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Safeguards Ordinance (SaO)

of 4 June 2021 (Status as of 1 July 2021)

The Swiss Federal Council,

on the basis of Article 101 paragraph 1 of the Nuclear Energy Act of 21 March 2003¹ (NEA), Articles 4, 11 and 22 paragraph 1 of the Goods Control Act of 13 December 1996² (GCA) and Articles 17 paragraph 2 and 47 paragraph 1 of the Radiological Protection Act of 22 March 1991³ (RPA),

ordains:

Section 1 General Provisions

Art. 1 Subject matter and purpose

¹ This Ordinance regulates in particular the implementation of the Agreement of 6 September 1978⁴ between the Swiss Confederation and the International Atomic Energy Agency (IAEA) concerning the application of safeguards within the scope of the Treaty on the Non-Proliferation of Nuclear Weapons (Safeguards Agreement) and of the Additional Protocol of 16 June 2000⁵ to the Safeguards Agreement.

² Its purpose is to ensure that materials and activities subject to these agreements serve peaceful uses only.

Art. 2 Scope of application

¹ This Ordinance applies to:

- a. the following materials:
 - 1. source material in accordance with Article 1 paragraph 1 letter one of the Nuclear Energy Ordinance of 10 December 2004⁶ (NEO) and spe-

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- ¹ SR 732.1
- ² SR **946.202**
- ³ SR **814.50**
- ⁴ SR **0.515.031**
- ⁵ SR 0.515.031.1
- 5 SR **732.11**

cial fissile material in accordance with Article 1 paragraph 1 letter b NEO,

- 2. radioactive waste that includes materials in accordance with number 1,
- 3. ores from which uranium or thorium are extracted;
- b. facilities that use or store the materials referred to in letter a:
 - 1. research reactors and critical assemblies,
 - 2. power reactors,
 - 3. storage facilities, in particular interim storage facilities,
 - 4. deep geological repositories,
 - 5. other facilities under Article 3 letter a;
- c. the following facilities that do not yet or no longer use or store the materials referred to in letter a:
 - 1. facilities in accordance with letter b that are in planning or under construction,
 - 2. closed-down facilities in accordance with letter b;
- d. locations outside facilities at which materials in accordance with letter a are used or stored;
- e. nuclear equipment in accordance with Annex 1, the manufacture, assembly and construction of which is subject to notification, and the production and enrichment of heavy water and deuterium in accordance with Annex 1;
- f. the possession, import, export and transport of materials in accordance with letter a;
- g. research and development related to the nuclear fuel cycle;
- h. the exploration for or exploitation of uranium and thorium mines.

² This Ordinance applies to:

- a. Swiss customs territory;
- b. Swiss open customs warehouses;
- c. Swiss warehouses for bulk goods;
- d. Swiss duty-free warehouses; and
- e. Swiss customs enclaves.

Art. 3 Definitions

¹ In this Ordinance:

a. *facility* means a reactor, a critical assembly, a conversion plant, a fuel element fabrication plant, a reprocessing plant, an enrichment plant, a storage facility or any other installation at which materials referred to in Article 2 paragraph 1 letter a are normally used in quantities that exceed an effective kilogram;

- b. *location outside facilities* means an installation outside facilities in which materials referred to in Article 2 paragraph 1 letter a are normally used or stored in quantities that do not exceed an effective kilogram;
- c. site means the area that includes the buildings and installations required for operation of a facility or of a location outside facilities; this includes closeddown facilities and closed-down locations outside facilities, provided hot cells are still installed at these locations outside facilities or activities have been carried out in connection with conversion, enrichment, fuel production or reprocessing;
- d. *closed-down facility* means a facility that is no longer in operation and in which no materials in accordance with Article 2 paragraph 1 letter a are present, but in which the essential structures and equipment for handling these materials are still available;
- e. *decommissioned facility* means a facility whose structures and equipment have been removed or rendered unusable to the extent that they can no longer be used to store, handle, process or use materials in accordance with Article 2 paragraph 1 letter a;
- f. *effective kilogram* means a unit of measurement that corresponds in the case of:
 - 1. plutonium, to its weight in kilogrammes,
 - 2. uranium with an enrichment of 0.01 (1 %) or more, its weight in kilogrammes multiplied by the square of its enrichment,
 - 3. uranium with an enrichment of less than 0.01 (1 %) and more than 0.005 (0.5 %), its weight in kilograms multiplied by 0.0001, and
 - 4. uranium with an enrichment of 0.005 (0.5 %) or less, and thorium, its weight in kilograms multiplied by 0.00005;
- g. *highly enriched uranium* means enriched uranium in which the proportion of uranium-233, uranium-235 or of both isotopes together amounts to or exceeds 20 per cent;
- batch means a portion of materials in accordance with Article 2 paragraph 1 letter a handled as a unit for accounting purposes and for which the composition and quantity of the materials are defined by a single set of specifications or measurements; the material may be in bulk form or in a number of separate items;
- terminated material means material in accordance with Article 2 paragraph 1 letter a for which the safeguards based on Article 11 or 13 of the Safeguards Agreement⁷ have been terminated;
- j. *essential equipment* means equipment that is essential for storing, handling, processing or using materials in accordance with Article 2 paragraph 1 letter a;

- k. *environmental samples* means air, water, soil, plant and other samples, including swipe samples;
- 1. research and development activities related to the nuclear fuel cycle means, subject to paragraph 2, activities that cover specific aspects of process or system development, in particular:
 - 1. the conversion and enrichment of materials in accordance with Article 2 paragraph 1 letter a,
 - 2. the manufacture and reprocessing of fuel elements,
 - 3. the development of nuclear reactors and critical assemblies,
 - 4. the processing of intermediate and high-level waste that contains plutonium, highly enriched uranium or uranium-233, but not repackaging and conditioning for the purpose of storage or disposal, provided that no isotopes are separated in the process.

² The following are not considered research and development activities related to the fuel cycle in accordance with paragraph 1 letter 1:

- a. activities related to theoretical or basic scientific research;
- b. research and development:
 - 1. on potential industrial uses of radio isotopes,
 - 2. for medical, hydrological and agricultural applications,
 - 3. on the effects on health and the environment, and
 - 4. for improved maintenance.

Art. 4 Responsibilities

¹ The Swiss Federal Office of Energy (SFOE) is responsible for the supervision of the safeguards (supervisory authority).

 2 The SFOE shall, as required, issue the detailed requirements for implementing the safeguards in guidelines, in particular Articles 5, 6, 10, 14, 16 and 20.

Section 2 Safeguards for Facilities in accordance with Article 2 Paragraph 1 letter b

Art. 5 Safeguards officer

¹ The holder of an operating licence under Article 19 NEA (licence holder) shall appoint a person (to be) responsible for safeguards, together with a deputy (safeguards officers) and entrust them with the necessary competencies and provide them with the required resources.

 2 The safeguards officers must be familiar with the obligations associated with the relevant treaties and agreements between Switzerland and the IAEA.

³ The appointments require the written consent of the SFOE. The SFOE may assess the suitability of the persons to be appointed.

Art. 6 Safeguards regulations

¹ The licence holder shall draw up safeguards regulations.

² These regulations shall be submitted to the SFOE for approval.

Art. 7 Specification of material balance areas

¹ The licence holder shall establish material balance areas for those areas in which material in accordance with Article 2 paragraph 1 letter a is present.

² It shall define the extent of the material balance area so as to ensure that the inventory of material within the zone and the movements of material beyond the boundaries of the zone can be ascertained at all times.

³ It shall divide each material balance area in such a way as to ensure that movements of such material within a material balance area can be ascertained at all times.

Art. 8 Consideration of safeguards in the event of substantial changes

In the event of substantial changes to facilities, the effects of such changes on the implementation of safeguards shall be considered in the planning process (*safe-guards by design*). In particular, the installation of monitoring and measurement instruments that facilitate the verification of the material inventory and the uninterrupted monitoring of material movements in accordance with Article 2 paragraph 1 letter shall be considered.

Art. 9 Accounting obligations

¹ The licence holder shall maintain an inventory, updated as and when required, of the material in accordance with Article 2 paragraph 1 letter a in each material balance area.

² The accounting documents shall comprise:

- a. the inventory and inventory change reports in accordance with Annex 2 number 1.2 for material that as a result of its composition or its purity level is suitable for fuel production or isotope enrichment;
- b. the inventory of material that as a result of its composition or its purity level is not yet suitable for fuel production or isotope enrichment;
- c. the operating records in accordance with Annex 2 number 1.3.

³ The measurement system used to establish the inventory of material shall meet, or be qualitatively equivalent to, the latest international standards.

⁴ The accounting documents shall be retained for a minimum of 10 years.