

COMMONWEALTH OF AUSTRALIA

*Nuclear Non-Proliferation (Safeguards) Act 1987*

PURSUANT to sub-section 4 (1) of the *Nuclear Non-Proliferation (Safeguards) Act 1987*, I, GARETH EVANS, Minister for Resources and Energy, hereby declare that:

1. The classes of equipment and plant which are 'associated equipment' for the purposes of that definition are:

(a) Nuclear reactors:

Nuclear reactors capable of operation so as to maintain a controlled self-sustaining fission chain reaction, excluding zero energy reactors, the latter being defined as reactors with a designed maximum rate of production of plutonium not exceeding 100 grams per year, but reactors which could reasonably be capable of modification to produce significantly more than 100 grams of plutonium per year shall be not excluded. Reactors designed for sustained operation at significant power levels, regardless of their capacity for plutonium production, are not considered as 'zero energy reactors'.

A 'nuclear reactor' 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 into direct contact with or control the primary coolant of the reactor core.

(b) Nuclear reactor pressure vessels:

Metal vessels, as complete units or major shop-fabricated parts therefor, which are especially designed or prepared to contain the core of a nuclear reactor as defined in 1 (a) above and are capable of withstanding the operating pressure of the primary coolant.

A top plate for a nuclear reactor pressure vessel is a major shop-fabricated part of a pressure vessel.

(c) Nuclear reactor internals:

Including, but not limited to, support columns and plates for the core and other vessel internals, control rod guide tubes, thermal shields, baffles, core grid plates, diffuser plates.

(d) Nuclear reactor fuel charging and discharging machines:

Manipulative equipment especially designed or prepared for inserting or removing fuel in nuclear reactors as defined in 1 (a) above capable of on-load operation or employing technically sophisticated positioning or alignment features to allow complex off-load fuelling operations including those in which direct viewing of or access to the fuel is not normally available.

(e) Nuclear reactor control rods:

Rods especially designed or prepared for the control of the reaction rate in a nuclear reactor as defined in 1 (a) above.

This item includes, in addition to the neutron absorbing part, the support or suspension structures therefor if supplied separately.

(f) Nuclear pressure tubes:

Tubes which are especially designed or prepared to contain fuel elements and the primary coolant in a nuclear reactor as defined in 1 (a) above at an operating pressure in excess of fifty atmospheres.

- (g) Zirconium tubes:  
Zirconium metal and alloys in the form of tubes or assemblies of tubes, especially designed or prepared for use in a nuclear reactor as defined in 1 (a) above and in which the relationship of hafnium to zirconium is less than 1 : 500 parts by weight.
- (h) Primary coolant pumps:  
Pumps especially designed or prepared for circulating liquid metal as primary coolant for nuclear reactors as defined in 1 (a) above.
- (i) Plants for the reprocessing of irradiated fuel elements, and equipment especially designed or prepared therefore:  
A 'plant for the reprocessing of irradiated fuel elements' includes the equipment and components which normally come in direct contact with and directly control the irradiated fuel and the major nuclear material and fission product processing streams. The following items of equipment are considered to fall within the meaning of the phrase 'and equipment especially designed or prepared therefore':  
(A) Irradiated fuel element chopping machines: remotely operated equipment especially designed or prepared for use in a reprocessing plant as defined above and intended to cut, chop or shear irradiated nuclear fuel assemblies, bundles or rods; and  
(B) Critically safe tanks (including small diameter, annular or slab tanks) especially designed or prepared for use in a reprocessing plant as defined above, intended for dissolution of irradiated nuclear fuel and which are capable of withstanding hot, highly corrosive liquid, and which can be remotely loaded and maintained.
- (j) Plants for the fabrication of fuel elements:  
A 'plant for the fabrication of fuel elements' includes the equipment:  
(A) which normally comes in direct contact with, or directly processes, or controls, the production flow of nuclear material, or  
(B) which seals the nuclear material within the cladding.  
The whole set of items for the foregoing operations, as well as individual items intended for any of the foregoing operations, and for other fuel fabrication operations, including checking the integrity of the cladding or the seal, and the finish treatment to the sealed fuel.
- (k) Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium:  
'Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes or uranium' includes each of the major items of equipment especially designed or prepared for the separation process. Such items include:  
- gaseous diffusion barriers  
- gaseous diffuser housings  
- gas centrifuge assemblies, corrosion-resistant to UF<sub>6</sub>  
- jet nozzle separation units  
- vortex separation units  
- large UF<sub>6</sub> corrosion-resistant axial or centrifugal compressors  
- special compressor seals for such compressors.

(l) Plants for the production of heavy water:

A 'plant for the production of heavy water' means a plant for the production of heavy water, deuterium and deuterium compounds and equipment especially designed or prepared therefor.

2. The classes of material which are 'associated material' for the purposes of that definition are:

(a) Deuterium and heavy water:

Deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1:5000, suitable for use in a nuclear reactor as defined in 1 (a) above.

(b) Nuclear grade graphite:

Graphite having a purity level better than five parts per million boron equivalent and with a density greater than 1.50 grams per cubic centimetre.

Dated this 31st day of March 1987.

GARETH EVANS

Minister for Resources and Energy