

# *Fordham International Law Journal*

---

*Volume 4, Issue 2*

1980

*Article 2*

---

## United States Nuclear Export Controls

Katherine D. McManus\*

Harry R. Marshall, Jr.†

\*

†

Copyright ©1980 by the authors. *Fordham International Law Journal* is produced by The Berkeley Electronic Press (bepress). <http://ir.lawnet.fordham.edu/ilj>

# United States Nuclear Export Controls

Katherine D. McManus and Harry R. Marshall, Jr.

## **Abstract**

This article will explore the U.S. nuclear export controls regime. It will initially discuss controls affecting the export of nuclear material, facilities, and specially designed components of nuclear facilities. This section will specifically consider export licensing procedures and requirements, agreements for nuclear cooperation, the specific export criteria for major nuclear cooperation, as well as the necessary policy determination. Then the Article will discuss the procedures and requirements for obtaining a license to export dual-use equipment, the authorization necessary for the export of nuclear technology and the subsequent arrangement process, which further aids in the implementation of U.S. non-proliferation policies.

# UNITED STATES NUCLEAR EXPORT CONTROLS

*Katherine D. McManus\**  
*Harry R. Marshall, Jr.\*\**

## I. INTRODUCTION—THE INTERNATIONAL REGIME

Since the inauguration of the Eisenhower “Atoms for Peace” program in 1953<sup>1</sup> and the passage of the Atomic Energy Act of 1954,<sup>2</sup> the United States has engaged in peaceful nuclear cooperation<sup>3</sup> with other nations to share the benefits of civilian nuclear energy programs. Such cooperation must take into account the inherent risks of proliferation, *i.e.*, the further spread of nuclear explosives.<sup>4</sup> The nuclear export controls regime plays a major

---

\* B.A. 1974, American University; M.S.F.S. 1979, Georgetown University. Ms. McManus is a Foreign Affairs Officer for the United States Arms Control and Disarmament Agency. For the past three years she has been responsible for nuclear export policy issues in the Non-Proliferation Bureau of the Agency.

\*\* Member of the New York Bar. B.A. 1961, University of Virginia; J.D. 1965, University of Pennsylvania; D.C.L.S. 1967, University of Cambridge. Mr. Marshall was the senior attorney for international nuclear energy matters in the United States Arms Control and Disarmament Agency when this article was prepared. Currently he is the Principal Deputy Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs (OES). The OES bureau is responsible for the formulation and implementation of United States non-proliferation and nuclear cooperation policy.

The views expressed in this Article are those of the authors and do not necessarily represent the views of the United States Arms Control and Disarmament Agency or any other United States Government Agency.

1. The text of President Eisenhower’s speech before the United Nations General Assembly on Dec. 8, 1953, entitled “Atomic Power for Peace,” is reprinted at 100 CONG. REC. 61 (1954); ENVIRONMENTAL AND NATURAL RESOURCES POLICY DIVISION, CONGRESSIONAL RESEARCH SERVICE, 96th CONG. 2d Sess., NUCLEAR PROLIFERATION FACTBOOK 25-30 (Comm. Print 1980) [hereinafter cited as FACTBOOK].

2. Act of August 30, 1954, Pub. L. No. 703, 68 Stat. 919 (codified in 42 U.S.C. §§ 2011-2296 (1976)) [hereinafter cited as Atomic Energy Act].

3. “Peaceful nuclear cooperation” in international usage means the transfer from one country to another of nuclear material, equipment and technology for civilian applications, *e.g.*, nuclear medicine, operation of research reactors, and electrical production using nuclear fuel.

4. A nuclear explosive is a device designed for either weapon use or peaceful purposes, *e.g.*, as a substitute for TNT in a large scale civil construction project. The design for either purpose is substantially the same.

role in minimizing this risk. In the United States this regime calls for United States controls continuing after export, recipient assurances that exports intended for peaceful uses will not be diverted to an explosives program, and the maintenance of international safeguards. It also restricts the export of weapons-useable material,<sup>5</sup> sensitive nuclear facilities, and classified and sensitive nuclear technology.<sup>6</sup>

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT)<sup>7</sup> recognizes the balance between sharing nuclear technology and preventing proliferation. In article IV of the NPT all parties undertake to facilitate the fullest possible exchange of equipment, material and information for the peaceful uses of nuclear energy. This commitment is tempered by article I in which the nuclear-weapon state parties<sup>8</sup> undertake "not in any way to assist, encourage, or induce any non-nuclear-weapon State to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices, or control over such weapons or explosive devices."<sup>9</sup>

The NPT requires that parties not provide, "(a) source or spe-

5. Nuclear material considered to be directly useable for explosive use, *i.e.*, separated plutonium, highly enriched uranium (HEU), *i.e.*, uranium enriched to 20% or more in the isotope 235 or uranium 233.

6. Classified technology includes information in the category of "Restricted Data" which is defined in 42 U.S.C. § 2014(Y) (1976) as "all data concerning (1) design, manufacture, or utilization of atomic weapons; (2) the production of special nuclear material; or (3) the use of special nuclear material in the production of energy, but shall not include data declassified or removed from the Restricted Data category pursuant to Section 2162 of this title." Sensitive nuclear technology is defined as "any information . . . which is not available to the public and which is important to the design, construction, fabrication, operation or maintenance of a uranium enrichment or nuclear fuel reprocessing facility or a facility for the production of heavy water, but shall not include Restricted Data controlled pursuant to chapter 12 of the 1954 Act." 22 U.S.C. § 3203(a)(6) (Supp. III 1979). *See also* 10 C.F.R. § 810.7 (1980).

7. Treaty on the Non-Proliferation of Nuclear Weapons, *done* July 1, 1968, 21 U.S.T. 483, T.I.A.S. No. 6839, 729 U.N.T.S. 161 [hereinafter cited as NPT]. This treaty currently has 115 parties. Egypt, the newest signatory, deposited its instrument of ratification on Feb. 26, 1981. For further discussion of the NPT, see M. WILLRICH, *NON-PROLIFERATION TREATY* (1969); Firmage, *The Treaty on the Non-Proliferation of Nuclear Weapons*, 63 AM. J. INT'L L. 711 (1968); Willrich, *The Treaty on Non-Proliferation of Nuclear Weapons: Nuclear Technology Confronts World Politics*, 77 YALE L.J. 1447 (1968); Note, *A Survey of the United States Treaties and Agreements Involving the Peaceful Uses of Nuclear Energy*, 10 CASE W. RES. J. INT'L L. 671, 692-94 (1978); 20 STAN. L. REV. 1030 (1968).

8. NPT, *supra* note 7, art. IX(3) defines a nuclear-weapon state party as a party which has "manufactured and exploded" a nuclear explosive device prior to Jan. 1, 1967.

9. NPT, *supra* note 7, art. I.

cial fissionable material, or (b) equipment or material especially designed or prepared for the processing, use or production of special fissionable material, to any non-nuclear-weapon State for peaceful purposes, unless the source or special fissionable material shall be subject to [International Atomic Energy Agency] safeguards . . . ."<sup>10</sup> This requirement has been further clarified by the so-called Zangger Committee Guidelines. This is an informal agreement among twenty-one NPT supplier state parties that, in accordance with article III of the NPT, any such party will not export any item specified on a "trigger list" in the Zangger Guidelines unless it will be subject to International Atomic Energy Agency (IAEA) safeguards and a "no-explosive-use pledge," and a "no-retransfer assurance" has been obtained from the recipient nation.<sup>11</sup>

In addition, the United States subscribes to the export guidelines developed by the Nuclear Suppliers Group (NSG), subscribed to by a group of nineteen supplier states.<sup>12</sup> The NSG

---

10. *Id.* art. III(2). "Source or special fissionable material" refers to the internationally accepted categorization of nuclear material consisting of certain isotopes and concentrations of uranium, thorium, and plutonium as defined in the Statute of the International Atomic Energy Agency (IAEA), *done* Oct. 26, 1956, 8 U.S.T. 1093, T.I.A.S. No. 3873, 276 U.N.T.S. 3 [hereinafter cited as Statute]. The Statute specifically provides:

1. The term "special fissionable material" means plutonium-239; uranium-233; uranium enriched in the isotopes 235 or 233; any material containing one or more of the foregoing; and such other fissionable material as the Board of Governors shall from time to time determine; but the term "special fissionable material" does not include source material.

3. The term "source material" means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope 235; thorium; any of the foregoing in the form of metal, alloy, chemical compound, or concentrate; any other material containing one or more of the foregoing in such concentration as the Board of Governors shall from time to time determine; and such other material as the Board of Governors shall from time to time determine.

*Id.* art. XX. IAEA safeguards, required by article III(5) of the Statute, refers to a system of inspection and material accountancy maintained by the IAEA to detect the diversion of source or special fissionable material from a peaceful use to any military or explosive use. *Id.* arts. III, XII.

11. IAEA, Communications Received from Members Regarding The Export of Nuclear Material and of Certain Categories of Equipment and Other Material, INFCIRC/209 (1974) [hereinafter cited as Zangger Guidelines], *reprinted in* FACTBOOK, *supra* note 1, at 286-93; 14 INT'L LEGAL MATS. 543 (1975).

12. IAEA, Communications Received from Certain Member States Regarding Guidelines for the Export of Nuclear Material, Equipment or Technology, INFCIRC/254 (1978) [hereinafter cited as NSG Guidelines], *reprinted in* 17 INT'L LEGAL MATS. 220 (1978).

Guidelines contain a trigger list of items identical to those on the list in the Zangger Guidelines. The export of any item on the NSG Guidelines list requires the supplier to obtain, in addition to the above stated Zangger Guidelines requirements, physical security and "no-replication" assurances.<sup>13</sup> The NSG Guidelines also provide that a supplier should exercise restraint in the transfer of any sensitive facility or technology or any weapons-useable material; and that, in the case of the transfer of an enrichment facility or its technology, the recipient should agree not to utilize any such export for producing highly enriched uranium (HEU). The NSG Guidelines recognize that the supplier and the recipient should reach mutual agreement or arrangements for reprocessing, storage, alteration, use, or retransfer of weapons-useable material. Thus United States nuclear export controls are designed to ensure that obligations under the NPT, including compliance with the Zangger Guidelines, are met, as well as compliance with the NSG Guidelines.

The nuclear test explosion undertaken by the Government of India in 1974, preparation for which involved nuclear technology and materials supplied by other nations,<sup>14</sup> and, more recently, attempts by other countries<sup>15</sup> to import sensitive nuclear facilities and technology provided the impetus in the United States for the imposition of more stringent nuclear export controls. The Nuclear Non-Proliferation Act of 1978 (NNPA)<sup>16</sup> amended the Atomic En-

---

13. Replication is the construction of a facility based on the same or similar technology previously transferred or contained in a facility or a major critical component thereof previously transferred.

14. Such technology and material had been supplied for the nuclear program in India which at the time of supply, to the knowledge of the suppliers, was not intended for any explosive applications.

15. For example, the arrangement between Brazil and the Federal Republic of Germany, signed in 1975, as reported in the *New York Times*, provides, inter alia, for the construction of uranium enrichment and reprocessing facilities. *N.Y. Times*, Aug. 21, 1980, at A10, col. 1. Also of concern have been Pakistan's efforts to obtain an enrichment plant. See Donnelly & Kramer, *Nuclear Energy: Carrying Out U.S. Nonproliferation Policy*, reprinted in *FACTBOOK*, supra note 1, at 497.

16. Act of Mar. 10, 1978, Pub. L. No. 95-242, 92 Stat. 120 (codified in scattered sections of 22, 42 U.S.C.) [hereinafter cited as NNPA]. For a discussion of the NNPA, see Bettauer, *The Nuclear Non-Proliferation Act of 1978*, 10 *LAW & POL'Y INT'L BUS.* 1105-80 (1978); Doub & Weiss, *International Nuclear Development in the Age of Interdependence*, 32 *VAND. L. REV.* 843, 856-62 (1979); Gleason, *Nuclear Power at Home and Abroad: The Quest For a New Nonproliferation Policy*, 11 *CONN. L. REV.* 512, 522-31 (1979).

ergy Act to include new export criteria, including the requirement of full-scope safeguards,<sup>17</sup> more comprehensive requirements for new agreements for cooperation,<sup>18</sup> and stringent sanction provisions. In addition, Presidents Ford and Carter instituted export policies which sought to discourage the use of weapons-useable material as fuels and to restrict the spread of sensitive nuclear facilities and technology.<sup>19</sup>

The United States maintains comprehensive nuclear export controls which require licensing or authorization for the export of nuclear material, facilities, equipment and technology, and also of "dual-use equipment"<sup>20</sup> which could contribute to a nuclear explosive program. Controls are implemented to place more stringent conditions upon the most sensitive exports and to expedite processing of exports to states with favorable "non-proliferation credentials,"<sup>21</sup> while providing closer scrutiny of exports to states of proliferation concern.

This Article will explore the United States nuclear export controls regime. It will initially discuss controls affecting the export of nuclear material, facilities, and specially designed components of nuclear facilities. This section will specifically consider export

---

17. 42 U.S.C. § 2157 (Supp. III 1979). Full-scope safeguards means the application of IAEA safeguards with respect to all peaceful nuclear activities within a nation's jurisdiction; *i.e.*, not just with respect to material supplied by another nation. This export requirement became applicable to exports after a period of 18 to 24 months following March 10, 1978, the date of enactment of the NNPA. *Id.*

18. 42 U.S.C. §§ 2153-2153(e) (Supp. III 1979). An agreement for cooperation is an international agreement providing for nuclear cooperation. The United States currently has agreements with 19 nations and two international organizations. In addition, agreements with four other countries have been signed and are awaiting conclusion of ratification proceedings. For a further discussion, see notes 48-49 *infra* and accompanying text.

19. President Gerald Ford's statement on nuclear policy is reprinted at 12 WEEKLY COMP. OF PRES. DOC. 1624-31 (Oct. 28, 1976). President Jimmy Carter's statement on nuclear policy of April 7, 1977 is reprinted at 13 WEEKLY COMP. OF PRES. DOC. 502-07 (Apr. 7, 1977); FACTBOOK, *supra* note 1, at 121-27. President Carter's message to the Congress transmitting the proposed Nuclear Non-Proliferation Policy Act of 1977 is reprinted at 13 WEEKLY COMP. OF PRES. DOC. 611-13 (Apr. 27, 1977).

20. Dual-use equipment refers to items which could be of significance for nuclear explosive purposes if used for purposes other than those intended by the exporter.

21. "Non-proliferation credentials" is a term often used to describe assurances or activities which a nation has given or undertaken to control proliferation, *e.g.*, adherence to the NPT and its efforts to control exports of sensitive nuclear items to a nation or region of concern.

licensing procedures and requirements, agreements for nuclear cooperation, the specific export criteria for major nuclear cooperation, as well as the necessary policy determination. Then the Article will discuss the procedures and requirements for obtaining a license to export dual-use equipment, the authorization necessary for the export of nuclear technology and the subsequent arrangement process which further aids in the implementation of United States non-proliferation policies.

## II. EXPORT OF NUCLEAR MATERIAL, FACILITIES, AND SPECIALLY DESIGNED COMPONENTS OF NUCLEAR FACILITIES

### A. *Procedures for Obtaining an Export License*

A Nuclear Regulatory Commission (NRC) license is required for the export of any source or special nuclear material, production or utilization facility, fuel fabrication plant, heavy water production plant, specially designed or prepared equipment for any such facility or plant,<sup>22</sup> deuterium or nuclear grade graphite, and by-product material.<sup>23</sup> This NRC jurisdiction includes all material and equipment covered by the trigger lists in the Zangger Guidelines and the NSG Guidelines.

To obtain a license<sup>24</sup> an application is filed with the NRC

22. Nuclear material includes: source material (uranium and thorium) 42 U.S.C. § 2014(z) (1976); special nuclear material, referred to internationally as special fissionable material (uranium enriched in the isotope 235, plutonium, uranium containing the isotope 233) 42 U.S.C. § 2014(aa) (1976), deuterium in specified ratios, 10 C.F.R. § 110.2(i) (1980); and by-product material (certain radioactive wastes and tailings) 42 U.S.C. § 2014(e) (Supp. III 1979). A nuclear facility includes a production facility, *i.e.*, a reactor or critical facility designed to produce special nuclear material or an enrichment or reprocessing plant, 42 U.S.C. § 2014(v) (1976); a utilization facility, *i.e.*, a reactor designed to use source or special nuclear material for the production of energy, 42 U.S.C. § 2014(cc) (1976); a heavy water (deuterium) production facility, *i.e.*, a fuel fabrication facility, 10 C.F.R. § 110.2(y) (1980); and major components of a nuclear reactor, 10 C.F.R. § 110.2 (1980), as enumerated in 10 C.F.R. App. A to Part 110 (1980).

23. An exception to the general licensing requirement arises in exports involving relatively insignificant amounts of source or special nuclear material which may be authorized by the Department of Energy for export to other governments. *See* 42 U.S.C.A. §§ 2094, 2074 (Supp. 1980). The NRC is also authorized to exempt any export from the requirement that a license be issued, but nearly identical findings must be made for such an exemption as are necessary for issuing a license. 42 U.S.C.A. § 2155 (Supp. 1980); 10 C.F.R. § 110.11 (1980).

24. The statutory procedures are set forth in 42 U.S.C.A. § 2155 (Supp. 1980).



which, before acting,<sup>25</sup> transmits it to the concerned Executive Branch agencies.<sup>26</sup> Interagency procedures govern the interagency review of the license application.<sup>27</sup> Within fifteen days of receipt from the NRC, these agencies must review the application and advise the State Department of their preliminary views, including whether additional information is required and whether the export raises unusual policy considerations.<sup>28</sup> The Department of Energy is responsible for obtaining confirmation, if required, that the export is subject to an appropriate agreement for cooperation, that the recipient is authorized to receive the export, and that physical security measures to be applied are adequate.<sup>29</sup>

Within thirty days of receipt of the license application, the State Department transmits to the other Executive Branch agencies a proposed Executive Branch judgment stating that the export will not be inimical to the common defense and security. The proposed judgment also addresses the extent to which the export criteria are met, the extent to which the cooperating party has adhered to the provisions of the applicable agreement for cooperation, and any additional relevant factors.<sup>30</sup>

---

The NRC has authority to issue general licenses for which no application need be filed. 10 C.F.R. § 110.20 (1980).

25. Applications for export of by-product material may be issued by the NRC without Executive Branch review, 42 U.S.C.A. § 2155 (Supp. 1980). Furthermore, 10 C.F.R. § 110.41(d) (1980) provides for no Executive Branch review in the case of by-product material.

26. 10 C.F.R. § 110.44 (1980). The agencies and offices for coordination are: (a) Department of State—The Office of Export and Import Control in the Nuclear Energy and Energy Technology Division of the Bureau of Oceans and International Environmental and Scientific Affairs; (b) Department of Energy—The Office of the Assistant Secretary for Defense Programs; (c) Department of Defense—The Office of the Assistant Secretary for International Security Affairs; (d) Department of Commerce—The Office of Export Administration in the Bureau of Trade Regulations; and (e) Arms Control and Disarmament Agency (ACDA)—The Nuclear Exports Division of the Bureau of Non-Proliferation.

27. Procedures Established Pursuant to the Nuclear Non-Proliferation Act of 1978, 43 Fed. Reg. 25,326-30 (1978) [hereinafter cited as Procedures]. Although in general the Procedures are the same for export licenses for major items and for all license applications, in practice, a number of less significant or routine applications are handled under expedited arrangements, *e.g.*, general licenses issued by the NRC and generic authorizations granted to NRC by the Executive Branch. Thus, full Executive Branch review does not occur for many less significant or routine export license applications.

28. Procedures, *supra* note 27, pt. B, § 1(b).

29. *Id.* § 1(c).

30. *Id.* § 1(f).

Within ten days of receipt of the proposed judgment, the four Executive Branch agencies must provide written views to the State Department with their recommendation.<sup>31</sup> The Executive Branch judgment is to be a unanimous one.<sup>32</sup> If an agency does not agree with the proposed action, there is a procedure for dispute resolution. The issue is referred first to the Subgroup on Nuclear Export Coordination of the National Security Council Ad Hoc Group on Non-Proliferation (SNEC), where it is usually resolved. Otherwise, there are further appeals, including referral to the President.<sup>33</sup>

When all agencies concur, the Executive Branch judgment is transmitted to the NRC.<sup>34</sup> The NRC can issue the license only after receiving such judgment and upon making a finding, based on assurances received, that the export criteria and other statutory requirements are met.<sup>35</sup> If the NRC does not issue the license because it is unable to make the statutory determinations, it must refer the application to the President who, upon making a finding that withholding the export will be "seriously prejudicial to the achievement of United States non-proliferation objectives, or would otherwise jeopardize the common defense and security," may authorize the export by Executive Order.<sup>36</sup> The President may also issue such an Executive Order when there has been no NRC action on an application.<sup>37</sup> The export under such an Executive Order may not occur until the President has notified the Congress and sixty days of continuous session have transpired. The export "shall not occur" if, during this period, Congress adopts a concurrent resolution of disapproval.<sup>38</sup> This procedure was followed in 1978 and 1980 with respect to the applications for export of reactor fuel and components to India.<sup>39</sup>

31. *Id.* § 1(g).

32. 42 U.S.C.A. § 2155(a)(1) (Supp. 1980) provides that no license may be issued by the NRC until it "has been notified by the Secretary of State that it is the judgment of the Executive Branch . . ." See also S. REP. NO. 467, 95th Cong., 1st Sess. 12 (1977).

33. Procedures, *supra* note 27, pt. A, § 5.

34. 42 U.S.C.A. § 2155(a)(1) (Supp. 1980).

35. *Id.*

36. *Id.* § 2155(b)(2).

37. *Id.* The President may so act if the NRC has not acted within a statutory time period, *i.e.*, 120 days after receipt of the Executive Branch judgment, unless further proceedings are initiated by the NRC, "upon a finding that further delay would be excessive and upon making the findings required for such Presidential authorization under this subsection . . ." *Id.*

38. *Id.*

39. 124 CONG. REC. H6517-31 (1978) (House disapproval of resolution of disap-

### B. *Requirements for Obtaining an Export License*

Although the procedures for obtaining an export license are generally the same for applications for different categories of items, the statutory requirements which must be met vary. Generally, exports involving major cooperation require more stringent criteria than that applied to exports of less significant items. Thus, the export of any source or special nuclear material, or a production or utilization facility<sup>40</sup> requires an agreement for cooperation,<sup>41</sup> and determinations that the export is not inimical to the common defense and security. In addition, it must be determined that explicit statutory criteria in sections 127 and 128 of the Atomic Energy Act are met.<sup>42</sup> The export of a uranium fuel fabrication plant, components, deuterium, or graphite, however, requires only a determination that the export is not inimical to the common defense and security and that the less comprehensive criteria of section 109b of the Atomic Energy Act be met.<sup>43</sup> The export of by-product material requires only a determination by the NRC that the export is not inimical to the common defense and security.<sup>44</sup> It should be noted that equipment can often contain technology subject to additional export controls which must be met as well.<sup>45</sup> Also, as a matter of policy, the export of certain sensitive equipment and technology has been restricted.

#### 1. *Agreements for Cooperation*

The United States currently has agreements for cooperation with nineteen states, the European Atomic Energy Community (EURATOM), and the IAEA.<sup>46</sup> The NNPA directed the President to seek to renegotiate existing agreements in order to obtain the additional controls which the law now requires for new agree-

---

proval); 126 CONG. REC. S13288 (daily ed. Sept. 24, 1980) (Senate disapproval of resolution of disapproval).

40. See note 22 *supra*. For a discussion of "source or special fissionable material," see note 10 *supra*.

41. See note 18 *supra*.

42. 42 U.S.C.A. §§ 2155, 2156, 2157 (Supp. 1980). For a discussion of the criteria enumerated in §§ 127-128, see notes 59-65 *infra* and accompanying text.

43. 42 U.S.C.A. § 2139(b) (Supp. 1980).

44. *Id.* § 2155(a).

45. Thus, for example, the less stringent conditions which apply to components would be only a part of the total requirements which must be met in the case of the export of a component of an enrichment plant.

46. See note 18 *supra*.

ments.<sup>47</sup> Since the enactment of the NNPA three new or amended agreements have entered into force,<sup>48</sup> and four other new agreements have been signed and are awaiting ratification.<sup>49</sup>

Nuclear cooperation can take place under a bilateral agreement for cooperation or, in the case of an IAEA member state, through the United States-IAEA agreement.<sup>50</sup> All cooperation by

47. 42 U.S.C.A. § 2153c(a) (Supp. 1980).

48. United States Agreements with Canada have been amended. *See Agreement for Cooperation on Civil Uses of Atomic Energy, signed June 15, 1955, United States—Canada, 6 U.S.T. 2595, T.I.A.S. No. 3304; as amended by: Agreement, signed June 26, 1956, 8 U.S.T. 275, T.I.A.S. No. 3771; Agreement, signed May 22, 1959, 10 U.S.T. 1293, T.I.A.S. No. 4271; Agreement, signed June 11, 1960, 11 U.S.T. 1780, T.I.A.S. No. 4518; Agreement, signed May 25, 1962, 13 U.S.T. 1400, T.I.A.S. No. 5102, Protocol Amending the Agreement for Cooperation Concerning Civil Uses of Atomic Energy, signed April 23, 1980 — U.S.T. —, T.I.A.S. No. 97-59. See also H.R. DOC. NO. 304, 96th Cong., 2d Sess. (1980).*

Similarly, United States agreements with the IAEA have been amended. *See Agreement for Cooperation in the Civil Uses of Atomic Energy, signed May 11, 1959, United States—IAEA, 10 U.S.T. 1424, T.I.A.S. No. 4291; extended and amended by Agreement, signed Feb. 12, 1974, 25 U.S.T. 1199, T.I.A.S. No. 7852; Second Amendment to Agreement for Nuclear Cooperation, signed Jan. 14, 1980, United States—IAEA, — U.S.T. —, T.I.A.S. No. 97-62. See also S. REP. NO. 658, 96th Cong., 2d Sess. (1980).*

The United States Agreements with Australia have been superseded. *See Agreement for Cooperation Concerning Civil Uses of Atomic Energy, signed June 22, 1956, United States—Australia, 8 U.S.T. 738, T.I.A.S. 3830; extended and amended by Agreement, signed Sept. 14, 1960, 12 U.S.T. 155, T.I.A.S. No. 4687; Agreement, signed April 11, 1967, 18 U.S.T., 400 T.I.A.S. No. 6250; Agreement Concerning the Peaceful Uses of Nuclear Energy, signed July 27, 1979, United States—Australia, — U.S.T. —, T.I.A.S. No. 98-93. See also H.R. DOC. NO. 169, 96th Cong., 1st Sess. (1979).*

49. New United States agreements with Indonesia, Colombia, Peru, and Morocco have been signed, reviewed by the Congress, and are now awaiting completion of ratification proceedings. *See Agreement for Cooperation Concerning Peaceful Uses of Nuclear Energy, done June 30, 1980 United States—Indonesia, — U.S.T. —, T.I.A.S. No. —, reprinted in H.R. DOC. NO. 338, 96th Cong., 2d Sess. (1980); Agreement Concerning Civil Uses of Nuclear Energy, signed Jan. 8, 1981, United States—Colombia, — U.S.T. —, T.I.A.S. No. —, reprinted in H.R. DOC. NO. 9, 97th Cong. 1st Sess. (1981); Agreement Concerning the Peaceful Uses of Nuclear Energy, done June 26, 1980, United States—Peru, — U.S.T. —, T.I.A.S. No. —, reprinted in H.R. DOC. NO. 336, 96th Cong., 2d Sess. (1980); Agreement on Peaceful Uses of Nuclear Energy, done May 30, 1980. United States—Morocco, — U.S.T. —, T.I.A.S. No. —, reprinted in H.R. DOC. NO. 321, 96th Cong., 2d Sess. (1980).*

50. Agreement for Cooperation signed May 11, 1959, United States—International Atomic Energy Agency (IAEA), 10 U.S.T. 1424, T.I.A.S. No. 4291; Agreement Amending and Extending the Agreement of May 11, 1959, signed Feb. 12, 1974, 25 U.S.T. 1199, T.I.A.S. No. 7852. For a subsequent amendment not yet published, see S. REP. NO. 658, 96th Cong., 2d Sess. 1 (1980).

the United States with the ten states which are a part of the European Community is undertaken through the United States-EURATOM agreements.<sup>51</sup> Requirements for cooperation, with one exception for EURATOM,<sup>52</sup> are essentially the same. The United States has not entered into a new agreement for cooperation with a state not party to the NPT since 1972.<sup>53</sup>

The United States has a program to negotiate new agreements for cooperation, and to renegotiate existing ones. By statute this activity is undertaken by the Secretary of State, with the technical assistance and concurrence of the Secretary of Energy and in consultation with the Director of the Arms Control and Disarmament Agency (ACDA).<sup>54</sup> As a practical matter, ACDA participates in the formulation of negotiating positions and as a member of negotiating delegations.

After a negotiated text is initialed, the proposed agreement, together with the views and recommendations of the Secretary of State, the Secretary of Energy, the NRC, and the Director of ACDA, is submitted to the President. The Director of ACDA also submits an unclassified Nuclear Proliferation Assessment Statement (NPAS) "regarding the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the agreement . . . to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose."<sup>55</sup>

---

51. See Agreement for Cooperation Concerning the Peaceful Uses of Atomic Energy, signed Nov. 8, 1958, United States—European Atomic Energy Community (EURATOM), 10 U.S.T. 75, T.I.A.S. No. 4173; Additional Agreement, signed June 11, 1960, 11 U.S.T. 2589, T.I.A.S. No. 4650; Amendment to the Additional Agreement of June 11, 1960, signed May 22, 1962, 13 U.S.T. 1439, T.I.A.S. No. 5104; Agreement Amending the Additional Agreement of June 11, 1960, as amended, signed Sept. 20, 1972, 24 U.S.T. 472, T.I.A.S. No. 7566.

52. The United States—EURATOM agreement, *supra* note 51, does not give the United States rights to approve the reprocessing of United States-origin material within the European Community. Section 127 of the Atomic Energy Act, as amended, requires as an immediate export criteria, that the United States have rights over reprocessing of United States-supplied material. EURATOM has been exempted from this criterion, *see* note 66 *infra*.

53. Adherence to the Treaty on the Non-Proliferation of Nuclear Weapons is not a requirement for such an agreement but has been encouraged in United States negotiations. The requirement of full scope safeguards, however, is a criterion which must be met. *See* note 66 *infra*.

54. 42 U.S.C.A. § 2153(a) (Supp. 1980). Such negotiations are often undertaken by designees of such principals.

55. *Id.*

After making a determination that the performance of the proposed agreement will promote the common defense and security, rather than constitute an unreasonable risk, the President authorizes its execution.<sup>56</sup> Normally, the agreement, signed by representatives of the two governments involved, is submitted to Congress together with the presidential approval and determination, the NPAS, and the concerned agencies' views.<sup>57</sup> If thereafter, during a period of sixty days of continuous session, Congress takes no action to disapprove the agreement by concurrent resolution, the agreement can then be brought into force,<sup>58</sup> usually by an exchange of diplomatic notes.

## 2. Specific Export Criteria for Major Nuclear Cooperation

Sections 127 and 128 of the Atomic Energy Act<sup>59</sup> contain the specific criteria which must be met before any export for peaceful nuclear uses of any source or special nuclear material, production or utilization facility, or sensitive nuclear technology may occur.

The criteria in section 127 require that assurances have been given to the United States that the exported material or facility (1) will be subject to IAEA safeguards as required by article III(2) of the NPT; (2) will not be used for nuclear explosive development; (3) will be subject to adequate physical security; (4) will not be retransferred without United States consent; and, in the case of material, (5) will not be reprocessed or, after irradiation, otherwise altered without United States consent.<sup>60</sup> In the case of sensitive nuclear technology, section 127 requires assurances of no-retransfer without United States consent, and no-explosive development and that the foregoing controls will apply to material or equipment produced or replicated through the use of such exported technology.<sup>61</sup> In the case of the last two criteria the assurances must also cover

---

56. *Id.* § 2153(b).

57. *Id.* § 2153(c).

58. *Id.* § 2153(d). In the case of an agreement limited to a reactor capable of producing not more than 5 thermal megawatts and its fuel, no NPAS needs to be submitted to the Congress, only to the President, and the Congress has only 30 days of continuous session to act to disapprove the agreement. *Id.* § 2153(c).

59. *Id.* §§ 2156, 2157. The text of these sections is set forth in the appendix to this Article.

60. *See* 42 U.S.C.A. § 2156 (Supp. 1980).

61. *Id.* § 2156(4).

special nuclear material produced by the exported material,<sup>62</sup> in the case of the first three criteria the assurances must also cover special nuclear material produced by the exported material.<sup>63</sup> In addition, the assurances for the first two criteria must be retroactive to cover material or equipment previously exported pursuant to an agreement for cooperation.<sup>64</sup>

The criterion in section 128 now requires, as a condition of supply, that a recipient state have all of its peaceful nuclear activities under IAEA safeguards.<sup>65</sup> This includes indigenous activities as well.

These criteria for major nuclear cooperation are met by commitments under the applicable agreement for cooperation although the physical security assurance is met through an exchange of notes. The United States does not have reprocessing control over exports to EURATOM, but cooperation with EURATOM nations is continuing under a presidential waiver provided in the Atomic Energy Act.<sup>66</sup> In addition to satisfying the specific export criteria, a determination must be made that "the export will not be inimical to the common defense and security."<sup>67</sup>

In addition, no nuclear export can be made to any state which engages in certain activities proscribed by section 129 of the Atomic Energy Act.<sup>68</sup> These activities include detonation of a nuclear explosive device, material breach of certain agreements, and engaging in certain actions directly related to weapons acquisitions or which have a weapons-related motivation.<sup>69</sup>

---

62. *Id.* §§ 2156(4), (5).

63. *Id.* §§ 2156(1), (2), (3).

64. *Id.* §§ 2156(1), (2).

65. *Id.* §§ 2157(a)(1), (b).

66. *Id.* § 2155(a)(2). The statute provides for an initial exemption from this criterion which expired on March 9, 1980 and was extended until March 10, 1981, Exec. Order No. 12193, 45 Fed. Reg. 9885 (1980). On Feb. 24, 1981 the exemption was extended a second time to March 10, 1982 by Exec. Order No. 12295, 46 Fed. Reg. 14,113 (1981).

67. 42 U.S.C.A. § 2155(a)(1) (Supp. 1980). This requirement is often referred to as the "non-inimicality" finding, *see* note 42 *supra* and accompanying text. In lieu of making a non-inimicality finding, the Executive Branch, under this statute, may find that "any export in the category to which the proposed export belongs would not be inimical to the common defense and security because it lacks significance for nuclear explosive purposes." 42 U.S.C.A. § 2155(a)(1) (Supp. 1980).

68. 42 U.S.C.A. § 2158(2)(A)-(C) (Supp. 1980). The text of this section is set forth in the appendix to this Article.

69. *Id.* § 2158(1)(A)-(D).

### 3. Specific Export Criteria for Other Nuclear Cooperation

Section 109b of the Atomic Energy Act directs the NRC, after consultations with ACDA and the Departments of State, Energy and Commerce, to determine "which component parts . . . and which other items or substances are especially relevant from the standpoint of export control because of their significance for nuclear explosive purposes."<sup>70</sup> The NRC made such a determination<sup>71</sup> concerning parts and components especially designed or prepared for use in a production or utilization facility, and heavy water and nuclear grade graphite.<sup>72</sup> Section 109b contains the criteria which must be met before any export of items subject to section 109b may occur. Assurances must have been given to the United States that the exported item will trigger<sup>73</sup> IAEA safeguards, will not be used for any explosive purpose and will not be retransferred without United States consent.

### 4. Policy Determination

In addition to the legal requirements for exports, President Carter established substantial guidance to govern the export of especially sensitive items: plutonium, highly enriched uranium (HEU), sensitive nuclear technology or plutonium fabrication technology.<sup>74</sup> This was designed to discourage the use of weapons-useable material as fuel, and to limit the spread of the sensitive nuclear technology<sup>75</sup> which provides direct access to weapons-useable

70. *Id.* § 2139(b).

71. *See* 10 C.F.R. § 110 (1980).

72. These components exclude four categories of "major components" of reactors, *e.g.*, the pressure vessel, which because of their significance are treated as reactors for export control purposes. 10 C.F.R. § 110.2(ss) (1980). Heavy water and graphite are moderator material essential to the operation of reactors utilizing unenriched uranium.

73. "Trigger" means that while the item itself will not be directly subject to safeguards its use with source or special nuclear material, and in some cases in a nuclear facility, will "trigger" application of safeguards with respect to such material or facility.

74. Factsheet on the Proposed Nuclear Non-Proliferation Policy Act of 1977, April 27, 1977, *reprinted in* 13 WEEKLY COMP. OF PRES. DOC. 611-13 (April 27, 1977). Such procedures for Presidential approval were established as a matter of policy by President Carter, and would not necessarily be continued by the new administration.

75. Sensitive nuclear technology is defined in the Nuclear Non-Proliferation Act as:

[A]ny information (including information incorporated in a production or



material. President Carter required that exports of plutonium greater than one kilogram be approved directly by him, and that exports of HEU greater than fifteen kilograms be approved directly by him after completion of a technical and economic justification on the recipient's need for the HEU.

In recent years, only incidental assistance to foreign enrichment, reprocessing, and heavy water production facilities under safeguards and other conditions has been provided. Cooperation in breeder technology has been limited in scope.

### III. EXPORT OF DUAL-USE EQUIPMENT

#### A. Procedures for Obtaining an Export License

Dual-use items are items other than nuclear material and equipment, which could be of significance for nuclear explosives but which are exported for other purposes.<sup>76</sup> These items are licensed by the Commerce Department pursuant to section 309(c) of the NNPA<sup>77</sup> and the Export Administration Act of 1979.<sup>78</sup>

Dual-use items are listed in the Nuclear Referral List contained in the Commerce Department regulations,<sup>79</sup> and include commodities which could be of direct or indirect use in the production of special nuclear material, nuclear explosive development and testing, *e.g.*, state-of-the-art computers, flash x-rays, lasers, or high-speed cameras.

To obtain an export license, an application is filed with the Commerce Department.<sup>80</sup> Any application for an item on the Nuclear Referral List is generally referred to the Department of Energy for technical review, and the Department of Energy will concur in the proposed export if no proliferation problem is present.

---

utilization facility or important component part thereof) which is not available to the public and which is important to the design, construction, fabrication, operation or maintenance of a uranium enrichment or nuclear fuel reprocessing facility or a facility for the production of heavy water, but shall not include Restricted Data controlled pursuant to chapter 12 of the 1954 Act.

22 U.S.C. § 3203(a)(6) (Supp. III 1979).

76. See note 20 *supra*.

77. 42 U.S.C.A. § 2139a (Supp. 1980).

78. Export Administration Act of 1979, Pub. L. No. 96-72, 93 Stat. 503 (codified at 50 U.S.C. App. 2401 (Supp. III (1979))).

79. 15 C.F.R. § 378 (1980).

80. 15 C.F.R. §§ 372.5, 378.6 (1980).

In such cases the Commerce Department will issue the license; however, applications which, in the view of the Department of Energy or the Commerce Department, raise policy considerations or other concerns are referred to the SNEC for review by the concerned Executive Branch agencies and the NRC.<sup>81</sup> The SNEC provides the Department of Energy with guidance concerning the type of cases which should receive full review. Any disagreements with respect to approval of the application are settled using the same dispute settlement procedures as for consideration of NRC licenses.<sup>82</sup>

#### B. *Requirements for Obtaining an Export License*

There are no express statutory criteria which need to be met in the licensing of dual-use items. The SNEC, however, has established precedence and policy guidance on exports for sensitive facilities and exports to countries of proliferation concern. When evaluating an export license application for dual-use equipment, the SNEC considers (a) the stated end-use; (b) the sensitivity of the particular item and its availability elsewhere; (c) the assurances given in the particular case; and (b) foreign policy and national security considerations.<sup>83</sup>

### IV. *EXPORT OF NUCLEAR TECHNOLOGY*

An export of nuclear technology<sup>84</sup> must be either authorized by the Secretary of Energy or specifically authorized in an agreement for cooperation.<sup>85</sup> If the technology is not classified as Restricted Data or does not relate to reprocessing, enrichment, heavy water production, or plutonium fuel fabrication, it may be exported under a general authorization contained in Department of Energy regulations other than to nations in the Soviet bloc or nations to

---

81. Procedures, *supra* note 26, pt. F.

82. See note 32 *supra*.

83. 45 Fed. Reg. 43,142-43 (1980) (to be codified in 5 C.F.R. § 378.4).

84. The term "nuclear technology" is not defined in the Atomic Energy Act; however, its export is controlled by restricting the production of special nuclear material abroad by any person, defined at 42 U.S.C. § 2014(s) (1976), generally any entity subject to United States jurisdiction, except the Department of Energy. See 42 U.S.C.A. § 2077(b) (Supp. 1980). The term includes all such technologies ranging from the most benign to the most sensitive, *i.e.*, those in the category of Restricted Data, for which a special agreement for cooperation and Presidential determination is needed.

85. *Id.* § 2077(b).

which all United States exports are restricted generally.<sup>86</sup> In the case of any proposed export of sensitive nuclear technology, the export criteria in sections 127 and 128 of the Atomic Energy Act must be satisfied.<sup>87</sup>

When a specific authorization by the Secretary of Energy is sought, he must first determine that the activity for which the export will be utilized "will not be inimical to the interest of the United States."<sup>88</sup> When a request for such an authorization is received, it is distributed by the Department of Energy to ACDA, the Departments of State, Commerce, and Defense, and the NRC for review in accordance with substantially the same procedures used for consideration of NRC licenses.<sup>89</sup> If unanimous concurrence is not obtained, similar dispute resolution procedures are also available; however, in the case of such authorizations, the Secretary of Energy by statute may act after consultation with the concerned agencies and with the concurrence of the State Department.<sup>90</sup>

#### V. SUBSEQUENT ARRANGEMENTS

Subsequent arrangements are defined by section 131 of the Atomic Energy Act as "arrangements entered into by any agency or department of the United States Government with respect to cooperation with any nation or group of nations (but not purely private or domestic arrangements) involving [nuclear supply contracts, approvals for retransfer under an agreement for cooperation, arrangements for physical security, safeguards, or the storage or disposition of irradiated fuel elements] and any other arrangements which the President finds to be important from the standpoint of preventing proliferation."<sup>91</sup>

It is through the subsequent arrangement process that the United States exercises its consent rights in agreements for cooperation over retransfer and reprocessing of nuclear material and equipment subject to such agreements, and enters into enrichment and other supply contracts<sup>92</sup> and safeguards arrangements.

---

86. 10 C.F.R. § 810.7 (1980).

87. 42 U.S.C.A. §§ 2156, 2157 (Supp. 1980); for a discussion of the criteria in §§ 127-128, see note 59 *supra*.

88. 42 U.S.C.A. § 2077(b)(2) (Supp. 1980).

89. Procedures, *supra* note 27, pt. D.

90. 42 U.S.C.A. § 2077(b)(2) (Supp. 1980).

91. *Id.* § 2160(a)(2)(A)-(G).

92. The Department of Energy operates all United States enrichment facilities.

A request for a subsequent arrangement is filed with the Department of Energy or in certain cases initiated by the Department of Energy which transmits the request to ACDA, the Departments of State, Commerce, and Defense, and the NRC.<sup>93</sup> No later than fifteen days after receipt of each request the five agencies must review the request and provide the Department of Energy with preliminary views, including whether the request will involve more extensive consideration than normal or whether additional information is required.<sup>94</sup> Thereupon, within fifteen days the Department of Energy prepares and transmits to the other agencies its proposed subsequent arrangement or other course of action.<sup>95</sup> Within twenty days of receipt of a subsequent arrangement proposed by the Department of Energy, all agencies must provide written views to the Office of Nuclear Affairs at the Department of Energy.<sup>96</sup> The ACDA response must state whether it intends to prepare an NPAS, which in the case of a subsequent arrangement may be prepared if, in the Director's view, a proposed subsequent arrangement might significantly contribute to proliferation.<sup>97</sup>

After receipt of all agency views and, if necessary, the NPAS, the Secretary of Energy with the concurrence of the Secretary of State shall decide whether to enter into the proposed subsequent arrangement.<sup>98</sup> This decision, along with the determination of the Secretary of Energy that the arrangement will not be inimical to the common defense and security, must be published in the Federal Register.<sup>99</sup> Subsequent arrangements for approval of re-

---

An enrichment services contract is concluded between the Department of Energy and foreign or domestic utilities or other entities whereby the Department of Energy agrees to enrich nuclear material for the utility. Enrichment is the process whereby the percentage of the fissionable isotope of uranium U-235 is increased relative to the non-fissionable isotope U-238. Uranium in nature contains .7% U-235. For use as nuclear fuel in power reactors the U-235 must be increased to 3%. Many research reactors utilize fuel enriched to 93% U-235. An enrichment services contract is only a commitment to enrich material and does not include a commitment to provide the nuclear material for enrichment or to export the material to the foreign utility. Other supply contracts include agreements for the sale of nuclear material by the United States.

93. Procedures, *supra* note 27, pt. E, § 1(a).

94. *Id.* § 1(b).

95. *Id.* § 1(c).

96. *Id.* § 1(d).

97. *Id.*; 42 U.S.C.A. § 2160(a)(2) (Supp. 1980).

98. 42 U.S.C.A. § 2160(a)(1) (Supp. 1980).

99. *Id.*

processing or retransfer of plutonium require a further determination by the Secretary of Energy that such activities "will not result in a significant increase in the risk of proliferation;" and must be reported to the Congress and not take effect for a period thereafter of fifteen days of continuous session.<sup>100</sup> Any subsequent arrangement involving the transfer of spent-power reactor fuel to the United States is subject to a special congressional review mechanism set forth in section 131.<sup>101</sup>

If any disagreements arise during the Executive Branch processing of a subsequent arrangement, they are settled using the same procedures as for NRC licenses.<sup>102</sup>

### CONCLUSION

The United States has sought to cooperate with other nations in the peaceful application of nuclear energy without increasing the risk of nuclear weapons proliferation. To that end, it has established a legal and procedural framework for nuclear exports which ensures that material, equipment, and technology exported from the United States for use in peaceful nuclear activities do not contribute to proliferation. This framework also ensures that United States international obligations are met and that nuclear exports do not harm United States national security interests.

Nuclear export control is clearly only part of the United States effort to prevent the worldwide spread of nuclear explosives. It is, however, an important part of international efforts to prevent proliferation, and has been a consistent element of United States efforts since the 1940's.

---

100. *Id.* § 2160(b). There is an exemption for a determination of emergency by the President. *Id.* § 2160(b)(1).

101. *Id.* § 2160(f).

102. Procedures, *supra* note 27, pt. A, § 6.

## APPENDIX

## 42 U.S.C.A. §§ 2156-2158 (Supp. 1980)

## § 2156. Criteria governing United States nuclear exports

The United States adopts the following criteria which, in addition to other requirements of law, will govern exports for peaceful nuclear uses from the United States of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology:

(1) IAEA safeguards as required by Article III(2) of the Treaty will be applied with respect to any such material or facilities proposed to be exported, to any such material or facilities previously exported and subject to the applicable agreement for cooperation, and to any special nuclear material used in or produced through the use thereof.

(2) No such material, facilities, or sensitive nuclear technology proposed to be exported or previously exported and subject to the applicable agreement for cooperation, and no special nuclear material produced through the use of such materials, facilities, or sensitive nuclear technology, will be used for any nuclear explosive device or for research on or development of any nuclear explosive device.

(3) Adequate physical security measures will be maintained with respect to such material or facilities proposed to be exported and to any special nuclear material used in or produced through the use thereof. Following the effective date of any regulations promulgated by the Commission pursuant to section 2156a of this title, physical security measures shall be deemed adequate if such measures provide a level of protection equivalent to that required by the applicable regulations.

(4) No such materials, facilities, or sensitive nuclear technology proposed to be exported, and no special nuclear material produced through the use of such material, will be retransferred to the jurisdiction of any other nation or group of nations unless the prior approval of the United States is obtained for such retransfer. In addition to other requirements of law, the United States may approve such retransfer only if the nation or group of nations designated to receive such retransfer agrees that it shall be subject to the conditions required by this section.

(5) No such material proposed to be exported and no special nuclear material produced through the use of such material will be reprocessed, and no irradiated fuel elements containing such material removed from a reactor shall be altered in form or content, unless

the prior approval of the United States is obtained for such re-processing or alteration.

(6) No such sensitive nuclear technology shall be exported unless the foregoing conditions shall be applied to any nuclear material or equipment which is produced or constructed under the jurisdiction of the recipient nation or group of nations by or through the use of any such exported sensitive nuclear technology.

§ 2157. Additional export criterion and procedures

(a)(1) As a condition of continued United States export of source material, special nuclear material, production or utilization facilities, and any sensitive nuclear technology to non-nuclear-weapon states, no such export shall be made unless IAEA safeguards are maintained with respect to all peaceful nuclear activities in, under the jurisdiction of, or carried out under the control of such state at the time of the export.

(2) The President shall seek to achieve adherence to the foregoing criterion by recipient non-nuclear-weapon states.

(b) The criterion set forth in subsection (a) of this section shall be applied as an export criterion with respect to any application for the export of materials, facilities, or technology specified in subsection (a) of this section which is filed after eighteen months from March 10, 1978, or for any such application under which the first export would occur at least twenty-four months after March 10, 1978, except as provided in the following paragraphs:

(1) If the Commission or the Department of Energy, as the case may be, is notified that the President has determined that failure to approve an export to which this subsection applies because such criterion has not yet been met would be seriously prejudicial to the achievement of United States non-proliferation objectives or otherwise jeopardize the common defense and security, the license or authorization may be issued subject to other applicable requirements of law: *Provided*, That no such export of any production or utilization facility or of any source or special nuclear material (intended for use as fuel in any production or utilization facility) which has been licensed or authorized pursuant to this subsection shall be made to any non-nuclear-weapon state which has failed to meet such criterion until the first such license or authorization with respect to such state is submitted to the Congress (together with a detailed assessment of the reasons underlying the President's determination, the judgment of the executive branch required under section 2155 of this title, and any Commission opinion and views) for a period of sixty days of continuous session (as defined in section 2159(g) of this title) and referred to the Committee on International Relations of the House of

Representatives and the Committee on Foreign Relations of the Senate, but such export shall not occur if during such sixty-day period the Congress adopts a concurrent resolution stating in substance that the Congress does not favor the proposed export. Any such license or authorization shall be considered pursuant to the procedures set forth in section 2159 of this title for the consideration of Presidential submissions.

(2) If the Congress adopts a resolution of disapproval pursuant to paragraph (1), no further export of materials, facilities, or technology specified in subsection (a) of this section shall be permitted for the remainder of that Congress, unless such state meets the criterion or the President notifies the Congress that he has determined that significant progress has been made in achieving adherence to such criterion by such state or that United States foreign policy interests dictate reconsideration and the Congress, pursuant to the procedure of paragraph (1), does not adopt a concurrent resolution stating in substance that it disagrees with the President's determination.

(3) If the Congress does not adopt a resolution of disapproval with respect to a license or authorization submitted pursuant to paragraph (1), the criterion set forth in subsection (a) of this section shall not be applied as an export criterion with respect to exports of materials, facilities and technology specified in subsection (a) of this section to that state: *Provided*, That the first license or authorization with respect to that state which is issued pursuant to this paragraph after twelve months from the elapse of the sixty-day period specified in paragraph (1), and the first such license or authorization which is issued after each twelve-month period thereafter, shall be submitted to the Congress for review pursuant to the procedures specified in paragraph (1): *Provided further*, That if the Congress adopts a resolution of disapproval during any review period provided for by this paragraph, the provisions of paragraph (2) shall apply with respect to further exports to such state.

§ 2158. Conduct resulting in termination of nuclear exports

No nuclear materials and equipment or sensitive nuclear technology shall be exported to—

- (1) any non-nuclear-weapon state that is found by the President to have, at any time after March 10, 1978,
- (A) detonated a nuclear explosive device; or
  - (B) terminated or abrogated IAEA safeguards; or
  - (C) materially violated an IAEA safeguards agreement; or
  - (D) engaged in activities involving source or special nuclear material and having direct significance for the manufacture or ac-



quisition of nuclear explosive devices, and has failed to take steps which, in the President's judgment, represent sufficient progress toward terminating such activities; or

(2) any nation or group of nations that is found by the President to have, at any time after March 10, 1978,

(A) materially violated an agreement for cooperation with the United States, or, with respect to material or equipment not supplied under an agreement for cooperation, materially violated the terms under which such material or equipment was supplied or the terms of any commitments obtained with respect thereto pursuant to section 2153a(a) of this title; or

(B) assisted, encouraged, or induced any non-nuclear-weapon state to engage in activities involving source or special nuclear material and having direct significance for the manufacture or acquisition of nuclear explosive devices, and has failed to take steps which, in the President's judgment, represent sufficient progress toward terminating such assistance, encouragement, or inducement; or

(C) entered into an agreement after March 10, 1978, for the transfer of reprocessing equipment, materials, or technology to the sovereign control of a non-nuclear-weapon state except in connection with an international fuel cycle evaluation in which the United States is a participant or pursuant to a subsequent international agreement or understanding to which the United States subscribes;

unless the President determines that cessation of such exports would be seriously prejudicial to the achievement of United States non-proliferation objectives or otherwise jeopardize the common defense and security: *Provided*, That prior to the effective date of any such determination, the President's determination, together with a report containing the reasons for his determination, shall be submitted to the Congress and referred to the Committee on International Relations of the House of Representatives and the Committee on Foreign Relations of the Senate for a period of sixty days of continuous session (as defined in section 2159(g) of this title), but any such determination shall not become effective if during such sixty-day period the Congress adopts a concurrent resolution stating in substance that it does not favor the determination. Any such determination shall be considered pursuant to the procedures set forth in section 2159 of this title for the consideration of Presidential submissions.

