



Radiation hazard requires cooperation

A nuclear explosion or a serious accident at a nuclear power station in Finland or its environs may result in a radiation hazard situation with effects that – at the worst – will have an impact on the whole of society. A clear allocation of the spheres of responsibility and of the duties of various authorities is essential in the prevention of the harmful effects caused by the situation.

The authorities hold the responsibility for duties within their own sphere of responsibility also in a radiation hazard situation. Successful and effective operations require advance planning. The functionality of plans and instructions, and the cooperation between various sectors is regularly being exercised. Particular attention must be paid to the flow of information and the organisation and coordination of communication.

NOTIFICATION ARRANGEMENTS

In order to take the necessary precautionary measures, it is important to be informed of a threatening situation as soon as possible. For this purpose, Finland has concluded agreements with its neighbouring countries and international organisations concerning notification of radiation and nuclear accidents. The nearby Russian power plants have communication systems, which will speed up the notification of accidents. These notifications are conveyed via satellite.

Even if there were no advance notification of a radioactive release, even a minor rise in the radiation level in Finland will be detected by means of a radiation monitoring network. When the radiation level exceeds the limit set to the measuring stations (0.4 microsieverts per hour), the system gives immediately alarm to the Radiation and Nuclear Safety Authority

(STUK). In comparison, protective measures are necessary when the radiation level is more than one hundred times higher than the set alarm limits. STUK will also receive automatically the alarm from the monitoring network of Leningrad NPP area.

THE ALARM PROCEDURE

STUK acts as the national contact point which receives all the alarms and notifications relating to radiation or nuclear safety. A continuous 24-hour duty system ensures receipt of a message. Operations can be launched within 15 minutes.

STUK notifies the duty officers of the principal ministries. The ministries give the alarm to their own organisation and to their regional and local administration, if required. If necessary, STUK, too, will send the alarm message to emergency response centres, which in turn will pass

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on the information to provinces and municipalities. STUK will also inform the media about the situation and about operations that have been launched.

COMMUNICATION

In a radiation hazard situation, quick and uniform communication, which conveys the correct information can prevent the spread of rumours and false information. If the situation requires rapid protective

action, a general alarm signal will be given by alarm sirens. Instructions will be issued on radio and television by the authority in charge of the rescue activities. Should an urgent situation arise, first notification of the situation may also be given by STUK. All telephone directories also contain instructions to the public in case of radiation hazard situations.

The authority in charge is responsible for general information about the accident

and rescue activities. Authorities at governmental, provincial, and municipal level provide information about their own activities and give instructions regarding their own sphere of responsibility. In a very serious situation, the information unit of the Council of State is responsible for the coordination of the information. Information is mainly conveyed through the media. Many authorities will also supply additional information via their Internet pages.

Drawing up an overview of a radiation situation concerning Finland

One of the prerequisite conditions of preparing for radiation hazard situations is that the radiation situation be continuously monitored and that specific data be quickly obtainable. STUK has been given the task of monitoring environmental radiation. Participating in this task are also the Ministry of the Interior, the Finnish Meteorological Institute (FMI), and the Defence Forces. If the normal level of radiation is exceeded, monitoring will be intensified immediately. STUK gathers all results of the measurements in order to draw up a radiation situation overview.

External radiation is measured by a network maintained by STUK, which comprises of c. 300 continuously operating automatic measuring stations. The results of the measurements are recorded in a national data system, where they are available for other authorities, almost in real time. This system also receives monitoring results from the rest of Scandinavia and from the monitoring network of 30 automatic stations installed in the vicinity of Leningrad NPP.

External radiation is also locally monitored at over one hundred measuring stations belonging to the rescue authorities and the Defence Forces. In addition, various authorities have thousands of portable dose rate meters. These are important as supplements to the automatic network and as control meters.

In order to assess the severity of the radiation situation and its impact on health, it is necessary to know how much and what kind of radioactive materials are present in the air that we breathe. This requires laboratory analyses of samples collected by means of special samplers. By this method, even minor amounts of radioactive material, and changes in the radiation situation can be detected. Radioactivity is being continuously monitored at 20 localities. FMI has 14 samplers, STUK has eight, the Defence Forces have one, and eight are situated

around of our nuclear power plants, four at each. STUK has portable samplers, which can be transported to various parts of the country, if required. Samplers fitted onto aircraft belonging to the Defence Forces can take samples of the upper atmosphere. STUK also has a special vehicle with equipment for monitoring external radiation, airborne radioactivity as well as radioactive fallout.

The quickest and most comprehensive regional coverage for scanning radioactive fallout can be obtained by means of aerial measurements. The Defence Forces have equipment, which can be fitted on to helicopters or aircraft for scanning radioactive fallout and searching for pieces of radioactive material. Special precipitation samplers are used and soil samples taken in order to get more specific details of the fallout. Fallout samples are continuously being collected at nine localities.

STUK is also continuously monitoring the radioactivity of the environment and of foodstuffs. In a fallout situation, a sampling and analysis programme for assessing the situation is planned by STUK together with the national food authorities. Participating in the programme are also c. 50 municipal laboratories committed to measurement of radioactivity of foodstuffs.

Radioactive material, which has found its way into the human body, is measured by whole body counters. STUK has two sets of equipment for this purpose, one fixed and one fitted into the special vehicle.

The radiation levels of vehicles and their loads, which arrive in Finland, are monitored by Customs. Customs also monitor the radioactivity of imported foodstuffs. STUK provides expert assistance for this monitoring.

STUK supplies information concerning the accident, the radiation situation, and the impact of the situation on public health and safety via the media, the Teletext pages (197) of the Finnish Broadcasting Company, and via Internet (www.stuk.fi) pages.

RESPONSIBILITIES

Depending on the extent of the hazard situation, decisions concerning safety

operations are made by the rescue authorities on the municipal, provincial or governmental level. Other measures required by the situation shall be decided upon by the relevant administrative sectors.

The rescue authority will be the general supervisor of the situation coordinating cooperation between the various authorities, too. At each supervisory level command centres will be used.

Representatives of the most important cooperative sectors will also be operating at these centres.

After the radioactive cloud has passed, the emphasis shall be on minimising the effects of exposure from foodstuffs and the environment. STUK and the relevant organisations shall give instructions for producers, manufacturers of foodstuffs, and consumers of self-produced foods and natural products.

The Ministry of the Interior is responsible for protective measures in severe hazard situations affecting widespread areas. The Ministry shall establish a command centre to which representatives are invited from governmental authorities taken part in protective measures. This centre coordinates activities and ensures that information is communicated to counterparts.

The Radiation and Nuclear Safety Authority (STUK) shall draw up an overview of the accident and radiation situation, assess harmful effects regarding safety of the population and the environment, and give recommendations for protective measures. STUK shall disseminate information about the situation to domestic and foreign counterparts and to the media. In addition, STUK shall advise e.g. the industry, trade, transport and customs authorities regarding the reduction of harmful effects. STUK shall also be responsible for international assistance relating to radiation expertise.

The Finnish Meteorological Institute shall calculate dispersion of airborne radioactive substances. It shall provide STUK with meteorological assistance and supply the weather information required during rescue activities.

The Ministry of Agriculture and Forestry shall issue orders and instructions

concerning e.g. milk and meat production, crops, forestry and peat production. The National Veterinary and Food Research Institute subject to the Ministry is responsible for the supervision of purity of foodstuffs of animal origin in processing and delivery.

During severe crisis situations, the Ministry of Trade and Industry shall be in charge of energy management, storage of reserve supplies, and of foreign trade. The National Food Administration subject to the Ministry is responsible for the supervision of retail foods and supervision of foodstuffs of vegetable origin in the processing and delivery. In Finland, the National Food Administration is the EU contact authority in matters concerning foodstuffs.

The Ministry of Social Affairs and Health is responsible for the general safety of public health and social security and shall assess the impact of the situation on them. It is the Ministry's responsibility that basic public health and social services are also ongoing in a radiation hazard situation. The Ministry issues orders concerning the monitoring and quality of drinking water.

The Defence Forces shall participate in rescue activities by supplying the necessary equipment, personnel, and special expert services. Participation in rescue operations must not, however, compromise the national defence duties.

The Ministry of Transport and Communications shall decide on matters concerning traffic, transport and communication links. It shall be responsible for transport-route instructions to long-distance lorry traffic, air and rail traffic and shipping. In addition, it shall be responsible for the maintenance of and priority arrangements for communication links.

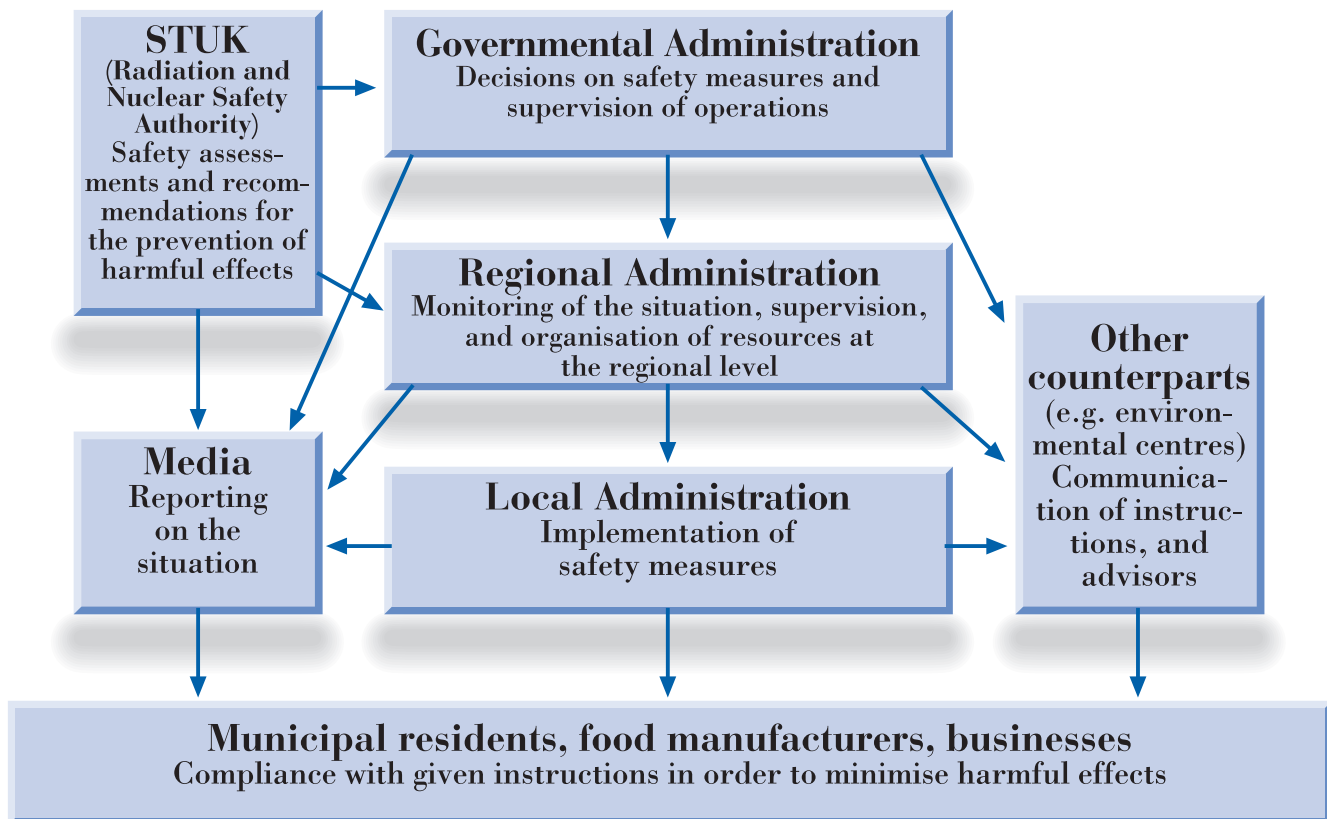
The Ministry for Foreign Affairs shall be in charge of intensified communication to Finnish embassies abroad and to embassies of foreign countries in Finland.

The State Provincial Offices, together with other regional administrative authorities, shall monitor the accident situation, supervise rescue activities and direct the activities of their subordinate authorities. Furthermore, the State Provincial Offices shall inform the Ministries e.g. about the development of the situation in their respective areas.

The municipalities of the danger area shall implement the decisions and instructions pertaining to the rescue activities and the other areas of administration. The municipalities in turn shall be in charge of the issue of information to the residents of their own area. The rescue authorities shall direct the activities and be in charge of coordination in their own area.

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Responsibilities in a large-scale radiation hazard situation



The arrows show the principal information flows.



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