

GROUP 4 – NUCLEAR NON-PROLIFERATION LIST

4000. TECHNOLOGY

(1) In this item,

"technology" means technical data, including technical drawings, photographic imagery, models, formulas, engineering designs and specifications and technical and operating manuals, whether in written form or recorded on disc, tape, read-only memory (ROM) or other medium. (*technologie*)

(2) Technology for use in the development, production, installation, operation or maintenance of equipment and materials included or specifically excluded under an item in this Group (*All destinations*) of this List, other than technology that is

- (a) described in advertising and sales literature;
- (b) available to the public in published books and periodicals; or
- (d) essential for the installation, operation and maintenance of any product
 - (i) for which an export permit has been issued and remains in force, or
 - (ii) that is eligible for export under an exclusion in an item of this Group.

Atomic Energy Materials

4001. Special and Other Fissionable Materials

(1) In this item,

"previously separated", means the result of any process that is intended to increase the concentration of the controlled isotope therein; (*précédemment séparés*)

"uranium enriched in the isotopes 235 or 233" means uranium that contains the isotopes 235 or 233, or both, in an amount such that the abundance ratio of the sum of those isotopes to the isotope 238 is greater than the ratio of the isotope 235 to the isotope 238 in nature. (*uranium enrichi en isotopes 235 ou 233*)

(2) Special and other fissionable materials, as follows:

- (a) plutonium and all isotopes, alloys and compounds and any material that contains any of the foregoing, other than plutonium 238 that is contained in heart pace-makers;
- (b) uranium 233, uranium enriched in the isotopes 235 or 233 and all alloys and compounds and any material that contains any of the foregoing; and
- (c) previously separated americium 242m, curium 245 and 247 and californium 249 and 251 and any material that contains the foregoing.

4002. Source Materials

Source materials that are in any form, including ore, concentrate, compound, metal or alloy, or that are incorporated in any substance other than medicinals, and in which the concentration of source material is greater than 0.05 weight per cent, as follows:

- (a) uranium that contains the mixture of isotopes that occurs in nature;
- (b) uranium that is depleted in the isotope 235; and
- (c) thorium.

4003. Deuterium

Deuterium and compounds, mixtures and solutions that contain deuterium, including heavy water and

heavy paraffins, and in which the ratio of deuterium atoms to hydrogen atoms is greater than 1 part to 5,000 parts by number.

4004. Zirconium

Zirconium metal, alloys and compounds in which the ratio of hafnium content to zirconium content is less than 1 part to 500 parts by weight, and manufactures wholly thereof.

4005. Nickel

(1) In this item,

"porous nickel metal" means porous nickel metal manufactured from nickel powder described in paragraph (2)(a) that has been compacted and sintered to form a metal material that has fine pores interconnected throughout its structure. (*nickel métal poreux*)

(2) Nickel, as follows:

- (a) powder that has a nickel purity content of 99.9 weight per cent or more and a mean particle size of less than 10 μm when measured using ASTM Standard B 330, *Standard Test Method for Average Particle Size of Powders of Refractory Metal and their Compounds by the Fisher Sub-sieve Sizer*; and
- (b) porous nickel metal that is produced from materials included in paragraph (a), other than single porous nickel metal sheets not greater than 0.093 m^2 in size intended for use in batteries for civil applications.

4006. Nuclear-grade Graphite

Nuclear-grade graphite, that is, graphite that has

- (a) a thermal neutron absorption cross-section equivalent to less than 5 ppm of boron; and
- (b) a density greater than 1 500 kg/m^3 .

4007. Lithium

Lithium, as follows:

- (a) metal, hydrides or alloys that contain lithium enriched in the 6 isotope to a concentration higher than what exists in nature, that is, 7.5 per cent on an atom-percentage basis; and
- (b) other materials that contain lithium enriched in the 6 isotope, including compounds, mixtures and concentrates, other than lithium enriched in the 6 isotope that is incorporated in thermoluminescent dosimeters.

4008. Hafnium

Hafnium metal, alloys and compounds that contain more than 60 weight per cent hafnium, and manufactures thereof.

4009. Beryllium

Beryllium metal, alloys that contain more than 50 weight per cent beryllium, compounds that contain beryllium, and manufactures thereof other than beryllium windows for medical X-ray machines.

4012. Tritium

Tritium and compounds and mixtures that contain tritium in which the ratio of tritium to hydrogen by atoms is greater than 1 part in 1,000, and products that contain one or more of the foregoing.

4013. Materials for Nuclear Heat Sources

(1) In this item,

"previously separated" has the same meaning as in item 4001. (*précédemment séparé*)