



IAEA

International Atomic Energy Agency
Atoms for Peace and Development

P0. Introductory presentation

Workshop on Application of Level 1 Probabilistic Safety Assessment

Bangkok, Thailand

5-9 September 2022

Mikhail Lankin

Safety Assessment Section

Division of Nuclear Installation Safety

Department of Nuclear Safety and Security

International Atomic Energy Agency

Welcome to IAEA/ANSN Regional Workshop on Application of Level 1 Probabilistic Safety Assessment!

3 Lecturers

20 participants

5 days

**Lectures, discussions and practical
exercises**

International Atomic Energy Agency



IAEA is the UN's scientific forum
for cooperation in the nuclear field



The IAEA's motto is Atoms for Peace and Development

Transferring nuclear technology to developing countries, working to prevent the spread of nuclear weapons, and serving as a global platform for nuclear safety and nuclear security, are core Agency business and most important areas of our work

Department of Nuclear Safety and Security (NS)

- The protection of people, society and the environment from the harmful effects of ionizing radiation is at the heart of the Department for Nuclear Safety and Security's work
- Whether the cause is an unsafe act or a security breach, it aims at providing a strong, sustainable and visible global nuclear safety and security framework



**Incident and
Emergency
Preparedness
and Response**



Nuclear Security



**Management of
Radioactive
Waste**



**Safety of
Nuclear
Installations**



**Radiation and
Transport Safety**



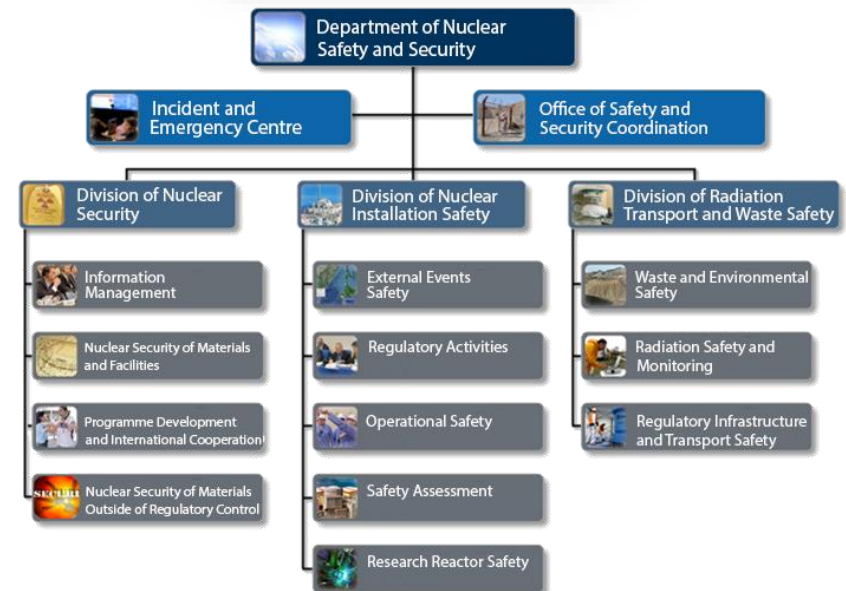
Division of Nuclear Installation Safety

The Division of Nuclear Installation Safety supports Member States in establishing the appropriate safety infrastructure and in continuously improving the safety of nuclear installations during site evaluation, design, construction and operation. The Division contributes to the development of [safety standards](#) for nuclear installations and provides [safety reviews and advisory services](#) to support their effective application.

Division of Nuclear Installation Safety (NSNI) Mission

To support Member States

- in establishing the appropriate safety infrastructure
- to continuously improve the safety of nuclear installations
 - site evaluation
 - design
 - construction
 - operation

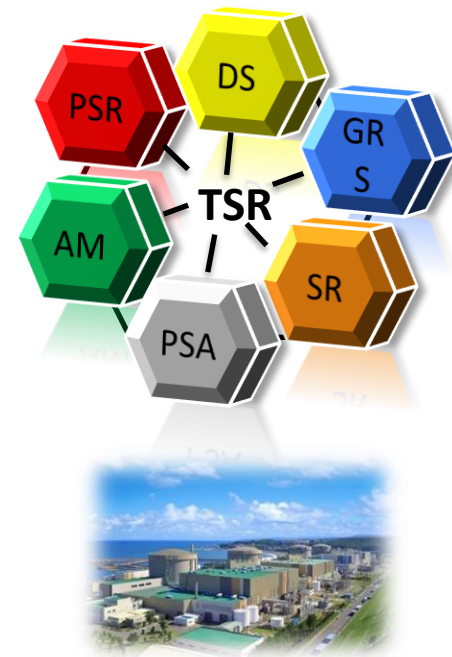
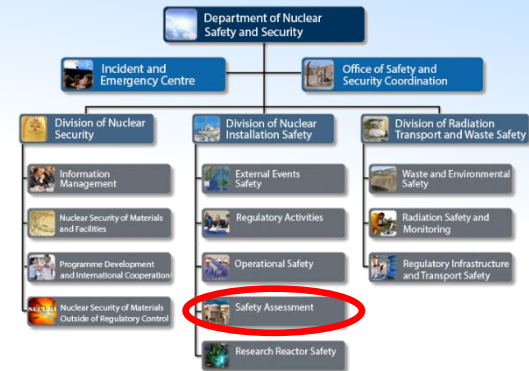


- through the development of up-to-date safety standards and providing for their effective application

Safety Assessment Section (SAS)

Mission: to support Member States in achieving a high level of safety in **nuclear power plant design** and excellence in **safety assessment**

- To provide Member States with state-of-the-art safety assessment and design safety standards
- To support Member States with advice and review services in the implementation of safety assessment and design safety standards, including through the delivery of Technical Safety Reviews (TSR)
- To develop safety assessment knowledge requirements and provide support to Member States in safety assessment competency and capacity building



Asian Nuclear Safety Network (ANSN)



- **Background**

- The Asian Nuclear Safety Network (ANSN) was established by the IAEA in 2002 to pool, analyse and share nuclear safety-related information, knowledge and experience among IAEA Member States participating in the Network
- ANSN aims to contribute to the activities by all Member Countries to enhance the safety of nuclear installation in the region, by providing continuous support for capacity building through the Network's activities

- **Vision**

- ANSN aims to be a sustainable regional network that can help in achieving a high level of nuclear safety in Asia

- **Mission**

- ANSN continuously facilitates and supports its member countries in their capacity building efforts in achieving a high level of nuclear safety
- ANSN fosters the sharing of information, expertise and experience in the area of nuclear safety through human and IT networks

Asian Nuclear Safety Network (ANSN)



- **Organization structure**



Plenary

- Strategic decisions and policy-making organ



Steering Committee

- Planning, coordination, monitoring and evaluation of ANSN activities
- Promotion of ANSN



Self-assessment Coordination Group (SACG)

- Provide support for capacity building initiatives within ANSN member states



Topical Groups

- Implementation of ANSN activities
- Dissemination of information/knowledge.

<https://ansn.iaea.org>

Asian Nuclear Safety Network (ANSN)



- **Topical groups**

- ☐ **Education and Training**
- ☐ **Emergency Preparedness and Response**
- ☐ **Regulatory Infrastructure**
- ☐ **Radioactive Waste Management**
- ☐ **Safety Assessment**
- ☐ **Safety Management of Research Reactors**
- ☐ **Siting**
- ☐ **Communication**
- ☐ **Information Technology Support Group**

Workshop agenda

Monday

SESSION 1 09:30–10:30	
Opening remarks	Mr Lankin
Self-introduction of participants and experts	All
Overview of the objectives and agenda of the Workshop	Mr Lankin
P1. Tasks of Level 1 PSA	Mr. Kanetsyan
Coffee Break 10:30–11:00	
SESSION 2 11:00–12:30	
P1. Tasks of Level 1 PSA (cont'd)	Mr. Kanetsyan
Discussion, questions, and answers	All
Lunch 12:30 – 14:00	
SESSION 3 14:00 – 15:30	
P2. Overview of PSA applications	Mr Lankin
P3. Experience in PSA Applications	Mr. Kanetsyan
Discussion, questions, and answers	All
Coffee Break 15:30 – 16:00	
SESSION 4 16:00 – 17:00	
P4. Experience in PSA Applications	Mr Hlavac

Workshop agenda

Tuesday



SESSION 5 09:00–10:30	
P5. Safety Goals	Mr Lankin
P6. Overview of Risk Informed Decision-Making Process	Mr Lankin
Discussion, questions, and answers	All
Coffee Break 10:30–11:00	
SESSION 6 11:00–12:30	
P7. Experience in Risk Informed Decision Making	Mr Hlavac
P8. Risk monitoring and managing risk configuration with practical examples	Mr Hlavac
Lunch 12:30 – 14:00	
SESSION 7 14:00 – 15:30	
P8. Risk monitoring and managing risk configuration with practical examples (cont'd)	Mr Hlavac
P9. Use of PSA for in service inspections, tests, and maintenance optimization	Mr Hlavac
NP1. National presentation – Malaysia	Participants
NP2. National presentation – Philippines	Participants
Discussions, questions and answers	All
Coffee Break 15:30 – 16:00	
SESSION 8 16:00 – 17:00	
P10. Experience in use PSA for inspections, tests, and maintenance optimization	Mr Kanetsyan
NP3. National presentation – Thailand	Participants
Discussions, questions and answers	All

Workshop agenda

Wednesday

SESSION 9 09:00–10:30	
P11. Use of PSA for design stage	Mr Lankin
P12. Using PSA for safety classification	Mr Lankin
NP3. National presentation – Indonesia	Participants
Coffee Break 10:30–11:00	
SESSION 10 11:00–12:30	
P13. Risk-Informed Technical Specification. Development and Optimization of Allowed Outage Times	Mr Hlavac
P14. Living PSA	Mr Hlavac
Lunch 12:30 – 14:00	
SESSION 11 14:00 – 15:30	
NP4. National presentation – Viet Nam	Participants
P15. PSA Usage for Development and Improvement of Emergency Operating Procedures	Mr. Kanetsyan
P16. Evaluation and Rating of Operational Events	Mr. Kanetsyan
Discussion, questions and answers	All
Coffee Break 15:30 – 16:00	
SESSION 12 16:00 – 17:00	
P17. Risk informed regulations. Risk-informed oversight and enforcement	Mr. Kanetsyan
Discussion, questions and answers	All

Workshop agenda

Tuesday

SESSION 13 09:00–10:30	
P18. Introduction to Risk Spectrum Software and to Test Model	Mr Hlavac
Discussion, questions, and answers	All
Coffee Break 10:30–11:00	
SESSION 14 11:00–12:30	
EX1. IRIDM Exercises (2-3 groups)	Mr Hlavac Mr. Kanetsyan
Lunch 12:30 – 14:00	
SESSION 15 14:00 – 15:30	
EX1. Continued	Mr Hlavac Mr. Kanetsyan
Coffee Break 15:30 – 16:00	
SESSION 16 16:00 – 17:00	
EX1. Continued	Mr Hlavac
Presentations of results discussions	Mr. Kanetsyan

Workshop agenda

Friday

SESSION 17 09:00–11:00	
P19. Discussion on workshop results. Closing	All

Friday time can be also used as a reserve time for discussion

If you want to discuss and to clarify something – let us know and we will try to answer!



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Thank you for your attention

Questions?