**SUMMARY AND CONCLUSIONS NKS-SEMINAR, B-PROGRAMME, 25.5.2022**

**Rapporteur Ole Harbitz**

Let me start by telling you all how impressed I am by the recent results of your cooperation and development. When I retired late summer 2020, the pandemic had just begun a few months earlier. Since then, you have had to find new ways of cooperation to keep momentum in NKS-projects, and you have managed! Kasper Andersson gave an impressive overview of the B-programme focusing on all the various aspects of EPR.

Lessons to be learned from the pandemic are significant. My former colleague Astrid Liland pointed out some of them. In my last meeting with prime minister Solberg before I retired, she, based on her recent experiences with the pandemic, stressed that decisions on counter measures and mitigation with large and long-term consequences must be taken by the Government, not by separate authorities, but of course based on clear analysis and advice from radiation protection and other authorities in the case of a nuclear emergency.

And the recovery process after a fallout situation may obviously involve both extremely expensive and long-lasting countermeasures. Jac Lochard has been heavily involved in the ICRP follow-up of the Fukushima accident, and his conclusion to ensure close cooperation between all relevant actors both nationally and locally and active involvement of the people directly affected, is of immense importance. The aim must be, based on an understanding of the variety of consequences and in solidarity with those directly affected, to develop the long-term mitigation strategy.

And: What we have learned from Roger Coates, prudence is a well-established necessity. But what he called multiple conservative assessments at very low doses should be avoided to prevent unnecessary costs for the society, but also to prevent unnecessary burdens on the shoulders of affected individuals.

The EPR-cooperation within NKS has always had a variety of projects on measurement methodology. In the presentations today and yesterday, we have learned how to cope with the difficulties of fresh fallout response (Mark Dowdall), on the development of MS-based rapid radiochemical analysis (Jixin Qiao), and on characterization of decom-waste (Anumaija Leskinen and Xiaolin Hou). I am glad to see that NKS now also have good decommissioning-projects in the programme.

The new modelling method to assess internal doses based on fallout pattern and dietary habits in subgroups of the population have a potential to serve as a valuable supplement to whole-body measurements (Mats Isaksson).

I am old enough to have served as a civil servant in Norway during the handling of the consequences of the Chernobyl accident. The first dramatic days during and immediately after the fallout, we tried to understand the geographic distribution of the fallout pattern. Suddenly, a person from the Met office showed up and offered their competence. Since then, the need for close cooperation across institutional borders in the EPR-field has been understood and is being developed further. At this meeting, good examples are the two presentations from the Danish Met office discussing how to visualize probabilities and uncertainties (Knud-Jacob Simonsen) and inverse methods to localize a release actualized by th Ruthenium-release a few years ago (Jens Havskov Sørensen).

Also, the development of a Nordic handbook for SAR in a maritime nuclear emergency, now to be operationalized, is a good example of cooperation with other responsible institutions and authorities (Øyvind Aas-Hansen).

Finally, Kjerstin Kjøndal gave us all an understanding of the importance of cooperation across Nordic borders in radiation protection and nuclear safety. I could add that especially in the field of EPR, such cooperation is a necessity also in the future. NKS has a long-lasting successful history and hopefully also a similar successful future.

It will always be a need, though, to follow closely the development under other umbrellas. We had a good presentation today by Wolfgang Raskob of the European research platforms focusing on EPR. The prevention of unnecessary overlapping activities is always needed.

**Some thoughts about needs in the years to come:**

There may be a need for common Nordic initiatives to build and enhance competence in our fields.

Further development of measurement methods and strategies, and modelling.

Develop further cooperation across institutional borders, with the met offices, SAR-authorities, civil defence authorities a.o., including arrangements for public involvement.

Contribute to operationalization of new methods, new knowledge and new tools.

Geopolitical and climate change influence on safety and EPR.

Focus on potential consequenses of fallout from accidents with, or the use of nuclear driven missiles and nuclear weapons.

Assess the need for common EPR exercises, including intercomparison excercises.