



Nordisk kernesikkerhedsforskning
Norroenar kjarnöryggisrannsóknir
Pohjoismainen ydinturvallisuustutkimus
Nordisk kjernesikkerhetsforskning
Nordisk kärnsäkerhetsforskning
Nordic nuclear safety research

NKS-B Status Report

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Status summary

Overall the work in NKS-B is progressing well, although the Fukushima accident has created some delays. Since the last NKS-B status report was made to the NKS-Board in January 2011, 3 new final reports from completed NKS-B activities have been published on the NKS website. Of the delayed NKS-B activities that commenced prior to 2010, all should have been completed (i.e. final reports submitted) by the time of the NKS Board meeting. Of the activities that started in January 2010 all but one are expected to be completed by the time of the NKS Board meeting. Of the NKS-B activities that started in 2011, contracts have been agreed and signed with all but one activity. Of those activities that started in 2011 where contracts have been agreed, all are currently on schedule.

NKS-B reports

The following NKS-B reports have been published on the NKS website since the last NKS-Board meeting.

[NKS-B NordRisk II](#)

Bent Lauritzen

NKS-B NordRisk II: Nuclear risk from atmospheric dispersion in Northern Europe - Summary Report

[NKS-B Method MS](#)

Lindis Skipperud et al.

Method-MS Final report

[NKS-B NordRisk II](#)

Ulrik Smith Korsholm et al:

NKS NordRisk II: Atlas of long-range atmospheric dispersion and deposition of radionuclides from selected risk sites in the Northern Hemisphere

[NKS-B PIANOLIB](#)

Lilián del Risco Norrlid et al.

In-vivo whole body measurement of internal radioactivity in the Nordic countries

NKS-B activities

Delayed NKS-B activities prior to 2008

NordRisk II

Nuclear risk from atmospheric dispersion in Northern Europe

Activity Leader: Bent Lauritzen, Risø DTU

The NKS funding for the work is **DKK 230 k**

Work in 2007 was delayed and the work plan for 2007 was instead extended into 2008 with a revised work plan in a contract with the following milestones:

1. Kick-off meeting 2007
2. Atmospheric dispersion model calculations for the Nordic Hemisphere using DERMA (DMI). Draft version of extended atlas December 2008.
3. Short progress report April 2008
4. Assessment of key dispersion parameters for software model, obtained from statistical analysis of calculated dispersion and deposition fields (Risø, DMI). Data collected for subsequent publication.
5. Preparation of NordRisk atlas data in a format suitable for presentation in the ARGOS

- decision support system (DMI, DEMA)
6. Progress report December 2008 (Risø)
 7. The work is planned to be completed by December 31, 2008.

Status

New Atlas produced and distributed. Activity completed.

NKS-B activities from 2008 (June)

DepEstimates:

Estimation of fallout deposition background for various radionuclides
Activity Leader: Sigurður Emil Pálsson, Geislavarnir ríkisins

NKS-B funding: **250 kDKK**

Milestones defined in contract:

1. Planning meeting, Bergen (June 2008)
2. Short status report (November 2008)
3. Progress report, including description of concentration function (December 2008)
4. Seminar (January – February 2009)
5. Draft paper for submission to a scientific journal (15 March 2009)
6. Final report (1 April 2009)

Status

The DepEstimates activity is being concluded with a final report to be concluded before the NKS Board meeting in June. The conclusions of the work have been accepted for an oral presentation at the ECORAD 2011 conference in Canada in June and will also appear in a paper to be submitted to a scientific journal.

NKS-B activities from 2009 (June)

FOOD

Countermeasures in food production in the Nordic countries
Activity Leader: Inger Margrethe Eikermann, NRPA

NKS-B funding: **200 kDKK**

Milestones defined in contract:

1. Develop agenda for the seminar and finalise invitations
2. Conduct the seminar
3. Final report

Status

Activity expected to be completed via submission of final report before the NKS Board meeting. Delayed to Fukushima.

NKS-B activities from 2010 (January)

MareNuc

Operationalisation of risk assessments for marine reactors
Activity Leader: Ole Reistad, NRPA

NKS-B funding: 340 kDKK

Milestones defined in contract:

1. Joint op-ed on the marine nuclear activities in the Nordic waters and the relevance for a Nordic network addressing the risks associated with these activities (Ultimo March 2010)
2. Workshop 1: Agreed methodology for scaling of source terms in relation to certain type of vessels, and prioritization of the most important nuclides for further consideration in impact assessments, on the basis of relevant literature on marine reactors and source term derivation from small reactor (April 22-23, 2010);
3. Workshop report 1 (Medio June, 2010);
4. Workshop 2: Assessment of the possible changes of risk associated with the operation of nuclear reactors in Northern European areas in relation to expected changes in vessel construction plans, new applications and introduction of new technologies (Ultimo August, 2010);
5. Workshop report 2 (Medio November, 2010):

Status

First workshop was postponed due to the volcanic ash travel restrictions and subsequently held in Reykjavik in October 2010. Co-ordinator has left his position with NRPA. NRPA will continue to administrate activity. Second seminar has been suggested to take place immediately after the NSFS conference in Reykjavik in August. It will be a two day seminar and the programme has been agreed. Delayed due to Fukushima.

PONPP

Preparedness organization at nuclear power plants in the Nordic countries
Activity Leader: Jan Porsmyr, IFE-Halden

NKS-B funding: 300 kDKK

Milestones defined in contract:

1. Interviews/Data collection/Analysis (15.01.10 - 15.08.10)
2. Status report after completion of interviews and analysis (15.09.10)
3. Workshop (October 2010)
4. Distribution of "Workshop" material and results (15.11.10)
5. Final Report (31.12.10)

Status

Activity completed.

PIANOLIB

Phantom-based intercomparison Among Nordic whole body counting facilities and the development of a Nordic phantom library website
Activity Leader: Lilián del Risco Norrlid, SSM

NKS-B funding: 320 kDKK

Milestones defined in contract:

1. Report on inventory of available phantoms and sources for calibration of whole body counters among the participants
2. Phantom library website
3. Progress report after completion of the library website
4. Intercomparison exercise
5. Final report

Status

Activity completed.

Method-MS

Application of mass spectrometry for the measurement of low level, long-lived radionuclides
Activity Leader: Lindis Skipperud, UMB

NKS-B funding: **470 kDKK**

Milestones defined in contract:

1. Tracers and Standard reference material purchase (spring 2010)
2. Inter laboratory exercise (spring 2010)
3. Further ICP-MS measurements and Quality Control of selected radionuclides (table 1)
4. New method developments and improvements (2010)
5. Short progress report and new application for third year by 15th October 2010
6. Applications/measurements of different matrices (Autumn 2010)
7. Progress meeting (September 2010)
8. Final Report on results of the first 2 years (December 2010)

Status

Activity completed.

RADPAST

Natural Radionuclides in Meadow and Pasture land in the Nordic countries
Activity Leader: Klas Rosén, SLU

NKS-B funding: **500 kDKK**

Milestones defined in contract:

1. Meeting in February 17-18, 2010
2. Interim report on field studies by the end of September 2010
3. Workshop in the mid of November 2010
4. Final report by the end of December 2010

Status

Final report for work in 2010 to be finalised shortly (delayed due to Fukushima).

NKS-B activities from 2011 (January)

GammaRate

Safe use of portable gamma radiation ratemeters for environmental monitoring
Activity Leader: Hans Bjerke, NRPA

NKS-B funding: **150 kDKK**

Milestones defined in contract:

1. Workshop May 2011, contribution to the final report including guidelines for calibration and use of some portable dosimeters
2. Publication of results from the comparison
3. Final report of GammaRate

Status

Contract signed. On schedule.

GammaWorkshops

Workshops for gamma spectroscopy

Activity Leader: Henrik Ramebäck (FOI)

NKS-B funding: **360 kDKK**

Milestones defined in contract:

1. Planning meeting in Reykjavik
2. Workshops
3. Final Report

Status

Contract signed. On schedule. The workshop will be held at Risø on 27-29 September.

The main topics will be:

- Monday, afternoon: Natural radionuclides, ½ day workshop
- Tuesday, morning: Matrix and absorption corrections, ½ day workshop, software specific, could mean parallel sessions
- Tuesday, afternoon: Uncertainties and detection limits, ½ day workshop
- Wednesday: True Coincidence Summing corrections – 1 day workshop, to a large degree software specific, parallel session

NordEx12

Nordic Exercises 2012

Activity Leader: Sigurður Emil Pálsson (Geislavarnir ríkisins)

NKS-B funding: **300 kDKK**

Milestones defined in contract:

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Status

Contract not yet signed but should be agreed prior to NKS Board meeting.

Update from activity leader as follows:

Originally the framework for NordEx12 was to be presented and decided at a meeting of the Nordic Emergency Preparedness group. The meeting was postponed to autumn due to Fukushima. The Fukushima case has also meant that all the participating organisations have had to revise their plans on exercises and related issues. A revised framework has been defined and approved by all the participating organisations (IRSA (IS), STUK (FI), NRPA (NO), SSM (SE), SIS (DK) and DEMA (DK)). The key elements of the work are:

1. Sharing of national exercises. Each organisation will as appropriate invite the others to take part in planning of its exercises, take part in them and share the lessons learned
2. Joint table top exercise – problems in sea transport of radioactive materials. This is a topical issue for many of the participating authorities. This exercise will be conducted in autumn / early winter.
3. Exercise: Assessment of an accident in a nuclear powered vessel. This exercise will use the output of the NKS-B MareNuc seminar scheduled in autumn and the plan is to conduct it as a table-top exercise. The exercise will be planned and prepared in late 2011 and conducted at the beginning of 2012.

4. Initial planning and preparation for a joint Nordic participation in a large Swedish exercise to be held in 2012. The exercise itself is planned, organised and conducted by Sweden (SSM). The NordEx part is to co-ordinate the participation of authorities outside Sweden, definitions of common objectives and prepare a joint follow-up / identification of potential lessons learned.

5. Extra item: Nordic co-operation in the aftermath of the Fukushima case – lessons learned. The identification of lessons learned from the Fukushima case is in many ways a similar process as identification of lessons learned from an exercise, apart from that this was a real event. Dealing with the situation in Japan has and will be the focus of the work of most of the participating organisations this year and the Nordic co-operation has been one of the key elements in this.

Items 1-4 are consistent with the original proposal, item 5 is an addition.

ORPEX

Orphan Sources and Fresh Fallout: Virtual Exercise in Mobile Measurement
Activity Leader: Mark Dowdall (NRPA)

NKS-B funding: **350 kDKK**

Milestones defined in contract:

1. Derivation of data sets and materials – April 2011
2. Exercise – May 2011
3. Final report to NKS, materials posted on NKS website – September 2011

Status

Contract signed. Practice materials distributed. On schedule.

PIANOLIB

Phantom-based intercomparison among Nordic whole body counting facilities and the development of a Nordic phantom library website
Activity Leader: Lilián del Risco Norrlid (SSM)

NKS-B funding: **520 kDKK**

Milestones defined in contract:

1. Report on the intercomparison results
2. Regional Workshop
3. New set of radioactive rods for phantom IRINA
4. Scientific paper
5. Final report

Status

Contract signed. PIANOLIB workshop planned for Gothenburg 15–16 September 2011. On schedule.

RADPAST

Natural radionuclides from ^{238}U and ^{232}Th decay series in rural areas of the Nordic countries and dose assessments.

Activity Leader: Klas Rosén (SLU)

NKS-B funding: **500 kDKK**

Milestones defined in contract:

1. Workshop in March 3, 2011
2. Interim report on field studies by the beginning of September 2011
3. Workshop in the mid of October 2011
4. Final report by the end of December 2011

Status

Contract signed. On schedule.

RadWaste

Radiochemical analysis of radionuclides difficult to measure for waste management in decommissioning and depository

Activity Leader: Xiaolin Hou (Risø-DTU)

NKS-B funding: **420 kDKK**

Milestones defined in contract:

1. Initial project meeting in week 7 (14-16 Feb, 2011).
2. Establish an internet based Nordic network for radioanalysis, Jan. - Oct. 2011.
3. Optimize and develop radioanalytical methods, Feb. – Nov. 2011
4. Intercomparison exercise on radioanalysis of some radioactive waste samples
5. Project meeting, Nov. – Dec. 2011
6. Final report, 31st Dec. 2011

Status

Contract signed. On schedule.