

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/book

For reports: www.nks.org/reports

NKS EMAIL LIST

NKS sends out newsflashes 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

Follow NKS on LinkedIn at
<https://www.linkedin.com/company/nks---nordic-nuclear-safety-research/>

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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 2025: about 8 million Danish kroner (more than € 1 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.

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.

EXAMPLES

RECENT NKS ACTIVITIES:

NKS-R

Safety Culture in the Nuclear Industry

The adoption of advanced nuclear power plants, e.g., highly automated conventional power plants and small modular reactors, greatly increases the level of automation in the management and control of the power production process. The project aims to get a deeper understanding of operator expertise and procedural knowledge about process automation, apply a new prospective risk assessment method, and specify knowledge, skill and training requirements, learning objectives and evaluation standards for operator-automation interaction and automation error/failure management. The activity is ongoing in NKS-R as SAFECOM.

NKS-R

Severe accidents

The project investigates the degradation of cable insulation material in sump water and identifies the released organic compounds, and any interactions with fission products. The reactions between organic material and fission products can produce extremely volatile species which are known to be difficult to trap with current management actions. Preliminary results imply that organic iodides may form in this way. The project focuses on the effects of sump water chemistry and heating, and includes on-line measurement of the exhaust, as well as ICP-MS of liquid traps. (NKS-R activity CADESU).

NKS-B

Symmetrical Array Methodology for Gamma Source Localization

Effective response to incidents involving searches for nuclear or other radioactive materials out of regulatory control (MORC) is dependent on rapid localization of the source. This project aimed to assemble Nordic expertise in this area to test new developments, exchange technologies, experience and enhance Nordic capacities in this field. The project presented a unique opportunity to further progress along a developmental trajectory that contributes significantly to nuclear security and response and will serve to substantially amplify Nordic capacities in this area of emergency preparedness and response (NKS-B SAMLOC).

NKS-B

Atmospheric migration of contaminants from a nuclear blast

The overall aim of the project is to improve the capability of Nordic and European emergency management decision support systems to predict the atmospheric dispersion of radioactivity from detonation of nuclear bombs of different yields. The method starts with a description of the initial spatial distribution of radioactive matter when stabilization has occurred five to ten minutes after detonation. This effective initial spatial distribution is taken over by an operational atmospheric dispersion model, which had to be further developed in order to comply with such description (NKS-B DISARM).

MAIN FINANCIERS:



CO-FINANCIERS:



DO YOU

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



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.