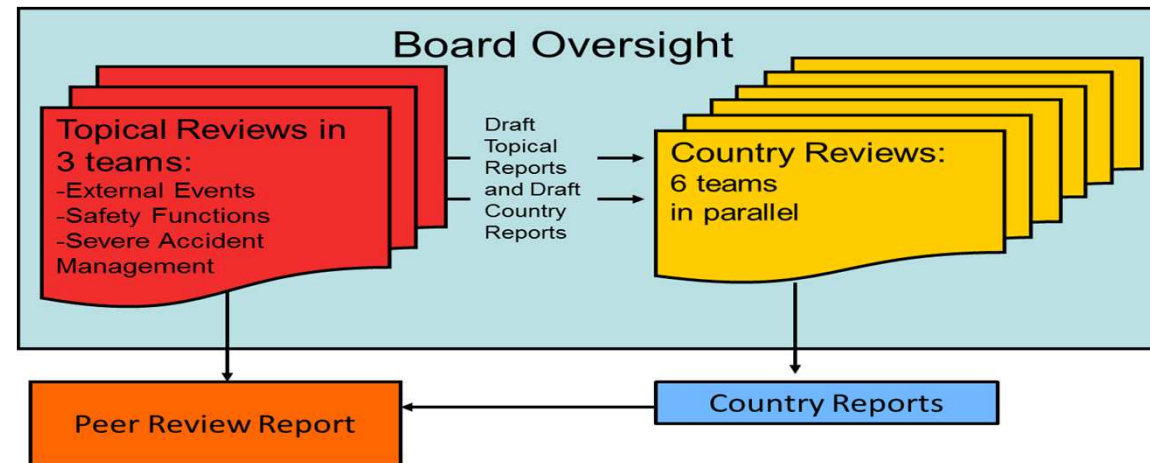
Source: “WENRA. A decade of European harmonization of nuclear Safety”. WENRA, March 2011

WENRA & EU Directives

- **COUNCIL DIRECTIVE 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations**
 - **Preamble:** (14) *It is useful to build on the process where the national safety authorities of the Member States having nuclear power plants on their territory have been working together in the context of Western European Nuclear Regulators' Association (WENRA) and have defined many safety reference levels for power reactors."*
 - **Article 9.3:** *"Member States shall at least every 10 years arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and/or authorities with the aim of continuously improving nuclear safety. Outcomes of any peer review shall be reported to the Member States and the Commission, when available".*
- **COUNCIL DIRECTIVE 2014/87/EURATOM of 8 July 2014 amending Directive 2009/71/Euratom establishing a Community framework for the nuclear safety of nuclear installations**
 - **Preamble:** *" (23) Cooperation on nuclear safety between Members States is well established and can give added value in terms of nuclear safety, transparency and openness towards stakeholders at the European and international level. Member States, through their competent regulatory authorities making relevant use of ENSREG, and building on the expertise of the WENRA, should every six years define a methodology, Terms of Reference and a time frame for Peer Reviews on a common specific technical topic related to the nuclear safety of their nuclear installations. The common specific technical topic to be considered should be identified among the WENRA safety reference levels or on the basis of operating experience feed-back, incidents and accidents and technological and scientific developments. Member States should perform a national self-assessment and make arrangements for common peer reviews by other Member States' competent regulatory authorities of their national self-assessment.*
 - **Article 8.e:** *1. Member States shall, at least once every 10 years, arrange for periodic self-assessments of their national framework and competent regulatory authorities and invite an international peer review of relevant segments of their national framework and competent regulatory authorities with the aim of continuously improving nuclear safety. Outcomes of such peer reviews shall be reported to the Member States and the Commission, when available.*
2. Member States shall ensure that, on a coordinated basis: (a) a national assessment is performed, based on a specific topic related to nuclear safety of the relevant nuclear installations on their territory; (b) all other Member States, and the Commission as observer, are invited to peer review the national assessment referred to in point (a); (c) appropriate follow-up measures are taken of relevant findings resulting from the peer review process; (d) relevant reports are published on the above mentioned process and its main outcome when results are available.
3. Member States shall ensure that arrangements are in place to allow for the first topical peer review to start in 2017, and for subsequent topical peer reviews to take place at least every six years thereafter. (...)

Stress Tests

- March 2011: European Council Request Stress tests to be developed by ENSREG, the Commission and WENRA
- April 2011 Methodology drafted by WENRA
- May 2011 Specification of EU Stress Tests approved by ENSREG and published by ENSREG and European Commission
- The methodology included the development of the Stress Tests peer review process:



New Reference Levels

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

New Reference Levels

Review & 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

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

New Reference Levels

Safety Management	A	Safety Policy
	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)

346 Safety Reference Levels

Natural Hazards

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.
 - 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.

Follow-up of the implementation of the SRLs in the national regulations

Western European
WENRA
Nuclear Regulators Association

27.10.2014

WENRA Statement

regarding the revision of the SRLs for existing reactors taking into account the lessons learned from the TEPCO Fukushima Dai-ichi Nuclear Accident

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One of the objectives of WENRA, as stated in its terms of reference, is to develop a harmonized approach to nuclear safety and radiation protection issues and their regulation in Europe. A significant contribution to this objective was the publication, in 2006, of a report on harmonization of reactor safety in WENRA countries. This report addressed the nuclear power plants in operation and it included “Safety Reference Levels” (SRLs), which reflected expected practices to be implemented in the WENRA countries. The SRLs were updated twice in 2007 and again in 2008.

The SRLs have been established for greater harmonization within WENRA countries raising the level of nuclear safety in Europe by their implementation in the national regulatory framework and in the nuclear power plants (NPPs). The emphasis of the SRLs has been on nuclear safety, primarily focussing on safety of the reactor core and spent fuel. The SRLs specifically exclude nuclear security and, with a few exceptions, radiation safety.

WENRA members are committed to continuous improvement of nuclear safety in their countries. Within this spirit WENRA emphasizes identifying the insights from the Fukushima Dai-ichi accident in March 2011 and operators improving NPP safety accordingly. For this purpose, WENRA mandated its Reactor Harmonization Working Group (RHWG) to review and revise the SRLs for existing reactors with the aim to integrate the lessons learned from the 2011 Fukushima Dai-ichi accident.

The SRLs that have been developed represent, in addition to good practices in WENRA countries, the lessons learned from the Fukushima Dai-ichi accident.

the Fukushima accident.

WENRA strives for openness and keeps all interested parties informed of the progress made in this work.

WENRA Statement on updated SRL 2014.docx
regarding the revision of the SRL under consideration of the lessons learned from Fukushima Dai-ichi accident

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Development of a process to follow-up on the implementation of the 2014 RLs since 2014

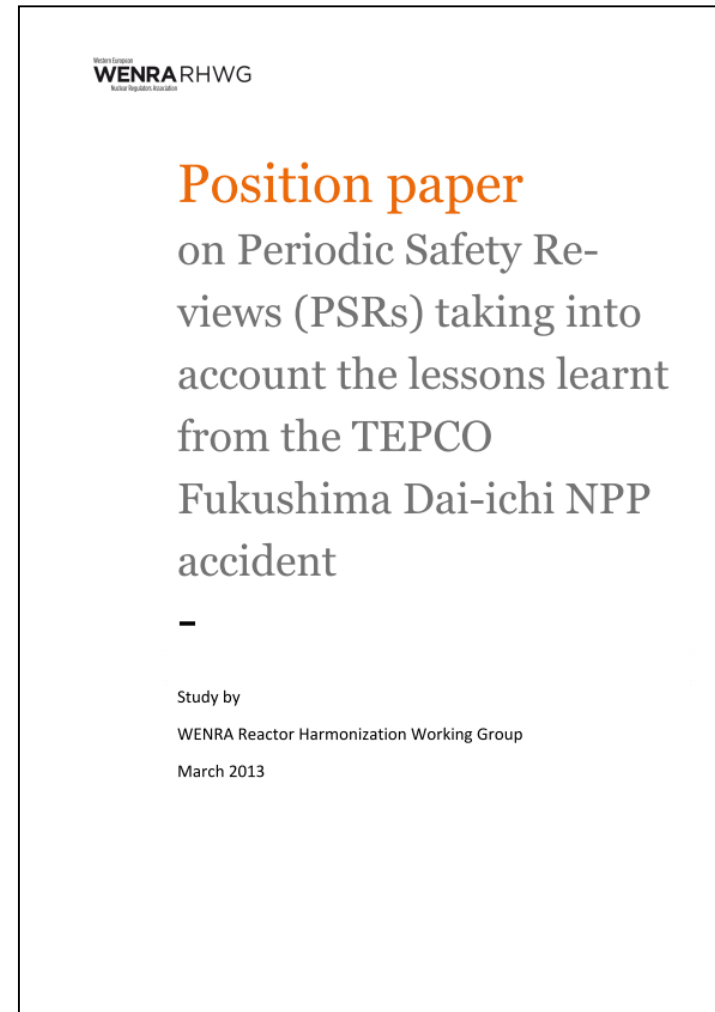
- first, on the regulatory side
- then, at the NPPs (targeted on a specific safety reference Level)

Expected schedule:

- End of 2015: national self-assessment
- During 2016: RHWG review of national self-assessment
- Later (2017) : final national action plan & follow-up

Other actions - Periodic Safety Review

WENRA Position Paper
March 2013
see www.wenra.org



Summary and Outlook

- In the last 15 years WENRA has achieved high level of harmonization of nuclear safety in its member states
 - Safety Reference Levels have been reviewed with regard to the lessons learned from the Fukushima accident
 - Safety Reference Levels for the management of waste have been and will further be developed
- WENRA will further strive for implementing the WENRA Safety Reference Levels.
- Future activities of WENRA will be related to the EU directives (implementation of Topical Peer Reviews in the revised Safety directive).
- WENRA will be an actor aiming to extend its cooperation to other regions (ANSN, FORO...).

Thank you.

WENRA

Stéphane Pailler

ASN

15 rue Louis-Lejeune

CS 70013

92541 Montrouge Cedex

France

Tel +33 1 46 16 44 01

Fax +33 1 46 16 44 37

Stéphane Pailler

info@wenra.org

stephane.pailler@asn.fr

www.wenra.org