

**December 31, 1975**

**Memorandum from George S. Springsteen,  
Executive Secretary, to National Security Adviser  
Brent Scowcroft, 'Nuclear Suppliers Guidelines'**

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**Summary:**

This document comprises the instructions which the White House approved for the September 1975 suppliers' meeting. At the November meeting, the suppliers completed negotiations on guidelines. Basic provisions included agreement to seek assurances by recipients of supplies not to produce nuclear explosive devices, physical security for installations and materials, transfer of trigger list items only under IAEA safeguards, restraint in transfer of sensitive technologies, facilities and materials, and the encouragement of supplier involvement in, and multinational controls over, sensitive installations. Appended to the guidelines was a two page "trigger list" based on the Zangger Committee's list.

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MEMORANDUM FOR MR. BRENT SCOWCROFT  
THE WHITE HOUSE

SUBJECT: Nuclear Suppliers Guidelines

In accordance with the President's authorization to seek a consensus on common guidelines for safeguards and controls on nuclear exports (attachment 1), a referendum confidential agreement was reached with representatives of the UK, Canada, the FRG, France, the USSR, and Japan on the guidelines at attachment 2. These guidelines will not constitute an international agreement but rather will embody common policies adopted on the political level by each of the participants.

While the procedure to be used in formalizing the undertaking is not yet finally settled, it is generally agreed that each government will unilaterally inform the others of its intention to abide by the guidelines. We anticipate that these notifications will take the form of a diplomatic note, with some of the governments requesting that their exchanges be kept confidential. All of the participants are anxious to conclude this procedure within a month.

George S. Springsteen  
Executive Secretary

Attachments:

1. Presidential Authorization
2. Guidelines Paper

Drafted by: PM/NPO:JPMcGuinness / PM:NPO:LVNosenzo

Clearances: ACDA-Mr. Van Boren (subs) C-Mr. Kelly (subs)  
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E.O. 11552: XGOS-3  
TAGS: PFOR, TECH, US  
SUBJECT: INSTRUCTIONS TO THE US DELEGATION SEPTEMBER 16-  
17 MULTILATERAL NUCLEAR EXPORTERS' MEETING AND ASSOCIATED  
BILATERALS

THE PRESIDENT HAS AUTHORIZED THE FOLLOWING INSTRUCTIONS:

1. THE PRIMARY OBJECTIVES AT THIS MULTILATERAL MEETING  
ARE TO:

--OBTAIN A CONSENSUS IN PRINCIPLE ON THE CONTENT OF AN  
UNDERSTANDING AMONG THE PARTICIPANTS;

--REACH AGREEMENT ON PROCEDURES FOR WORKING OUT THE FORM  
AND DRAFT TEXTS OF SUCH UNDERSTANDINGS, PREFERABLY  
THROUGH A MULTILATERAL WORKING GROUP WHICH WOULD MEET  
IN THE NEAR FUTURE; WHILE HOLDING OPEN, IF APPROPRIATE  
AND WITHOUT JEOPARDIZING THE CONSENSUS AGREEMENT, THE  
POSSIBILITY OF FURTHER IMPROVEMENT IN CERTAIN PROVISIONS  
OF THE UNDERSTANDING IF THERE APPEARS TO BE A REASONABLE  
CHANCE THAT OTHERS (PARTICULARLY THE FRENCH AS A RESULT

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OF OUR ACCOMMODATION OF THEIR BILATERAL CONCERNS) MAY BE CONSIDERING A MORE FORTHCOMING POSITION TOWARD THOSE PROVISIONS.

2. AS OVERALL GUIDANCE, THE US DELEGATION SHOULD ADOPT THE INITIAL AND FALLBACK POSITIONS IDENTIFIED IN THE AUGUST 28 ISSUES PAPER) ON THE VARIOUS POINTS DISCUSSED IN THE PRELIMINARY GUIDELINES PAPER (PGP).
3. THE US DELEGATION SHOULD INDICATE THAT IT CAN ACCEPT THE FIRST APPROACH (COMPREHENSIVE IAEA SAFEGUARDS ON ALL FACILITIES AS A CONDITION OF TRANSFER) IDENTIFIED IN THE PGP IF OTHERS CAN DO SO. IF, AS EXPECTED, THE FRENCH RESIST THIS APPROACH, THE US SHOULD EXPLORE INCORPORATING THE CONCEPT AS AN OBJECTIVE AND PRESS FOR A UNDERSTANDING EMBODYING THE SECOND APPROACH (IAEA SAFEGUARDS ON TRANSFERS, SPECIAL CONTROLS ON SENSITIVE FACILITIES AND MATERIALS, AND CONTROL OF RETRANSFERS).
4. THE US SHOULD VIGOROUSLY SUPPORT AN OBLIGATORY PROVISION FOR CONTINUING SUPPLIER INVOLVEMENT IN ENRICHMENT AND REPROCESSING FACILITIES BUILT WITH TRANSFERRED EQUIPMENT AND TECHNOLOGY, WITH A RESTRICTED EXCEPTIONS CLAUSE. IF SUCH A PROVISION IS UNACCEPTABLE TO OTHER PARTICIPANTS, THE DELEGATION SHOULD PURSUE THE ALTERNATIVE POSITIONS PRESENTED AS THE SUGGESTED US POSITION IN THE ISSUES PAPER, ATTEMPTING TO REACH THE NEAREST APPROXIMATION TO OUR PREFERRED POSITION WHICH APPEARS NEGOTIABLE.
5. THE US SHOULD STRONGLY SUPPORT A PROVISION ON SUPPLIER CONSENT FOR ALTERATION AND STORAGE OF WEAPONS USABLE MATERIAL, AND SHOULD VIGOROUSLY SEEK TO HAVE OBLIGATORY CRITERIA ADOPTED ON NO-PNE ASSURANCES AND PERMANENT SAFEGUARDS. IF SERIOUS OPPOSITION DEVELOPS, THE DELEGATION SHOULD CONTINUE TO PURSUE THE PRINCIPLE OF SUPPLIER CONSENT, WITH DISCRETIONARY RATHER THAN OBLIGATORY CRITERIA.
6. WHILE STRONG MULTINATIONAL ENTERPRISES AND SUPPLIER CONSENT PROVISIONS WOULD GREATLY ENHANCE THE RESULTING

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UNDERSTANDINGS, AND ARE OF GREAT IMPORTANCE FROM THE US VIEWPOINT, A CONSENSUS IN PRINCIPLE ON OTHER ISSUES SHOULD NOT BE SACRIFICED IN PURSUING THESE PROVISIONS.

7. THE DELEGATION SHOULD ENSURE IF POSSIBLE THAT THE DESIRABILITY OF RESTRAINT IN THE TRANSFER OF SENSITIVE CHEMICAL REPROCESSING AND URANIUM ENRICHMENT TECHNOLOGY IS NOTED IN THE SUPPLIERS' UNDERSTANDINGS.

8. THE DELEGATION SHOULD LEND ITS SUPPORT TO EFFORTS TO DEVISE FEASIBLE AND NEGOTIABLE FORMULATIONS FOR SAFEGUARDS ON REACTOR TECHNOLOGY, PREFERABLY AFFECTING NATURAL URANIUM AND ADVANCED REACTOR TYPES, BUT SHOULD NOT PRESS THIS CONCEPT TO THE POINT OF ENDANGERING OVERALL CONSENSUS.

9. THE DELEGATION SHOULD ALSO REITERATE THE IMPORTANCE THE US ATTACHES TO CONTINUED BILATERAL CONSULTATIONS ON SPECIFIC SENSITIVE EXPORT CASES OF SPECIAL CONCERN.

10. THE DELEGATION SHOULD, IN GENERAL, EXERT EVERY POSSIBLE EFFORT TO ENSURE CONTINUED CONSULTATIONS AMONG SUPPLIERS AND FOLLOW-ON ARRANGEMENTS TO PERMIT SUBSEQUENT MODIFICATION AND STRENGTHENING OF MULTILATERAL UNDERSTANDINGS IN THE LIGHT OF FUTURE CIRCUMSTANCES AND EXPERIENCE.

11. IF THE ISSUE OF RETROACTIVE APPLICATION OF AGREED POLICIES IS RAISED, THE DELEGATION SHOULD GENERALLY ACKNOWLEDGE THE PROBLEMS ASSOCIATED WITH SUCH A PROSPECT, BUT REFRAIN FROM FORECLOSING OPTIONS TO APPLY POLICIES THROUGH INTERPRETATIONS AND AMENDMENTS OF EXISTING AGREEMENTS, EXPORT LICENSING AUTHORITIES, AND OTHER POSSIBLE MECHANISMS.

12. THE DELEGATION SHOULD ENDEAVOR TO REACH AGREEMENT ON AN EARLY AND SPECIFIC DATE FOR MULTILATERAL WORKING GROUP MEETING TO BEGIN DRAFTING TEXTS.

13. SUBJECT TO AGREEMENT ON APPROPRIATE TIMING AND PROCEDURES, THE US SHOULD INDICATE WILLINGNESS TO APPRISE SELECTED NON-PARTICIPANTS OF THE PURPOSE AND PROGRESS

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OF THESE MEETINGS, BUT SHOULD NOT PRESS FOR AGREEMENT ON THIS QUESTION AT THE SEPTEMBER 16 MEETING IF OTHER PARTICIPANTS DISAGREE.

14. IF THERE IS A DISCUSSION OF OBTAINING BROADENED PARTICIPATION IN THE UNDERSTANDINGS, THE US SHOULD SUPPORT SUCH BROADENING ALONG FUNCTIONAL RATHER THAN ACROSS-THE-BOARD LINES, AS DISCUSSED IN THE ISSUES PAPER. THE US SHOULD EXPLORE THE IDEA OF THE MAJOR SUPPLIERS BEGINNING THIS PROCESS, AFTER THE AREAS OF CONSENSUS HAS BEEN CLEARLY IDENTIFIED, WITH SELECTED NON-PARTICIPANTS WHILE RESERVING ACTUAL EXPANSION UNTIL AFTER FORMAL AGREEMENT AMONG THE SEVEN. KISSINGER

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*General*

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5 November 1975

## GUIDELINES FOR NUCLEAR TRANSFERS

1. The following fundamental principles for safeguards and export controls should apply to nuclear transfers to any non-nuclear-weapon state for peaceful purposes. In this connection, suppliers will define an export trigger list and agree on common criteria for technology transfers to be included in the list.

2. Prohibition on Nuclear Explosives

Suppliers should authorize transfer of items identified in the trigger list only upon formal governmental assurances from recipients explicitly excluding uses which would result in any nuclear explosive device.

3. Physical Protection

- (a) All nuclear materials and facilities identified by the agreed trigger list should be placed under effective physical protection to prevent unauthorized use and handling. The levels of physical protection to be ensured in relation to the type of materials, equipment and facilities, will be agreed among suppliers, taking account of international recommendations.
- (b) The implementation of measures of physical protection in the recipient country is the responsibility of the government of that country. However, in order to implement the terms agreed upon amongst suppliers, the levels of physical protection on which these measures have to be based should be the subject of an agreement between supplier and recipient.
- (c) In each case special arrangements should be made for a clear definition of responsibilities for the transport of trigger list items.

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4. Suppliers should transfer trigger list items only when covered by IAEA safeguards, with duration and coverage provisions in conformance with the GOV/1621 guidelines. Exceptions should be made only after consultation with the parties to this understanding.

5. Before the end of 1976 suppliers will jointly reconsider their common safeguards requirements.

6. Safeguards Triggered By The Transfer Of Certain Technology

- (a) The requirements of paragraphs 2, 3 and 4 above should also apply to facilities for reprocessing, enrichment, or heavy water production, utilising technology directly transferred by the supplier or derived from transferred facilities, or major critical components thereof.
- (b) The transfer of such facilities, or <sup>major</sup>critical components thereof, or related technology, should require an undertaking (1) that IAEA safeguards apply to any facilities of the same type (i.e. if the design, construction or operating processes are based on the same or similar physical or chemical processes, as defined in the trigger list) constructed during an agreed period in the recipient country and (2) that there should at all times be in effect a safeguards agreement permitting the IAEA to apply Agency safeguards with respect to such facilities identified by the recipient, or by the supplier in consultation with the recipient, as using transferred technology.

7. Special Controls on Sensitive Exports

Suppliers should exercise restraint in the transfer of sensitive facilities, technology and weapons-usable materials. If enrichment or reprocessing facilities, equipment or technology are to be transferred, suppliers should encourage recipients to accept, as an alternative to national plants, supplier involvement and/or other appropriate multinational participation in resulting facilities.

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Suppliers should also promote international (including IAEA) activities concerned with multinational regional fuel cycle centres.

8. Special Controls on Export of Enrichment Facilities, Equipment and Technology

For a transfer of an enrichment facility, or technology therefor, the recipient nation should agree that neither the transferred facility, nor any facility based on such technology, will be designed or operated for the production of greater than 20% enriched uranium without the consent of the supplier nation, of which the IAEA should be advised.

9. Controls on Supplied or Derived Weapons-Usable Material

Suppliers recognise the importance, in order to advance the objectives of these guidelines, and to provide opportunities further to reduce the risks of proliferation, of including in agreements on supply of nuclear materials or of facilities which produce weapons-usable material, provisions calling for mutual agreement between the supplier and the recipient on arrangements for re-processing, storage, alteration, use, transfer or retransfer of any weapons-usable material involved. Suppliers should endeavour to include such provisions whenever appropriate and practicable.

/10. Controls on Retransfer

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**10. Controls on Retransfer**

(a) Suppliers should transfer trigger list items, including technology defined under paragraph 6, only upon the recipient's assurance that in the case of:-

- (1) retransfer of such items,  
or
- (2) transfer of trigger list items derived from facilities originally transferred by the supplier, or with the help of equipment or technology originally transferred by the supplier;

the recipient of the retransfer or transfer will have provided the same assurances as those required by the supplier for the original transfer.

(b) In addition the supplier's consent should be required for: (1) any retransfer of the facilities/<sup>major</sup>critical components, or technology described in paragraph 6; (2) any transfer of facilities or/<sup>major</sup>critical components derived from those items; (3) any retransfer of heavy water or weapons-usable material.

## SUPPORTING ACTIVITIES

11. Physical Security

Suppliers should promote international co-operation on the exchange of physical security information, protection of nuclear materials in transit, and recovery of stolen nuclear materials and equipment.

12. Support for Effective IAEA Safeguards

Suppliers should make special efforts in support of the continuing effectiveness of IAEA safeguards.

13. Sensitive plant design features

Suppliers should encourage the designers and makers of sensitive equipment to construct it in such a way as to facilitate the application of safeguards.

14. Consultations

- (a) Suppliers should maintain contact and consult through regular channels on matters connected with the implementation of these guidelines.
- (b) Suppliers should consult, as each deems appropriate, with other Governments concerned on specific sensitive cases, to ensure that any transfer does not contribute to risks of conflict or instability.
- (c) In the event of a diversion of materials or a violation or abrogation of supplier-recipient understandings consistent with these guidelines, suppliers should consult promptly on appropriate responses, and possible common actions, bearing in mind Article XII of the IAEA Statute.

15. In considering transfers, each supplier should exercise prudence having regard to all the circumstances of each case, including any risk that technology transfers not covered by paragraph 5, or subsequent retransfers, might result in unsafeguarded nuclear materials.

16. Unanimous consent is required for any changes in these guidelines, including any which might result from the reconsideration mentioned in paragraph 5.

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TRIGGER LIST REFERRED TO IN GUIDELINES

PART A. MATERIAL AND EQUIPMENT

1. Source or special fissionable material as defined in Article XX of the Statute of the International Atomic Energy Agency; provided that items specified in sub-paragraph (a) below, and exports of source or special fissionable material to a given recipient country, within a period of 12 months, below the limits specified in sub-paragraph (b) below, shall not be included:

(a) Plutonium with an isotopic concentration of plutonium-238 exceeding 80%;

Special fissionable material when used in gram quantities or less as a sensing component in instruments; and

Source material which the Government is satisfied is to be used only in non-nuclear activities, such as the production of alloys or ceramics;

- (b) Special fissionable material 50 effective grams;
- Natural uranium 500 kilograms;
- Depleted uranium 1000 kilograms; and
- Thorium 1000 kilograms.

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## 2.1. Reactors and equipment therefor:

- 2.1.1. 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.

### 2.1.2. Reactor pressure vessels:

Metal vessels as complete units or as major shop-fabricated parts therefor, which are especially designed or prepared to contain the core of a nuclear reactor as defined in paragraph 2.1.1 above and are capable of withstanding the operating pressure of the primary coolant.

### 2.1.3. Reactor fuel charging and discharging machines:

Manipulative equipment especially designed or prepared for inserting or removing fuel in a nuclear reactor as defined in paragraph 2.1.1 above 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.

### 2.1.4. Reactor control rods:

Rods especially designed or prepared for the control of the reaction rate in a nuclear reactor as defined in paragraph 2.1.1 above.

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2.1.5. Reactor pressure tubes:

Tubes which are especially designed or prepared to contain fuel elements and the primary coolant in a reactor as defined in paragraph 2.1.1 above at an operating pressure in excess of 50 atmospheres.

2.1.6. Zirconium tubes:

Zirconium metal and alloys in the form of tubes or assemblies of tubes, and in quantities exceeding 500 kg per year, especially designed or prepared for use in a reactor as defined in paragraph 2.1.1 above, and in which the relationship of hafnium to zirconium is less than 1:500 parts by weight.

2.1.7. Primary coolant pumps:

Pumps especially designed or prepared for circulating liquid metal as primary coolant for nuclear reactors as defined in paragraph 2.1.1 above.

2.2. Non-nuclear materials for reactors:

2.2.1. Deuterium and heavy water:

Deuterium and any deuterium compound in which the ratio of deuterium to hydrogen exceeds 1:5000 for use in a nuclear reactor as defined in paragraph 2.1.1 above in quantities exceeding 200 kg of deuterium atoms for any one recipient country in any period of 12 months.

2.2.2. Nuclear grade graphite:

Graphite having a purity level better than 5 parts per million boron equivalent and with a density greater than 1.50 grams per cubic centimetre in quantities exceeding 30 metric tons for any one recipient country in any period of 12 months.

2.3.1. Plants for the reprocessing of irradiated fuel elements, and equipment especially designed or prepared therefor.

2.4.1. Plants for the fabrication of fuel elements.

2.5.1. Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium.

2.6.1. Plants for the production of heavy water, deuterium and deuterium compounds and equipment especially designed or prepared therefor.

Clarifications of certain of the items on the above list are annexed.

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CLARIFICATIONS OF ITEMS ON THE TRIGGER LIST

A. Complete nuclear reactors

(Item 2.1.1 of the Trigger List)

1. 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.

2. The export of the whole set of major items within this boundary will take place only in accordance with the procedures of the Guidelines. Those individual items within this functionally defined boundary which will be exported only in accordance with the procedures of the Guidelines are listed in paragraphs 2.1.1 to 2.1.5.

The Government reserves to itself the right to apply the procedures of the Guidelines to other items within the functionally defined boundary.

3. It is not intended to exclude reactors which could reasonably be capable of modification to produce significantly more than 100 grams of plutonium per year. Reactors designed for sustained operation at significant power levels, regardless of their capacity for plutonium production, are not considered as "zero energy reactors".

## B. Pressure vessels

(Item 2.1.2 of the Trigger List)

4. A top plate for a reactor pressure vessel is covered by item 2.1.2 as a major shop-fabricated part of a pressure vessel.

5. Reactor internals (e.g., support columns and plates for the core and other vessel internals, control rod guide tubes, thermal shields, baffles, core grid plates, diffuser plates, etc.) are normally supplied by the reactor supplier. In some cases, certain internal support components are included in the fabrication of the pressure vessel. These items are sufficiently critical to the safety and reliability of the operation of the reactor (and, therefore, to the guarantees and liability of the reactor supplier), so that their supply, outside the basic supply arrangement for the reactor itself, would not be common practice. Therefore, although the separate supply of these unique, especially designed and prepared, critical, large and expensive items would not necessarily be considered as falling outside the area of concern, such a mode of supply is considered unlikely.

## C. Reactor control rods

(Item 2.1.4 of the Trigger List)

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

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D. Fuel reprocessing plants

(Item 2.3.1 of the Trigger List)

7. 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 export of the whole set of major items within this boundary will take place only in accordance with the procedures of the Guidelines. In the present state of technology, the following items of equipment are considered to fall within the meaning of the phrase "and equipment especially designed or prepared therefor":

- (a) Irradiated fuel element chopping machines; remotely operated equipment especially designed or prepared for use in a reprocessing plant as identified above and intended to cut, chop or shear irradiated nuclear fuel assemblies, bundles or rods; and
- (b) Critically safe tanks (e.g. small diameter, annular or slab tanks) especially designed or prepared for use in a reprocessing plant as identified 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:

The Government reserves to itself the right to apply the procedures of the Guidelines to other items within the functionally defined boundary.

E. Fuel fabrication plants

(Item 2.4.1 of the Trigger List)

9. 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.

10. The export of the whole set of items for the foregoing operations will take place only in accordance with the procedures of the Guidelines. The Government will also give consideration to application of the procedures of the Guidelines to individual items intended for any of the foregoing operations, as well as for other fuel fabrication operations, such as checking the integrity of the cladding or the seal, and the finish treatment to the solid fuel.

F. Isotope separation plant equipment

(Item 2.5.1 of the Trigger List)

11. "Equipment, other than analytical instruments, especially designed or prepared for the separation of isotopes of uranium" includes each of the major items of equipment especially designed or

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prepared for the separation process. Such items include:

- gaseous diffusion barrier
- gaseous diffuser housings
- gas centrifuge assemblies, corrosion-resistant to UF 6
- jet nozzle separation units
- vortex separation units
- large UF 6 corrosion-resistant axial or centrifugal compressors
- special compressor seals for such compressors

PART B. COMMON CRITERIA FOR TECHNOLOGY  
TRANSFERS UNDER PARAGRAPH 6 OF  
THE GUIDELINES

- (1) "Technology" means technical data in physical form designated by the supplying country as important to the design, construction, operation, or maintenance of enrichment, reprocessing, or heavy water production facilities or major critical components thereof, but excluding data available to the public, for example, in published books and periodicals, or that which has been made available internationally without restrictions upon its further dissemination.
- (2) "Major critical components" are:
  - (a) in the case of an isotope separation plant of the gaseous diffusion type: diffusion barrier;
  - (b) in the case of an isotope separation plant of the gas centrifuge type: gas centrifuge assemblies, corrosion-resistant to UF<sub>6</sub>;
  - (c) in the case of an isotope separation plant of the jet nozzle type: the nozzle units;
  - (d) in the case of an isotope separation plant of the vortex type: the vortex units.
- (3) For facilities covered by paragraph 6 of the Guidelines for which no major critical component is described in paragraph 2 above, if a supplier nation should transfer in the aggregate a significant fraction of the items essential to the operation of such a facility, together with the knowhow for construction and operation of that facility, that transfer should be deemed to be a transfer of "facilities or major critical components thereof".
- (4) The definitions in the preceding paragraphs are solely for the purposes of paragraph 6 of the Guidelines and this Part B, which differ from those applicable to Part A of this trigger list, which should not be interpreted as limited by such definitions.
- (5) For the purposes of implementing paragraph 6 of the Guidelines, the following facilities should be deemed to be "of the same type (i.e., if their design, construction or operating processes are based on the same or similar physical or chemical processes)":

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Where the technology transferred is such as to make possible the construction in the recipient state of a facility of the following type, or major critical components thereof:

The following will be deemed to be facilities of the same type:

(a) an isotope separation plant of the gaseous diffusion type . . . . .

any other isotope separation plant using the gaseous diffusion process.

(b) an isotope separation plant of the gas centrifuge type . . . . .

any other isotope separation plant using the gas centrifuge process.

(c) an isotope separation plant of the jet nozzle type . . . . .

any other isotope separation plant using the jet nozzle process.

(d) an isotope separation plant of the vortex type . . . . .

any other isotope separation plant using the vortex process.

(e) a fuel reprocessing plant using the solvent extraction process.

any other fuel reprocessing plant using the solvent extraction process.

(f) a heavy water plant using the exchange process . . . . .

any other heavy water plant using the exchange process.

(g) a heavy water plant using the electrolytic process . . . . .

any other heavy water plant using the electrolytic process.

(h) a heavy water plant using the hydrogen distillation process . . . . .

any other heavy water plant using the hydrogen distillation process.

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Note: In the case of reprocessing, enrichment, and heavy water facilities whose design, construction, or operating processes are based on physical or chemical processes other than those enumerated above, a similar approach would be applied to define facilities "of the same type", and a need to define major critical components of such facilities might arise.

(6) The reference in paragraph 6(b) of the Guidelines to "any facilities of the same type constructed during an agreed period in the recipient's country" is understood to refer to such facilities (or major critical components thereof), the first operation of which commences within a period of at least 20 years from the date of the first operation of (1) a facility which has been transferred or incorporates transferred major critical components or of (2) a facility of the same type built after the transfer of technology. It is understood that during that period there would be a conclusive presumption that any facility of the same type utilized transferred technology. But the agreed period is not intended to limit the duration of the safeguards imposed or the duration of the right to identify facilities as being constructed or operated on the basis of or by the use of transferred technology in accordance with paragraph 6(b)(2) of the Guidelines.