

NKS – The Nordic region’s cooperative network for addressing challenges in nuclear safety and emergency preparedness

Kasper G. Andersson^{1,2}, Karin Andgren^{1,3}, Kaisu Leino^{1,4}, Sigurður M. Magnússon^{1,5} & Finn Physant^{1,6}

¹ NKS, Roskilde, Denmark

² DTU Nutech, Roskilde, Denmark

³ Vattenfall R&D, Stockholm, Sweden

⁴ Fortum Power and Heat Oy, Espoo, Finland

⁵ Icelandic Radiation Safety Authority, Reykjavik, Iceland

⁶ FRIT, Roskilde, Denmark

Based on the foundation of a common cultural and historical heritage and a long tradition of collaboration, NKS aims to facilitate a common Nordic view on nuclear and radiation safety. A common understanding of rules, practice and measures, and national differences in this context, is here an essential requirement. Problems can generally be tackled quicker, more efficiently, more consistently and at a lower cost through collaboration, bearing in mind that key competences are not equally distributed in the different Nordic countries.

For instance common Nordic challenges emerge in relation to nuclear installations, where nuclear power plants are in operation in Finland and Sweden, and research reactors have been operated in Denmark, Finland, Norway and Sweden. There is an obvious benefit in exchanging ideas and technologies in relation to plant operation, and since a number of reactors in different Nordic countries are under decommissioning, a collaborative benefit can also be realised in that context. Sweden also has a nuclear fuel production plant, and its collaboration with other Nordic nuclear installations can also be beneficial. Further, a number of large radiological installations are projected in Nordic areas (e.g., the MAX-LAB/MAX IV synchrotron radiation source and the European spallation source ESS), where Nordic organisations are collaborating in addressing, e.g., potential environmental implications.

On the emergency preparedness side, the Fukushima accident in March 2011 was a reminder that large accidents at nuclear installations can lead to widespread radioactive contamination in the environment. In order to respond to nuclear or radiological emergencies, should they affect Nordic populations, it is necessary to maintain an operational emergency preparedness. By continuously improving detection, response and decision aiding tools while maintaining an informal collaborative network between relevant stakeholders in the Nordic countries (including nuclear power plant experts), the capacity and capability to respond optimally to an emergency is enhanced. Today’s emergency preparedness also needs to address prevention against and response to nuclear and radiological terror attacks.