

NEA NUCLEAR SAFETY RESEARCH JOINT PROJECTS WEEK: Success Stories and Opportunities for Future Developments

9-13 January 2023

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Welcome

Day 1 – Monday 9 January


NEA NUCLEAR SAFETY RESEARCH JOINT PROJECTS WEEK: Success Stories and Opportunities for Future Developments

9-13 January 2023

Questions: [Questions, feedback and suggestions](#)

Event public page: [Nuclear Energy Agency \(NEA\) - NEA Nuclear Safety Research Joint Projects Week: Success Stories and Opportunities for Future Developments \(oecd-nea.org\)](#)

Form: [Questions, feedback and suggestions link](#) available in the registration confirmation email

 **NEA**
NUCLEAR ENERGY AGENCY

ABOUT US | TOPICS | NEWS AND RESOURCES | LEARNING AND TOOLS

Webinar (Online Event)

To address the challenges announced, please write here your questions to the speakers and we will do our best to include as many of them as possible in the discussions.

Please enter your questions in the dedicated spaces below for each session.

Session 1: Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future
Questions for session 1

Session 2: Joint Projects for Safety in Design, Learnings and Perspectives
Questions for session 2

Session 3: Joint Projects for Safety in Operation, Learnings and Perspectives
Questions for session 3

Session 4: Joint Projects for Safety in Accidental Situations, Learnings and Perspectives
Questions for session 4

Session 5: Future Needs for International Co-operation in Nuclear Safety Research
Questions for session 5

Please suggest specific topics you consider to be priorities for future joint safety research projects.
Topics for future safety research joint projects

If you already know the NEA joint projects framework, please suggest specific items for future revisions.

If you are not familiar with the NEA joint projects framework, please share with us what you consider to be key elements to incorporate in the framework of future NEA joint safety research projects.

If you already know the NEA joint projects framework, could you please tell us what suggestions you have for future revisions, and in case you are not familiar with the NEA joint projects framework, please share with us potential mechanisms and frameworks that could be used in the future to address nuclear safety research. *

Professional information

First Name *

LAST NAME *

ORGANISATION *

COUNTRY *

Professional e-mail address *

Thank you very much for your most kind contribution to the successful outcome of this event.

Introductory Remarks



Mr William D. MAGWOOD, IV
Director-General
OECD Nuclear Energy Agency (NEA)



Ms Véronique ROUYER
Head of Division, Nuclear Safety Technology and
Regulation
OECD Nuclear Energy Agency (NEA)

Introductory Remarks



Mr William D. Magwood, IV
Director-General
OECD Nuclear Energy Agency (NEA)



Mr William D. MAGWOOD, IV, is the Director-General of the OECD Nuclear Energy Agency (NEA) since September 2014. Prior to this position, he served from 2010 to 2014 as one of the five Commissioners appointed by the US President and confirmed by the US Senate to the US Nuclear Regulatory Commission (NRC). From 2005 to 2010, he provided independent strategic and policy advice on energy, environmental and technology policy issues. From 1998 to 2005, Mr Magwood was Director of Nuclear Energy at the US Department of Energy (DOE). During his tenure, he launched several important initiatives including the Generation IV International Forum (GIF) and the formation of the Idaho National Laboratory (INL). He began his career working as a scientist for Westinghouse Electric Corporation and managing electric utility research and nuclear policy programmes at the Edison Electric Institute. Mr Magwood, a US national, holds Bachelor's degrees in Physics and English from Carnegie Mellon University and a Master of Fine Arts from the University of Pittsburgh.

Introductory Remarks



Ms Véronique ROUYER

Head of Division, Nuclear Safety Technology
and Regulation

OECD Nuclear Energy Agency (NEA)



Ms Véronique ROUYER is the Head of the NEA Division of Nuclear Safety Technology and Regulation since August 2019. She supports the Director-General of the NEA in enhancing the technical excellence of the Agency's work and in ensuring high standards of safety in the use of nuclear energy by contributing to the development of effective and efficient regulation and oversight of nuclear installations, and by helping to maintain and advance the scientific and technological knowledge base. Prior to joining the NEA, Ms Rouyer was the Safety Research Director in the French Institut de Radioprotection et de Sûreté

Nucléaire (IRSN), the French Technical Support Organisation to the public authorities dealing with radiation protection and nuclear safety. She managed nuclear safety research activities and programmes including numerous co-operative activities that comprised experimental facilities and simulation codes development platforms. In addition, she gained extensive experience in the development and co-ordination of scientific programmes plans as Deputy Director for the scientific projects, strategy, development and partnerships division, a role she held between 2009 to 2016. Previously, she managed and co-ordinated IRSN criticality safety activities, assuming positions of increasing responsibility over 15 years, including in areas such as nuclear fuel cycle facilities and safety assessment and evaluation of the transport of radioactive materials. She was also very involved in academic and professional training activities. Ms Rouyer holds a Graduate Chemical Engineering Master Degree from the Polytechnic Institute of Toulouse and a Master's Degree in Nuclear Engineering from the Institut National des Sciences et Techniques Nucléaires (INSTN).

Session 1

Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future

SESSION MODERATOR



Mr William D. Magwood, IV
Director-General
OECD Nuclear Energy Agency (NEA)



Mr Raymond FURSTENAU

Director, Office of Nuclear Regulatory Research, United States Nuclear Regulatory Commission (USNRC)

SESSION 1: Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future



Mr Raymond FURSTENAU has been the Director of Nuclear Regulatory Research at the US Nuclear Regulatory Commission since July 2018. Prior to joining the NRC, from 1987 to 2018, he held several leadership positions in the US Department of Energy's Office of Nuclear Energy. During most of those years, Mr Furstenau provided US government oversight of nuclear facility operations, and nuclear energy research & development programmes at the Idaho National Laboratory. Mr Furstenau holds a BS degree in Applied Science and Engineering from the US Military Academy and a MS degree in Nuclear Science and Engineering from Idaho State University. He is a registered professional nuclear engineer.



Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future

January 9, 2023 – NEA Nuclear Safety Research Joint Projects Week

Raymond Furstenau

Director, Office of Nuclear Regulatory Research

Agenda



- Nuclear Safety Research Perspectives
- Benefits of NEA Joint Projects to the NRC
 - General
 - Example-NRC as the operating agent
 - Example-NRC as a participant
 - Example-FIDES-II
- Challenges Facing Joint Projects
- Enhancement Opportunities

Nuclear Safety Research Perspectives

- Understand phenomena that may affect nuclear safety
- Quantify and reduce uncertainties
- Understand sensitivities to safety
- Obtain quality data for computer code validation
- Be ready for the future
 - License renewal of existing reactors
 - New reactor applications (light water, non-light water, SMRs)

Benefits of Joint NEA Projects

- Sharing of world-wide expertise on safety topics and experimentation techniques
- Sharing of resources, leveraging investments and facilities
- Provide data for improving nuclear safety code modeling and simulation capabilities
- Complement our domestic research projects

Example-NRC as the Operating Agent Rod Bundle Heat Transfer Facility (RBHT)



Benefits: Provides new and unique data on reflood hydraulics in a highly instrumented facility. Rod bundle and spacer grids are prototypical of most LWRs.

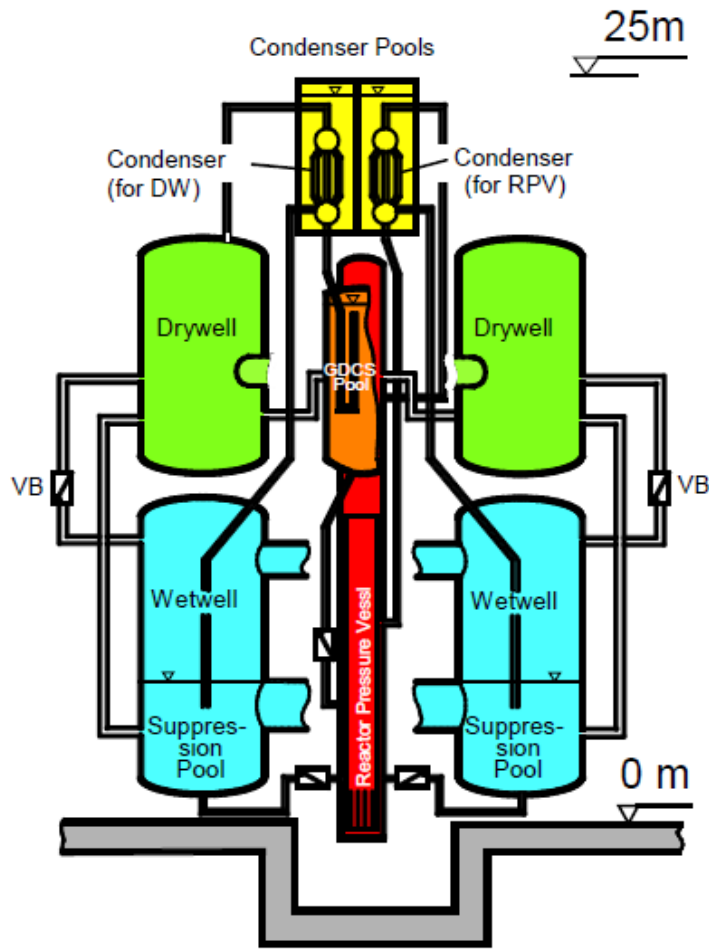
Outcomes: Sixteen reflood experiments were performed and data was provided to participants. Tests provided measurements of droplet size/velocity and spacer grid effects. Simulation of test results showed deficiencies where analytical code improvements are needed.



Challenges: Maintaining schedule (due to facility closure during pandemic), transferring large data files with numerous participants, and obtaining contract commitments prior to initiating project.

Example-NRC as a Participant

PANDA Tests



Benefits: Provides new data on passive heat removal for LWR safety systems (including SMRs) and insight on the data and code calculations from the participants.

Outcomes: New data for code assessment and an improved understanding of phenomenon that are important for passive system performance.

Challenges: Consensus on what tests are to be performed.

Example-FIDES II Participation



HERA in pile-testing
Figure source: INL

- **Benefits:** "A stable, sustainable, reliable platform for fuel and material testing"
- **Outcomes:** "Generates experiment results and expertise for shared cost" ---Three JEEP's on-going: P2M, INCA and HERA
- **Challenges:**
 - Balance between capability development and test results
 - Balance between fuels and materials testing
 - Balance between current LWR needs and advanced reactor technologies

Challenges Facing Joint Projects

- Maintaining critical world-wide research and test capabilities (people, equipment, and facilities)
- Balancing priorities among participants
- Resource constraints
- Developing our future workforce



Opportunities to Enhance Joint Projects

- Strengthen education opportunities
 - NEA Joint Projects provide a portfolio of activities that can provide education and training opportunities
 - The NEA Nuclear Education, Skills and Technology (NEST) Framework is an important way to promote education opportunities in joint projects
- Reduce risk to Operating Agents
- Expand participation and review criteria for contributions to joint projects

Closing Thoughts

- NRC sees considerable value in NEA joint projects and plans to continue our support – we cannot afford to go it alone
- Joint projects leverage world-wide capabilities
- Look for opportunities to make the joint projects even better



Dr Jean-Christophe NIEL

Director-General, Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France



Dr Jean-Christophe NIEL is Director General of the French Institute of Radiation Protection and Nuclear Safety (IRSN). Over 30 years Dr Jean-Christophe NIEL has gained a long experience in the control of nuclear safety and in radiological protection through various positions, at the Institut de Radioprotection et de Sûreté Nucléaire (IRSN), French technical safety organisation and at Autorité de sûreté nucléaire (ASN), the French nuclear safety authority. He was Director General of ASN for almost 10 years. The President of the French Republic appointed Jean-Christophe Niel as the head of IRSN in April

2016. He was reappointed in April 2021 for a further five years. Dr Niel currently chairs the NEA Committee on the Safety of Nuclear Installations (CSNI). He has recently been appointed member of the International Nuclear Safety Group (INSAG) by the Director General of IAEA, Raphael Grossi.



**NUCLEAR SAFETY RESEARCH JOINT PROJECTS WEEK: A SUCCESS STORY
AND OPPORTUNITIES FOR FUTURE DEVELOPMENTS**

**SESSION 1: NUCLEAR SAFETY RESEARCH JOINT PROJECTS: BENEFITS AND
CHALLENGES FOR THE FUTURE**

JANUARY 9, 2023 - 13:00 – 16:00 CET

Research projects and Assessment at IRSN: Why?

The Law

« IRSN exercises assessment and research missions »

The regulation

« IRSN defines research programs to maintain and develop its knowledge and skills needed for its assessment activities »

- Development of knowledge and skills for assessment activities*
- Development of tools and methods for assessment activities*
- Improvement of nuclear installations safety level*

Science and research : the driving forces for improvement of nuclear risks protection

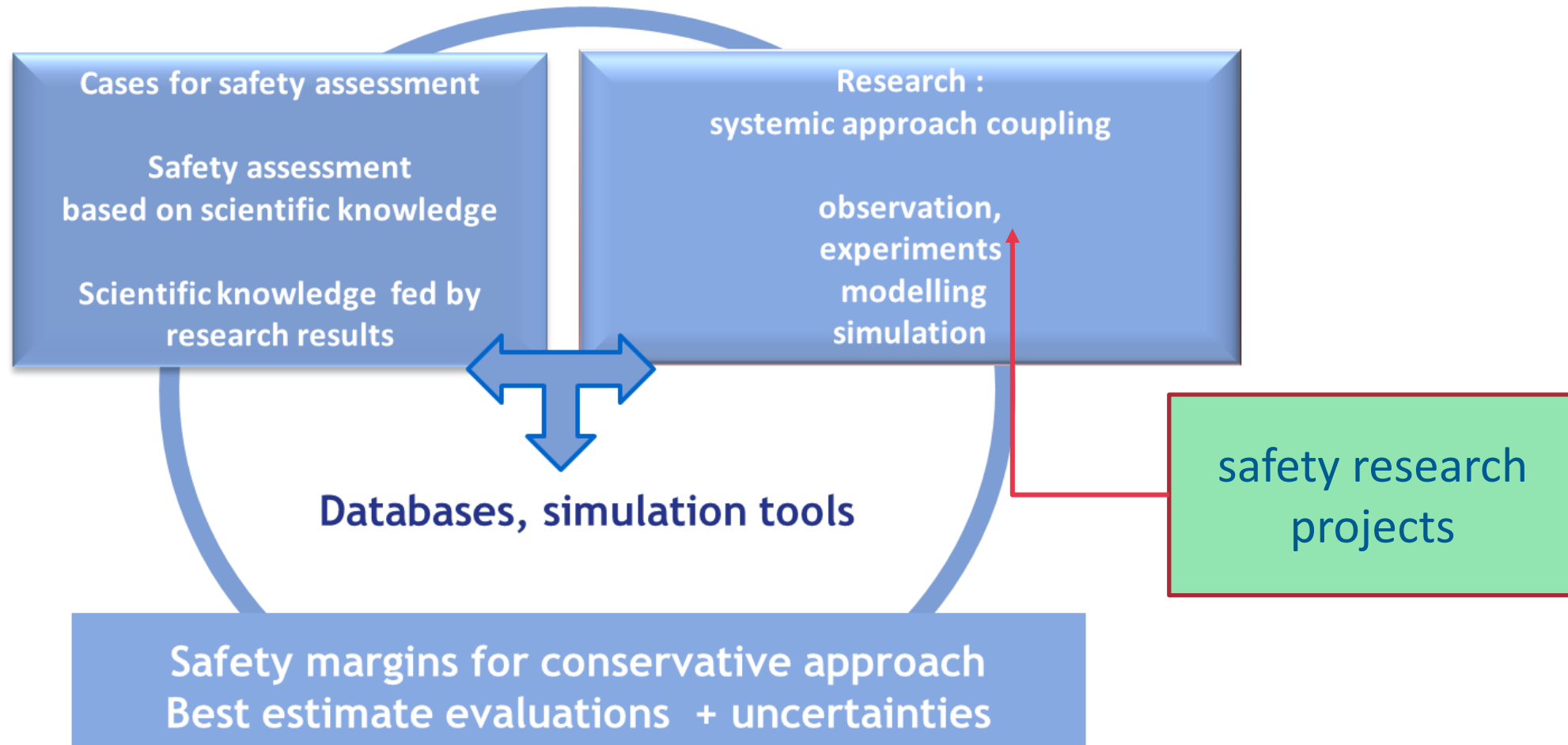
inject this knowledge into the defense in depth approach

Technological developments performed by industry and major research operators. But what about safety and security?

TSOs are in the same dynamics: their importance in the Global Nuclear Safety Regime justify their direct link with science and R&D activities

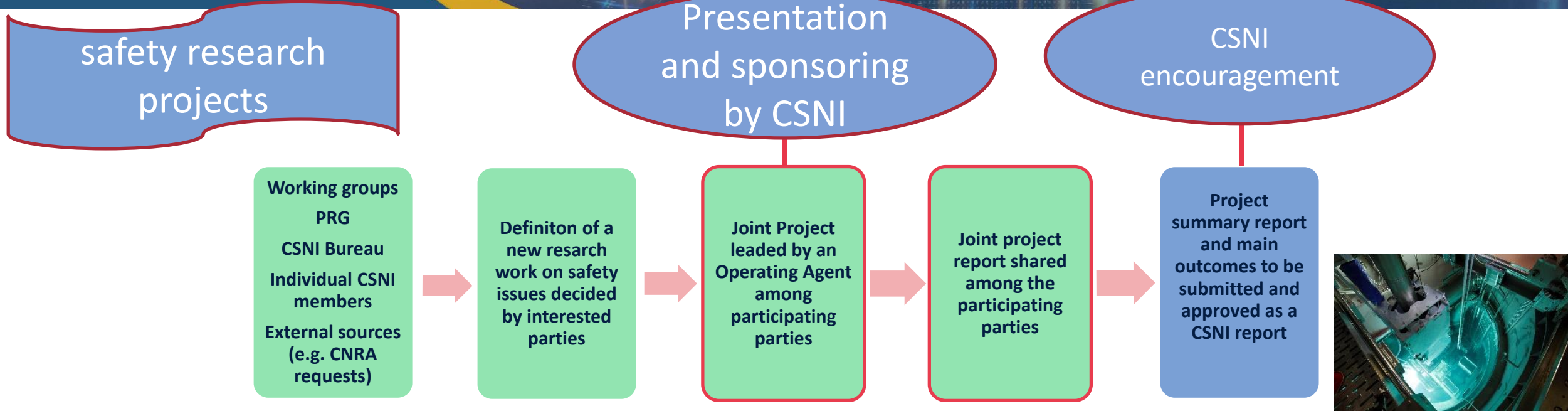
- Identifying and addressing safety research needs and creating new knowledge
- Identifying and addressing education and training needs and developing high level skills
- Developing an overall research strategy to support a science based safety assessment including: experimental platforms, data bases, scientific softwares, methodologies

Research and assessment: A systemic approach



Role and contribution of the CSNI for TSOs and safety organizations

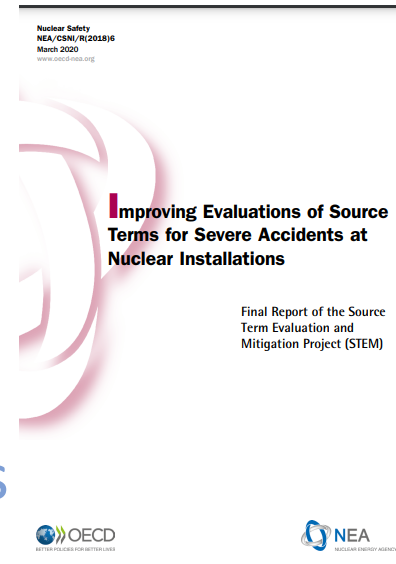
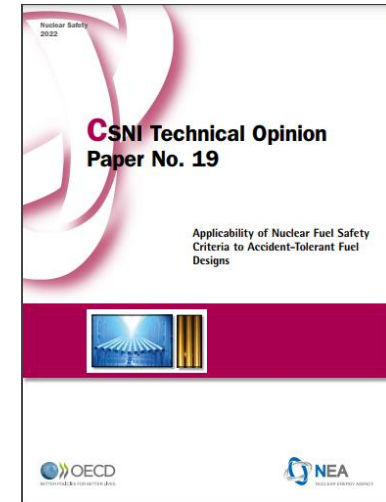
- ❑ CSNI is mandated by the NEA to “*be responsible for NEA programmes and activities that support maintaining and advancing the scientific and technical knowledge base of the safety of nuclear installations*”
- ❑ CSNI is a discussion forum and the reference Committee for TSOs and other organizations for :
 - Exchanging information about operating experience and safety issues
 - Addressing safety issues associated with new technologies and reactor designs
 - Balancing overviews of safety research issues
 - Promoting research as needed to reach consensus on CSNI technical goals
- ❑ CSNI addresses the challenges of ensuring an adequate knowledge base and infrastructure for supporting TSO’s safety research in an efficient way



- ❑ Joint projects (JPs) involve interested countries to pursue research or the sharing of data with respect to particular areas or problems
- ❑ JPs help TSOs to address main safety issues on current and future nuclear installations
- ❑ They are carried out under the auspices and with the support of the NEA

Regulation and governance of CSNI's activities

- ❑ IRSN's recognition of the key role played by the Program Review Group (PRG) established 20 years ago
- ❑ Strategic vision of the "medium to long term" needs for research infrastructures in support of safety
- ❑ Essential support to CSNI and the CSNI bureau for decision making
- ❑ Evaluation and prioritization of CSNI and WG activities and effective follow-up of the work of the WGs and the main outcomes of the JPs
- ❑ Review of the content and quality of the deliverables (JP reports, technical opinion paper, experimental results, databases)
- ❑ PRG can play an essential role for TSOs in helping define and prioritize their safety research programs for current or new nuclear installations



Nuclear Safety Research Projects: current and future issues

- Major issue for TSOs as IRSN and safety research organizations: preservation of experimental research infrastructures and experimental skills
 - Closure of number of research facilities at the international level and loss of associated skills that are nonetheless essential to the development of nuclear energy and the improvement of safety
 - The shutdown of Halden reactor in 2018 and subsequent project activities have highlighted the need for preserving key experiments in international databases

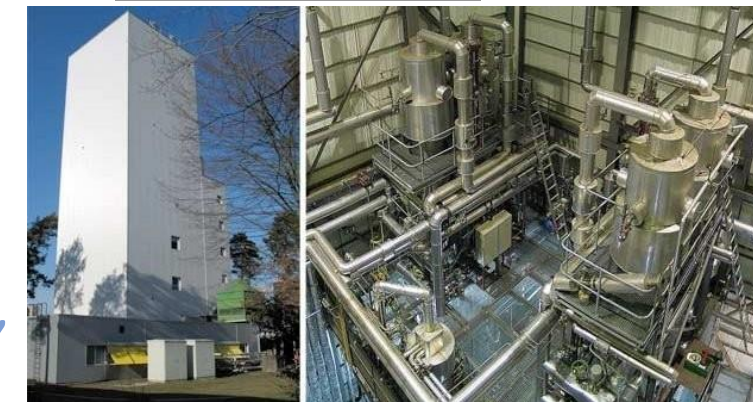
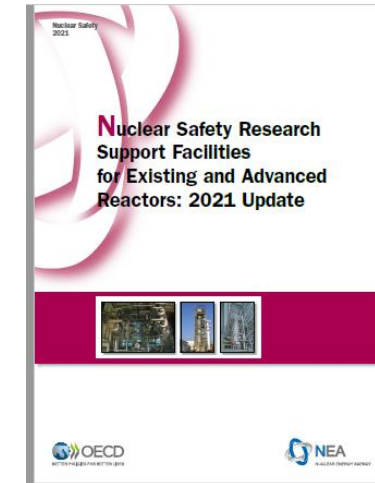


Halden reactor - Norway

Nuclear Safety Research Projects: current and future issues

□ Major issue: preservation of experimental research infrastructures and associated skills

- Major contribution of CSNI SESAR group "Senior Expert Group on Safety Research" reports to point out the following issues and make recommendations
 - Last update in 2021
 - Identification of "medium to long term" issues and needs for experimental activities
 - Review of existing experimental facilities, their situation and identification of those that are at risk and too costly to replace (research reactors, irradiators, fire facilities, thermal-hydraulic, mechanical, earthquake,)
 - Identification of the teams and skills that are at risk of disappearing



Primary Coolant Loop Test Facility [PKL] in Erlangen - Germany

Nuclear Safety Research Projects: current and future issues

□ Several initiatives and roadmaps to address this issue

➤ At NEA level :

- Prioritization actions made by CSNI and NSC
- Joint projects sponsored by CSNI
- CSNI and NSC initiative : the FIDES network dedicated to R&D for irradiated fuels and materials
- Nuclear Education, Skills and Technology (NEST) framework for students
- Pooling of resources and optimization of TSOs' research programs

➤ The Nuclear Safety and Security Group (NSSG) initiative *“to preserve the remaining operating research facilities, when appropriate, to ensure durability of scientific expertise”*



Nuclear Safety Research Projects: current and future issues

□ Several initiatives and roadmaps to address this issue



IAEA

International Atomic Energy Agency

- The International Centres based on Research Reactors (ICERRs) supported by IAEA to help IAEA Member States gain timely access to relevant nuclear infrastructure based on research reactors to achieve their capacity building and R&D objectives



- The Sustainable Nuclear Energy Technology Platform (SNETP) to support and promote the safe, reliable and efficient operation of Generation II, III and IV civil nuclear systems supported by the European Commission

Research projects in nuclear safety : IRSN's view on innovative approaches for improved efficiency

**Reach and
maintain
the highest
level of
safety
worldwide**

Technological harmonisation for industry

Regulatory harmonisation for governments and regulators ?

Harmonisation of safety by TSOs, but
how ?

Research projects in nuclear safety : IRSN's view on innovative approaches for improved efficiency

- ❑ Through JPs to converge on safety issues, methods and safety margins evaluation
- ❑ By supporting an harmonisation process which can also be “bottom-up”, from technical expertise to regulation
- ❑ By feeding the harmonisation discussions with robust technical safety features based upon cutting-edges scientific expertise, for the benefit of the public and environmental protection
- ❑ By implementing dedicated research and renewing research capacities to be able to face future challenges, especially as it seems to be growing interest for nuclear energy in the world nowadays (e.g. SMRs)

Research projects in nuclear safety :

IRSN's view on innovative approaches for improved efficiency

- ❑ By always seeking efficiency while always guaranteeing the ethics and safety objectives of the projects :
- ➔ By attracting the interest of other actors as industrialists and designers to participate in the financing of projects ➔ **money and time saving** – e.g. industrial third parties associated to CSNI joint projects
- ❑ By experts exchanges on their practices, safety approaches, difficulties and the challenges they are facing
- ❑ By using, promoting and developing networks such ETSON, the European Technical Safety Organisation Network, which could help on harmonisation through technical and scientific approaches, prioritization of research projects and cross expertise

Conclusion

- ❑ A better coordination of nuclear safety research international roadmaps could guarantee a robust nuclear safety expertise and increase the quality of this research
- ❑ The NEA could play a key role in setting up the international research agenda and defining priorities for research projects
- ❑ It is important to preserve the remaining operating research facilities and develop new ones to ensure durability of scientific expertise and address the safety issues of new nuclear facilities
- ❑ Dedicated safety research in a cooperative mode can contribute to harmonisation (common vision on future challenges)
- ❑ International cooperation, multilateral and bilateral, is key to safety harmonisation
- ❑ If we want harmonization to be successful, we need also to stay connected to the public and to civil society = work in a transparent manner
- ❑ It is necessary to provide opportunities for the young generation to ensure high level skills required for the safe use of nuclear energy



Thank you for your attention!



Mr Manuel CARRASCO

Deputy Director of the Design and Technology Branch of the New Builds Engineering and Projects Division, Électricité de France S.A., France

SESSION 1: Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future



Since 2018, **Manuel CARRASCO** has been Deputy Director of the Design and Technology Branch of the Nuclear Engineering and New Build Projects Division of EDF. He is responsible for R&D programmes management, for continuously improving and delivering EDF technical engineering standards and for the monitoring of International Safety Standards. Prior to this appointment, Manuel Carrasco worked in the EDF EPR2 project direction where he was in charge of Safety, Security, Licensing and Nuclear Pressurised Equipment regulation implementation. Before occupying these positions at EDF, he was Head of the Safety and Reactor Process division at Framatome where he spent around 30 years occupying diverse positions. Manuel Carrasco currently serves as Chair of the EUR association, the utility association addressing the European Utilities Requirements for Generation III NPPs and represents EDF at the the European Nuclear Installations Safety Standards Initiative (ENISS) steering committee.

Panel SESSION 1: Nuclear Safety Research Joint Projects: Benefits and Challenges for the Future



Mr Raymond FURSTENAU

Director, Office of Nuclear
Regulatory Research,
United States Nuclear
Regulatory Commission
(USNRC), United States



Dr Jean-Christophe NIEL

Director-General, Institut de
Radioprotection et de Sûreté
Nucléaire (IRSN), France



Mr Manuel CARRASCO

Deputy Director of the
Design and Technology
Branch of the New Builds
Engineering and Projects
Division, Électricité de
France S.A., France



Professor Sevostian BECHTA

Head of Division, Nuclear Power
Safety, Royal Institute of Technology
(KTH), Sweden



Professor Sevostian BECHTA

Head of Division, Nuclear Power Safety, Royal Institute of Technology (KTH), Sweden



Professor Sevostian BECHTA is the Head of the Division of Nuclear Power Safety at Royal Institute of Technology (KTH), Sweden since September 2011. He has 35 years' experience of R&D in nuclear engineering and safety, reactor thermal hydraulics, fuel behaviour, severe accidents and material science. He is a member of the NEA Working Group on Analysis and Management of Accidents (WGAMA) and a member of the High Scientific Council of the European Nuclear Society. He has authored and co-authored over 100 journal papers and holds ten patents, contributed in writing several NEA state of the art

reports, as well as technical reports for both the NEA and IAEA. Prior to joining KTH, he held several research and leadership positions at the Research Institute of Technology of ROSATOM, and Research and Design Institute for Energy Technologies, St Petersburg. He contributed to severe accident management concepts of various VVER designs employing in-vessel melt retention and ex-vessel core catchers, safety systems and new class of functional materials such as sacrificial materials for corium retention. He received his MS and PhD degree in nuclear engineering from St Petersburg Polytechnic State University.

Day 5 – Friday, 13 January 2023

Day 2 – Tuesday, 10 January 2023

Session 2: Joint Projects for Safety in Design, Learnings and Perspectives

Moderator: Jinzhao ZHANG, Technical Director, Business Area Global Nuclear, Tractebel (ENGIE), Belgium

Introduction 13:00-13:10
 ➤ **Didier JACQUEMAIN**, NEA/SAF, Senior Nuclear Safety Specialist
 ➤ **Jinzhao ZHANG**

13:10-14:00 ➤ **Examples of Nuclear Fuel Safety Projects**
 QUENCH-ATF, **Dr-Ing Th. Walter TROMM**, Head of the Nuclear Waste Management, Safety and Radiation Research Programme (NUSAFE), Karlsruhe Institute of Technology (KIT), Germany
 CABRI CIP, **Vincent BUSSE**R, CABRI CIP Project Manager, Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France

14:00-14:50 ➤ **Examples of Primary and Secondary Side Circuit Thermal-Hydraulics, Passive Safety Systems Projects**
 ATLAS, **Kyoung-Ho KANG**, Principal Research, Director, Korea Atomic Energy Research Institute (KAERI), Korea
 RBHT, **Steve BAJOREK**, Senior Technical Advisor for Thermal Hydraulics (USNRC), United States

14:50-15:00 **Break**

15:00-16:00 ➤ **Panel Discussion:** Perspectives for Nuclear Safety Research Programmes and Frameworks to support Evolutionary and Advanced Designs (e.g. NEA Framework for Irradiation Experiments – FIDES)

➤ **Panellists:** Walter TROMM; Vincent BUSSE; R; Kyoung-Ho KANG; Steve BAJOREK; Jonathan WRIGHT, Head of the Fuel Materials Centre of Excellence at Westinghouse Electric Company, Sweden; Ki-Yong CHOI, Senior Vice-President of Intelligent Nuclear Safety Research Department, KAERI, Korea

Day 3 – Wednesday, 11 January 2023

Session 3: Joint Projects for Safety in Operation, Learnings and Perspectives

Moderator: Alex VIKTOROV, Canadian Nuclear Safety Commission (CNSC), Canada, Director-General, Directorate of Power Reactor Regulation

Introduction 13:00-13:10
 ➤ **Markus BEILMANN**, NEA/SAF, Nuclear Safety Specialist
 ➤ **Alex VIKTOROV**

13:10-14:00 ➤ **Examples of Fire Research Projects**
 FIRE-DB, **Marina RÖWEKAMP**, Senior Expert, Gesellschaft für Anlagen- und Reaktorsicherheit (GRS), Germany
 PRISME, **Sylvain SUARD**, Head of Fire Experimentation Laboratory, (IRSN), France

14:00-14:25 ➤ **Example of a Human Technology and Organisation Project**
 Halden HTO, **Andreas BYE**, Chief Scientist, Programme Manager of the OECD NEA Halden Human-Technology-Organisation (HTO) Project, Institute for Energy Technology (IFE), Norway

14:25-14:50 ➤ **Example of a Material Ageing Project**
 SMILE, **Lotta NYSTRAND**, Senior Technical Sales Manager, Studsvik, Sweden

14:50-15:00 **Break**

15:00-16:00 ➤ **Panel Discussion:** Perspectives for Nuclear Safety Research Programmes and Frameworks to Support Safe Operation of Nuclear Facilities

➤ **Panellists:** Marina RÖWEKAMP; Sylvain SUARD; Andreas BYE; Lotta NYSTRAND; Jean SMITH, Electric Power Research Institute (EPRI), US; Raoul AWAD, Federal Authority of Nuclear Regulation (FANR), UAE; Wei GAO, Nuclear Power Operations Research Institute (NPRI), China

Day 4 – Thursday, 12 January 2023

Session 4: Joint Projects for Safety in Accidental Situations, Learnings and Perspectives

Moderator: Hideo NAKAMURA, Japan Atomic Energy Agency (JAEA), Japan, Technical Associate

Introduction 13:00-13:10
 ➤ **Martina ADORNI**, NEA/SAF, Nuclear Safety Specialist
 ➤ **Hideo NAKAMURA**

13:10-14:00 ➤ **Examples of Containment Thermal-Hydraulics, Mitigation Systems and Hydrogen Risk Management Projects**
 THAI/THESIS, **Sanjeev GUPTA**, Deputy General Manager, Head of Reactor Safety & Engineering, Becker Technologies, Germany
 HYMERES/PANDA, **Domenico PALADINO**, Leader Experimental Thermal-Hydraulics group at the Paul Scherrer Institute, Switzerland

14:00-14:25 ➤ **Example of an Accident Progression and Melt Coolability In-Vessel and Ex-Vessel Project**
 ROSAU, **Jeremy LICHT**, Nuclear Engineer, Principle Investigator for the ROSAU Project, Argonne National Laboratory, US

14:25-14:50 ➤ **Example of a Source Term Project**
 STEM/ESTER, **Christophe MARQUIE**, Deputy Head of the Experimental Department, Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France

14:50-15:00 **Break**

15:00-16:00 ➤ **Panel Discussion:** Perspectives for Nuclear Safety Research Programmes and Frameworks to Enhance Management of Accidents

➤ **Panellists:** Sanjeev GUPTA; Domenico PALADINO; Jeremy LICHT; Christophe MARQUIE; Katharina STUMMEYER, Head of Division, Project Management Agency, Gesellschaft für Anlagen- und Reaktorsicherheit, (GRS), Germany; Won-Pil BAEK, Senior Research Fellow, Korea Atomic Energy Research Institute (KAERI), President of the Korean Nuclear Society, Korea

Session 5: Future Needs for International Co-operation in Nuclear Safety Research

Moderator: William D. MAGWOOD, IV, Director-General, Nuclear Energy Agency

Introduction 13:00-13:10
 ➤ **Didier JACQUEMAIN**, NEA/SAF, Senior Nuclear Safety Specialist
 ➤ **William D. MAGWOOD, IV**

13:10-13:30 ➤ **Post-Fukushima Daiichi Co-operative Safety Research Projects and Opportunities for Future Research**, Toyoshi FUKETA, Advisor, Nuclear Regulation Authority (NRA), Japan

13:30-13:50 ➤ **Nuclear Innovation-2050: An NEA Initiative to Foster Innovations in the Nuclear Sector**, Fiona RAYMENT, OBE FREng, Chief Science and Technology Officer, National Nuclear Laboratory (NNL), the United Kingdom

13:50-14:10 ➤ **Addressing Future Research Prioritisation under the NEA Committee on the Safety of Nuclear Installations (CSNI) Auspices**, Vesselina RANGUELOVA, Deputy Head of the NEA Division of Nuclear Safety Technology and Regulation

14:10-14:30 ➤ **Better Addressing the Challenge of Joint Projects Data Preservation and Dissemination**, Didier JACQUEMAIN

14:20-14:35 **Break**

14:35-14:50 ➤ **Brief summary of the key outcomes of workshop sessions**, Didier JACQUEMAIN

14:50-16:00 ➤ **Concluding panel discussion**

• *What mechanisms to establish priorities for future international co-operation in nuclear safety research? Which frameworks to address future safety research?*

• **Panellists:** William D. MAGWOOD, IV; Jess GEHIN, Associate Laboratory Director, Nuclear Science and Technology, Idaho National Laboratory, United States; Fiona RAYMENT; Jean-Christophe NIEL; Toyoshi FUKETA; Aline DES CLOIZEAUX, Director, Division of Nuclear Power, Department of Nuclear Energy, International Atomic Energy Agency (IAEA); Roger GARBIL, Head of the Fission Section, Euratom Research Unit, Directorate General for Research and Innovation, European Commission

NEA NUCLEAR SAFETY RESEARCH JOINT PROJECTS WEEK: Success Stories and Opportunities for Future Developments

9-13 January 2023

Thank you for your participation today and see you all tomorrow!

[Questions, feedback and suggestions](#) link available in the registration confirmation email

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