

Inspections by the Swedish Radiation Protection Authority (SSI)

SSI is the regulatory and supervisory authority in Sweden that is responsible for radiation protection on a national level. The base in the legal framework is the “ Radiation Protection Act” from 1988 and regulations issued by SSI. The Act requires licence for all work with ionising radiation and is giving general radiation protection obligations. The radiation protection ordinance assigns SSI as the competent authority with the tasks of issuing regulations, granting licences and performing supervision and inspections. Since Sweden joined the European Union SSI has issued a number of regulations according to EG-directives. All our regulations can be found at our web site www.ssi.se.

In recent years, SSI has developed its policy for inspections in order to create an updated and applicable programme for all areas and activities, which SSI has to supervise. All quality- and policy document for different kind of official actions and standpoints that SSI has to deal with are collected in an internal management systems. Essentially three types of regulatory routine inspections are performed:

System Inspections

In a system inspection, the organisation, administrative procedures, organisational co-ordination, allocation of responsibilities and competence at the facility are examined. The aim of a system inspection is to acquire a sound knowledge of the whole or parts of the quality system of the facility.

Specific Inspections

A specific inspection focuses on a part of the facility’s activity. An event that is important for the radiation protection often initiates a specific inspection. Sometimes, a specific inspection can be initiated by the public or by media. A specific inspection can be part of a follow-up of previous inspections.

Topical Inspection

A topical inspection consists of a number of specific inspections that are performed in co-ordination at a number of similar facilities and with a common theme.

In SSI’s policy it also is stated that inspections have a central role. High-priority facilities for supervision and inspections are:

- those that can result in **high radiation doses**
- those where there is a considerable risk that **many** can receive minor but not negligible radiation doses
- those about which SSI needs **more knowledge**.

The radiation protection work covers a number of different areas, nuclear installations, industries, research and medical exposures:

Nuclear installations

The nuclear industry in Sweden consists of 12 nuclear power plants, a research reactor, a nuclear fuel factory, a final repository radioactive waste, and a central interim storage for

spent nuclear fuel. SSI performs inspections of all the nuclear facilities several times a year, covering the area of occupational exposure activities as well as the area of effluents and waste handling. The frequency of inspections varies depending on actual areas of interest but is normally larger on the nuclear power plants compared to the other nuclear facilities. That is because the plants are larger facilities, and have higher potential of occupational radiation exposures.

Industry and research

Within the broad sector of non-nuclear industry and research activities outside the medical sector the authority supervise open and shield sources including x-rays and accelerators in various applications. About 6000 radiation sources at 1500 licence holders altogether.. The selection of inspection objects has to be based on an order of priority of licensed activities grounded on substantial risk such as high dose rate, high activity or complex use of open sources.

Medical exposures

Within the medical sector there are 232 hospitals/medical facilities with x-ray equipment, 33 with nuclear medicine departments and 17 with external radiation therapy departments. With 20 to 30 inspections per year universities hospitals and larger hospitals will be inspected every third to fifth year and minor hospitals very fifth to tenth year. It is important to mention that every hospital has there own medical physicist, or a contract with a medical physicist, who is a local resource responsible for radiation protection.