

Use of Decision Support Systems at NRPA

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About NRPA

- The Norwegian Radiation Protection Authority (NRPA) is the competent national authority in the area of radiation protection and nuclear safety in Norway.
- The NRPA is responsible for:
 - overseeing the use of radioactive substances and fissile material
 - coordinating contingency plans against nuclear accidents and radioactive fallout
 - monitoring natural and artificial radiation in the environment and at the workplace
 - increasing our knowledge of the occurrence, risk and effects of radiation



National Nuclear Preparedness Organisation

- The nuclear emergency preparedness organisation was established to make expertise available to handle nuclear incidents and to ensure the rapid implementation of measures to protect life, health, the environment and other important public interests.
- The organisation comprises:
 - Crisis Committee for Nuclear Preparedness
 - Committee's advisors
 - Committee's secretariat
 - County governors

The Crisis Committee

- The Crisis Committee is represented by:
 - Norwegian Radiation Protection Authority (NRPA)
 - Ministry of Defense
 - Norwegian Directorate of Health
 - Norwegian Food Safety Authority
 - National Police Directorate
 - Directorate for Civil Protection and Emergency Planning.
- In case of a nuclear incident the Crisis Committee shall ensure the coordination of efforts and information.
- During the acute phase of a nuclear incident the Committee has the authority to issue orders concerning measures it specifies.
- The Crisis Committee are the decision makers in the acute phase

The role of NRPA

- NRPA is head of and the Secretariat for the Crisis Committee
- National competent authority in the area of radiation protection and nuclear safety
- National and international contact point in case of emergency
- Host the operation center during an emergency
- Operate and maintain communication and information systems, and measurement systems.



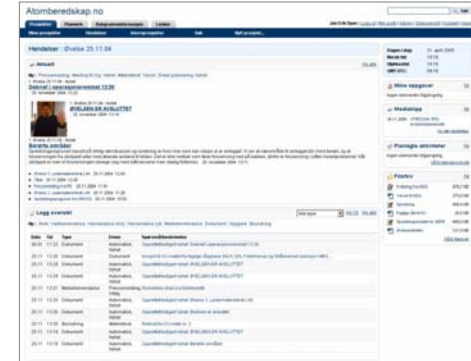
Nuclear and Radiological Threats

- Nuclear activity in Norway
 - Two research reactors
 - Visiting reactor powered vessels
 - Waste treatment and storage
- Industrial use of radioactive sources
 - Oil industry
 - Orphan sources / missuse of sources
- Nuclear industry
 - Neighbouring nuclear countries (Russia, Sweden, UK)
 - Waste (Sellafield, Kola peninsula)



Decision Support Systems at NRPA

- ARGOS
- Information exchange portal (Atomberedskap.no)
 - Accessible by all members of the organisation
 - Publish information concerning an event
 - Logging tool and emergency plans
- Radnett information system
- SIVWEB data reporting tool
- EURDEP web site



ARGOS

- ARGOS is mainly used for dispersion prognosis and measurement data analysis.
- Project on implementing food dose models; Strategy and/or FDM (or something else)
- Runs on ~10 computers. Four regular trained users.
- In use since 2004



Dispersion models

- SNAP Dispersion models:
 - Long range particle model developed by National Met. Office
 - 20x20 km resolution, 3 hour timestep, ~72h forecast
 - Calculations done off-site, but fully automated interface for requesting runs.
 - Covers northern hemisphere from Canada to Russia
- Rimpuff:
 - No access to national numeric weather prognosis, so only used with manual weather data
 - Used in exercises and for research activity (emergency planning)



Measurement Capabilities

- Automatic monitoring network (28 stations)
- Civil Defence (120 units)
- High volume airsamplers (5 stations)
- Mobile measurement systems (cars and helicopters)
- Mobile lab for field work
- Laboratories for α -, β - and γ -measurements (3 labs)



Situation Room

- Center of Operations
- Systems in use
 - ARGOS: prognosis, data collection and analysis, modelling.
 - Atomberedskap.no; Information exchange, event logg.
 - Video Tele Conference
 - Notification systems
- Room is used by NRPA to fulfill its roll as secretariat for the Crisis Committee.
- The Committee meets in another room connected with VTC



What happens during a crisis?

- Personnel at NRPA join in the Situation Room
- An event is made in the information portal
- ARGOS started up, met office notified and trajectories are requested.
- Activate measurement systems
- The management meet to decide upon how to proceed, including allocation of resources and if Crisis Committee should be set
- General notification of the organisation
- Determine information strategy and implement (i.e. press release)
- Regular status meetings
- Situation report to the Committee over VTC or in the room
- Implement decisions made by the Committee.

Conclusion

- ARGOS and Atomberedskap.no is the two most important DSSs
- They are integrated in the emergency management
- No automatic integration between those two systems
- We use many other systems, but again good integration is lacking
- A lot of national work is going on related to web based information systems – will somehow affect us