6th INPRO Dialogue Forum on Global Nuclear Energy Sustainability: Licensing and Safety Issues for Small and Medium-sized Nuclear Power Reactors (SMRs)

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Report on the breakout session results: Legal and Regulatory Framework of SMRs

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Issues Covered

- Plant Staffing
- Transportation of fuelled NPPs (modules)
- Licensing process for multiples modules
- Identification of required changes to safety standards
- Standardization of portion of design and safety classification
Plant Staffing

- Number of plant operators relies on design features
- SMR operator training requirements should be examined
- International Design Certification
Transportation of fuelled NPPs (modules)

- Industrial standards
- Distinction between new designs that transport fuel separately and those that transport fuelled
- TS-R-1 “Regulations for the safe transport of nuclear material
Licensing process for multiple modules

• Sharing of safety systems
• Multi-unit PSA
• Standardization of designs
Identification of required changes to safety standards

- SSR-2/2 “Safety of nuclear power plants: commissioning and operation”
- NS-G-2.14 “Conduct of operations at nuclear power plants”
Standardization of portion of design and safety classification

• Important to business case for vendors
• Difficult with changing standards
• Requires shift in thinking on part of users
Cross Cutting Issues

- Application of graded approach
- Size of EPZ & siting
- Design for inspection & testing
Issues for Public Participation in Licensing Process

• Plant Staffing
  • Would public demand at least one operator running any nuclear power plant, including fully automated SMRs?

• Recommendation
  • IAEA conduct a workshop for Member States on SMR public acceptance
Recommendations

• IAEA to consider the need for reviewing the IAEA Safety Standards regarding the new SMR technologies/approaches that have potential for commercial deployment in the short-medium term with regards to licensing process, number of staffing, remote operation, TNPP transportation, etc.

• Encourage designers, regulators and operators to cooperate with standards organizations on technical standards for SMRs

• It is fundamental to facilitate parallel considerations of design Safety Requirements by industry and licensing Safety Requirements by regulators.
Recommendations (2)

- Update the IAEA Glossary to include terminology relevant to SMRs, in order to clarify terminology
- IAEA to evaluate the classification of SMRs in terms of electricity output
- IAEA to support discussion of potential international certification of designs
- IAEA to support discussion of potential international certification of operators
- Regulator and IAEA role in facilitating the deployment of SMRs, including licensing, serialization
Recommendations (3)

• Review the IAEA Safety Standards regarding number of staffing, for example, **NS-G-2.14**, to determine whether changes are needed with regard to SMRs. For example, one should consider defining a minimum number of operators.

• Support the publication of IAEA document on TNNP.

• Encourage the IAEA to participate in discussions with OECD-NEA RISKWG with regards to SMRs.