



Radnett – a national network for monitoring radioactivity in the environment

The Norwegian Radiation Protection Authority is responsible for a nationwide network of 28 stations that continuously measure background radiation levels. The network was established in the years following the Chernobyl accident in 1986, and was upgraded to a new and modern network in the period 2006–2008. The purpose of the monitoring network is to provide an early warning if radioactive emissions reach Norway. The measurements from the network will also form an important part of the decision base for the Crisis Committee for Nuclear Preparedness in an early phase, once the news of the emissions has reached Norway.



Measuring stations at Bergen, Snåsa and Brønnøysund (photo: NRPA).

Crisis Committee for Nuclear Preparedness

If a nuclear incident, or if the possibility of a nuclear incident cannot be excluded, and this could affect Norway or Norwegian interests, the Crisis Committee for Nuclear Preparedness will ensure coordinated efforts and information. In the acute phase of a nuclear incident, the Crisis Committee has the authority to decide the appropriate countermeasure.

In order to be able to decide the nature of these measures, the Crisis Committee must be in possession about the facts of the incident and its potential consequences. During the acute phase, this may include meteorological forecasts that show whether and how a nuclear cloud will affect

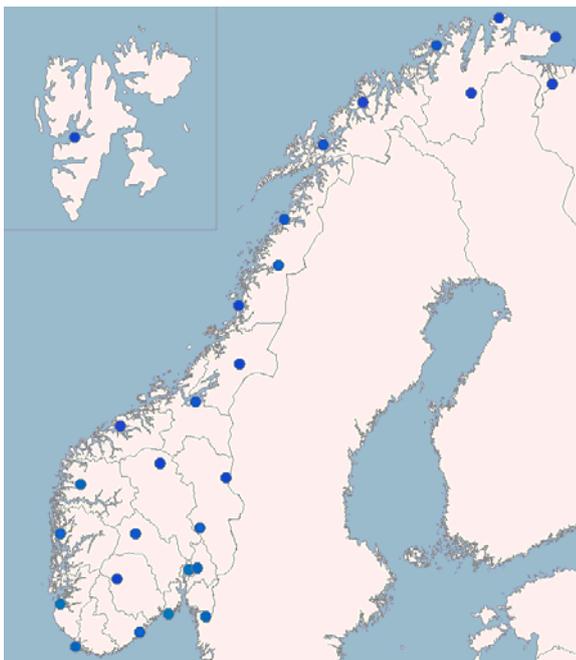
Norway, and actual observations in the form of measurements. The Crisis Committee has several survey resources at its disposal, and Radnett is one of them.

Nationwide measuring stations

There are Radnett stations throughout mainland Norway, from Lista in the south, to Mehamn in the north, as well as in Longyearbyen on Svalbard. There is a total of 28 stations distributed evenly throughout Norway. Each county has at least one station, and they are usually located in large conurbations and cities.

The stations communicate with a central system at the Radiation Protection Authority. The measurements are analysed continually at the

station, and the data are transferred to the central system once per hour. When the data have been received, they can be compiled with the meteorological forecasts and data from other resources in the decision system ARGOS. The information is analysed in the system and presented to the Crisis Committee.



Radnett stations in Norway (Ill: NRPA).

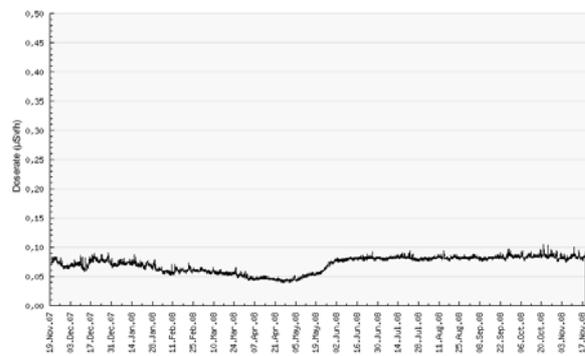
What is being measured?

A Radnett station measures the local radiation levels. This will normally be background radiation from the ground and cosmic radiation. Generally speaking, there is higher background radiation in the south, due to more naturally-occurring radiation in bedrock in this region.

The background radiation can vary seasonally. In the winter, the background radiation will often be lower, because the snow screens against ground radiation. In the summer and autumn, there will often be minor increases following heavy rainfall. This is due to secretion of naturally-occurring radon and radon daughter products from the surroundings. Radon is a gas that is lighter than air. In the air, it decays and becomes new radioactive substances. These substances from radon are precipitated down to the ground and cause so-called “radon peaks”.

If the surrounding area becomes polluted by radioactive fall-out, the station will measure this

and issue a warning. The warning will be sent to the Radiation Protection Authority’s 24-hour duty officer, which will consider the warning and handle it from then on.



Typical background radiation over a year (Mehamn).

European collaboration

Norway has data exchange agreements with the Baltic states and the EU. This agreement obliges the Authority to supply measurement data from Radnett. In return, the Authority receives equivalent data from throughout Europe. This data exchange covers more than 4,000 measuring stations.

The data exchange is a continual process, with as little delay as possible, in order to ensure that all parties have rapid access to the data. The agreement ensures that the Crisis Committee can have a good overview of the situation in Europe in the case of a serious nuclear accident.

Radnett online

The Norwegian Radiation Protection Authority publishes the measurement data from Radnett continually online at radnett.nrpa.no. The data are updated once an hour, and show the measurements for the last 24 hours, and a graphic representation of the measurements carried out over the last month and last year. Information is also published concerning the cause of the high values as soon as these have been considered. The service is open to everyone, but is primarily useful for other preparedness players such as county governors, municipalities and others who have responsibilities in the case of a nuclear incident.