



Introduction of ASEAN NPSR

ASEAN NPSR 4th Annual Meeting

By Tang Jia Hao



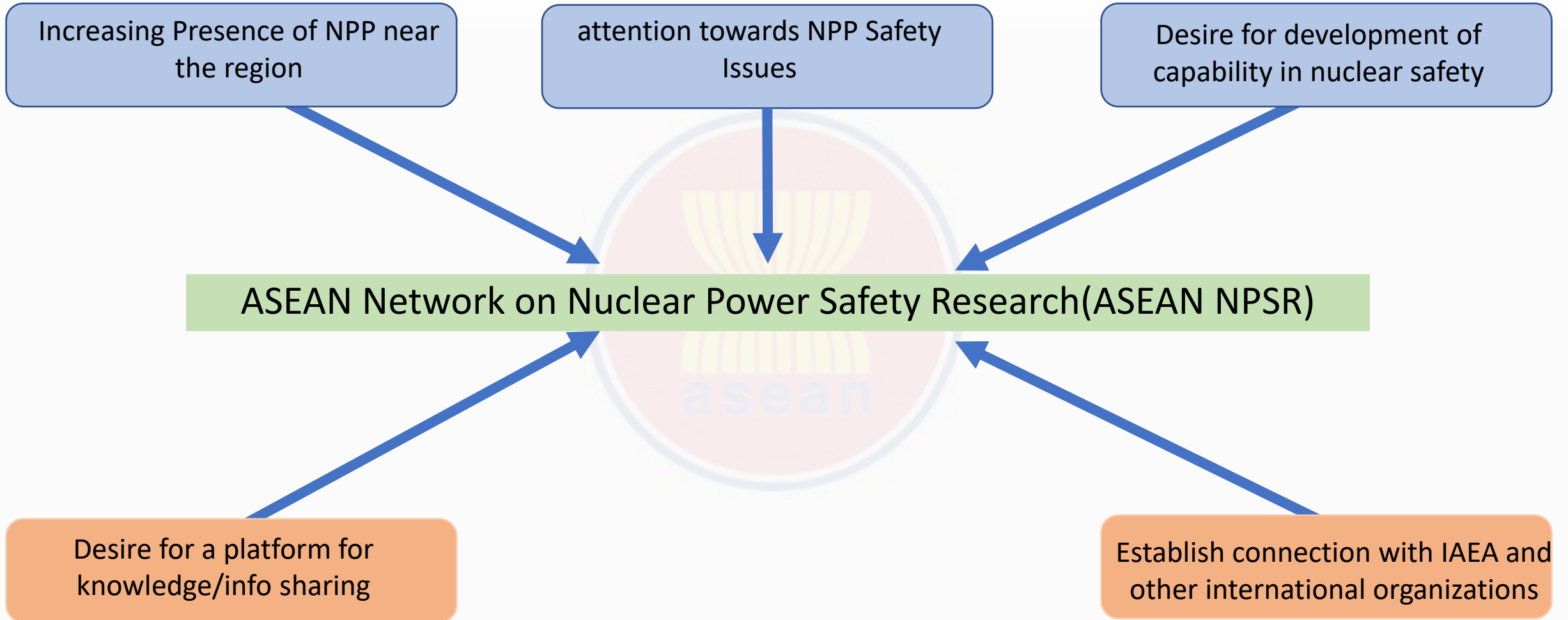
Fukushima Daiichi NPS Accident

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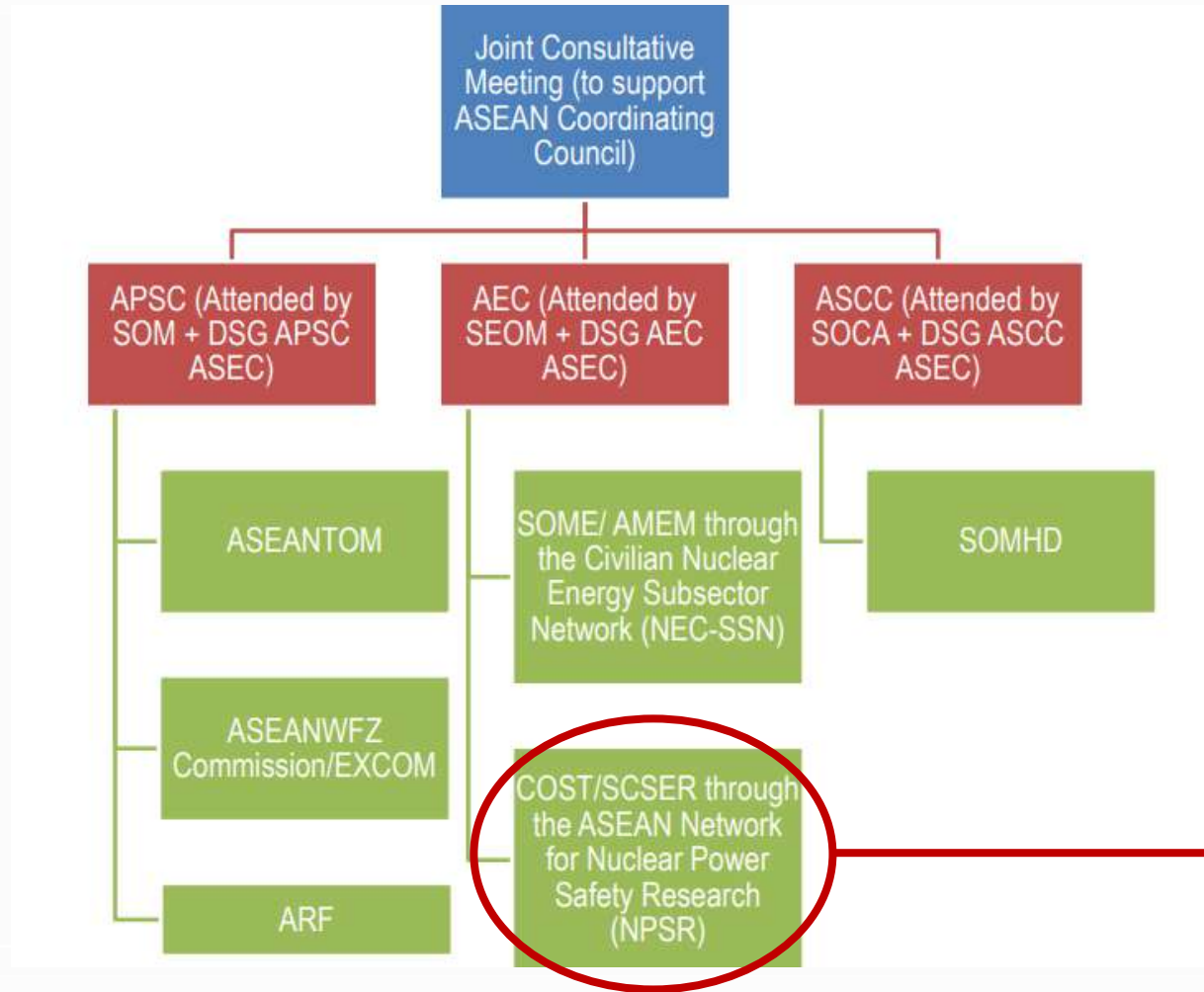


Formation

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- Idea of the network was seeded in 2016
- Agreed in principle by 7 countries on May, 2016
- Formally formed on March 9, 2017 in Bangkok, Thailand
- Between the Lao People's Democratic Republic, Malaysia, the Republic of the Union of Myanmar, the Republic of the Philippines, the Republic of Singapore, the Kingdom of Thailand and the Socialist Republic of Vietnam



ASEAN Committee on Science and Technology

Sub-Committee on Sustainable Energy Research (SCSER)

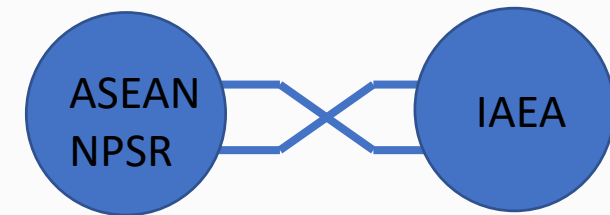
ASEAN NPSR: Goal

To strengthen R&D, HRD and regional cooperation in the field of nuclear power safety in ASEAN in order to support formulation of regional strategy for accident management and to be consistent with IAEA Safety Standards

ASEAN NPSR: Objectives

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- To be the regional platform to promote data and information sharing and cooperation
- To fulfil needs and address gaps in ASEAN region in R&D
- To strengthen capability in R&D in order to be able to provide the technical support for decision making
- To establish and enhance the cooperation between ASEAN network and IAEA and other relevant international organizations



Milestones of ASEAN NPSR

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2016

1st Workshop for ASEAN Network on Nuclear Power Safety Research (May) Participants from 7 countries agreed in principle on the network establishment

Start of benchmark problem assessment by Thailand and Vietnam (Sep)

Support of the network establishment by SC SER (Oct)

2017

2nd ASEAN Workshop on Nuclear Power Safety Research and **Kick-off Meeting** for ASEAN Network on Nuclear Power Safety Research (Mar)

Formal network establishment (@ASEAN Next 2017) Thailand is the 1st lead country

Endorsement by ASEAN SC SER and approval by ASEAN COST (Oct)

2018

2nd ASEAN Network on Nuclear Power Safety Research Annual meeting and finalization of details of benchmark problem (Mar)

Online project meeting: once every three months (June, Sep, Dec)

Milestones of ASEAN NPSR

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2019

3rd ASEAN Network on Nuclear Power Safety Research Annual meeting and nomination of Thailand as lead country and Singapore as Co lead(Mar)

Continued progress on the Benchmark Problem(June & Sep)

Wrapping up of the Benchmark problem(Dec)

2020

Preparation for publication of Benchmark problem(Jan)

Cancellation of 4th ASEAN NPSR annual meeting(Mar)

ASEAN NPSR Virtual Regional Workshop (Nov)

2021

Publication of Benchmark problem in Progress of Nuclear Energy Journal(May)

4th ASEAN NPSR annual meeting (Jun)

Research Collaboration

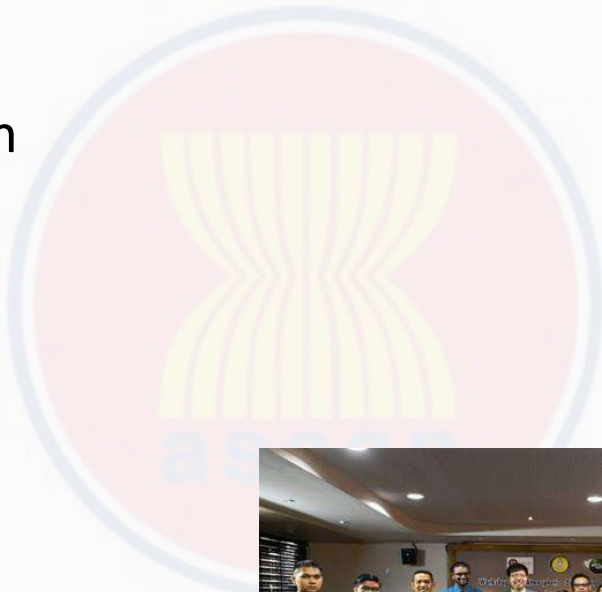
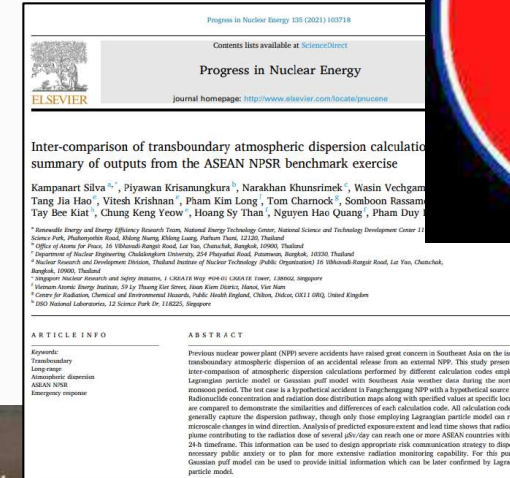
- Benchmark Problem
- Strengthen R&D
- Fulfill & gaps in ASEAN region

Annual meeting

- Regional platform
- Update on Progress

Workshop

- Strengthen capability
- Further develop the research topic



- Progress in Nuclear Energy: Inter-comparison of transboundary atmospheric dispersion calculations: A summary of outputs from the ASEAN NPSR benchmark exercise

Progress in Nuclear Energy 135 (2021) 103718

Contents lists available at ScienceDirect

Progress in Nuclear Energy

journal homepage: <http://www.elsevier.com/locate/pnucene>

Inter-comparison of transboundary atmospheric dispersion calculations: A summary of outputs from the ASEAN NPSR benchmark exercise

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ARTICLE INFO

Keywords:
Transboundary
Long-range
Atmospheric dispersion
ASEAN NPSR
Emergency response

ABSTRACT

Previous nuclear power plant (NPP) severe accidents have raised great concern in Southeast Asia on the issue of transboundary atmospheric dispersion of an accidental release from an external NPP. This study presents the inter-comparison of atmospheric dispersion calculations performed by different calculation codes employing Lagrangian particle model or Gaussian puff model with Southeast Asia weather data during the northeast monsoon period. The test case is a hypothetical accident in Fangchenggang NPP with a hypothetical source term. Radionuclide concentration and radiation dose distribution maps along with specified values at specific locations are compared to demonstrate the similarities and differences of each calculation code. All calculation codes can generally capture the dispersion pathway, though only those employing Lagrangian particle model can record microscale changes in wind direction. Analysis of predicted exposure extent and lead time shows that radioactive plume contributing to the radiation dose of several $\mu\text{Sv/day}$ can reach one or more ASEAN countries within the 24-h timeframe. This information can be used to design appropriate risk communication strategy to dispel unnecessary public anxiety or to plan for more extensive radiation monitoring capability. For this purpose, Gaussian puff model can be used to provide initial information which can be later confirmed by Lagrangian particle model.

Annual meeting

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At the annual meeting, the Member States present achievements and research results, getting comments from other members and discuss future activities of the said network.



- Training & sharing
- Discussion for Benchmark problem

Goals: To strengthen the capability in R&D of the Member States & To fulfill the needs and address the gaps of countries in the ASEAN region in R&D

- Program Management Unit for Human Resources & Institutional Development, Research, and Innovation (PMU-B)
- Project proposal titled “Enhancement of Collaborative Network and Development of Holistic Knowledge of Nuclear Energy Research in ASEAN Region”

Purpose: support the development of knowledge on nuclear energy research and to strengthen the network among Thailand, ASEAN countries, and alliance countries through the exchange of research and knowledge.

Research Interest

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- Embarking on a new research direction for the ASEAN NPSR network
- Determine the research interest of the Member states
- Current proposed areas:
 1. Atmospheric Dispersion and Dose Assessment
 2. Severe Accident Analysis
 3. Research Reactor
- Group discussion on Day 2 based on the identified areas
- Open to proposal of other topics!

Let us know which discussion topic are you interested in the group chat or email us.



Thank you for your attention