



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

---

## **NKS-B Status Report**

Kasper G. Andersson  
NKS-B Programme Manager  
May 2013  
Technical University of Denmark

## Status summary

Overall the work in NKS-B is progressing well. Since the last NKS-B status report was made to the NKS-Board in January 2013, 4 new final reports from completed NKS-B activities have been published on the NKS website. All of the delayed NKS-B activities that commenced prior to 2012 are completed. Of the 9 NKS-B activities commencing in 2012, 5 have been completed, 1 is very near completion, and 3 are delayed. Of the NKS-B activities that started in 2013, contracts have been agreed and signed with all. Activities that started in 2013 are all currently on schedule. The contract for the NKS-B activity PONPP2, for which funding was allocated in 2011, has never been signed, and a final attempt to start the activity has failed.

## NKS-B reports

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

### [Gamma Workshops](#)

E. Strålberg et al.

GammaWorkshops 2012 Proceedings

### [MOMS](#)

J. Nilssen et al.

Mobile Measurement Systems, Final Report from NKS-B MOMS

### [BERMUDA](#)

T. Turtiainen et al.

Doses from natural radioactivity in wild mushrooms and berries to the Nordic population. Interim Report from the NKS-B BERMUDA activity

### [COSEMA](#)

M. Iosjpe et al.

Consequences of severe radioactive releases to Nordic Marine environment

## NKS-B activities from 2011 (January)

### **PONPP2**

Preparedness Organization at Nuclear Power Plants in the Nordic countries

Activity Leader: Jan Porsmyr (IFE-Halden)

NKS-B funding: **300 kDKK**

Contract not signed.

### **Status**

Some of the participants have not been able to commit the required resources, and the activity leader organisation has therefore, after several attempts to get starting, recommended that the activity be cancelled and proposed that the 300 kDKK be transferred to the NKS reserve.

## **NKS-B activities from 2012 (January)**

### **Nordex12**

Nordic Exercises 2012

Activity leader: Sigurdur Emil Pálsson

NKS-B funding: **420 kDKK**

Milestones defined in contract:

1. Development of revised work plan in consultation with the participating Nordic Authorities (March 2012)
2. Presentation at a meeting of Nordic Authorities of NordEx12 support for Nordic participation in the Swedish REFOX exercise (March 2012)
3. Meeting for representatives from Nordic Authorities with planners of REFOX (May 2012)
4. Coordination with NKS-B MOMS of Nordic technical preparation for REFOX (e.g. harmonisation of data formats and processing, to the degree needed) (at MOMS seminar, May 2012)
5. Development and distribution of scenarios for table-top exercises for use by the authorities individually (May 2012)
6. Coordination of Nordic participation during the REFOX exercise (September 2012)
7. Progress report (including summaries of shared experience of exercises, December 2012)
8. Seminar on lessons learned after REFOX and related exercises (spring 2013)
9. Final report (May 2013)

### **Status**

Contract signed. The seminar has not yet been held, but time and venue have been defined. It will take place, in conjunction with the EmSem seminar, on 27-29 August 2013, at Hotel Park Inn, Solna Centrum, Stockholm, Sweden. The seminar will thus address both the findings from the REFOX exercise and those from other recent exercises. Final report expected in September.

### **MUD**

Meteorological uncertainty of atmospheric dispersion model results

Activity leader: Jan Havskov Sørensen (DMI)

NKS-B funding: **300 kDKK**

Milestones defined in contract:

1. Kick-off meeting (DMI, Met.no, Risø, SSM, DEMA)
2. Case studies selected (DMI, Met.no, Risø, SSM, DEMA)
3. Corresponding NWP model ensembles generated (DMI, Met.no)
4. Long-range atmospheric dispersion models applied to the case studies, and atmospheric dispersion model ensembles generated (DMI, Met.no)
5. Status meeting (DMI, Met.no, Risø, SSM, DEMA)
6. Preparation of NKS-B application for project continuation and completion next year (DMI, Met.no, Risø, SSM, DEMA)

### **Status**

Contract signed. Final reporting seems imminent. A good 32 p. long draft has been received, and only minor dosimetric work is missing.

## **THYROID**

Assessment of accidental uptake of radioiodine in emergency situations - proficiency test and evaluation of the regional capabilities

Activity leader: Lilián del Risco Norrlid (SSM)

NKS-B funding: **280 kDKK**

Milestones defined in contract:

1. First call for activity
2. Running the calibrations and intercomparison exercise
3. Meeting of coordinators for evaluation of the results
4. Report of the activity

### **Status**

Contract signed. The activity started in the autumn of 2012, when calibration sources were received from Russia with great delay. Calibration sources are now being circulated for use by 30 registered participants. A revised deadline for submission of the final report was agreed in the autumn of 2012 (30 October 2013). The activity leader will write a scientific paper on the activity work, which she originally in the autumn of 2012 planned to send for peer review by 15 December 2013. Currently, it looks like there will be a further delay of the above deadlines by 3-4 weeks.

## **PUBPLUME**

Communicating dispersion modelling results to the public

Activity leader: Jan Erik Dyve (NRPA)

NKS-B funding: **150 kDKK**

Milestones defined in contract:

1. Workshop with follow-up meeting
2. Final report

### **Status**

Contract signed. The activity started in 2012, and videoconferences were held for coordination of the individual national efforts for the final report. Minutes have been received. Due to heavy work load up to a big NB8 on 14 March 2013, the final report has been delayed, and will most likely not be available yet for the NKS Board meeting in May 2013.

## **NKS-B activities from 2013 (January)**

### **EmSem**

Seminar – Practical and operational emergency preparedness – Status and future developments

Activity leader: Sigurdur Emil Pálsson

NKS-B funding: **210 kDKK**

Milestones defined in contract:

1. Initial announcement of seminar (April 2013)

2. Announcement of registration procedures (May 2013)
3. Seminar held (August 2013)
4. Final report submitted (December 2013)

### **Status**

Contract signed. Progress on schedule. The seminar was announced in April 2013. It will take place, in conjunction with the Nordex12 seminar, on 27-29 August 2013, at Hotel Park Inn, Solna Centrum, Stockholm, Sweden. The seminar will thus address both the findings from the REFOX exercise and those from other recent exercises.

### **MUD (continued)**

Meteorological uncertainty of atmospheric dispersion model results  
Activity leader: Jan Havskov Sørensen (DMI)

NKS-B funding: **360 kDKK**

Milestones defined in contract:

1. Project meeting (video conference) (DMI, Met.no, DTU, SSM, DEMA)
2. Literature study on ensemble prediction for atmospheric dispersion finalized (DMI, Met.no)
3. Methods developed and described for computation of the meteorological uncertainty of the atmospheric dispersion of radioactivity from accidental releases (DMI, Met.no, DTU, SSM, DEMA)
4. Methods applied to the atmospheric dispersion model ensembles corresponding to the case studies (DMI, Met.no)
5. Presentation of the uncertainties to decision makers described and applied to the case studies selected (DMI, Met.no, DTU, SSM, DEMA)
6. Final project meeting (DMI, Met.no, DTU, SSM, DEMA)
7. Automatic interaction with DSSs described and results made available to ARGOS for demonstration purposes (DMI)
8. Final report (DMI, Met.no, DTU, SSM, DEMA)

### **Status**

Contract signed. Progress on schedule. Kick-off video meeting held on the 9<sup>th</sup> of April, to agree on who does what and when. Minutes received.

### **COSEMA (continued)**

Consequences of severe radioactive releases to Nordic marine environment  
Activity leader: Vesa Suolanen (VTT)

NKS-B funding: **500 kDKK**

Milestones defined in contract:

1. Draft report of the activity by the end of November 2013.
2. Final report on validated consequences of severe radioactive releases to Nordic marine environment by the end of December 2013.

### **Status**

Contract signed. Progress on schedule. Kick-off meeting held on the 23-24<sup>th</sup> of April at Risø, to agree on distribution of tasks.

## **RADIOANALYSIS**

Workshop on radioanalysis of radionuclides difficult to measure  
Activity leader: Xiaolin Hou (DTU)

NKS-B funding: **370 kDKK**

Milestones defined in contract:

1. Initial meeting / communication for planning workshop, Feb. 2013
2. Announcement of the workshop, Feb. 2013
3. Preparation of workshop March-August 2013
4. Workshop, August 2013
5. Proceedings of workshop lectures and presentation
6. Final report of the project (December 2013)

### **Status**

Contract signed. Progress on schedule. The seminar was announced in April. It will take place on 2-6 September 2013, in Roskilde, Denmark.

## **BERMUDA (continued)**

Doses from natural radioactivity in wild mushrooms and berries to the Nordic population  
Activity leader: Tuukka Turtiainen (STUK)

NKS-B funding: **380 kDKK**

Milestones defined in contract:

1. Analytical work at laboratories (spring 2013)
2. Writing of final report (spring 2013)
3. Submitting a scientific article (summer 2013)
4. Final report (summer 2013)

### **Status**

Contract signed. Although the activity is in progress, the partners have not been able to analyse all samples by the contractual deadline. There will thus be a delay in the delivery of the final report (also due to summer holidays). The revised deadline is the 31<sup>st</sup> of October 2013.

## **GAMMATEST 2013**

Gamma measurement intercomparison and seminar  
Activity leader: Henrik Ramebäck (FOI)

NKS-B funding: **370 kDKK**

Milestones defined in contract:

1. Planning meeting (February 2013)
2. Announcement of intercomparison (March 2013)
3. Distribution of data and announcement of seminar (May 2013)
4. Seminar (September 2013)
5. Final report (December 2013)

### **Status**

Contract signed. Progress on schedule. Seminar and intercomparison announced in April. Seminar to be held on 17-19 September, 2013, at FOI, Umeå, Sweden

## **NOVE**

Novel neutron detection methods for nuclear security

Activity leader: Kari Peräjärvi (STUK)

NKS-B funding: **225 kDKK**

Milestones defined in contract:

1. Preliminary local testing (e.g., measurements using different techniques and operational scenarios)
2. Seminar at the Icelandic Radiation Safety Authority: 'Neutron detection in Nordic countries at present and in the future' (funded parties will give an overview on their operational neutron detection capabilities and present results from the preliminary measurements).
3. Neutron intercomparison measurements at the Metrology laboratory of the Finnish Radiation and Nuclear Safety Authority using well characterised Cf-252 and Am/Be sources.
4. Report describing all parts of the activity, including the intercomparison measurements and conclusions. The report will discuss the advantages of each tested technique and their implications for operative use (to be delivered by December, 2013).

## **Status**

Contract signed. The seminar was announced in April, and held 13-16 May in Iceland. Preliminary conclusions are that measurements have been conducted to test various in situ methods under different environmental conditions. The measurement exercise seems to have given interesting results. This was followed by a two-day seminar discussing neutron detection methods and capabilities. Also representatives from Norwegian, Finnish and Swedish authority organisations were present.