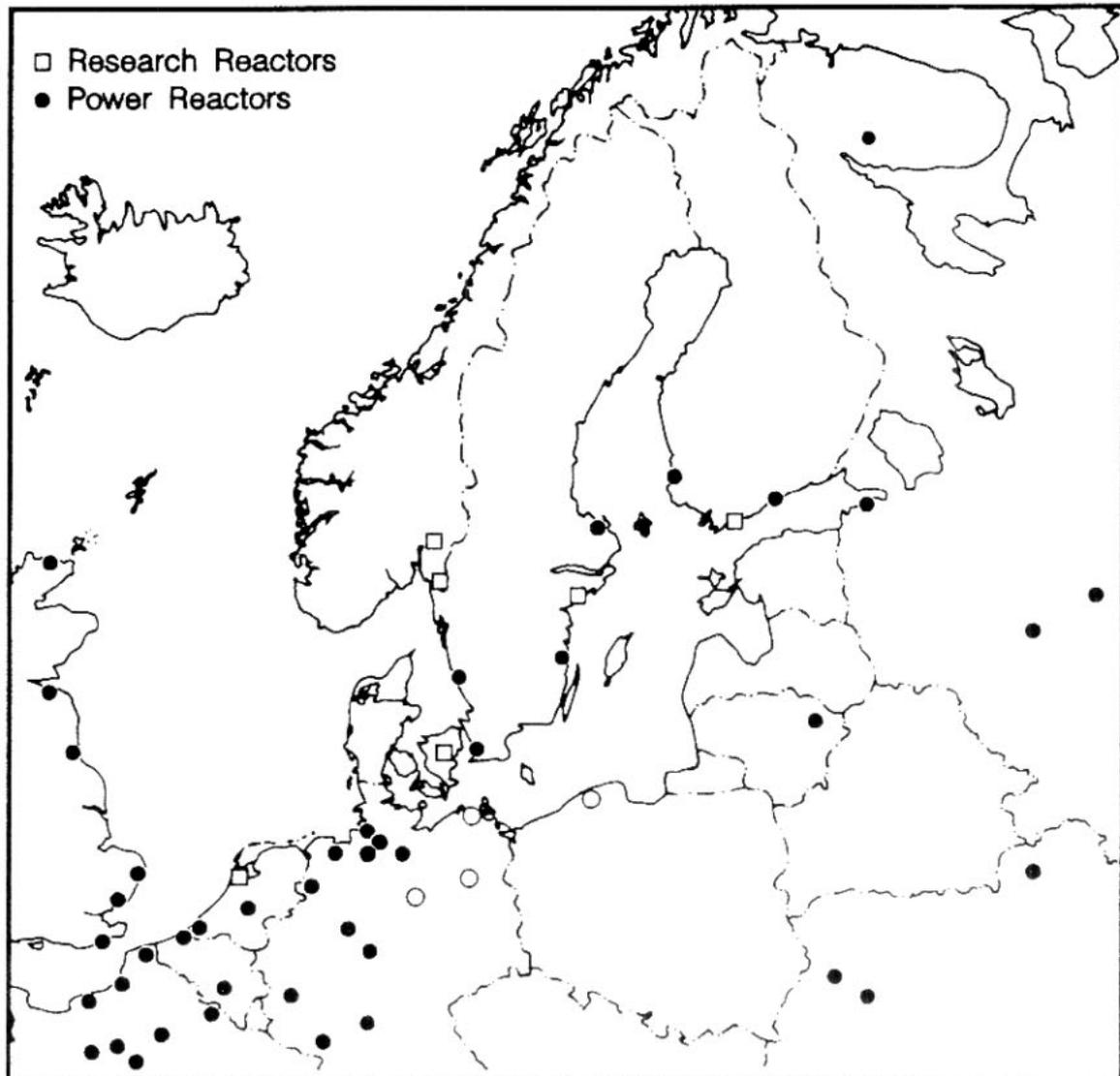


Evaluation Report of the Nordic Emergency Exercise Nora

- *January 14, 1993*



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**Evaluation Report of
the Nordic Emergency
Exercise Nora**
- January 14, 1993



EVALUATION REPORT OF THE NORDIC
EMERGENCY EXERCISE NORA
JANUARY 14, 1993

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May 4, 1993

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EVALUATION REPORT OF THE NORDIC EMERGENCY EXERCISE N O R A

Introduction

There are long traditions of co-operation between all five Nordic countries Denmark, Finland, Iceland, Norway and Sweden in many fields including radiation protection, nuclear safety and emergency preparedness. Information is frequently exchanged between sister organizations. There are many joint projects underway between the authorities and research institutes, e.g. under the umbrella of the Nordic Nuclear Safety Research Programme (NKS).

Nordic countries are signatories to the Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency. In addition to these international conventions the states, except Iceland, have bilateral agreements on early notification and exchange of information with each other and with neighbouring countries, see Annex 1.

The bilateral agreements also require notification if levels of radionuclide contamination are observed which prompt information to the public or activation of the emergency organization or part of it.

Four of the Nordic countries are parties to a broad frame agreement on general emergency assistance which covers all types of accidents. Also Iceland has the option to join the agreement.

Although general guidelines for the implementation of the various agreements have been prepared, a joint Nordic emergency plan does not exist.

The importance of rapid and frequent contacts between the authorities in the Nordic countries has increased along with the quick media transmittance of information and rumours on nuclear related events. The national authorities are expected to be able to respond quickly even in cases in which there is no urgency to protect people against radiation. In some cases large economic losses may occur without good reason, e.g. in agriculture and fishing, if there are delays in informing the public in time.

1. The objectives of the exercise

With this background in mind the following objectives for the exercise were developed:

The main objective of the exercise NORA was to test and harmonize the overall decision making in the responsible Nordic emergency management organizations and to create a harmonized Nordic approach to the emergency response.

Several more detailed sub-objectives were identified which for the purpose of the evaluation are grouped as follows:

1. to improve co-operation in assessing rumour-, threat- and accident-situations
2. to improve co-operation in making decisions on intervention levels and on interventions in a Nordic perspective
3. to enhance harmony in information policy concerning information to the public in order to avoid "double messages"
4. to improve information exchange between the Nordic countries and internationally.

As mentioned there exists no Nordic emergency plan which could be used as the basis for an evaluation of the exercise. Only the expectations based on the objectives as defined above and on the long tradition in Nordic co-operation could be used as a basis for the evaluation. An unusual but important feature in setting the objectives was to use the exercise itself as a vehicle in arriving at a Nordic approach to emergency response.

2. The participating organizations

The central authorities, responsible for advising and deciding on measures in threat and emergency situations, participated in the exercise. The participating countries decided themselves to which extent they participated and to which extent they simulated functions in addition to those of the central policy making authorities. Field functions were not exercised.

Recent reorganization of the emergency response organization in Denmark, and awaiting a final decision on the Norwegian reorganization, caused some problems and delays in planning for the exercise.

The responsibilities of the authorities in the Nordic countries are described in detail in the national emergency plans. The decision making, co-ordination and expert advice was provided in the exercise as described below. In Annex 2 are given the English and national names of the participating organizations.

In **Denmark** the emergency response arrangements are co-ordinated by the Emergency Management Agency of the Ministry of the Interior with the help of a central command center, which includes persons from the National Institute of Radiation Hygiene, the Danish Meteorological Institute, the Risø National Laboratory, the Ministry of Foreign Affairs, the Chief of Defence-Denmark, the National Food Agency, the State Police, the Danish Radio and the Ritzaus Bureau. The command center directs and co-ordinates the response to civil nuclear emergencies. It can co-ordinate and decide upon the warnings and implementation of protective actions, it assesses the situation and informs the public.

In Denmark 22 persons participated directly in the exercise, assisted by 8 persons belonging to the infrastructure of the emergency center.

In **Finland** the Ministry of Interior has the responsibility for co-ordination of the emergency response. The authorities and experts invited by the ministry to participate in the work of the co-ordination group depend on the type of the accident, but in a nuclear accident they are:

Finnish Centre for Radiation and Nuclear Safety, The Cabinet's Information Unit, Ministry of Foreign Affairs, Ministry of Social Affairs and Health, and further ministries for Agriculture and Forestry, Environment, Trade and Industry, Defence, Communication and Justice.

In addition to those mentioned, experts in meteorology, food control, telecommunications, broadcasting, seismology, alarm centers etc. are involved in the emergency organization and participated in the exercise.

The central body for assessment, radiation protection and nuclear safety, is the above mentioned Finnish Centre for Radiation and Nuclear Safety. The emergency organization is working in several command centers and offices. The main command center is in the Ministry of Interior.

In Finland more than 100 persons participated in the exercise.

In Iceland the Civil Defence Authority is responsible for emergency response in general. Emergency response functions in case of nuclear accidents are co-ordinated by the civil defence, food control and radiation protection authorities. There is a central body of experts from these authorities as well as key organizations such as marine research and meteorology. This body can include experts from other organizations such as fisheries, agriculture etc. as needed.

Experts from the Civil Defence Authority, the National Institute of Radiation Protection, the Oceanographic Institute, the National Center for Food Control and the National Weather Bureau took part in the exercise.

In Iceland about 35 persons participated in the exercise.

In Norway a new organization for emergencies will be established shortly. The existing co-ordinating body for emergencies, the Norwegian emergency organization (AVA)*, participated in the exercise. The members of the AVA are from the Norwegian Radiation Protection Authority*, the Ministry of Foreign Affairs, the Directorate of Civil Defence and Emergency Planning, the State Pollution Control Authority, the Shod. Norway Military Head Quarter and the Directorate of Health. As associate members the fisheries, communications and agriculture authorities are represented in the body. AVA has also special advisers in the fields of energy engineering, air pollution research, radiation protection, meteorology, health, food control, geology, defence research, marine research and farming.

In Norway about 30 persons participated in the exercise.

In Sweden the county administration boards are responsible for the emergency response. They get advice in radiation accidents from a central emergency preparedness organization maintained by the radiation protection authority, the Swedish Institute of Radiation Protection. In the organization are represented the following expert organizations: the Swedish Institute of Radiation Protection, the Swedish Rescue Services Board, the Swedish Nuclear Power Inspectorate, the National Food Administration, the Swedish Board of Agriculture and the Swedish Meteorological and Hydrological Institute.

In Sweden 20 persons participated in the exercise.

* The National Institute of Radiation Hygiene and the Norwegian Nuclear Safety Authority are organized in one institute under the name Norwegian Radiation Protection Authority from 1. January, 1993.

3. How the evaluation was organized

Evaluation of the exercise was performed at two levels, the national and the Nordic. The aim of the evaluation is to obtain a basis for further development of the national emergency preparedness and for future development of the Nordic co-operation in threat and accident situations. In order to provide a similar basis for evaluation in each country, Nordic evaluation guidelines were prepared. They addressed the aim, organization, criteria and the key functions for the Nordic evaluation. National evaluation guidelines were developed in line with the Nordic guidelines if considered useful.

The evaluation organization consisted of

- the Nordic chief evaluator
- one Nordic evaluator for each of the five countries
- one national chief evaluator for each country; he/she could be the same person as the country's Nordic evaluator
- national evaluators for different functions or sites. The number of national evaluators varied from country to country depending on the extent of the exercise and the organization.

The distribution of the national evaluators was the following:

Denmark:

- * The command center
 - the co-ordination group (1)
 - group of experts (2)
 - situation evaluation group (1)
 - radiation monitoring group (1)
 - information service group (1)
- * Marine operative command (1)

in total 8 evaluators

Finland:

- * Ministry of Interior
 - leading group (3)
 - radiation related matters (1)
 - information (1)

- * Finnish Centre for Radiation & Nuclear Safety
 - leading group (2)
 - radiation prot. & dose assessment (2)
 - nuclear safety (2)
 - information (2)
- * Cabinet's information unit (1)
- * Finnish Broadcasting company (1)
- * Ministry of Social Affairs and Health (1)
- * National Food Administration (1)
- * contact persons in other ministries

in total 17 evaluators

- Iceland:**
- Emergency response co-ordination center
 - leading group (1)
 - group of experts (1)
 - services (1)
 - information (1)

in total 4 evaluators

- Norway:**
- Emergency response co-ordination body, AVA
 - co-ordinator staff functions (1)
 - source term group (1)
 - radiation prot. & dose assessment (1)
 - information (1)

in total 4 evaluators

- Sweden:**
- Emergency response center
 - leading group (1)
 - assessment group
 - group of authorities (1)
 - communication and services group
 - information group (1)

in total 3 evaluators

In the appraisal of the performance of the various functions and of the exercise methodology the following rating was used: good, satisfactory or unsatisfactory.

Good implies that the response or function was performed without significant failings in all countries.

Satisfactory implies that the response or function was performed with minor failings and delays creating some confusion.

Unsatisfactory implies that the response or function was performed with major failures which could have contributed at least to economic losses.

In the overall evaluation, the appraisal indicates whether the aims were met perfectly, satisfactorily or not at all.

4. Exercise methodology

The exercise was a mixture of "table top" and "command post" exercises, in which the main emphasis was in decision making, e.g. in policy matters, and in communication between the countries.

The exercise was conducted at the same time in all five Nordic countries

The requirement to have sufficiently strong impact on all five countries, within a short time period, to prompt enough activities for a meaningful exercise, was difficult to handle. The distance between the extremes, Iceland and Finland, forced to use a two-days scenario even with the radiation sources moving into opposite directions. However, only one day was considered feasible for conducting the exercise.

The scenario was developed by starting the sequence of events with a rumour, later proven true, of a collision between a submarine and a warship, both nuclear powered, off the Norwegian coast. The submarine took course towards Iceland, while the warship took course towards the Baltic Sea. En route to St.Petersburg the latter passed Denmark, Sweden and Finland, which all in turn observed short elevations in the dose rates at their radiation monitoring stations implying radionuclide releases. It was confirmed by the Embassy concerned that the reactors of the warship had suffered from

the collision and small releases would occur but the vessel could continue to the dock without assistance. For the submarine the collision was also confirmed by the Embassy concerned. The secondary cooling system of the submarine reactor was somewhat damaged and the possibility of small releases existed. However, the submarine was considered to be able to proceed with reduced speed and pass Iceland.

The detailed event description contained a number of messages and questions to be inserted into the exercise at appropriate times by the umpires in order to prompt Nordic contacts. The inserts were expected to provoke contacts, in particular concerning realistic assessment of the radiological situation, international passenger traffic, international meetings, fisheries problems, information to the public, etc.

Even to get an overview of the situation, Nordic contacts would have been useful because the information inserted by the umpires to the players was not the same but complementary in different countries. The decisions about protective actions (misleading information was also inserted) and the public understanding of the decisions was planned to benefit from Nordic contacts.

Based on the Nordic scenario a detailed event description was worked out for each country with both Nordic and national inserts. The inserts with transboundary impacts were co-ordinated paying special attention to their timing and the time differences between the countries (with DK, N and S as reference, SF is + 1 h and IS -1 h).

Nordic exercise guidelines were prepared, and in line with them national guidelines for each country in their own language.

The guidelines described

- the objectives of the exercise
- the composition of the exercise management group
- participants (players, umpires, evaluators & observers)
- evaluation
- practical details for locations, parking, meals etc.
- telecommunications
- languages
- handling of normal duties during the exercise

Participants were expected to use their own languages during the exercise but for Nordic contacts it was permitted to use English if there was a risk of misunderstanding in particular in contacts with Finland and Iceland.

The exercise was conducted under the leadership of the Nordic exercise co-ordinator who was assisted by a Nordic exercise management group consisting of representatives from each Nordic country. The group members were located in their own countries during the exercise. Each country had their own national exercise manager and exercise management group: Denmark 6, Finland 5, Iceland 4, Norway 8 and Sweden 7 persons.

The participants of the exercise were informed about the time they should be gathered to the emergency command posts. There they were briefed about the sequences of events so far and then the exercise started simultaneously in all Nordic Countries. In Denmark, Iceland, Norway and Sweden the participants were essentially in one single location, in Finland in several locations.

5. The evaluation

Below are given the observations, recommendations and appraisals for the functions considered the most important from the Nordic perspective as well as for the exercise methodology:

5.1 Initial responses by the emergency organizations

OBSERVATIONS:

The national responses to the emergency situation were highly professional. Monitoring activities were activated immediately in all countries as well as seeking for information on ship reactors.

The Nordic contacts were understandably not seen as priority issue by those who were the closest to the sources at different points in time. The contacts were not seen beneficial enough in improving the understanding of the situation to prompt systematic contacts between the countries.

RECOMMENDATION:

In order to ensure an effective communication between the Nordic countries during an emergency situation, it could be considered whether one person in each staff should be responsible for surveying the inter-Nordic communication. However, it seems to be more important to convene this nordic

consciousness to all relevant persons in the organizations, leaving it to the responsible head of the emergency staff to check on this as part of his/her general management.

APPRAISAL:

Nationally good, not sufficiently Nordic contacts and therefore only satisfactory from the Nordic viewpoint.

5.2 Assessment of the emergency situation

OBSERVATIONS:

Earlier contacts with other countries on radiation measurements would have given better overview of the situation and probably assisted in planning for additional measurements. However, exchange of monitoring results functioned fairly well at the level of those responsible for that function in the different organizations. The comparison of the assessments of the potential releases and of the consequences as well as those of the likely doses based on the existing releases did not take place prior to the decisions but other countries were informed of the results.

RECOMMENDATION:

There is a long tradition to rapidly inform each other of monitoring results and observations. However, this is based on personal contacts and not on officially agreed routines. It is recommended to further develop procedures for rapid data transfer, such as in the BER-2 project, as well as personal contacts. The latter should concern assessments and important input data to the assessments. This recommendation implies by no means an observation of differences in competence but merely a possibility of incidental differences in information available at a certain point in time.

APPRAISAL:

Nationally satisfactory. Nordic contacts taken were in most cases satisfactory as regards the measurements but unsatisfactory as regards the other input data to assessments, which were used as a basis for the decisions made nationally.

5.3 Decision making process

OBSERVATIONS:

Harmonization between the Nordic countries of recommended actions did not take place. However, some attempts were made to contact each other. Different decisions were observed in some cases, e.g. in Finland the experts advised and decision makers decided to distribute iodine tablets to the population and to shelter the population in the southernmost parts of Finland. These decisions differed from those in other Nordic countries in similar exposure situations. The decisions were normally communicated for information to other countries.

Actions, such as restrictions in passenger transport and fisheries problems, received very little attention compared with deliberations concerning iodine tablets and sheltering. This may partly be caused by the very limited time of the exercise. No reactions were observed on requests to get co-ordinated responses from the Nordic countries to various issues, such as joint passenger policy, CNN request of a correspondent joining the emergency organizations, requests from the Baltic Council, the Nordic Council, WHO, NucNet, Teleray, etc. Some confusion was caused by the fact that for some functions it was not known whether counterparts in the other countries participated in the exercise and if so, whether as part of some co-ordinating organization or separately.

RECOMMENDATION:

Improving contacts between those authorities in the Nordic countries that are responsible for decision making on various interventions should be considered. The ambition level in harmonization of interventions and the possibility of joint Nordic responses should be discussed among the authorities in the Nordic countries.

APPRAISAL:

Nationally satisfactory, a few unsuccessful Nordic contacts prior to decisions were taken, thus the appraisal is unsatisfactory.

5.4 Communication between the Nordic countries and to non-Nordic countries and international organizations*

OBSERVATIONS:

Different technical and human difficulties were initially observed in communication such as wrong phone and fax numbers in the distributed communications catalogue, blocked phones, broken fax apparatus, participants at meetings, no one answering the phone etc. These were straightened out during the first few hours. Part of the difficulties were caused by the exercise arrangement, e.g. phone numbers being different from those in normal use. In some cases it was not clear whether representatives of some authorities were in their normal quarters or in the emergency response centers. Well established contacts, which are used regularly, between nuclear safety, health physics (measurements) and information officers functioned well. Information exchange with non-Nordic countries and international organizations was simulated.

RECOMMENDATION:

Communications facilities should be checked regularly, see also Chapter 5.6. It is equally important that the personal contacts for important functions are maintained under normal circumstances.

APPRAISAL:

The communication between the Nordic countries was unsatisfactory. The simulated communication to the international community was satisfactory.

5.5 Information distribution within a country

OBSERVATIONS:

The information distribution to other authorities within a country, which is important also in minimizing "double messages", was considered having run smoothly in most cases.

* contacts with other countries and international organizations were simulated.

Views about the frequencies for distributing information to the public and possibly the preparedness to implement information distribution may vary from country to country, but it could not be fully assessed because of the limited participation of media in the exercise (e.g. the broadcasts were not performed nor simulated). In some countries representatives of the media are included in the emergency management organization itself in addition to the information officials of the authorities. It should also be noted that different "cultures" exist in the countries as regards the relations to the media.

RECOMMENDATION:

It is important to continue the Nordic co-operation, which is presently underway under the umbrella of the NKS programme, project BER-4, in some form or other in order to maintain the personal contacts between the information officials of the central authorities. Within the countries it seemed generally desirable to improve the availability of the up-to-date information on the development of the situation and the decisions in the command center to the information officials. It is also recommended that the organizations exchange information on their experiences in distribution of information to the public.

APPRAISAL:

Satisfactory, but it varied between the Nordic countries both as regards information to other authorities in a country and to the public.

5.6 Technical facilities

OBSERVATIONS:

The observations are discussed in more detail in each country's report but differences between the countries were observed, in particular if the quarters used were provisional, compared to those already well established. Radiation data transfer is presently under development in the BER-2 project.

RECOMMENDATION:

Within the countries there will be need for further development of communication facilities following the general development of the electronic communication. Such developments could include sending faxes directly from PC:s and the use of electronic mail. These should be developed by taking also into account the needs in Nordic communication, and therefore Nordic contacts are desirable at the planning stage. The possibility to listen to radiobroadcasts from other countries as well as to watch international TV networks in emergency centers should be taken into account in future planning if not yet implemented. The equipment should be kept up to date, and the same goes for information on telephone and fax numbers.

APPRAISAL:

The facilities varied between the countries and were not all up to highest standards but still satisfactory.

5.7 Planning and carrying out the exercise

OBSERVATIONS:

The scenario was generally considered very good for a Nordic exercise covering such a wide geographic area and with the expectation of having approximately equally heavy impacts in all five countries. Some uncertainty was created with invented or imprecise names such as "Vorik" and "Baltiska RÖdet".

The detailed event sequence descriptions for each country were well co-ordinated with each other, but the compression of two days into one work day caused problems in all countries. The break in the exercise between the 14. and the 15. of January was not long enough to allow for informing the players about the events during the 24 h in between. In some countries the actions were not well enough developed in the description for the 24 h nor the monitoring results to allow the umpires to give requested information. The umpires would have needed to have more time to get acquainted with the scenario and the inserts in those countries in which the umpires were different from the exercise management group. The likely delays in fax transmittance were probably not foreseen adequately.

The exercise directive came too late, in particular the communications part would have been needed earlier.

Exercise management functioned well in all countries.

The participating organizations were selected nationally and thus reflected how national emergency organizations are composed. Some confusion was observed as not all authorities involved had their counterparts in other countries participating in their normal offices. However, the participation can be considered having been about right when taking into account the organizational differences.

RECOMMENDATION:

It is recommended that in future scenarios and event sequences real names are used for sources otherwise there will be confusion when seeking information on the source term. Only real international and other bodies should be used as otherwise the players suspect that intentional wrong information is inserted. Radiation information should be in such form that data can easily be interpolated or extrapolated if information additional to the preprepared inserts is requested by the players. In future exercises it should be made perfectly clear which organizations are playing, and the natural counterparts should participate from all countries.

APPRAISAL:

Apart from the observations it was considered being good.

5.8 The national emergency organizations

The evaluation of the national emergency organizations is presented in detail in the national evaluation reports. They are written in national languages and contain useful information for national planning purposes. The reports can be obtained from the members of the evaluation group, see Annex 3.

5.9 Overall evaluation of the exercise

The main arguments in favour of a co-ordinated approach in the intervention policy in the Nordic countries have been that the public would not understand and accept very different ambition levels in the protection of the public in these countries. At least there has to be good reasons for differences. If there are differences in decisions in very similar situations the confidence in authorities will be lost and consequently the implementation of necessary protective actions may suffer.

The exercise showed that it cannot be taken for granted that the decisions made in each of the Nordic countries would be in harmony. It also turned out that there will not necessarily be a co-ordinated response to questions coming from non-Nordic countries and organizations even when this is asked for.

In future more emphasis should be devoted to the economic consequences, in particular in situations in which hardly any health consequences from radiation can be expected.

The exercise hopefully made a useful contribution to prompt an indepth discussion, at the policy making level, of the desirability and feasibility of a co-ordinated intervention policy, of what has to be co-ordinated in advance and what can be left to the actual emergency situation.

In implementing those functions, in which personal contacts exist or were improved under the BER-programme, contacts were taken with Nordic colleagues during the exercise. Such functions are radiation measurements, information and to some extent nuclear safety matters. This shows the need for frequent personal contacts in normal situations, since such contacts are important in emergency situations.

Observers to national exercises are encouraged from other Nordic countries.

In the overall evaluation of the exercise we feel that the performance relating to the nordic element was somewhat less than satisfactory but the performance relating to individual countries was somewhat better than satisfactory.

The objectives of the exercise were considered to have been met satisfactorily and the exercise made a valuable contribution to further develop the Nordic co-operation.

ANNEX I. Bilateral agreements on notification and information exchange

	DENMARK	FINLAND	NORWAY	SWEDEN
DENMARK	-	1987		1986
FINLAND	1987	-	1987	1987
ICELAND				
NORWAY		1987	-	1986
SWEDEN	1986	1987	1986	-
GERMANY	1987		1988	1990
NETHERLANDS			1989	
RUSSIA (USSR)	1987	1987	1988	1988
POLAND	1987		1990	
UNITED KINGDOM	1987		1987	
LITHUANIA	1993			

ANNEX II. LIST OF NAMES OF AUTHORITIES AND INSTITUTES IN THE NORDIC COUNTRIES

DENMARK

Ministry of the Interior, Emergency Management Agency	Beredskapsstyrelsen, Indenrigsministeriet
Danish Meteorological Institute	Danmarks Meteorologiske Institut
Flag Officer Denmark	Sövärnets Operative Kommando
Risø National Laboratory	Forskningscenter Risø
National Institute of Radiation Hygiene	Statens Institut for Stålehygiejne
National Food Agency	Levnedsmiddelstyrelsen
State Police	Rigspolitiet
Chief of Defence - Denmark	Forsvarskommandoen
Danish Radio	Danmarks Radio
Ritzaus Bureau	Ritzaus Bureau
Ministry of Foreign Affairs	Udenrigsministeriet

FINLAND

Ministry of the Interior	Sisäasiainministeriö/Inrikesministeriet
Finnish Centre for Radiation and Nuclear Safety	Säteilyturvakeskus/Strålsäkerhetscentralen
Cabinet's Information Unit	Valtioneuvoston tiedotusyksikkö/Stadsrådets informations enhet
Ministry of Foreign Affairs	Ulkoministeriö/Utrikesministeriet
Ministry of Social Affairs and Health	Sosiaali- ja terveystieteiden ministeriö/Social- och hälsovårdsministeriet
Finnish Meteorological Office	Ilmatieteenlaitos/Meteorologiska Institutet
National Food Administration	Elintarvikevirasto/Livsmedelsverket
Finnish Broadcasting Company	Suomen Yleisradio/Finlands Rundradio

ICELAND

Civil Defence Authority	Almannavarnir ríkisins
The National Institute for Radiation Protection	Geislavarnir ríkisins
The Oceanographic Institute	Hafrannsóknarstofnun
The National Center for Food Control	Hollustuvernd ríkisins
The National Weather Bureau	Vedurstofa íslands

NORWAY

The Norwegian emergency organization (AVA)

Members:

Norwegian Radiation Protection Authority
 Ministry of Foreign Affairs
 Directorate of Civil Defence and Emergency Planning
 State Pollution Control Authority
 Shod. Norway Military Head Quarter
 Directorate of Health

Associate members:

Ministry of Fisheries
 Ministry of Transport and Communications
 Ministry of Agriculture

Advisors:

Norwegian Radiation Protection Authority
 Norwegian Institute for Energy Technology
 Norwegian Institute for Air Research
 Norwegian Meteorological Institute
 The National Institute of Public Health
 Norwegian Food Control Authority
 Geological Survey of Norway
 Norwegian Defense Research Establishment
 Institute of Marine Research
 Agricultural University of Norway

Aksjonsutvalget ved atomulykker (AVA)

Statens Strålevern
 Utenriksdepartementet
 Direktoratet for sivilt beredskap
 Statens Forurensningstilsyn
 Forsvarets overkommando
 Helsedirektoratet

Fiskeridepartementet
 Samferdselsdepartementet
 Landbruksdepartementet

Statens Strålevern
 Institutt for Energiteknikk
 Norsk Institutt for Luftforskning
 Det Norske Meteorologiske Institutt
 Statens Institutt for folkhelse
 Statens Næringsmiddeltilsyn
 Norges geologiske undersøkelse
 Forsvarets Forskningsinstitutt
 Havforskningsinstituttet
 Norges landbrukshøgskole

SWEDEN

Swedish Radiation Protection Institute
 Swedish Rescue Services Board
 National Food Administration
 Swedish Board of Agriculture
 Swedish Nuclear Power Inspectorate
 Swedish Meteorological and Hydrological Institute

Statens Strålskyddsinstitut
 Statens Räddningsverk
 Livsmedelsverket
 Jordbruksverket
 Kärnkraftinspektionen
 Sveriges Meteorologiska och Hydrologiska Institutet

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Evaluation Report of the Nordic Emergency Exercise Nora

- January 14, 1993

Disposal of Cleanup Wastes after Nuclear Accidents

A major Nordic exercise was performed in January, 1993 in order to test responses to a simultaneous nuclear threat to all the Nordic countries. An accident involving nuclear powered ships was simulated. The exercise has been evaluated by an independent team, and the results will be used in the planning of the second exercise, to take place later in 1993.

The Nordic Committee for Nuclear Safety Research - NKS

organizes pluriannual joint research programmes. The aim is to achieve a better understanding in the Nordic countries of the factors influencing the safety of nuclear installations. The programme also permits involvement in new developments in nuclear safety, radiation protection, and emergency provisions. The three first programmes, from 1977 to 1989, were partly financed by the Nordic Council of Ministers.

The 1990-93 Programme

The current programme, running until the end of 1993, comprises four areas:

- * Emergency preparedness (The BER-Programme)
- * Waste and decommissioning (The KAN-Programme)
- * Radioecology (The RAD-Programme)
- * Reactor safety (The SIK-Programme)

The programme is managed - and financed - by a consortium comprising the Danish Emergency Management Agency, the Finnish Ministry of Trade and Industry, Iceland's National Institute of Radiation Protection, the Norwegian Radiation Protection Authority, and the Swedish Nuclear Power Inspectorate. Additional financing is offered by the IVO and TVO power companies, Finland, as well as by the following Swedish organizations: KSU, OKG, SRV, Vattenfall, Sydkraft, SKB.

Additional Information is available from
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