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Resources, Community, and
Economic Development Division

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March 1, 1996

The Honorable Edward J. Markey
House of Representatives

The Honorable Richard G. Lugar
Chairman, Subcommittee on
European Affairs
Committee on Foreign Relations
United States Senate

The Honorable William V. Roth
United States Senate

Nuclear trade between the United States and the European Atomic Energy Community (EURATOM)¹ has been governed since 1958 by an agreement for cooperation that expired at midnight on December 31, 1995. On November 29, 1995, the President transmitted to the Congress a proposed agreement for cooperation in the peaceful uses of nuclear energy between the United States and EURATOM.² (See enclosure I for additional information about the agreement.)

¹EURATOM currently is composed of 15 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom. We recently issued a report that provides information on the amount and value of nuclear exports to EURATOM. See Nuclear Nonproliferation: Information on Nuclear Exports Controlled by U.S.-EURATOM Agreement (GAO/RCED-95-168, June 16, 1995).

²The complete texts of the proposed agreement, the accompanying agreed minute (a separate document, but an integral part of the proposed agreement, which specifies how the agreement will be implemented), the annexes, and other attachments are reprinted in "Proposed Agreement for Cooperation in the Peaceful Uses of Nuclear Energy Between the United States of America and the European Atomic Energy Community (EURATOM)," H.R. Doc. No. 138, 104th Cong., 1st Sess. (1995).

As requested, we reviewed the proposed agreement with EURATOM to determine whether it satisfies certain requirements for nuclear cooperation agreements under the Atomic Energy Act of 1954, as amended (act). We focused our analysis on whether the proposed agreement is consistent with requirements in section 123 of the act for U.S. consent and prior approval for retransfers, reprocessing, and designation of storage facilities for U.S.-origin nuclear material. We also agreed to examine (1) whether the proposed agreement covers exports of U.S.-origin sensitive nuclear technology, (2) U.S. suspension rights under the proposed agreement, (3) provisions for safeguarding and protecting nuclear materials exported to EURATOM, and (4) the impact of the proposed agreement on the U.S. export licensing process. In addition, you asked that we discuss any other issues of importance associated with the proposed agreement.

In summary, with respect to advance U.S. approval for retransfers, reprocessing, and designation of storage facilities for U.S.-origin nuclear materials, we conclude that the proposed agreement satisfies these specific requirements of the act. Although the words "consent" and "approval" are not used, the proposed agreement uses other terms, such as "may proceed," that provide the long-term consent and approval for these activities as long as certain conditions are met. (See enclosure II.)

We also determined the following:

- The proposed agreement does not provide for the transfer of sensitive nuclear technology. (See enclosure II.)
- The proposed agreement provides that the United States (or EURATOM) may suspend the agreement. In addition to the right to suspend the agreement itself, the United States (or EURATOM) may suspend its advance long-term consent to reprocessing and alteration in the form or content of certain nuclear materials. (See enclosure II.)
- The proposed agreement provides for a range of controls over European facilities handling U.S. nuclear materials. According to State Department and Nuclear Regulatory Commission (NRC) officials, these include requirements for International Atomic Energy Agency and EURATOM safeguards and for physical protection measures meeting international standards for U.S. nuclear materials in EURATOM facilities. (See enclosure III.)

- The proposed agreement will not have any discernible impact on the U.S. export licensing process. According to NRC's Director, Division of Nonproliferation, Exports, and Multilateral Relations, the proposed agreement satisfies the licensing criteria under the Nuclear Nonproliferation Act of 1978, and the licensing criteria under the proposed agreement would remain the same as the licensing criteria under the previous agreement.

In addition, we determined that the limitations in the system for tracking U.S. nuclear materials exported to EURATOM will not be corrected under the proposed agreement. In December 1994, we reported that the U.S. system for tracking exported U.S. nuclear materials may not contain correct data on the location (facility) of these materials within foreign countries or on their current status.³ According to an official in State's Office of Nuclear Affairs, negotiations are under way to develop an administrative arrangement through which EURATOM would, among other things, annually report to the United States the amount of U.S.-origin nuclear material within EURATOM. However, this information would not show the amounts of nuclear material on a country-by-country or a facility-by-facility basis.

AGENCY COMMENTS

We provided a draft of this report to the Secretaries of State and Energy, the Director of the Arms Control and Disarmament Agency (ACDA), and the Chairman of NRC for review and comment. In general, State, ACDA, DOE, and NRC agreed with the draft report and suggested technical changes that we incorporated where appropriate.

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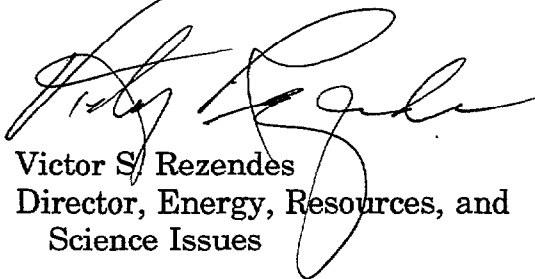
In determining whether the proposed U.S.-EURATOM agreement satisfies certain requirements for consent and approval under section 123 of the Atomic Energy Act of 1954, as amended by the Nuclear Non-Proliferation Act of 1978, we reviewed the proposed agreement and the pertinent legislation. We also reviewed other pertinent documents, including legislative analyses by ACDA, State, and Energy, which accompanied the submission of the proposed agreement to the Congress, and the combined written response of these agencies to our questions concerning the proposed agreement. We also

³Nuclear Nonproliferation: U.S. International Nuclear Materials Tracking Capabilities Are Limited (GAO/RCED/AIMD-95-5, Dec. 27, 1994).

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interviewed officials at the Departments of State and Energy and at NRC, including State's Principal Deputy Director of the Office of Nuclear Energy Affairs. We also spoke with representatives of the Nuclear Energy Institute and the Nuclear Control Institute.

As arranged with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report for 7 days. At that time, we will send copies of this report to the appropriate congressional committees, the Secretaries of State and Energy, the Director of ACDA, the Chairman of NRC, and other interested parties. If you or your staff have any questions about this report, please call me at (202) 512-3841. Major contributors to this work were Gene Aloise, Doreen S. Feldman, Susan W. Irwin, and Mario Zavala.



Victor S. Rezendes
Director, Energy, Resources, and
Science Issues

BACKGROUND

EURATOM was established in 1957 to, among other things, facilitate the development of nuclear energy, ensure a regular supply of nuclear fuel, and guarantee that nuclear materials are not diverted for purposes other than those for which they are intended. During the years in which the previous EURATOM agreement was in effect, the United States supplied significant assistance--including fuel, technologies, equipment, and services--to the civilian nuclear energy programs in EURATOM member states. This assistance, and arrangements with U.S. manufacturers for the commercial licensing of reactor technology, greatly aided the establishment of manufacturing capability in several EURATOM member states and still underlies a substantial transatlantic trade in these nuclear items, although over the years European programs have gradually reduced their reliance on nuclear supplies from the United States. The previous agreement also formed a major part of Europe's substantial nuclear cooperation with Japan, because many of the technologies and materials involved in this trade were originally supplied by the United States. The expiration of the previous agreement has halted the transfer of U.S.-origin nuclear material from the United States to EURATOM and the retransfer from Japan to EURATOM of such material.

In 1978, the Congress enacted the Nuclear Non-Proliferation Act (NNPA) , expanding controls on all nuclear exports by the United States. In particular, NNPA required foreign governments to obtain the "prior consent" of the United States before reprocessing and other sensitive activities could occur. NNPA called for negotiations to replace the existing agreement with one that conformed to NNPA's requirements. Because the previous EURATOM agreement predated these requirements, it did not require prior U.S. consent for these activities. In order to permit U.S. exports under agreements that predated NNPA and did not fully comply with all of its requirements, successive presidents annually waived NNPA's requirements.⁴

EURATOM members believed that the strict application of NNPA's requirements to their civilian nuclear programs would be an intrusion by the United States into their sovereign decisions on how to operate their nuclear fuel cycles. These fears apparently were exacerbated over the years by delays in request-by-request approvals for various activities, and they account to a large extent for the difficult and extended negotiations that ultimately resulted in the proposed EURATOM agreement.

⁴Waiver authority is found in section 126(a)(2) of the act, 42 U.S.C. 2155(a)(2).

In 1985, amendments to NNPA added new procedures for congressional consideration of proposed agreements for cooperation.⁵ The amendments provided two review periods for these agreements. The first period lasts for not less than 30 days of continuous session and contemplates consultation between the Congress and the President concerning the consistency of the proposed agreement with the requirements of the act. The second period is for 60 days of continuous session, during which the committees hold hearings and recommend whether the agreement should be approved or disapproved. The two periods of congressional review routinely have been telescoped into one 90-day period of continuous session, a practice consistent with the legislative history of the provision.⁶ If the agreement is found to be consistent with the act, it becomes effective after the expiration of the total 90-day period unless the Congress passes a joint resolution of disapproval. Agreements that do not meet all the requirements of the act must be submitted with a presidential waiver of noncomplying provisions and can enter into force only if the Congress adopts a joint resolution of approval.

⁵PL. 99-64, title III, 301(a) and (b), 99 Stat. 120, 159 and 160 (1985), 42 U.S.C. 2153(b) and (d).

⁶According to the House conference report to the bill containing these provisions, "The steps for submitting, consulting and approving nuclear cooperation agreements set forth in section 123b, as amended, need not be taken in any particular sequence . . . [T]hese amendments do not require separate submissions under section 123b and section 123d. A single submission would satisfy the law." H.R. Rep. No. 180, 99th Cong., 1st Sess., 52-53 (1985).

ANALYSIS OF SELECTED PROVISIONS
OF THE PROPOSED AGREEMENT FOR COOPERATION
BETWEEN THE UNITED STATES AND EURATOM

This enclosure provides our analysis of certain provisions of the proposed Agreement for Cooperation in the Peaceful Uses of Nuclear Energy Between the United States of America and the European Atomic Energy Community (EURATOM).⁷ Specifically, we examined whether the proposed agreement is consistent with requirements in section 123 of the Atomic Energy Act of 1954, as amended (act). Under these requirements, an agreement for cooperation must provide for the consent and prior approval of the United States for

- retransfers of U.S.-origin nuclear materials out of EURATOM,
- reprocessing or alteration in the form or content of certain weapons-usable nuclear materials within EURATOM, and
- designation of storage facilities for certain weapons-usable nuclear materials within EURATOM.

We also examined whether the proposed agreement covers exports of U.S. sensitive nuclear technology and U.S. suspension rights under the proposed agreement.

ADOPTION OF ADVANCE LONG-TERM CONSENTS
IN AGREEMENTS FOR COOPERATION

Until the mid-1980s, the United States generally entered into bilateral nuclear cooperation agreements that required request-by-request U.S. approvals for the transfer of spent U.S.-origin nuclear fuel for reprocessing and for the subsequent retransfer of separated plutonium back to a nonnuclear-weapons state. This approach changed in 1984 and 1985, when the United States entered into cooperation agreements with Sweden, Norway, and Finland, and, for the first time, used programmatic or long-term advance consents for the reprocessing of U.S.-origin nuclear material in designated facilities in England and France (both of which are nuclear-weapons states). In brief, under these 30-year agreements,

⁷The initial U.S.-EURATOM agreement was signed in 1958 and amended in 1959. An additional agreement for cooperation, signed in 1960, was amended on four occasions between 1962 and 1973. These seven documents are generally referred to collectively as "the agreement."

activities involving specified nuclear materials no longer had to receive request-by-request approvals from the United States. Rather, long-term consent for these activities was granted for the life of the agreements and could be revoked only if a cooperating nation breached its nonproliferation promises or took other actions that threatened U.S. security.

These agreements were the forerunners of the 1988 U.S.-Japan agreement,⁸ which contains advance consents and approvals that are much more comprehensive than those in the three prior agreements. For example, included in the advance consents is authority for Japan to reprocess and store U.S.-origin nuclear material within Japan, to transfer spent fuel to designated facilities in Europe for reprocessing, and to retransfer the resulting plutonium back to Japan. Not only do these consents and approvals last the life of the U.S.-Japan agreement, but they also apply to facilities in Japan that did not exist when this agreement was approved.

In January 1988, the Chairman, Committee on Foreign Affairs, House of Representatives, asked us for our views on whether the advance consents and approvals in the then-proposed U.S.-Japan agreement satisfied the requirements of section 123 of the act. In our February 29, 1988, opinion to the Chairman, we noted that section 123 of the act does not require consents to be in any particular form. Our review of the act and its legislative history led us to believe that the Congress had anticipated that approvals for these activities would be provided on a request-by-request basis. Nevertheless, we found no provision in this legislation that expressly limits approvals associated with these activities to any particular process or that specifically precludes the inclusion of advance, long-term approvals for these activities in cooperation agreements. However, on the basis of an analysis of the structure of the relevant legislation, its legislative history, the specific terms of the proposed cooperation agreement and its integral implementing agreement, and facts relevant to the particular circumstances of nuclear commerce between the United States and Japan at that time, we concluded that the proposed agreement with Japan did not set forth the guaranties of consent and prior approval over retransfer and reprocessing activities required by subsections 123(a)(5) and (7) of the act.

In congressional action on the proposed agreement with Japan, the Senate Committee on Foreign Relations reported out a Senate concurrent resolution

⁸The Agreement for Cooperation between the Government of Japan and the Government of the United States of America Concerning Peaceful Uses of Nuclear Energy was signed in 1987 and entered into force in 1988.

stating that the programmatic consent to be granted by the proposed cooperation agreement was not consistent with the act and that the President must renegotiate the draft agreement or resubmit it with an exemption of statutory requirements for affirmative action by the Congress.⁹ On March 21, 1988, by a vote of 30 to 53, the Senate rejected a formal joint resolution of disapproval, and the agreement thus became effective.

In the years following the approval of the U.S.-Japan agreement, there has been considerable public discussion about the possible precedent established by the advance consent provisions of that agreement, particularly concerning the likelihood that similar provisions would be included in a new U.S.-EURATOM agreement. However, during the nearly 8 years since the U.S.-Japan agreement entered into force, the Congress has not amended the act either to prohibit or in any way to limit the use of advance consents and approvals in subsequent cooperation agreements.

Proposed Agreement Provides Advance Consent for Retransfers, Reprocessing, and Storage of U.S.-Origin Nuclear Materials

The proposed agreement with EURATOM, together with its related documents, is highly complex in both its structure and content, the result of a series of arduous negotiations between the parties.¹⁰ Section 123 neither mandates a means of incorporating the required consents and approvals into an agreement nor requires the consents to be in any particular form. The terms "consent" and "approval" are not explicitly stated in the text of either the proposed agreement or the agreed minute that is an integral part of that agreement. The proposed agreement and agreed minute use other language of authorization, such as "may proceed," "may be made," and "may be carried out." A system of mutual consent and approval for the duration of the proposed agreement can be found by construing certain

⁹Although there was no congressional challenge to the agreements with Sweden, Norway, or Finland, three members of Congress and six public interest organizations filed suit in U.S. District Court contesting the authority of the executive branch to approve in advance the retransfer or reprocessing of spent fuel. The lawsuit was dismissed on the basis that the issue raised was a nonjusticiable political question. Cranston v. Reagan, 611 F. Supp. 247 (D.D.C. 1985).

¹⁰The proposed agreement has an initial term of 30 years and will continue in force thereafter for additional periods of 5 years each. Either party may terminate the proposed agreement at the end of the initial 30-year period or at the end of any subsequent 5-year period by giving the other party 6 months' written notice.

provisions of article 8 of this agreement together with related provisions of the agreed minute.

Article 8, together with the provisions of the agreed minute, describes specified nuclear fuel cycle activities, such as retransfers, reprocessing, and storage of U.S.-origin nuclear material, to be carried out by both parties under the proposed agreement as long as specified conditions continue to be met. The advance consents and approvals for the different types of activities are established in article 8 together with associated paragraphs of the agreed minute. The specific provisions of article 8 and the agreed minute are discussed more fully later in our analysis of particular requirements of section 123 of the act.

In brief, paragraph 1 of article 8 addresses advance consents and approvals for retransfers to third countries, under procedures in the agreed minute, for three different purposes. In addition to retransfers, paragraph 1 covers the enrichment of uranium, irradiation of specified nuclear material, and "postirradiation examination" within EURATOM.

Paragraph 2 of article 8 addresses advance consents and approvals for reprocessing specified nuclear materials in listed facilities within EURATOM. Procedures for making changes in these programs are spelled out in the agreed minute. Also addressed in paragraph 2 are the alteration in form or content of plutonium, uranium-233, and high enriched uranium (HEU) in designated facilities within EURATOM. The agreed minute details under what conditions the United States could suspend its approval of these activities.

Paragraph 3 of article 8 of the proposed agreement addresses advance approval of the storage, in facilities that meet specified standards, of plutonium, uranium-233, and HEU. (See table I.1 for sections in the agreement for retransfers, reprocessing, and designation of storage facilities that satisfy section 123's requirements).

Table I.1: Provisions in Agreement that Satisfy Section 123's Consent and Approval Requirements

Action	Agreement	Section 123 Provision
Retransfers	Article 8(1)(C)/ paragraphs 2-5 of agreed minute	Section 123(a)(5)
Reprocessing	Article 8(2)/ paragraphs 6-8 of agreed minute	Section 123(a)(7)
Designation of Storage Facilities	Article 8(3)	Section 123(a)(8)

Certain Requirements of Section 123 in the Proposed Agreement

Retransfers

Section 123(a)(5) of the act requires that an agreement for cooperation provide for the consent of the United States prior to the retransfer of any material transferred under the agreement beyond the jurisdiction or control of the cooperating party, in this case, EURATOM. 42 U.S.C. 2153(a)(5).¹¹

The section 123(a)(5) retransfer requirement is dealt with in article 8(1)(C) of the proposed agreement (those materials that can be retransferred) and paragraphs 2 through 5 of the agreed minute (the procedures under which retransfers can take place). Article 8(1)(C) of the proposed agreement and paragraphs 2 through 5 of the agreed minute create a system governing retransfers of various categories of materials and equipment transferred under the proposed agreement, as well as of special nuclear materials produced through the use of such materials or equipment. Under this system, the cooperating parties provide each other with initial lists of the countries to which retransfers under this article may be made by the other party. Criteria of eligibility for inclusion on the list are specified in paragraph 2 of the agreed minute. Retransfers to countries not listed may be

¹¹For purposes of the proposed agreement, EURATOM is considered a single party, and the provisions of the agreement apply for all member states of EURATOM. Since a retransfer is the movement of covered items to third countries outside EURATOM, the movement of such items between member states is not a retransfer and is permissible under either the act or agreement.

considered by the parties on a case-by-case basis, but advance consent is not provided by the agreement, as it is when the country is on the appropriate list.

Article 8 (1)(C) permits retransfers to third countries, "according to procedures set out in the Agreed Minute," of

"(i) low enriched uranium, non-nuclear material, equipment and source material transferred pursuant to this Agreement or of low enriched uranium produced through the use of nuclear material or equipment transferred pursuant to this Agreement, for nuclear fuel cycle activities other than the production of HEU;

"(ii) irradiated nuclear material transferred pursuant to this Agreement or irradiated nuclear material used in or produced through the use of non-nuclear material, nuclear material or equipment transferred pursuant to this Agreement, for storage or disposal not involving reprocessing;

"(iii) other nuclear material transferred pursuant to this Agreement and other special fissionable material produced through the use of non-nuclear material, nuclear material or equipment transferred pursuant to this Agreement, for other fuel cycle activities including those specified in paragraphs 2 and 3 of this Article."

These subparagraphs of article 8 provide that the designated materials transferred under the proposed agreement can be retransferred according to the procedures in the agreed minute. Whether these subparagraphs constitute the required U.S. approvals for retransfers of these materials depends, therefore, on how they may be construed in conjunction with the procedures in paragraphs 2 through 5 of the agreed minute.

Paragraph 2 of the agreed minute provides that when the proposed agreement enters into force, the parties shall exchange lists of third countries to which retransfers under subparagraph (i) "may be made" by the other party.¹² For a third country to remain eligible for inclusion on these lists, it must, at a minimum, satisfy specified criteria: It must have made effective nonproliferation

¹²Paragraph 5 of the agreed minute has an exception from the requirement to be on a list for retransfers from EURATOM to Japan. These retransfers are permitted as long as the proposed agreement remains in force, provided the events described in paragraph 8 of the agreement do not occur. See the discussion of U.S. suspension rights, below.

commitments; have effective physical protection measures by being in compliance with the conditions in a specified circular; and be a party to a nuclear cooperation agreement with the United States.

Paragraph 3 of the agreed minute provides procedures for retransfers under subparagraphs (ii) and (iii). According to the participating agencies, no such retransfers are being considered at this time, and no lists will be exchanged upon the entry into force of the proposed agreement. Retransfers under subparagraphs (ii) and (iii) may be requested in the future. For retransfers under subparagraphs (ii) and (iii), EURATOM would be required to provide the United States with a list of third countries to which such retransfers may be made. For countries on this list to be included, consideration would have to be given to specified additional criteria relating to safety and nonproliferation.

Paragraph 4 of the agreed minute provides that either party may add eligible third countries to its own list at any time. After consultations, either party may delete countries from its own list but may not be do so to gain commercial advantage or to interfere with the peaceful nuclear programs of the other party. Paragraph 4 also provides that retransfers to third countries not included on the lists may be considered on a case-by-case basis. In this connection, ACDA's assessment states that the "U.S. would be required to use the subsequent arrangement procedures of section 131 of the Act for approval of such retransfers."¹³

These procedures, when construed together, establish the approved way of retransferring to third countries the several kinds of materials and equipment transferred under the agreement. Although article 8 of the proposed agreement does not use the terms "consent" or "approval," the agreed minute states that the lists of third countries are those to which retransfers "may be made" pursuant to article 8(1)(C)(i). The language that these retransfers "may be made" provides advance consent by the United States for the transfers under article 8(1)(C)(i). Under these procedures, only retransfers allowed by subparagraph (i) of article 8(1)(C) are approved in advance. Retransfers under subparagraphs (ii) and (iii) are subject to future requests and approvals, as discussed above.

Reprocessing or Alteration in Form or Content

Section 123(a)(7) of the act requires an agreement for cooperation to provide for prior U.S. approval for the cooperating party (EURATOM) to reprocess material

¹³ACDA Assessment, at II-12, H.R. Document 138, at 105.

transferred under the agreement, or material used in or produced through the use of any material or production or utilization facility so transferred. Section 123(a)(7) also requires prior U.S. approval for the enrichment or alteration in form or content of certain nuclear materials.

This requirement is also dealt with in article 8 of the proposed agreement, which, as noted above, creates the system under which the parties consent in advance to certain fuel cycle activities. Under article 8(2), each party grants the other consent to reprocess, or alter in form or content, certain nuclear material transferred under the agreement, to recover plutonium in facilities forming part of a "delineated nuclear program" as described in annex A¹⁴ to the agreement.

Article 8(2) provides as follows:

"The following nuclear fuel cycle activities may be carried out pursuant to this Agreement within the territorial jurisdiction of either Party in facilities forming part of the delineated peaceful nuclear programs described in Annex A:

"(A) Reprocessing of nuclear material transferred pursuant to this Agreement and nuclear material used in or produced through the use of non-nuclear material, nuclear material or equipment so transferred;

"(B) Alteration in form or content of plutonium, uranium 233 and high enriched uranium transferred pursuant to this Agreement or used in or produced through the use of non-nuclear material, nuclear material or equipment so transferred."

The phrase "may be carried out" provides advance consent for reprocessing and alteration in form or content, subject to the condition that the reprocessing be carried out "pursuant to this Agreement." That is, the U.S. consent to reprocessing is granted within the territorial jurisdiction of EURATOM at facilities enumerated in annex A.¹⁵

¹⁴Annex A to article 8 contains a list of four facilities within EURATOM for reprocessing--two in France and two in the United Kingdom.

¹⁵Officials of ACDA and the other participating agencies with whom we spoke are confident that the United States has enough information about the EURATOM facilities (particularly about the safeguards procedures in effect) to be assured that they satisfy "applicable statutory criteria, both for new agreements for cooperation and the subsequent arrangement procedure." ACDA Assessment, at II-17, H.R.

Implementing provisions for reprocessing and alteration under article 8(2) are found in paragraphs 6 and 7 of the agreed minute. Paragraph 6 of the agreed minute allows either party to make changes to the peaceful nuclear programs delineated in annex A by notifying the other party in writing in accordance with the procedures set forth in the agreed minute and receiving a written acknowledgement. Paragraph 7 sets forth the requirements of the notification and acknowledgement, including specific confirmations with respect to safeguards arrangements and physical protection measures for a new facility. This paragraph also provides that intended changes "shall receive the fullest possible consideration during consultations under the Agreement, which may include an exchange of information and views on safeguards matters of mutual interest."¹⁶

These paragraphs of the agreed minute provide that although EURATOM may add future facilities to be covered by the advance consent, the United States must be given notice and an opportunity to consult, and the new facilities must be subject to safeguards and physical protection requirements. Paragraph 7(C) of the agreed minute provides that either party may delete a facility from its own delineated program by notifying the other party of the facility's name and other available relevant information.

An additional control over reprocessing and alteration in form or content is the right of the United States to suspend its consent for these activities. Paragraph 8(A) of the agreed minute gives the United States the right to suspend its consent to these activities on the basis of objective evidence that their continuation would entail a serious threat to its security or a significant increase in the risk of nuclear proliferation resulting from a situation of the same or greater degree of seriousness as would result from the situations specified on an illustrative list.¹⁷

Designation of Storage Facilities

Section 123(a)(8) of the act requires an agreement for cooperation to provide for advance U.S. approval of facilities for the storage of plutonium, U-233, or HEU transferred from the United States under the agreement or recovered from any

Document 138, at 110.

¹⁶Agreed minute, par. 7, at 38, H.R. Document 138, at 42.

¹⁷See the discussion of U.S. suspension rights, below.

source or special nuclear material so transferred or from any source or special nuclear material used in any facility so transferred.¹⁸

This requirement is addressed in article 8(3) of the proposed agreement. Paragraph 3 of article 8 (nuclear fuel cycle activities) provides for the storage of these materials as follows:

"3. The following nuclear materials:

"(i) plutonium, uranium-233 and high enriched uranium, if not contained in irradiated nuclear fuel, transferred pursuant to this Agreement;

"(ii) plutonium, uranium-233 and high enriched uranium recovered from nuclear material transferred pursuant to this Agreement;

"(iii) plutonium, uranium-233 and high enriched uranium recovered from nuclear material used in equipment transferred pursuant to this Agreement

"may be stored in facilities that are at all times subject, as a minimum, to the levels of physical protection that are set out in Annex C to IAEA document INFCIRC 254/Rev 1/Part 1 (guidelines for nuclear transfers) as it may be revised and accepted by the Parties and the Member States of the Community."

Article 8(3) also requires each party to identify its facilities on a list available to the other party. The list must be kept confidential upon the request of a party.

The phrase "may be stored" in facilities that meet certain requirements provides advance U.S. approval for the storage of plutonium, U-233, and HEU in any facilities that meet the required standards and are included in the required list. According to the participating agencies, EURATOM has provided the United States with the required list, and the United States "regards the list as satisfactory." EURATOM has requested, consistent with the proposed agreement, that its list be kept confidential. The United States has informed EURATOM that the United States will provide a copy of EURATOM's list on a confidential basis to the appropriate congressional committees for their information.¹⁹ Either party

¹⁸42 U.S.C. 2153(a)(8).

¹⁹The list of U.S. facilities is included with the materials provided to the committees with the proposed agreement.

may make changes in its list by notifying the other party in writing and receiving a written acknowledgement within 30 days after receipt of the notice.

If the requirements are not being complied with, article 8(3) sets forth procedures for specific corrective actions:

"If there are grounds to believe that the provisions of this sub-Article are not being fully complied with, immediate consultations may be called for.

"Following upon such consultations, each Party shall ensure by means of such consultations that necessary corrective measures are taken immediately. Such measures shall be sufficient to restore the levels of physical protection referred to above at the facility in question. If this proves not to be feasible, the nuclear material in question shall be transferred for storage at another appropriate, listed facility."

These provisions of article 8(3) contain few limitations on the nature or location of the facilities within EURATOM in which the specified nuclear materials can be stored. They do, however, require their listing and subsequent reciprocal written notification to and acknowledgement by the United States. The facilities also must, at a minimum, meet appropriate, internationally accepted physical protection standards established by the International Atomic Energy Agency (IAEA). Should any facility not comply with these standards, the provisions call for immediate consultation and corrective measures. Neither party has an express right to require the other to take corrective actions, but the consultation process is designed to ensure either that such actions are implemented or that the nuclear materials in question are moved to another facility.

SENSITIVE NUCLEAR TECHNOLOGY CANNOT BE TRANSFERRED UNDER THE PROPOSED AGREEMENT

Section 123 (a)(9) of the act requires an agreement for cooperation to contain a provision that all of the requirements specified in section 123(a) will be applied to any special nuclear material, production facility, or utilization facility produced or constructed by or through the use of U.S.-origin "sensitive nuclear technology" transferred under the agreement.²⁰

²⁰"Sensitive nuclear technology" is defined in section 4(a)(6) of NNPA, 22 U.S.C. 3203(a)(6), as "any information (including information incorporated in a production or utilization facility or important component part thereof) which is not available to the public and which is important to the design, construction, fabrication,

There are no procedures established in the proposed agreement to satisfy the requirement of section 123(a)(9) because, as noted in a November 7, 1995, "side letter" to the proposed agreement covering sensitive nuclear technology and reactor technology, "the Agreement does not provide for the transfer of sensitive nuclear technology."²¹ Therefore, no nuclear materials will be obtained by or through the use of U.S.-origin sensitive nuclear technology transferred under the agreement. ACDA's assessment of the proposed agreement and the President's letter transmitting the proposed agreement to the Congress also declare that the proposed agreement does not provide for transfers of sensitive nuclear technology. Additionally, ACDA asserts that "this requirement of the Act does not pertain in this case."²²

The side letter also states that sensitive nuclear technology "may be transferred to the Community outside an agreement for cooperation pursuant to sections 127 and 128 of the U.S. Atomic Energy Act."²³ Sections 127 and 128 of the act, 42 U.S.C. 2156, 2157, provide criteria and procedures that authorize an alternative means of transferring sensitive nuclear technology to EURATOM (and nonnuclear-weapons states) outside of a cooperation agreement. The requirements in sections 127 and 128 are similar to those in section 123. According to State Department officials, any transfers of sensitive nuclear technology under sections 127 and 128 would be approved by the United States on a case-by-case basis.

PROPOSED AGREEMENT INCLUDES U.S. SUSPENSION RIGHTS

Under article 13 of the proposed agreement, the United States (or EURATOM) may suspend (or terminate) the agreement if certain circumstances occur. For example, either party may suspend the agreement if the other party materially violates its obligations under the agreement.²⁴ Before suspending the agreement, the United States must consult with EURATOM for the purpose of taking

operation or maintenance of a uranium enrichment or nuclear fuel reprocessing facility or a facility for the production of heavy water. . . ."

²¹Side letter, No. 46, at 1, H.R. Document 138, at 79.

²²ACDA Assessment, at II-23, H.R. Document 138, at 116.

²³Side letter, No. 46, at 1-2, H.R. Document 138, at 79-80.

²⁴Section E, paragraphs 16-18, of the agreed minute contain provisions for determining if a material violation has occurred.

corrective actions and must consider whether the facts triggering these steps were deliberate.

Also, either party may require the return of items subject to the agreement if the other party engages in certain proscribed activities, such as termination or abrogation of a safeguards agreement with IAEA. Article 13 also lists requirements that must be satisfied before either party requires the return of any items, including compensating the party against whom the right of return is invoked for the fair market value of the items to be removed and the costs of removal.

In addition to the article 13 right to suspend the entire agreement, paragraph 8(A) of the agreed minute provides procedures by which either party may suspend its advance consent to activities covered by article 8.2 (reprocessing of material subject to the proposed agreement and alteration in form or content of plutonium, U-233, and HEU). This action would suspend approvals for these activities as a whole, not just those of a particular facility. To suspend advance consent, the United States must consider on the basis of objective evidence that the continuation of these activities would entail a serious threat to its security or a significant increase in the risk of nuclear proliferation resulting from a situation of the same or greater degree of seriousness as would result from the situations specified on an illustrative list. Paragraph 8(A) describes what would constitute a "significant increase in the risk of nuclear proliferation" by reference to this list of specific situations.²⁵

The agreed minute further provides that a decision by the United States to suspend advance, long-term consent can only be taken after consultations with EURATOM; by the President; and without regard to actions of third countries or events outside EURATOM unless, because of such actions or events, the activities in EURATOM itself would clearly result in a significant increase in the risk of nuclear proliferation or pose a serious threat to U.S. security. In addition, the United States must invoke suspension of these consents only in the most extreme

²⁵This list of situations includes detonation by the United States or by a nuclear-weapons member state of EURATOM of a nuclear explosive device using an item subject to the proposed agreement, the retransfer of an item subject to the proposed agreement to a nonnuclear-weapons state that has not concluded a full-scope safeguards agreement with IAEA, or the termination or abrogation of a safeguards agreement with IAEA. In addition, suspension of these consents could be triggered by acts of war, serious internal disturbances, or serious international tension constituting a threat of war.

circumstances of exceptional concern from a nonproliferation or security point of view, not for differences over EURATOM's fuel cycle choices, or to interfere with other aspects of EURATOM's civilian nuclear program--and the suspension must be applied only for the minimum time necessary to deal with the situation.²⁶

Under the various provisions of the proposed agreement and the agreed minute, suspension rights are limited, particularly with respect to the criteria in article 13. It is difficult to envision the occurrence of situations that would be sufficiently serious to invoke a suspension. Nevertheless, for the first time, provisions for suspension rights are included in the proposed agreement (the previous agreement did not have suspension rights), and the decision to implement them and invoke a suspension rests respectively with the United States and EURATOM.

²⁶Paragraphs 8-12 of the agreed minute.

SAFEGUARDING, TRACKING, AND PROTECTING
EXPORTED NUCLEAR MATERIAL OF U.S. ORIGIN

The International Atomic Energy Agency (IAEA) is an international organization affiliated with the United Nations and has 122 member states. The agency's safeguards and promotional responsibilities are outlined in a formal statute adopted in 1956 at a conference of 81 states that were members of the United Nations or its specialized agencies. IAEA safeguards are a central element in international efforts to prevent the proliferation of nuclear weapons. Under IAEA's statute and the Treaty on the Non-Proliferation of Nuclear Weapons (treaty), IAEA is mandated to administer safeguards to detect diversions of significant quantities of nuclear material from peaceful uses. In the early 1960s, the agency established an inspection program based on a system of technical measures, referred to as safeguards, designed to detect the diversion of significant quantities of nuclear material. IAEA applies safeguards to equipment, facilities, and nuclear material. The treaty, effective in 1970, expanded IAEA's responsibilities to apply safeguards to source and fissionable nuclear material, such as enriched uranium and plutonium, that could be used to produce nuclear weapons. The treaty binds signatory nonnuclear weapons states--states that had not manufactured or detonated a nuclear device by January 1, 1967--to accept IAEA safeguards on all nuclear material, referred to as "full-scope" safeguards. All 15 members of EURATOM are treaty parties and are also members of IAEA. All nuclear activities in the nonnuclear weapon states of EURATOM are safeguarded under the IAEA-EURATOM safeguards agreement that entered into force in 1977.

Safeguarding Exported Nuclear Material of U.S. Origin

According to the State Department's Deputy Principal Director, Office of Nuclear Energy Affairs, the proposed agreement provides for a range of controls over European facilities handling U.S.-origin nuclear materials. These include requirements for IAEA and EURATOM safeguards, including IAEA safeguards on all peaceful nuclear activities in the nonnuclear weapons states of EURATOM (article 6), peaceful, nonexplosive use assurances (article 7), and physical protection measures meeting international standards for U.S.-obligated nuclear materials in facilities in EURATOM (article 11). According to the Arms Control and Disarmament Agency, the proposed agreement states that plutonium, uranium-233, and high enriched uranium may be stored in facilities that are subject, at a minimum, to the levels of physical protection that are set out in annex C to IAEA document INFCIRC 254/Rev. 1/Part 1 (guidelines for nuclear transfers). The proposed agreement also provides U.S. approval for the storage of plutonium, uranium-233, and high enriched uranium at facilities that meet the

appropriate standards for physical protection promulgated by IAEA and accepted by the United States and the international community.

In September 1993,²⁷ we reported on the effectiveness of IAEA's safeguards program, the adequacy of the program's funding, and the management of U.S. technical assistance for IAEA's safeguards program. Among other issues, our report noted weaknesses in the internal management of the U.S. Program of Technical Assistance to IAEA safeguards. The Department of Energy has since implemented our recommendations to improve the program's management.

Tracking Exported Nuclear Material of U.S. Origin

In December 1994, we reported on²⁸ how the United States tracks its exported civilian (nondefense-use) nuclear materials and ensures their physical protection. Our report noted that the United States relies primarily on a computerized system run by the Department of Energy. (At the time of our review, the system was called the Nuclear Materials Management and Safeguards System). We reported that the tracking system does not have all the information needed to track the specific current location (facility) and status of all nuclear materials of U.S. origin that are supplied to foreign countries. For example, the system does not track exported U.S. nuclear materials that are moved from facility to facility within countries, nor does it show the current status of nuclear materials (e.g., irradiated, unirradiated, fabricated, burned up, or reprocessed). Thus, the system may not contain correct data on where (at which facility) these materials are located within foreign countries or on their current status. The system does not contain this information primarily because the amounts, types, and reliability of the data contained in the system depend largely on the requirements for reporting data under international agreements for peaceful nuclear cooperation, as well as on the willingness of foreign countries and of U.S. and foreign facilities to report complete and accurate data. For example, the previous U.S. agreement for cooperation with EURATOM did not require EURATOM countries to inform the United States of retransfers of U.S.-supplied materials from one EURATOM country to another or to report alterations to U.S.-supplied nuclear materials in these countries. In addition, none of the existing agreements for cooperation require foreign countries to report intracountry transfers of U.S.-supplied materials from one facility to another. According to an official at the State Department's Office of Nuclear

²⁷Nuclear Nonproliferation and Safety: Challenges Facing the International Atomic Energy Agency (GAO/NSIAD/RCED-93-284, Sept. 22, 1993).

²⁸Nuclear Nonproliferation: U.S. International Nuclear Materials Tracking Capabilities Are Limited (GAO/RCED/AIMD-95-5, Dec. 27, 1994).

Affairs, negotiations are under way to develop an administrative arrangement through which EURATOM would, among other things, annually report to the United States the amount of U.S.-origin nuclear material within EURATOM. However, this information would not show the amounts of nuclear material on a country-by-country or a facility-by-facility basis.

Protecting Exported Nuclear Material of U.S. Origin

Our December 1994 report also noted that, to ensure the physical protection of exported U.S.-supplied civilian-use nuclear materials, the United States relies on the protection systems in recipient countries, these countries' compliance with IAEA's guidelines, and U.S. evaluations of the adequacy of the recipient countries' physical protection systems (e.g., security devices and guards, etc.). Once the United States exports nuclear materials, the recipient country is responsible for adequately protecting them. While no international organization is responsible for establishing or enforcing physical protection standards, IAEA has developed guidelines for physical protection that are broadly supported by its member states. These guidelines include protection measures, such as using physical barriers along the perimeters of protected areas. The United States uses these guidelines to help evaluate whether foreign countries' physical protection systems are adequate. As a result of these evaluations, the United States may make nonbinding physical protection recommendations. The international community, including the United States, has supported states' sovereign rights and responsibilities to establish and operate physical protection systems for nuclear materials and facilities. It is also in the best interest of the sovereign states to ensure the physical protection of these materials to reduce the threat of theft or diversion.

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