Norwegian Assessment of Nuclear and Radiological Threats

Øyvind Gjølme Selnæs, NSFS Conference 2008

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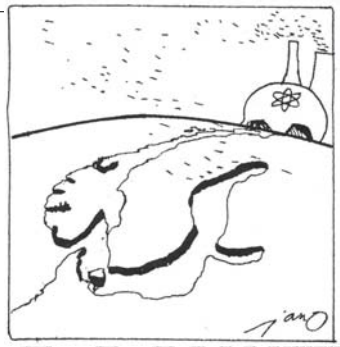
Threat ?



Norwegian threat assessment report

- **Prepared on behalf of the Crisis Committee**
- **Work group members from the scientific advisors of the Crisis Committee**
  - Norwegian Radiation Protection Authority
  - The Norwegian Meteorological Institute
  - Norwegian University of Life Sciences
  - Norwegian Defence Research Establishment
  - Institute for Energy Technology
  - Norwegian Institute of International Affairs
- **Accepted by the Crisis Committee December 2007**

Motivation for assessing nuclear and radiological threats

- **A particular emergency preparedness towards nuclear or radiological threats**
- **Most significant hazards are foreign**
- **Royal decree and the Radiation Protection Act provides a clear mandate and points out responsibilities**
- **National long-term plan for upgrading nuclear emergency preparedness (2003 – 2012)**

Particular Norwegian vulnerabilities

Arctic environment and ecosystems
Outdoor use, hunting/gathering, grazing in uncultivated areas
Reindeer herding industry, Saami culture and society
Norwegian reputation abroad, marketing

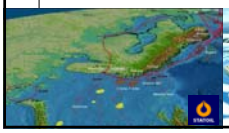
Changes in threat scenarios

- **Increased globalisation**
  - Norwegian citizens travel and work abroad to a larger extent
  - Norwegian service personnel in areas of conflict
- **Improved conditions in North-west Russia**
  - Improved safety at Russian facilities
  - Economical growth on the Kola peninsula
  - Remeditation leads to temporary increased risk
- **Nuclear renaissance**
- **International terrorism**

7

New topical issues

- **Norwegian partcipation in developing the Sthokman field**
- **Floating nuclear power plants (onshore and offshore)**
- **Climate changes**
- **Transport of SNF along the Norwegian coast**



8

Likelihood of nuclear terrorism


PST

UNCLASSIFIED THREAT ASSESSMENT 2007

The Norwegian Police Security Service (PST) continously assesses the likelihood of terrorism or other malevolent actions in Norway

Emphasis is on use of CBRN means

Our threat assessment report includes scenarios regarding terrorism and malevolent use of radioactivity

9

Different hazards I

- Limited nuclear industry in Norway (Kjeller, Halden, Himdalen)
- Nuclear powered vessels
- Radioactive sources in use in Norway
- Orphan sources
- Malevolent use of radioactive material



10

Different hazards II

- Nuclear industry and waste repositories abroad
- Satellites or other spacecrafts with radioactive material
- Nuclear weapons



11

Scenarios and consequences

Emphasis on

- Possible events (scenarios)
- Size of affected area in Norway
  - Local, regional/provincial or national
- Estimated time before consequences occur
  - E.g. time of transport of release from foreign site to Norway
- Consequences
  - Human health
  - Environmental
  - Other societal consequences
  - Particular consequences for Norwegian citizens and interests abroad

12

Report summary table

Scenario	Size of affected area in Norway	Est. time before consequences occur	Consequences			
			Human health	Environmental	Other societal consequences	Particular consequences for Norwegian citizens and interest abroad
Foreign nuclear power plants						
Severe event at Kola, Leningrad or Ignalina NPP, or NPP in Sweden, Finland, UK og Germany	National.	Few hours.	No acute effects in Norway, but may cause considerable stocastical effects. May cause considerable psychological effects	May cause considerable national fallout. May have long-term consequences for the terrestrical environment	May have considerable consequences for national food production. May have considerable consequences for other industries. Will cause some public worry.	May cause considerable acute effects and stocastical effects for Norwegian citizens in the surrounding area. Will cause considerable psychological effects in the surrounding area. Norwegian interests in the area may be affected.
Severe event at other NPPs	National.	Several hours or days.	No acute effects in Norway, but may cause considerable stocastical effects. May cause considerable psychological effects	May cause considerable national fallout. May have long-term consequences for the terrestrical environment	May have considerable consequences for local food production. May have considerable consequences for other industries. Will cause some public worry.	May cause considerable acute effects and stocastical effects for Norwegian citizens in the surrounding area. Will cause considerable psychological effects in the surrounding area. Norwegian interests in the area may be affected.
Norwegian research reactors						
Severe event at Jeep II on Kjeller or the Halden reactor	Local.	Immediate.	No acute effects, may cause some stocastical effects among the nearby population. Will cause psychological effects.	May cause local fallout and long-term consequences for local environment.	May have consequences for local food production for a period of time. Will cause some public worry.	Insignificant.
Assault or plane crash directed towards Jeep II on Kjeller or the Halden reactor	Local or regional.	Immediate.	May cause some acute effects, may cause some stocastical effects. Will cause considerable psychological effects.	Will cause local and possibly regional fallout, as well as short- and long-term consequences for local environment.	May have consequences for local food production. Will cause public worry. May have other societal	May cause some psychological effects.

13

Analysis of nuclear emergency preparedness

1. **Threat assessment**
   (Scenarios and consequences)
2. **Challenges for the nuclear emergency preparedness organization**
   (Countermeasure strategies)
3. **Resource requirements**
   (Prioritizing and recommendations)