

NKS-B Status Report
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NKS-B Programme Manager

Overall the work in NKS-B is progressing well

- Since last NKS-B status report
 - *4 final reports published on website*
- Delayed activities (from before 2017)
 - *None*
- Activities commencing in 2017
 - *8 (of 8) completed*
- Activities commencing in 2018
 - *All 8 contracts signed, work on schedule*

Final reports published on NKS website (since last Board Meeting):

- AVESOME final report 2017
- NORDIC ICP final report 2016 (now published in journal form)
- NORDIC ICP final report 2017
- NEXUS final report 2017

NKS-B Seminars 2018

RADWORKSHOP: Three-day seminar plus two-day lab practice on radioanalytical chemistry for nuclear decommissioning and waste management. To be held at Risø, 8-12 October 2018. Announcement made on NKS website / in NKS Newsletter.

GAMMARAY: Two-day seminar/workshop on gamma-ray spectrometry issues. To be held in Reykjavik, 25-26 September 2018. Announcement made on NKS website / in NKS Newsletter.

AVESOME: Seminar entitled 'Uncertainties in decision support – on the use of meteorological and source term data in nuclear emergency management'. To be held at DMI on 12 September. Announcement made on NKS website / in NKS Newsletter.

RadWorkshop 2018



Workshop Objectives:

The workshop aims to strengthen the education of MSc/PhD students and young scientists and to increase competence of staff in the field of radiochemistry, with the focus on its application in nuclear decommissioning and waste management.

The objectives of the workshop include:

- 1) Provide the participants with an overview of the nuclear decommissioning strategies and plans especially in Nordic countries, and the state-of-art of radio analytical methods developed and applied for nuclear decommissioning and challenges faced in the near future.
- 2) Provide an opportunity to the participants to get knowledge and practical experience in analytical experiment by participating the hands-on training in the laboratory.
- 3) Provide a forum to share knowledge, exchange experiences and explore solutions together overcome difficulties in analysis of various radionuclides with different approaches and techniques.

Getting there:

You can find all information you need about getting to the workshop venue at Risø near Roskilde from the following link: <http://www.dtu.dk/english/about/campuses/dtu-risoe-campus>.

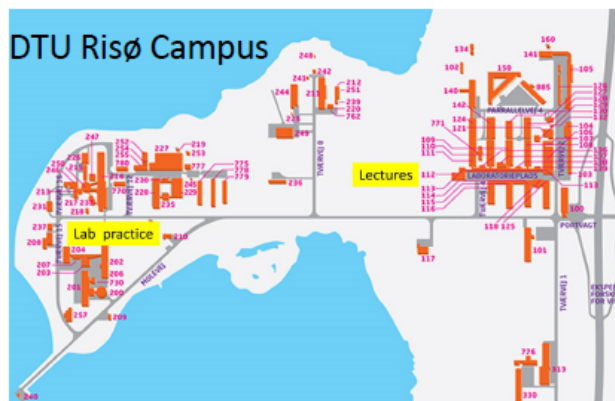
Accommodation:

For accommodation in the Roskilde area, the following hotels can be recommended:

Zleep Hotel (<https://www.zleephotels.com/da/hotel/roskilde/>)
Scandic (<https://www.scandichotels.dk/hoteller/danmark/roskilde>)
Comwell (<http://www.comwellroskilde.dk/>)
Danhostel (<http://www.danhostelroskilde.dk/>)

Practical Information for Visitors:

You can find a lot practical information for your visit to Roskilde here: <http://www.visitroskilde.com/in-int/roskilde-lejre/tourist>
If you would like to visit Copenhagen, you can find a lot practical information here: <http://www.visitcopenhagen.com/copenhagen/transportation/practical-information>



RadWorkshop 2018



Workshop on Radioanalytical Chemistry for Nuclear Decommissioning and Waste Management

8-12 October 2018

DTU Risø Campus
Frederiksborgvej 399, Roskilde,
Denmark

Welcome !

RadWorkshop 2018

Dear colleagues,

I am delighted to welcome you to the Workshop on Radioanalytical Chemistry for Nuclear Decommissioning and Waste Management (RadWorkshop 2018). It will take place during October 8-12, 2018 near the historic town of Roskilde, Denmark.

This is the third RadWorkshop supported by NKS. The two previous RadWorkshops with the scope of general aspects in radioanalytical chemistry took place at Risø, Denmark in 2010 and 2013, respectively. Different from the previous RadWorkshops, the upcoming RadWorkshop 2018 will more focus on radioanalytical chemistry for nuclear decommissioning and waste management.

The workshop is organised by Technical University of Denmark (DTU) in close collaboration with, Swedish Radiation Safety Authority (SSM), Norwegian Radiation Protection Agency (NRPA), Radiation and Nuclear Safety Authority, Finland (STUK).

This workshop will aim to create a network for all the partners in connection with nuclear decommissioning and waste management to review the import role of radioanalytical chemistry played in this domain. I hope that RadWorkshop 2018 is successful to share knowledge, exchange experience and further promote international collaborations, while you also enjoy the lovely autumn in Denmark!

With best regards,

Dr. Jixin Qiao
Technical University of Denmark
Chairman, RadWorkshop 2018 Organizing Committee



Workshop Venue:

The seminar will take place at DTU Risø Campus, located on the peninsula Risø in Roskilde Fjord 7 km north of the historic Cathedral town of Roskilde and 40 km west of Copenhagen.

Address: Risø Campus, Technical University of Denmark
Frederiksborgvej 399
DK-4000 Roskilde, Denmark

The workshop consists of two parts:

8-10th October: Invited lectures and presentations from participants at Auditorium, building 112, Risø. A number of highly reputed experts from authorities, research institutes and nuclear industries will be invited to give state-of-the art lectures in different aspects in nuclear decommissioning and waste management with the focus on radioanalytical chemistry.

11-12th October: Lab practice building 202 and 204, Risø. The lab training will demonstrate the radiochemical analysis of alpha emitters (Pu-239, 240 and Am-241) and beta emitters (Fe-55, Ni-63) in nuclear decommissioning materials.

Abstract submission and registration:

Please submit your abstract and register following the link <http://www.conferencemanager.dk/NKSRADWorkshop>.

Abstract submission deadline is **30th June 2018**. Registration deadline is **31st August 2018**. For the lab training, only **20** vacancies are available.

There is no fund available from the organizer to support the participants' travel and subsistence costs. The Nordic participants are encouraged to apply a travel fund directly from NKS (<http://www.nks.org/>).

Workshop topics:

- International and national legislation on decommissioning, waste management and clearance of materials, buildings and land**
- Strategies, experience and challenges in decommissioning of nuclear facilities**
- Radiological characterization and radiochemical analysis**
 - Sampling technique and strategies
 - Radiological characterization methods
 - Principles of radiochemical analysis
 - Radiochemical methods for hard-to-measure radionuclides
 - Measurement techniques (alpha, beta, gamma, LSC, mass spectrometry)
 - Development of new techniques/materials

NKS-B CfP 2019

A large number of selected potential activity leaders (50+) have again this year be contacted (in May/June), urging them to send in proposals.

Will follow up on this systematically in the autumn when the CfP is announced.

Useful to ask for Board members' assistance also this year.

Lobbying for CfP2019 will also be made at relevant seminars in the autumn of 2018.

NKS B journal paper

Submitted to Journal of Environmental Radioactivity on 15-03-18.

No news from journal in 3 months.

Joint Nordic nuclear research to strengthen nuclear emergency preparedness after the Fukushima accident

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Abstract

Contrary to most areas of Europe, the Nordic countries (Denmark, Finland, Iceland, Norway, Sweden, and the Faroe Islands) have for many years shared a regional research and development program on nuclear reactor safety and emergency preparedness - NKS. In spite of its project results having received great recognition and having been integrated in state-of-the-art emergency preparedness tools over the world, NKS is as an organization is relatively unknown outside the Nordic countries. Although the Fukushima accident had no health impact at all in Nordic areas, it taught a number of lessons of generic nature with respect to new R&D tasks that could further strengthen and secure future maintenance of the Nordic region's capability to effectively respond to such events. For broader inspiration, this paper briefly introduces the Nordic nuclear emergency preparedness cooperation channels and outlines the related NKS R&D project initiatives launched after the Fukushima accident, many of which should be of general interest also far outside the region. The paper is intended as an appetizer with an invitation to explore NKS results. All project results are available cost-free on the NKS website.

1. Introduction

Specifically in relation to NPP emergency preparedness and recovery of contaminated areas, many lessons were learned from the way that the Fukushima accident was managed off-site. As pointed out by the IAEA comprehensive Fukushima report (IAEA, 2015), criteria for protective actions had in Fukushima not been expressed in terms of measurable quantities. For example, criteria for such measures as relocation had not been determined, and some evacuated persons ended up being relocated a number of times over less than 24 hours. Also missing were guidelines for the transition from the emergency phase to the recovery phase, where the authorities in Japan eventually decided to build on the current recommendations of the ICRP.

Measurement strategies to support justification and optimization of practical recovery options were lacking, and the first measured quantities were not in-line with needs with respect to optimizing recovery. Since

highly contaminated soil waste, which pose a great disposal problem (IAEA, 2015). This also highlighted the need for optimizing countermeasure implementation in practice through site-specific assessments.

Among other lesson learned with respect to off-site consequences could be mentioned the need to deal with multi-unit and multi-site accidents, primary contaminant releases over potentially as long periods as weeks complicating operation using 'traditional' accident phase planning, and source term characteristics that reflected new types of accident processes, and could perhaps in the future to an increasing extent be predicted through probabilistic safety assessments. On top of everything the accident has led to considerable stigmatization and socio-economic repercussions in the contaminated areas (Hasegawa et al., 2015), the nature and extent of which should in the light of, e.g., the Chernobyl and Goiânia cases (Steinhausler, 2005), hardly surprise.

In addressing the lessons learned, they need to be considered in the context of existing management systems and cultures. The Nordic countries have a common cultural and historical heritage that stretches many centuries back, and thus a long tradition of working together to solve societal problems. Specifically with respect to nuclear safety (including emergency preparedness), Nordic cooperation goes back to the 1950's, when the nuclear power concept was first foreseen to promise inexpensive energy based on virtually inexhaustible fuel resources. The long-lasting cooperation has resulted in a common Nordic understanding of things like rules, practices and measures, although national differences exist. Through cooperative initiatives, these comparatively small nations have built, and over decades further developed and refined, a nuclear safety network through which they can together tackle existing and emerging problems more efficiently, more consistently and at a lower cost. In this network, the non-profit organization NKS (acronym for 'Nordisk Kernesikkerhedsforskning' – or in English: 'Nordic Nuclear Safety Research'), holds a central position. It emerged from a Nordic wish to together closely follow the planning and development of nuclear energy systems in the region. NKS is funded by the Nordic countries and has since 1977 run joint Nordic research and development activities (with annual open calls for new project proposals) in the fields of nuclear safety and nuclear/radiological emergency preparedness, addressing the region's specific needs, and ensuring that relevant competence and networking is maintained. For more than 40 years NKS has supported and managed collaborative Nordic research and development projects, and alone since the turn of the century this has produced almost 400 final project reports addressing and describing solutions to various problems identified in Nordic areas or internationally (all freely available on the NKS website www.nks.org), as well as countless peer reviewed journal papers. Another important outcome of this collaboration is building and maintenance of vital networks between the region's key people in the field. To secure future continuity, NKS promotes participation of young scientists in the activities, and also has a dedicated budget for travel support for young scientist competence building.

Since 2011, many NKS projects have specifically targeted on learning points from the Fukushima accident. Currently, the projects are run under two separate programs: the NKS-R (reactor safety) and NKS-B (emergency preparedness – B for 'beredskab' in Nordic language), each with its own program manager. In recent years, NKS has annually co-financed projects with a sum of about 1 MEuro. The participating organisations have at least matched the NKS funding with an own contribution, which has often been given as 'in-kind' payment. Although NKS project budgets are obviously smaller than those often offered by, e.g.,

NKS B journal paper

Answer from journal editor on 18 June 2018:

Kasper ... I have one review (major revision) and one late by 90 days. Six reminders to no avail, the last reminder was sent last week. Annoying that people do not keep their promises! I think you can say the paper has been recommended for acceptance after revision, and I'll try to make that formal this week.

Remaining tasks for the PC's related to Appendix A of the January Board meeting in Reykjavik:

- Profiling NKS more towards young scientists: PC's to see if text in CfP can better reflect importance of young scientists in activities.

Revision of text needed in handbook for applicants and activity leaders:

Participation of young scientists

Will the proposed activity involve young scientists in the proposed work programme and if so, how? In this context, those studying towards a masters degree or a PhD and those in their first 4 years of their professional career after obtaining an academic degree would be considered as 'young scientists'. **Note that participation of 'young scientists' is an important criterion in funding decisions.**

Remaining tasks for the PC's related to Appendix A of the January Board meeting in Reykjavik:

- Quality assurance: one final report per activity. The PC's will present proposal for new text for applicants at the June Board meeting.

Revision of text possible in handbook for applicants and activity leaders:

Final reporting of the activity

All NKS activities, regardless of their nature, must produce a final report that should be in the standardised NKS report format (see template/instructions: report template). **All material reported by an activity in each year is to be contained in one final report.**

Remaining tasks for the PC's related to Appendix A of the January Board meeting in Reykjavik:

- Visibility of NKS and NKS work: A few slides on NKS to be developed by PC's for use at presentations of NKS projects at non NKS events.

Slides to be produced by the PC's with general information about NKS.

NKS in short

NKS (Nordic Nuclear Safety Research) is a forum for Nordic cooperation and competence in nuclear safety, including emergency preparedness, serving as an umbrella for Nordic initiatives and interests.

NKS runs joint activities of interest to financing organisations and other end users producing seminars, exercises, scientific articles, technical reports and other types of reference material.

Two Programmes running activities: NKS-R (nuclear reactor safety, etc.) and NKS-B (nuclear/radiological emergency preparedness, etc.)

Financing and support comes from Nordic authorities, companies and other organisations.

Results should be practical and directly applicable for use by participating organisations in their decision making processes and information activities.

Annual NKS Call for Proposals for R&D projects

- Call typically announced around 1st of September
- Deadline: typically around 15th of October
- Foreseen project start: January next year (one year contract at a time)
- Typical annual NKS project funding total of about 1 MEuro
- Final project reports and further information available for free on www.nks.org

Who can participate?

Organisations such as universities, research centres, institutes and companies in the Nordic countries can apply for NKS funding for research activities. The activity budget should distribute the NKS funding between participant organisations from at least 3 Nordic countries (in some special cases, involvement of only 2 Nordic countries has been accepted in the NKS-R programme). Non-Nordic participation in NKS activities is possible, but NKS funding of Non-Nordic organisations is not possible. The activity leader must come from a Nordic country (i.e. work for a Nordic organisation).
