



## **The Swedish Radiation Protection Authority's Regulations on Planning for and during Decommissioning of Nuclear Facilities;**

issued on October 29<sup>th</sup> 2002.

On the basis of § 7 in the Radiation Protection Ordinance (1988:293) the Swedish Radiation Protection Authority has issued the following regulations.

### **Area of application**

**§ 1** These regulations contain provisions concerning the planning of decommissioning of nuclear facilities in matters of importance from a radiation protection point of view.

The regulations do not apply to such parts of nuclear facilities intended for disposal of radioactive waste, nuclear waste or spent nuclear fuel that will remain after closure.

Radioactive material that solely contains naturally occurring radioactive substances in proportions found in corresponding materials otherwise shall not be taken into account when the regulations are applied.

### **Definitions**

**§ 2** Terms and concepts used in the Radiation Protection Act (1988:220) and the Nuclear Activities Act (1984:3) shall have the same meanings in these regulations.

In these regulations terms and concepts are used with the meanings specified here.

*decommissioning of nuclear facility:* collective term for the actions taken by the licensee after final shutdown in order to reduce the amount of radioactive substances in land and buildings to levels that allow the release of the site,

*release of site:* decision by the Swedish Radiation Protection Authority that for radiation protection purposes no restrictions apply to the use of land and any remaining buildings

*radioactive material:* material that contains, or is contaminated on the surface, by a radioactive substance,

*finally shut down facility:* facility where the main operations have ceased with no intention of resuming them.

### **New or reconstructed facilities**

§ 3 When a nuclear facility is constructed or an existing facility is reconstructed, the licensee shall ensure that the radiation protection aspects, such as radiation doses, emission of radioactive substances and waste quantities, of any future decommissioning are taken into account.

### **Decommissioning plans**

§ 4 The licensee shall ensure that there are preliminary plans for future decommissioning of the facility. The plans shall include the items referred to in Sections 5 to 8.

Plans shall be kept up to date and shall be revised in the event of changes to the facility or operations at the facility.

Certain regulations of the Swedish Work Environment Authority and the Swedish Nuclear Power Inspectorate contain rules concerning work environment matters and safety that are applicable in connection with the planning of decommissioning and demolition of nuclear facilities.

#### *Documentation*

§ 5 The background information for the planning shall contain any documentation about the facility and its operation that is required from a radiation point of view. This documentation shall include

1. current drawings,
2. operating data,
3. operating experiences and events that are of importance in connection with demolition,
4. a description of high-dose work,
5. results of radiation level measurements and calculations,
6. a list of radiation sources and other radioactive material and
7. other documentation that the licensee may consider necessary.

#### *Analysis of decommissioning alternatives*

§ 6 Plans must identify possible decommissioning methods with estimated time requirements and ultimate objectives. Any consequences of the identified alternatives shall be investigated concerning

1. occupational radiation doses,
2. emissions of radioactive substances to the environment,
3. risk of unplanned events that may cause radiation doses or emission of radioactive substances,
4. handling and storage of radioactive material that arises and
5. requirements of information for and training of various personnel categories.

#### *Investigations concerning radioactive materials*

7 The licensee shall in respect of radioactive material investigate

1. estimated quantities of materials and radioactive substance content,
2. the flow of materials during handling and transport and
3. necessary and available space for handling and storage, including disposal of radioactive waste and nuclear waste.

*Organisational matters*

§ 8 Preparations must be in place to ensure that the organization of the facility can be adapted so that the particular radiation protection issues that arise in connection with decommissioning and demolition can be satisfactorily managed.

**Finally shut down facility**

§ 9 The licensee shall within one year after final shutdown of the facility submit to the Swedish Radiation Protection Authority a general report explaining objectives, measures and a time schedule for decommissioning.

The report shall cover

1. projected occupational radiation doses,
2. expected emission of radioactive substances to the environment,
3. foreseeable sub-operations that involve a risk of unplanned events and
4. expected quantities and flows of radioactive materials that arise.

The report shall furthermore show how the licensee in the continued decommissioning process intends to handle matters relating to

1. organization of personnel and contractors,
2. emergency preparations for unplanned events,
3. supply of competence and personnel,
4. survey and documentation of radioactive materials and radiation levels,
5. handling, transport and storage of radioactive materials and
6. control and limitation of releases and environmental monitoring.

Changes of the submitted plans must be notified to the Swedish Radiation Protection Authority as soon as possible.

**Dismantling and demolition after final shutdown**

§ 10 The licensee shall prior to commencement of dismantling and demolition of systems or facility parts containing radioactive material submit a report to the Swedish Radiation Protection Authority covering

1. systems and facility parts concerned,
2. organization and description of the work,
3. training of personnel and contractors,
4. emergency preparations for unplanned events,
5. quantities of materials and radioactive substance content,
6. sorting, treatment, storage, measurement and transport of radioactive material,
7. planned ultimate objectives for various materials flows, such as clearance and disposal,
8. release control and environmental monitoring
9. methods for determining residual levels of radioactive substances in land or buildings, with action levels for decontamination and
10. quality assurance of the radiation protection measures.

The Swedish Radiation Protection Authority shall receive the report no later than four months prior to commencement of dismantling or demolition.

The information referred to in Article 37, Title II of the Treaty of 25 March 1957 establishing the European Atomic Energy Community (Euratom Treaty) shall however have been received by the Swedish Radiation Protection Authority no later than nine months prior to implementation of the plans.

**Basis for site release**

§ 11 The licensee shall during the decommissioning process ensure that the results of measurements and calculations together with considerations made and actions taken are continuously documented to provide background information for radiation protection assessments for future release of the site.

**Exemptions**

§ 12 If special grounds exist, the Swedish Radiation Protection Institute may grant exemptions from these regulations.

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These regulations enter into force on January 1<sup>st</sup> 2004. The provisions of Section 10 shall not be applied to dismantling and demolition that had been completed or commenced before that date.

On behalf of the Board of the Swedish Radiation Protection Authority

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