



Nordic nuclear safety research

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Threat and Hazard Assessment Seminar 2024

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Abstract

There have been significant changes in both civilian and military nuclear and radiological threats and hazards relevant for the Nordic region the last years. The THREATSEM seminar was a two-day Nordic seminar 12-13 September 2024 in Oslo, Norway, with the purpose of exchanging knowledge and views on nuclear and radiological threats and hazards between authorities, research communities and other stakeholders. The seminar aimed to provide a basis for understanding different approaches to assessing threats and hazards, especially regarding new challenges.

Key words

threats, hazards, scenarios, assessments, Nordic countries

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Threat and Hazard Assessment Seminar 2024

Final Report from the NKS-B THREATSEM activity

(Contract: AFT/B(24)7)

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Disclaimer

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1. Introduction

There have been significant changes in both civilian and military nuclear and radiological threats and hazards relevant for the Nordic region the last years. Increased traffic of nuclear-powered vessels including more frequent military exercises, the ongoing war in Ukraine and its implication for nuclear safety, aging nuclear power plants, nuclear-powered weapons systems, including testing of the Skyfall missile on Novaya Zemlya, and other developing technologies are a few examples. For both authorities with responsibility for RN emergency preparedness and response, universities, research communities and other stakeholders, it is important to have a mutual understanding and exchange of views on assessments of current nuclear and radiological threats and hazards.

The THREATSEM seminar was a two-day seminar 12-13 September 2024 at Scandic Fornebu Hotel in Oslo, Norway. The seminar was held in order to exchange knowledge and views on nuclear and radiological threats and hazards between authorities, research communities and other stakeholders. The seminar aimed to provide a basis for understanding different approaches to assessing threats and hazards, especially regarding new challenges.

The sessions at the seminar were:

- War and nuclear safety
- Nuclear-powered ships
- The High North
- Nuclear weapons
- New activities and emerging technologies
- Country reports

There were 47 participants at the seminar from 22 different organisations from all Nordic countries, including the Faeroe Islands.

2. Project participants

The NKS-B THREATSEM seminar was organised by the Norwegian Radiation and Nuclear Safety Authority (DSA), the Radiation and Nuclear Safety Authority of Finland (STUK), the Swedish Radiation Safety Authority (SSM), the Swedish Defence Research Agency (FOI), the Icelandic Radiation Safety Authority (IRSA) and the Danish Emergency Management Agency (DEMA).

Project participants from the different organisations were:

- From DSA: Øyvind Gjølme Selnæs and Inger Margrethe Eikermann
- From STUK: Aleksi Mattilä
- From SSM: Anna Maria Blixt Buhr
- From FOI: Petra Lagerkvist
- From IRSA: Kjartan Guðnason
- From DEMA: Agnieszka Ewa Hac-Heimburg

3. Seminar program

The NKS-B THREATSEM seminar was held at Scandic Fornebu Hotel in Oslo, Norway, on 12 and 13 September 2024.

Thursday 12 September 2024

13:00 – 13:15 Seminar opening (Kjetil Longva, Norwegian Radiation and Nuclear Safety Authority (DSA))

Session: War and nuclear safety

13:15 – 13:45 The Russian invasion of Ukraine, nuclear safety and security impacts, Risks and considerations (Mark Dowdall, Norwegian Radiation and Nuclear Safety Authority (DSA))

13:45 – 14:35 Hybrid warfare and nuclear safety (Ørjan Karlsson, Nord university)

14:35 – 14:50 Coffee break

Session: Nuclear-powered ships

14:50 – 15:20 New nuclear-powered vessels (Ole Reistad, Det norske veritas (DNV))

15:20 – 15:40 Visits of nuclear-powered vessels to Tromsø since 2021 (Inger Margrethe Eikemann, Norwegian Radiation and Nuclear Safety Authority (DSA))

15:40 – 16:00 Visits of nuclear-powered vessels to the Faeroe Islands (Óli á Grindafloitti, Faroese Safety Authority)

16:00 – 16:20 Visits of nuclear-powered vessels and transits in Danish waters (Agnieszka Ewa Hac-Heimburg, Danish Emergency Management Agency (DEMA))

16:20 – 16:40 Visits of nuclear-powered vessels to Iceland (Kjartan Guðnason, Icelandic Radiation Safety Authority (IRSA))

Friday 13 September 2024

Session: The High North

09:00 – 09:45 Nuclear Russia and the High North (Thomas Nilsen, The Independent Barents Observer)

09:45 – 10:15 The development in the Arctic from a rescue operation perspective (Tore Hongset, Norwegian Joint Rescue and Coordination Centre (JRCC))

10:15 – 10:30 Coffee break

Session: Nuclear weapons

10:30 – 11:00 Modernizing of Chinese nuclear weapons and risk for use in East-Asia (Henrik Stålhane Hiim, Norwegian Institute for Defence Studies (IFS))

11:00 – 11:30 Recent and ongoing work on radiation protection in non-peacetime circumstances (Anna Maria Blixt Buhr, Swedish Radiation Safety Authority (SSM))

11:30 – 12:15 Lunch

Session: New activities and emerging technologies

12:15 – 12:45 Russian nuclear-powered weapons systems (Fredrik Nielsen, Swedish Defence Research Agency (FOI))

12:45 – 13:15 Is Norway going nuclear? (Tone Bergan, Norwegian Radiation and Nuclear Safety Authority (DSA))

13:15 – 13:55 Overview of SMRs with a hazard assessment point-of-view (Aleksi Valkepäa, Finnish Radiation and Nuclear Safety Authority (STUK))

13:55 – 14:15 Floating nuclear power plants: An update on Academician Lomonosov (Aleksi Mattilä, Finnish Radiation and Nuclear Safety Authority (STUK))

14:15 – 14:30 Coffee break

Session: Country reports

14:30 – 14:45 Country report Norway (Øyvind Gjølme Selnæs, Norwegian Radiation and Nuclear Safety Authority (DSA))

14:45 – 15:00 Country report Sweden (Anna Maria Blixt Buhr, Swedish Radiation Safety Authority (SSM))

15:00 – 15:15 Country report Denmark (Emma Hviid Kristensen and Elias Pagh Senstius, Danish Emergency Management Agency (DEMA))

15:15 – 15:25 Country report Iceland (Kjartan Guðnason, Icelandic Radiation Safety Authority (IRSA))

15:25 – 15:55 Country report Finland (Jyrki Heinonen, Finnish Radiation and Nuclear Safety Authority (STUK))

Closing

15:55 – 16:00 Seminar closing and summary (Øyvind Gjølme Selnæs, Norwegian Radiation and Nuclear Safety Authority (DSA))

4. Seminar participants

There were 47 participants at the seminar from the following organisations:

Norway:

- Det norske veritas (DNV)
- Geological Survey of Norway
- Nord University
- NORSAR
- Norwegian Customs
- Norwegian Defence Research Establishment (FFI)
- Norwegian Directorate for Civil Protection (DSB), Norwegian Civil Defence
- Norwegian Directorate of Fisheries
- Norwegian Food Safety Authority
- Norwegian Institute for Defence Studies (IFS)
- Norwegian Joint Rescue and Coordination Centre (JRCC)
- Norwegian Radiation and Nuclear Safety Authority (DSA)
- Norwegian University of Life Sciences (NMBU)
- Norwegian Veterinary Institute
- Oslo University Hospital, Ullevål, (National Centre for CBRNe Medicine)
- The Independent Barents Observer

Finland:

- Finnish Radiation and Nuclear Safety Authority (STUK)

Sweden:

- Swedish Defence Research Agency (FOI)
- Swedish Radiation Safety Authority (SSM)

Iceland:

- Icelandic Radiation Safety Authority (IRSA)

Denmark:

- Danish Emergency Management Agency (DMA)

Faeroe Islands:

- Faroese Safety Authority

5. Conclusions

The aim of the NKS-B THREATSEM project was to organise a Nordic seminar in order to share knowledge and exchange views on nuclear and radiological threats and hazards relevant for the Nordic region, in a period of time with significant changes with new technologies, the geopolitical situation, climate change, and threats to nuclear safety and security. Increased traffic of nuclear-powered vessels including more frequent exercises, the ongoing war in Ukraine and its implication for nuclear safety, aging nuclear power plants, nuclear-powered weapons systems, small modular reactors (SMRs), and modernization of nuclear weapons and weapons use doctrines are a few examples.

The seminar was well received. With 47 participants from both authorities, universities, research communities and other stakeholders, the seminar was well-suited for exchanging both knowledge and views on a number of topics. In total, 22 different organisations from all Nordic countries, including the Faeroe Islands, were present at the seminar. Directors responsible for emergency preparedness and response from the radiation and nuclear safety authorities in Norway and Finland (DSA and STUK), and from the Danish Emergency Management Agency (DEMA) participated in the seminar. There was an expressed wish for similar seminars in the future, to further follow-up the ongoing development regarding nuclear and radiological threats and hazards relevant for the Nordic region.

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