Harmonization to support the operation and new build of NPPs, including SMRs CORDEL 4th Regional Workshop

18 - 20 May 2022 Lyon, France





Overview







presentations



52 organizations



Proceedings can be accessed here.

They can also be accessed through the following route:

- Navigate to World Nuclear Association Website https://world-nuclear.org/
- Locate the "events" page- https://world-nuclear.org/events.aspx
- Click on "Regional Workshop" tab
- Click on the link to the "event page"
- Locate the "Proceedings" tab

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Opening session

GG International harmonization and collaboration are of fundamental importance to safe and successful global SMR deployment. 55 Ramzi Jammal



Key themes

- Need a culture shift towards broader harmonization and collaboration
- Potential to overwhelm regulators' capacities
- Regulatory differences present a blocker to climate goals and innovation
- Harmonization initiatives must complement each other.

Chairs



Jean-Marie Hamy Framatome



Manuel Carrasco EDF and EUR

Speakers

Yves Desbazeille nucleareurope

Ramzi Jammal CNSC

Olivier Gupta WENRA

Anna Bradford IAEA Véronique Rouyer OECD/NEA

Ghislain Pascal European Commission

Roger Lundmark ENISS

Sama Bilbao y León World Nuclear Association

International standards & joint design assessment session

C The convergence of industry needs, private-sector investment, environmental drivers, and government support for advanced reactor technology has opened a window of opportunity that must be seized. Andrew Sowder



Key themes

- Streamlining requirements between regulators will facilitate innovation and speed up deployment.
- International bodies should consider extending their activities to support review and assessment of vendor designs.
- Governments and policy makers must recognize these challenges, responding by empowering and providing guidance to organizations in the pursuit of climate objectives.

Chairs



Jože Špiler GEN energija



Carrie Fosaaen NuScale Power

Speakers

Anna Bradford IAEA Gisela Stoppa WENRA Vincent Sorel EDF Anicet Touré Tractebel Brian Smith US NRC Marina Demeshko OECD NEA

Andrew Sowder EPRI Ville Tulki VTT Gian-Luigi Fiorini

Nuclear 21

Safety standards implementation session

G Discrepancies between national regulatory requirements can be minimized through harmonization of regulatory approaches allowing deployment of standardized designs. 55

Claude Mayoral



Key themes

- Regulatory discrepancies could be overcome by a robust design, adapted to accommodate different regulatory interpretations.
- Greater sharing of information and further discussions between different organizations could help accelerate harmonization.

Chairs



Robert Vesecký CEZ



Etienne Courtin Framatome

Speakers

Claude Mayoral Edvance

Mathieu Bernard ENISS

Olivier Dubois ETSON Robert Vesecký CEZ

Stéphane Beils EDF

Risk informed decision-making session

C Probabilistic risk assessment is not only a way to fulfil regulatory requirements, but also a versatile tool to optimize plant operation. 55 Sami Siren



Key themes

- Emergency planning requirements for existing large LWRs and SMRs should be evaluated from a risk informed perspective and the resulting requirements scaled proportionally
- Risk informed decision making approaches and methodologies should be accepted for use more broadly
- Safeguards by design should be considered as early as possible
- Public perception of the risk of existing plants and future plants will be an ongoing challenge that should be addressed

Chairs



Claude Mayoral Edvance



Brian Smith US NRC

Speakers

Gerd Bassing ENISS

Sami Siren Fortum

John Skegg EDF Amir Afzali Southern Company

Jeremy Whitlock

Supply Chain session

New challenges include a shortage of skilled suppliers, the shrinking number of manufacturing bases, increased supply chain length, shortened product lifecycles, emerging materials, advances in information technology, new technological processes and standards, and the globalization/localization of supply sources.

Pekka Pyy



Key themes

- Processes for purchase and supply must be improved and supplier bases and options should be expanded
- A better understanding of quality (guidance documents, webinars, training courses) is critical
- Expanded use of commercial grade dedication type processes (national or international initiatives) will also help to strengthen supply chains.
- Procurement departments must act as an intelligent customer, ensuring that success is delivered with competent people and efficient processes

Chairs



Julie Gorgemans Westinghouse Belgium



Oliver Martin EC Joint Research Centre

Speakers

Pekka Pyy IAEA

Andrei Goicea nucleareurope

Peter Tuominen Fortum Frédéric Magloire EDF

Sylvain Gien Framatome

Codes & standards session

SMRs need to rely on the series effect of the in-factory manufacturing to benefit from scaling effects. While standardization of codes and standards benefits the whole industry, it is of paramount importance for the SMR business case.

Benoît Lepouzé



Key themes

- Through active cooperation Standards Developing Organisations are adapting their Codes & Standards to make them more internationally acceptable or compatible
- Greater flexibility for operators when specifying codes and standards for their plant
- Many code comparisons, at high level or focused on a specific topic, also facilitate the use of alternatives to the "typically applied code".

Chairs



Cécile Petesch CEA



Damien Couplet Engie Tractebel

Speakers

Frédéric Beaud EDF

Shiva Samasundar ProSim

Kimberly Verderber ASME Benoît Lepouzé IAEA

Sarah Eaton

David Clarkson Frazer-Nash Consulting

Long-term operation session

GG For many countries, if nuclear energy is to remain a part of the strategy to achieve a low carbon energy future, the safe, environmentally sound and economical, long-term operation of nuclear power reactors must be ensured. 55

Kimberly Nick



Key themes

- Should provide flexibility to "do the right thing" at any given time with respect to nuclear safety.
- Guidance and standards at international and European levels provide sufficient information to support EU Member States in implementing the provisions of Articles 8a to 8c of Directive 2014/87/Euratom.
- Better understanding of legal frameworks required to support LTO.

Chairs



Roger Lundmark ENISS



Abderrahim Al Mazouzi EDF

Speakers

Kimberly Nick OECD NEA

Olivier Dubois ETSON

Simon Brown WANO Mark Bateman ENISS

Steve Nardone Engie Laborelec

Hing-Ip Wong Materials Ageing Institute

Closing session



Key themes

- The goals of harmonization / standardization are supported across industry and regulators
- Many related initiatives are on-going with multiple stakeholders: must determine how to bring these initiatives together
- Leadership by national governments for the development of suitable legal frameworks and policies to support their national regulator is critical
- Effective collaboration among a small group of stakeholders to drive action towards reforming international licensing and regulatory frameworks is needed
- Harmonization / standardization should be a guiding principle when developing new regulations for advanced technologies

Technical Tour

Tour of two Framatome manufacturing facilities:

- 1. Saint-Marcel heavy equipment assembly plant Saône-et-Loire
 - Reactor pressure vessels
 - Steam generators
 - Pressurizers
- 2. Forge Le Creusot one of the world's few forges capable of producing the large parts for the nuclear island's primary components
 - Foundry
 - Presses
 - Machining workshops
 - Furnaces



Cooperation in Reactor Design Evaluation & Licensing (CORDEL) Working Group

Supporting a new paradigm for reactor design licensing

Promoting standardized reactor designs and harmonized approaches to licensing, enabling:

Enhanced safety:

Sharing of operational feedback across a fleet

Improved economics:

Streamlining of licensing and deployment time

Greater public understanding:

Risks managed consistently across borders

Stronger supply chain:

Supporting long-term power plant operation

