
GOVERNMENT NOTICE

DEPARTMENT OF MINERALS AND ENERGY

No. 207**27 February 2009**

NUCLEAR ENERGY ACT, 1999 (ACT NO. 46 OF 1999)

THE MINISTER OF MINERALS AND ENERGY HAS, IN TERMS OF SECTION 2 (a) (b) (c) (f) OF THE NUCLEAR ENERGY ACT, 1999 (ACT NO. 46 OF 1999), DECLARED CERTAIN SUBSTANCES, MATERIALS AND EQUIPMENT AS RESTRICTED MATERIAL, SOURCE MATERIAL, SPECIAL NUCLEAR MATERIAL AND NUCLEAR RELATED EQUIPMENT AND MATERIAL AS INDICATED IN THE GOVERNMENT NOTICE 740, SCHEDULES 1, 2, 3 AND 4 RESPECTIVELY. THE DECLARATION REPEALS THE GOVERNMENT NOTICE 740 OF 16 APRIL 1994.

SCHEDULE 1: RESTRICTED MATERIAL**1. Beryllium**

Beryllium as follows: Metal, alloys containing more than 50% of beryllium by mass, compounds containing beryllium, and manufactures thereof, except-

- (a) metal windows for X-ray machines;
- (b) oxide shapes in fabricated or semi-fabricated forms specially designed for electronic component parts or as substrates for electronic circuits.

Technical Note: This control applies to waste and scrap containing beryllium as defined here.

2. Hafnium

Hafnium of the following description: Metal, alloys and compounds of hafnium containing more than 60% hafnium by mass and manufactures thereof.

3. Zirconium

Zirconium as follows: Metal, alloys containing more than 50% zirconium by mass and compounds in which the ration of hafnium content to zirconium content is less than 1 part to 500 parts by mass, and manufactures wholly thereof.

Technical Note: This control applies to waste and scrap containing zirconium as defined here.

SCHEDULE 2: SOURCE MATERIAL

Source material is any substance containing the following unless the Minister gives an exemption for insignificant quantities (as determined by the Minister and on specific applications)

- (a) uranium, expressed as a conversion to uranium oxide (U_3O_8);
- (b) thorium, expressed as a conversion to thorium oxide (ThO_2);
- (c) uranium by products of enrichment processes, e.g enriched in isotope U-238 or depleted in the isotope U-235;
- (d) uranium containing the mixture of isotopes occurring in nature.

SCHEDULE 3: SPECIAL NUCLEAR MATERIAL

- (a) plutonium-239;
- (b) uranium-233;
- (c) uranium enriched in its uranium-235 isotope;
- (d) transuranium elements; or
- (e) any compound of any of the materials referred to in paragraphs (a), (b), (c) and (d) or of anything so referred to and any other substance or substances in a quantity consisting of or containing a mass of any of the isotopes or elements referred to in paragraphs (a), (b), (c) and (d), regardless of the concentration thereof.

SCHEDULE 4: NUCLEAR RELATED MATERIAL AND EQUIPMENT**CATEGORY A: MATERIAL****1. Deuterium and heavy water**

Deuterium, heavy water (deuterium oxide) and any other deuterium compound in which the ratio of deuterium to hydrogen atoms exceeds 1:5000.

2. Nuclear grade graphite

Graphite having purity level better than 5 parts per million boron equivalent and with a density greater than 1,50 g/cm³.

CATEGORY B: EQUIPMENT**DISPOSAL OF TECHNOLOGY REGARDING EQUIPMENT**

Pursuant to the authorisation required by Section 34 (1) (u) of the Nuclear Energy Act for the disposal of "technology" associated with the equipment specified in this Category, the disposal of "technology" directly associated with any item in this Category will be subject to the same authorisation requirements as the item itself.

Such authorisations of the disposal of "technology" do not apply to information "in the public domain" or to "basic scientific research".

"Technology" means specific information required for the "development", production", or "use" of any item contained in the Category. This information may take the form of "technical data", or "technical assistance".

"Disposed of" used in the context of safeguards means sell, exchange, donate, distribute, lend or in any other manner transfer and "disposal of" has a corresponding meaning.

"Basic scientific research" - means experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena and observable facts, not primarily directed towards a specific practical aim or objective.

"Component parts" - means an integral part of plants, systems, assemblies, or equipment, without which such plants, systems, assemblies or equipment cannot perform their intended function or achieve the characteristics or performance level that make the aforementioned plants, systems, assemblies or equipment controlled.

"Development" - is related to all phases before "production" such as:

- design
- design research
- design analysis
- design concepts
- assembly and testing of prototypes
- pilot production schemes
- design data
- process of transforming design data into a product
- configuration design
- integration design
- layouts

"In the public domain" - as it applies herein, means technology that has been made available without restrictions upon its further dissemination.

(Copyright restrictions do not remove technology from being in the public domain)

"Production" - means all production phases such as:

- construction
- production engineering
- manufacture
- integration
- assembly (mounting)
- inspection
- testing
- quality assurance

"Technical assistance" - may take forms such as: instruction, skills, training, working knowledge, consulting services.

Note: "Technical assistance" may involve transfer of "technical data".

"Technical data" - may take forms such as blueprints, plans, diagrams, models, formulae, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.

"Use" - Operation, installation (including on-site installation), maintenance (checking), repair, overhaul and refurbishing.

Furthermore, the authorisations required by Section 34 (1) of the Act for the equipment listed in this Category, should not be circumvented by the transfer of component parts of such equipment without adequate review and authorisation as is necessary.

1. **Reactors and equipment, intended or especially designed or prepared therefor**

- (i) Complete nuclear reactor capable of operation so as to maintain a controlled self-sustaining fission chain reaction producing plutonium.

A nuclear reactor basically includes the items within or attached directly to the reactor vessel, the equipment which controls the level of power in the core, and the components which normally contain or come in direct contact with or control the primary coolant of the reactor core.

- (ii) Reactor pressure vessels as complete units or as major shop-fabricated parts, intended to contain the core of a nuclear reactor referred to in subparagraph (i), and are capable of withstanding the operating pressure of the primary coolant.
- (iii) Reactor fuel charging and discharging machines intended for inserting or removing fuel in nuclear reactor referred to in subparagraph (i), which is capable of on-load operation or employing technically sophisticated positioning or alignment features to allow complex off-load fuelling operations such as those in which direct viewing of or access to the fuel is not normally available.
- (iv) Reactor control rods, intended for reaction rate control in a nuclear reactor referred to in subparagraph (i).
- (v) Reactor pressure tubes which are intended for containment of fuel elements and the primary coolant in a nuclear reactor referred to in subparagraph (i).
- (vi) Primary coolant pumps intended for circulating the primary coolant for nuclear reactor referred to in subparagraph (i).
- (vii) Zirconium metal and alloys in the form of tubes or assemblies of tubes, intended for use in a nuclear reactor referred to in subparagraph (i).
- (viii) Nuclear reactor internals including support columns and plates for the core and other vessel internals control rod guide tubes, fuel channels, thermal shields, baffles, core grid plates and diffuser plates intended for use in nuclear reactors referred to in subparagraph (i).
- (ix) Heat exchangers (steam generators) intended for use in the primary coolant circuit of a nuclear reactor as referred to in subparagraph (i).