



SUMMARY REPORT

WORKSHOP ON ATMOSPHERIC DISPERSION BENCHMARK PROBLEM ASSESSMENT

AND

THE 3RD ANNUAL MEETING OF THE ASEAN NETWORK ON NUCLEAR POWER SAFETY RESEARCH

Bangkok, Thailand, 14 – 15 March 2019

INTRODUCTION

1. The Workshop and Meeting (hereinafter referred to as “the Meeting”) was held in Bangkok, Thailand on 14 – 15 March 2019. The Meeting was chaired by *Thailand* and was attended by *Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam*. The list of participants appears in **ANNEX 1**.

AGENDA ITEM 1: ADOPTION OF AGENDA

2. The Meeting adopted the Agenda, which appears as **ANNEX 2**.

Opening Remarks

3. Dr. Piriyaorn SUWANMALA, the Director of Nuclear Research and Development Division, Thailand Institute of Nuclear Technology delivered the opening remarks. The full text of the remarks appears as **ANNEX 3**.

AGENDA ITEM 2: INTRODUCTION OF OVERVIEW OF THE ATMOSPHERIC DISPERSION BENCHMARK PROBLEM

4. Thailand recalled the background, objectives and scope of the ASEAN Network on Nuclear Power Safety Research (ASEAN NPSR), and introduced the overview of the 2017 benchmark problem on atmospheric dispersion modelling. The presentation appears as **ANNEX 4**.

AGENDA ITEM 3: PROGRESS REPORT OF THE 2018 BENCHMARK PROBLEM

5. The participants from Singapore, Thailand and Vietnam reported their progress on the 2017 benchmark problem. The presentation of each Member States appears as **ANNEX 5-7**, respectively.

6. Singapore reported benchmark problem assessment results for a hypothetical accident in Nuclear Power Plants 1 and 2 (hereinafter referred to as NPP1 and NPP2) calculated by ARGOS, including the contour maps of air concentration, ground concentration and total effective dose equivalent, one micro Sievert exposure extent, and lead time of the radioactive plume.

7. Thailand reported the benchmark problem assessment results calculated by JRODOS, and the comparison of its results with those of ARGOS. Thailand also introduced the results of the constant wind case calculated by ARGOS, JRODOS and NACAC which is used to compare the basic models of the three codes.

8. Vietnam presented the simulation results of atmospheric dispersion of cesium-137 and iodine-131 from the Fukushima Accident using Flexpart which was compared to actual measurements. Vietnam also reported the results of benchmark problem assessment calculated by Flexpart.

AGENDA ITEM 4: DISCUSSION ON FIELD WORK FOR THE BENCHMARK PROBLEM ASSESSMENT

9. Thailand showed the proposal of the project entitled *Enhancing ASEAN Research Competency in Nuclear Power Emergency Preparedness and Response* which was funded by ASEAN Science Technology and Innovation Fund (ASTIF) which aims to provide financial support to the 2017 benchmark problem activities. The detail appears as **ANNEX 8**.

10. Field work under the aforementioned project was discussed. The objectives of this field work are to confirm the technical information of NPP2 and obtain the meteorological data around NPP2. The meeting concluded that Singapore, Thailand and Vietnam will be responsible for the field work.

AGENDA ITEM 5: DISCUSSION ON THE CONTENT OF THE WORKSHOP FOR NUCLEAR POWER EPR RESESEARCH CAPACITY BUILDING

11. The meeting concluded that the objective of the three-day-workshop is to disseminate the knowledge and findings from the 2017 benchmark problem assessment to the Member States.

12. Thailand proposed to include basic concept of atmospheric dispersion, atmospheric dispersion models of respective codes, benchmark problem assessment results and findings, and a lecture from an international expert in the workshop.

13. Lao PDR proposed to include a hands-on training of a simple atmospheric dispersion code, e.g. HotSpot.

14. The meeting proposed three choices of international experts including (1) Mr. Tom Charnock, Public Health England, UK, and (2) Prof. Petra Seibert, University of Vienna, Austria, Flexpart developer, and (3) JRODOS or ARGOS developer.

AGENDA ITEM 6: DISCUSSION ON WORK PLAN FOR BENCHMARK PROBLEM ASSESSMENT

15. The Meeting agreed upon the work plan for benchmark problem assessment as following.

Activities	Schedule
First online meeting	End of April 2019
Field work	August or September 2019
Technical workshop	March 2020
Wrap-up workshop	February 2021

16. The Meeting agreed to include a new benchmark problem case with extreme weather condition for NPP2, survey of existing EPR-related reports, and consideration of EPR measures within the framework of 2017 benchmark problem assessment.

17. Malaysia will consider using PC-CREAM for the assessment of the NPP2: 24 November, 2018 case.

AGENDA ITEM 7: SELECTION OF THE 2019 LEAD AND CO-LEAD COUNTRIES

18. The Meeting agreed upon the roles of the lead and co-lead countries as shown in **Annex 9**.

19. The Meeting concluded that Thailand continues as the lead country, and Singapore be the co-lead country for 2019.

AGENDA ITEM 8: DISCUSSION ON THE 2019 WORK PLAN OF ASEAN NPSR

20. Member States appointed the contact persons as shown below.

Member States	Contact Persons
Lao PDR	Mr. Houmpheng THEUAMBOUNMY
Malaysia	Mr. Mohd Fairus Bin ABDUL FARID
Myanmar	Ministry of Science and Technology (MOST)
The Philippines	Mr. Carl NOHAY Mr. Neil Raymund GUILLERMO
Singapore	Mr. CHUNG Keng Yeow Mr. TANG Jia Hao
Vietnam	Mr. NGUYEN Hao Quang Mr. HOANG Sy Than
Thailand	Mr. Kampanart SILVA Ms. Kanchalika DECHATES

21. ASEAN NPSR will be seeking opportunities to share the information on its activities with other networks e.g. ASEANTOM, Nuclear Energy Expert Group.

22. The Meeting suggested that all Member States will consult with their home organizations and provide link to the website of ASEAN NPSR in their website. Thailand will study from the websites of other networks and enhance the content of the ASEAN NPSR website.

AGENDA ITEM 9: ADOPTION OF REPORT

23. The Meeting adopted the Summary Report.

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