



nks
Nordic nuclear safety research

DENMARK

FINLAND

ICELAND

NORWAY

SWEDEN

A COMMON NORDIC VIEW

Nordic problems need Nordic solutions. NKS aims to facilitate a common Nordic view on nuclear safety and radiation protection including emergency preparedness. This requires common understanding of rules, practice and measures, which may vary between countries, as well as with time. The work builds on a foundation of over sixty years of Nordic collaboration on related issues.

ADDRESSING CURRENT SOCIETAL QUESTIONS

NKS keeps an open eye to societal changes and events that might influence requirements and perception of nuclear safety, radiation protection and emergency preparedness in the Nordic countries. For instance the Fukushima accident prompted the arrangement of NKS joint reactor safety and emergency preparedness seminars on lessons learned and future implications for Nordic society.

STRENGTHENING RESPONSE CAPACITIES

By maintaining vital informal networks between Nordic authorities, nuclear power companies, scientists and other stakeholders, the region's potential for a fast, coordinated and targeted response to urgent issues is strengthened. Thereby, problems can be tackled quicker, more efficiently and consistently and at lower cost than if they needed to be addressed on a national scale.

SECURING NORDIC COMPETENCE AND KNOWLEDGE BUILDING

Through collaborative NKS activities, Nordic competence and capabilities are maintained and strengthened, and solutions to Nordic problems are disseminated through a sustained informal network. NKS publications are available cost-free on the internet. A special effort is made to engage young scientists and students, to ensure knowledge and expertise for the future.

FINANCING OF NKS ACTIVITIES

NKS is mainly financed by Nordic authorities, with additional contributions from Nordic organizations that have an interest in nuclear safety. The budget for NKS in 2020: about 9 million Danish kroner (€ 1.2 million). In addition to the funding sought from NKS, participating organizations are asked to provide a similar amount of in-kind contributions. This may take the form of working hours, travel expenses or laboratory resources. Without these in-kind contributions it would not be possible to carry out NKS activities.

MAIN FINANCIERS:



CO-FINANCIERS:



NKS ACTIVITIES

NKS activities can take the form of research activities, test exercises or information collation/review exercises. Alternatively they can aim to harmonize approaches to common problems or spread and distribute knowledge and results through seminars, workshops and educational/training courses. Common to all NKS activities is that the results should be beneficial and made available to concerned end users in all Nordic countries. Aspects of nuclear safety, radiation protection and emergency preparedness may be combined in one activity.

RESEARCH AREAS

Areas of interest covered by NKS activities fall under two main programmes, NKS-R and NKS-B, which cover the following specified research areas.

NKS-R programme:

- Reactor physics
- Thermal hydraulics
- Severe accidents
- Risk analysis and probabilistic methods
- Organisational issues and safety culture
- Decommissioning and management of reactor waste and spent fuel
- Plant life management and extension.

NKS-B programme:

- Radiological and nuclear emergency preparedness
- Measurement strategy, technology and quality assurance
- Radioecology and environmental assessments.



Do you have suggestions for a nuclear safety or radiation protection related activity?
Contact us via www.nks.org

SOME RECENT EXAMPLES OF NKS ACTIVITIES

NKS-R

Safety Culture in the Nuclear Industry

Good safety culture is essential for ensuring safety in the nuclear industry. The predominant approaches for safety culture are based on the assumption of stable and relatively homogeneous organizations, which often does not apply to contemporary project-oriented and turbulent environments. The work performed within the NKS-R activity SC_AIM has resulted in the development of twelve principles of safety culture change that summarize the essential good practices for leading safety culture change. Guidelines for the implementation of safety culture ambassadors have been developed as a novel method for safety culture improvement (NKS-R activity SC_AIM).

NKS-R

Extraction and Analysis of Reactor Pressure Vessel Material

Irradiation induced ageing of the weld material of the reactor pressure vessel (RPV) is a limiting factor from a long term operation perspective. The closed Barsebäck 2 reactor gives an opportunity to harvest samples from the RPV, which was manufactured and welded with the same technique and high amounts of nickel and manganese as most Nordic RPVs. A test program to analyze the as-aged material properties by mechanical testing and high resolution microscopy is ongoing within the NKS-R activity BREDA-RPV.

NKS-B

Optimisation of analytical methods for simultaneous determination of important alpha emitting radionuclides in nuclear and environmental samples

Due to their high radiation toxicity, a number of alpha emitting radionuclides are important in connection with radiation protection in nuclear facilities (e.g., in decommissioning) and in the environment. The NKS-B OPTIMETHOD activity aims to improve the analytical quality and enhance the competence of the Nordic laboratories for radiochemical analysis of alpha emitting nuclides. An important instrument is here intercomparison exercises (NKS-B activity OPTIMETHOD).

NKS-B

Natural radioactivity in the Nordic diet

Although the dose contribution from natural radioactivity in the diet may be many times higher than the dose contribution resulting from human activities, data on naturally occurring radionuclides in food is scarce. The NKS-B NANOD activity aims to enhance the understanding of the mechanisms determining dose from ingestion of natural radionuclides. Contents of ²¹⁰Pb, ²¹⁰Po, ²²⁶Ra and ²²⁸Ra in fish and shellfish have been shown to be highly important (NKS-B activity NANOD).

HOW TO APPLY

Nordic companies, authorities, organizations and researchers can submit proposals for NKS activities under the NKS-R and NKS-B programmes. Usually at least three of the five Nordic countries should participate in an activity. Activities submitted under annual calls for proposals are assessed according to criteria important to the objectives of NKS, with final funding decisions made by the NKS board. NKS funding of Non-Nordic organisations is not possible, but their participation is allowed under certain circumstances. Contact the NKS secretariat for details.

THE NKS WEBSITE

On the NKS website (www.nks.org) information is available on funding opportunities, travel support for young scientists, current activities and upcoming seminars. Presentations from seminars held are available for download as are reports from all completed NKS activities. It is also possible to discover more information on NKS and the history of Nordic co-operation in nuclear safety.

For funding: www.nks.org/handbook

For reports: www.nks.org/reports

NKS EMAIL LIST

NKS sends out newsflashes and newsletters throughout the year providing information on call for proposals, upcoming seminars and published reports. If you wish to join the NKS email list please sign up via the NKS website.



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NKS ON LINKEDIN

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CONTACT

If you wish to learn more about NKS and NKS activities visit our website or contact the NKS secretariat.

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Photo: Lift of Top Shield Plug in 2014
from Danish Reactor 3

Source: Danish Decommissioning



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