

## **Policy for Nordic Nuclear Safety Research (NKS).**

**Approved 04062019.**

### **This is NKS**

NKS is a Nordic forum for research, competence building, experience exchange and networking in nuclear and radiation safety with focus on reactor safety, including decommissioning, and emergency preparedness. This is achieved by joint activities of interest to the financing organisations and other end users resulting in scientific articles and technical reports. The results are used by the participating organisations in their competence building, decision making processes and information activities. All NKS results are available free of charge not only for the NKS family but also internationally providing an international benefit of NKS work.

Within NKS, valuable networks are built: between younger and more senior researchers; between industry, universities and authorities; between neighbouring countries. Important links are also created between those who need to cooperate in case of a nuclear accident within the NKS countries or elsewhere in the world. As NKS makes people connect, problems are tackled quicker, more efficiently, more consistently, and at a lower cost than if acting alone – with benefits for both humans and the environment.

NKS is committed to good public governance, including transparency, efficiency, and sound financial planning. Decisions concerning strategic aspects of NKS economy are made by the owners, while a board consisting of owners and co-financiers make decisions on e.g. projects eligible for funding.

### **The purpose of NKS**

The purpose of NKS is to facilitate a common Nordic view on nuclear and radiation safety and at the same time creating networks that are easily activated, e.g. in the case of a nuclear accident. The co-operation builds on the foundation of a common cultural and historical heritage and a long tradition of collaboration between the five Nordic countries: Denmark (also the Faroe Islands and Greenland), Finland, Iceland, Norway and Sweden.

### **The challenges addressed by NKS**

The Nordic countries face common challenges in relation to Nordic nuclear installations as well as those in neighbouring countries. While nuclear power plants are in operation in Finland and Sweden, research reactors are in operation or have been operated in Denmark, Finland, Norway and Sweden. In Finland new reactors are being built, whereas for Sweden, Denmark and Norway decommissioning of research reactors and of the oldest nuclear power plants is on the agenda.

By exchanging experiences, a common understanding of rules, practices and measures, and how they might differ between the neighbouring countries, can be achieved. By building competence together, each country benefits and has the opportunity of financing both more and bigger research projects since co-operation creates synergy and new approaches.

Nuclear accidents have highlighted the need for effective emergency preparedness. By continuously improving detection, response and decision aiding tools while maintaining an informal collaborative network between relevant stakeholders in the Nordic countries, the capacity and capability to respond optimally to an emergency is enhanced. Experience has shown that nuclear challenges to society are far from static, and the response systems require continuous development.

## **The activities of NKS**

NKS activities are divided into two program areas:

**NKS-R**: The NKS-R program is focusing on the area of reactor safety throughout the lifecycle of a nuclear installation. The program covers the topics thermal hydraulics, severe accidents, reactor physics, risk analysis and probabilistic methods, organisational issues and safety culture, and plant life management and extension. Decommissioning of nuclear power plants and other nuclear installations/facilities and management of nuclear waste and spent fuel is also included in the NKS-R program, whereas measurements related to these topics are covered by the NKS-B program. Activities within NKS-R typically involve experimental and computational studies of phenomena related to reactor safety, model development for risk and uncertainty assessments, analysis of human and organisational factors, or development of new methods for surveillance and enhancement of safety in daily and long-term reactor operation or within decommissioning and waste management.

**NKS-B**: The NKS-B program is focusing on nuclear and radiological emergency preparedness, radioecology and environmental assessments and measurement strategies, technologies and quality assurance. The key area of interest in the context of emergency preparedness is the impact on society (humans and the environment). Radioecology provides information on the fate, transport and effects of radionuclides and other influencing contaminants in the environment. Measurements are an integral part of both emergency management and radioecology, and also needed to secure compliance with standards and regulations concerning radioactive material, for example in decommissioning and reactor waste management. All such measurement issues are included in the NKS-B program as are measurement projects related to recovery of sources.

## **Owners and Financiers of NKS**

The owners and main financiers are:

[Danish Emergency Management Agency](#) (DEMA, Denmark)  
[The Ministry of Economic Affairs and Employment](#) (TEM, Finland)  
[Icelandic Radiation Safety Authority](#) (GR, Iceland)  
[Norwegian Radiation and Nuclear Safety Authority](#) (DSA, Norway)  
[Swedish Radiation Safety Authority](#) (SSM, Sweden)

The co-financiers are:

[Fennovoima Oy](#) (Finland)  
[Fortum Power and Heat Ltd.](#) (Finland)  
[TVO](#) (Finland)  
[Institute for Energy Technology](#) (IFE, Norway)  
[Forsmark Kraftgrupp AB](#) (Sweden)  
[OKG AB](#) (Sweden)  
[Ringhals AB](#) (Sweden)  
[SKB](#) (Sweden)