115th Congress, 2d Session – – – – – – – – – – – – House Document 115–115

TEXT OF PROPOSED AGREEMENT FOR COOPERATION BETWEEN THE GOVERNMENT OF THE U.S. AND THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND CONCERNING PEACEFUL USES OF NUCLEAR ENERGY

MESSAGE

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

THE TEXT OF AN AGREEMENT BETWEEN THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND FOR COOPERATION IN THE PEACEFUL USES OF NUCLEAR ENERGY, PURSUANT TO 42 U.S.C. 2153(d); AUG. 1, 1946, CH. 724, TITLE I, SEC. 123 (AS AMENDED BY PUBLIC LAW 109–401, SEC. 104(e)); (120 STAT. 2734)

MAY 7, 2018.—Referred to the Committee on Foreign Affairs and ordered to be printed

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U.S. GOVERNMENT PUBLISHING OFFICE
79–011 WASHINGTON : 2018

To the Congress of the United States:

I am pleased to transmit to the Congress, pursuant to subsections 123b. and 123d. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b), (d)) (the "Act"), the text of an Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (the "Agreement"). I am also pleased to transmit my written approval, authorization, and determination concerning the Agreement and an unclassified Nuclear Proliferation Assessment Statement (NPAS) concerning the Agreement. In accordance with section 123 of the Act, a classified annex to the NPAS, prepared by the Acting Secretary of State, in consultation with the Director of National Intelligence, summarizing relevant classified information, will be submitted to the Congress separately. A joint memorandum submitted to me by the Acting Secretary of State and the Secretary of Energy and a letter from the Chairman of the Nuclear Regulatory Commission stating the views of the Commission are also enclosed. An addendum to the NPAS containing a comprehensive analysis of the export control system of the United Kingdom with respect to nuclear-related matters, including interactions with other countries of proliferation concern and the actual or suspected nuclear, dual-use, or missile-related transfers to such countries, pursuant to section 102A(w) of the National Security Act of 1947 (50 U.S.C. 3024(w)), is being submitted separately by the Director of National Intelligence. Although not required by the Act, I am also transmitting an analysis and a determination and judgment from the Secretary of Energy concerning the advance, long-term approvals contained in the proposed Agreement.

The Agreement has been negotiated in accordance with the Act and other applicable law. In my judgment, it meets all applicable statutory requirements and will advance the nonproliferation and other foreign policy interests of the United States.

The Agreement contains all of the provisions required by subsection 123 a. of the Act. It provides a comprehensive framework for peaceful nuclear cooperation with the United Kingdom based on a mutual commitment to nuclear nonproliferation. It would permit the transfer of material, equipment (including reactors), components, sensitive nuclear facilities, major critical components, and information for nuclear research and nuclear power production. It also would allow for the transfer of sensitive nuclear technology if the parties later agree on conditions in writing.

The Agreement has a term of 30 years, although it can be terminated by either party on one year's advance written notice. In the event of termination or expiration of the Agreement, key nonproliferation conditions and controls will continue in effect as long as any material, equipment, component, sensitive nuclear facility,

or major critical component subject to the Agreement remains in the territory or under the jurisdiction or control of either party, or until such time as the parties agree in writing that such nuclear material or non-nuclear material is no longer usable for any nuclear activity relevant from the point of view of international safeguards or have been practically irrecoverable, or that such equipment, components, sensitive nuclear facilities, or major critical components is no longer usable for nuclear purposes.

As one of the five nuclear weapon states under the Treaty on the Non-Proliferation of Nuclear Weapons, including one of the Treaty's three Depositary States, and one of the five permanent members of the United Nations Security Council, the United Kingdom holds an important leadership role in the global nonproliferation regime and the larger international security architecture. The United Kingdom is a member of the four major multilateral export control regimes: the Nuclear Suppliers Group, the Australia Group, the Missile Technology Control Regime, and the Wassenaar Arrangement. In addition, the United Kingdom has provided financial, technical, and leadership support to key nonproliferation mechanisms such as the Global Threat Reduction Program, the Global Initiative to Combat Nuclear Terrorism, the Elimination of Weapons-Grade Plutonium Production Program, the International Atomic Energy Agency (IAEA) Technical Cooperation Program, the IAEA Department of Safeguards, the G7 Global Partnership against the Spread of Weapons of Mass Destruction, and the Proliferation Security Initiative. A more detailed discussion of the United Kingdom's civil nuclear activities and its nonproliferation policies and practices is in the NPAS and its classified annex.

I have considered the views and recommendations of the interested departments and agencies in reviewing the Agreement and have determined that its performance will promote, and will not constitute an unreasonable risk to, the common defense and security. Accordingly, I have approved the Agreement and authorized its execution and urge that the Congress give it favorable consideration.

This transmission shall constitute a submittal for purposes of both subsections 123b. and 123d. of the Act. My Administration is prepared to begin immediately consultations with the Senate Foreign Relations Committee and the House Foreign Affairs Committee, as provided in subsection 123b. Upon completion of the 30 days of continuous session review provided for in subsection 123b., the 60 days of continuous session review provided for in subsection 123d. shall commence.

DONALD J. TRUMP.

THE WHITE HOUSE, *May 7, 2018.*

THE WHITE HOUSE

WASHINGTON

April 30, 2018

Presidential Determination
No. 2018-07

MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF ENERGY

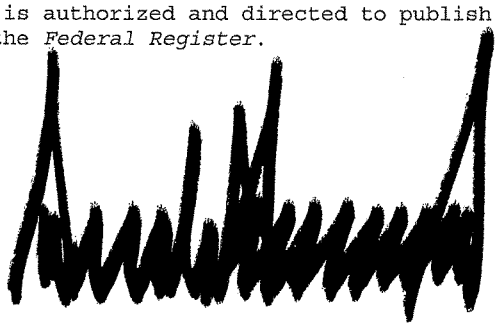
SUBJECT: Presidential Determination on the Proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy

I have considered the proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (the "Agreement"), along with the views, recommendations, and statements from interested departments and agencies.

I have determined that the performance of the proposed Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security.

By the authority vested in me as President by the Constitution and the laws of the United States, including section 123 b. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153(b)), I hereby approve the proposed Agreement and authorize the Secretary of State to arrange for its execution.

The Secretary of State is authorized and directed to publish this determination in the *Federal Register*.



AGREEMENT

BETWEEN

THE GOVERNMENT OF THE UNITED STATES OF AMERICA

AND

THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

FOR COOPERATION IN PEACEFUL USES OF NUCLEAR ENERGY

The Government of the United States of America ("United States") and the Government of the United Kingdom of Great Britain and Northern Ireland ("United Kingdom"), hereinafter referred to as the Parties;

RECOGNIZING that the partnership between the United States and the United Kingdom in the field of civilian nuclear energy contributes to continued international stability as well as promotes political and economic progress;

MINDFUL of their respective rights and obligations under the Treaty on the Non-Proliferation of Nuclear Weapons of July 1, 1968 ("NPT"), to which both the United States and the United Kingdom are states parties;

AFFIRMING their desire to promote universal adherence to the NPT;

REAFFIRMING their commitment to the international development and peaceful use of nuclear energy consistent with the provisions of the NPT;

ACKNOWLEDGING that the United States and the United Kingdom are members of the International Atomic Energy Agency ("IAEA");

AFFIRMING their support for the IAEA and its safeguards system, including the Additional Protocol;

RECOGNIZING that the United States and the United Kingdom have achieved an advanced level in the use of nuclear energy for the production of electric power and in the development of nuclear industry and scientific research in this field;

ACKNOWLEDGING their close cooperation in the development, use, and control of peaceful nuclear energy pursuant to the Agreement for the Cooperation in the Peaceful Uses of Nuclear Energy between the United States of America and the European Atomic Energy Community, done at Brussels on November 7, 1995, and March 29, 1996, which entered into force on April 12, 1996 (the "1996 U.S.-EURATOM Agreement"), and desiring to continue such cooperation following the United Kingdom's withdrawal from the European Atomic Energy Community;

RECOGNIZING that the United States, a nuclear-weapon State, entered into the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America, done at Vienna on November 18, 1977, and the Protocol Additional to the Agreement between the United States of America and the International Atomic Energy Agency for the Application of Safeguards in the United States of America, done at Vienna on June 12, 1998, hereinafter collectively referred to as "the United States-IAEA Safeguards Agreement";

RECOGNIZING that the United Kingdom, as a nuclear-weapon State, entered into the Agreement between the United Kingdom of Great Britain and Northern Ireland, the European Atomic Energy Community and the International Atomic Energy Agency for the Application of Safeguards in the United Kingdom of Great Britain and Northern Ireland in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, done at Vienna on September 6, 1976, and the Protocol Additional to the Agreement, done at Vienna on September 22, 1998 ("the Trilateral Safeguards Agreement"), and has made a clear commitment to enter into a new Safeguards Agreement with the IAEA, supplemented by an Additional Protocol, for the application of safeguards in connection with the NPT ("the Bilateral Safeguards Agreement"), that will be in force from the date on which the Trilateral Safeguards Agreement is no longer in force;

AFFIRMING their ongoing cooperation under the Agreement between the Government of the United States of America and the Three Governments of the Federal Republic of Germany, the Kingdom of the Netherlands and the United Kingdom of Great Britain and Northern Ireland regarding the Establishment, Construction, and Operation of a Uranium Enrichment Installation in the United States, done at Washington on July 24, 1992, which entered into force on February 1, 1995;

RECALLING the Agreement between the Government of the United States of America and the Four Governments of the French Republic, the United Kingdom of Great Britain and Northern Ireland, the Kingdom of the Netherlands, and the Federal Republic of Germany Regarding the Establishment, Construction and Operation of Uranium Enrichment Installations Using Gas Centrifuge Technology in the United States of America, done at Paris on February 24, 2011, which entered into force on January 31, 2012;

SEEKING to expand and enhance their mutually beneficial cooperation in the field of the peaceful uses of nuclear energy on a stable, reliable, and predictable basis;

AFFIRMING their commitment to the Guidelines of the Nuclear Suppliers Group and the NPT Exporters Committee;

ACKNOWLEDGING the need for measures for the physical protection of nuclear material and facilities and affirming compliance with the obligations set forth in the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities, adopted at Vienna on October 26, 1979, as amended on July 8, 2005 ("CPPNM"), as well as subsequent amendments to that Convention that enter into force for the United States and the United Kingdom; and

MINDFUL that peaceful nuclear activities must be undertaken with a view to protecting the international environment from radioactive, chemical, and thermal contamination;

Have agreed as follows:

ARTICLE 1 – DEFINITIONS

For the purposes of this Agreement, the terms listed below shall have the following meanings:

1. "Agreed Minute" means the minute annexed to this Agreement, which is an integral part hereof;

2. "Byproduct material" means any radioactive material (except special fissionable material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special fissionable material;

3. "Competent authorities" means, in the case of the United States, the Department of State, the Department of Energy, and the Nuclear Regulatory Commission. For the United Kingdom, the competent authorities are the Department for Business, Energy, and Industrial Strategy and the Office for Nuclear Regulation. Each Party may change its competent authority/authorities or add additional competent authorities by written notice to the other Party;

4. "Component" means a component part of equipment or other item so designated by written agreement of the competent authorities of the Parties;

5. "Decommissioning" means the actions taken at the end of a facility's useful life to retire the facility from service in a manner that provides adequate protection for the health and safety of the decommissioning workers and the general public, and for the environment. These actions can range from closing down the facility and a minimal removal of material coupled with continuing maintenance and surveillance to a complete removal of residual radioactivity in excess of levels acceptable for unrestricted use of the facility and its site;

6. "Equipment" means any reactor as a complete unit (other than one designed or used primarily for the production of plutonium or uranium-233), reactor pressure vessel, reactor calandria, complete reactor control rod drive system, reactor primary coolant pump, on-line reactor fuel charging and discharging machine or any other item so designated by written agreement of the competent authorities of the Parties;

7. "High enriched uranium" means uranium enriched to twenty percent or greater in the isotope uranium-235;

8. "Information" means data or information of a scientific, commercial, technical, or other nature in any form that is appropriately designated by written agreement of the competent authorities of the Parties to be provided or exchanged under this Agreement;

9. "Intellectual property" shall have the meaning set out in Article 2 of the Convention establishing the World Intellectual Property Organization, done at Stockholm on July 14, 1967, as amended on September 28, 1979, and may include other subject matter as mutually agreed by the Parties;

10. "Low enriched uranium" means uranium enriched to less than twenty percent in the isotope uranium-235;

11. "Major critical component" means any part or group of parts essential in the operation of a sensitive nuclear facility;

12. "Material" means nuclear material, byproduct material, non-nuclear material, or any other such substance so designated by written agreement of the competent authorities of the Parties;

13. "Non-nuclear material" means heavy water or nuclear-grade graphite for nuclear use, or any other such material so designated by written agreement of the competent authorities of the Parties;

14. "Nuclear material" means source material and special fissionable material;

15. "Persons and undertakings" means any natural person who, and any undertaking or institution (whatever its public or private legal status) that, pursues activities within the scope of this Agreement within the territory, jurisdiction or control of the United Kingdom or of the United States;

16. "Reactor" means any apparatus, other than a nuclear weapon or other nuclear explosive device, in which a self-sustaining fission chain reaction is maintained by utilizing nuclear material;

17. "Restricted Data" means all data concerning (1) design, manufacture or utilization of nuclear weapons; (2) the production of special fissionable material; or (3) the use of special fissionable materials in the production of energy, but shall not include data that the United States has declassified or removed from the category of Restricted Data;

18. "Sensitive nuclear facility" means any facility designed or used primarily for uranium enrichment, reprocessing of irradiated nuclear material, heavy water production, or fabrication of nuclear fuel containing plutonium;

19. "Sensitive nuclear technology" means any information, including information that is incorporated in equipment or an important component, that is not in the public domain and is important to the design, construction, fabrication, operation or maintenance of any sensitive nuclear facility, or any other such information that may be so designated by written agreement of the competent authorities of the Parties;

20. "Source material" means uranium containing the mixture of isotopes occurring in nature; uranium depleted in the isotope uranium-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 of the IAEA shall from time to time determine; and such other materials as the Board of Governors of the IAEA shall from time to time determine or as may be agreed in writing by the Parties. Any determination by the Board of Governors of the IAEA under Article XX of the IAEA Statute or otherwise that amends the list of materials considered to be source material shall only have effect under this Agreement when both Parties to this Agreement have informed each other in writing that they accept such an amendment;

21. "Special fissionable material" means plutonium, uranium-233, uranium enriched in the isotopes 233 or 235; any material containing one or more of the foregoing; and such other fissionable material as the Board of Governors of the IAEA shall determine or as may be agreed in writing by the Parties. "Special fissionable material" does not include "source material." Any determination by the Board of Governors of the IAEA under Article XX of the IAEA Statute or any determination by the Board of Governors of the IAEA that otherwise amends the list of materials considered to be "special fissionable material" shall only have effect under this Agreement when both Parties to this Agreement have informed each other in writing that they accept such an amendment;

22. "UK Atomic Information" means information, data, materials, services or any other matter designated by the Government of the United Kingdom as "ATOMIC"; and

23. "United Kingdom-IAEA Safeguards Agreement" means whichever of the Trilateral Safeguards Agreement or the Bilateral Safeguards Agreement is in force at any particular time.

ARTICLE 2 – SCOPE OF COOPERATION

1. The Parties intend to cooperate in the peaceful use of nuclear energy in accordance with the provisions of this Agreement and their respective international agreements, national laws, regulations, and license requirements.

2. Transfer of information, material, equipment, components, sensitive nuclear facilities, and major critical components under this Agreement may be undertaken directly between the Parties, between their competent authorities, or through their respective persons and undertakings. Such transfers shall be subject to this Agreement and to such additional terms and conditions as may be agreed in writing by the Parties or their competent authorities.

ARTICLE 3 – TRANSFER OF INFORMATION

1. Information concerning the peaceful use of nuclear energy may be transferred under this Agreement. Transfers of information may be accomplished through various means, including but not limited to reports, data banks, computer programs, conferences, visits, and assignments of staff to facilities. Fields that may be covered may include the following:

(A) Research, development, design, construction, operation, maintenance and use of reactors, reactor experiments, and decommissioning;

(B) The use of material in physical and biological research, medicine, agriculture, and industry;

(C) Fuel cycle studies of ways to meet future world-wide civil nuclear needs, including multilateral approaches to guaranteeing nuclear fuel supply and appropriate techniques for management of nuclear wastes;

(D) Safeguards and nuclear security of material, equipment, and components;

(E) Health, safety and environmental considerations related to the foregoing subparagraphs;

(F) Assessing the role nuclear power may play in national energy plans; and

(G) Any other field of cooperation as may be agreed in writing by the Parties.

2. This Agreement does not require the transfer of any information that the Parties are not permitted to transfer under their respective international agreements, national laws, and regulations.

3. Restricted Data shall not be transferred by the United States under this Agreement.

4. UK Atomic information shall not be transferred by the United Kingdom under this Agreement.

5. Sensitive nuclear technology may be transferred under this Agreement pursuant to conditions as agreed in writing by the Parties. Such conditions shall include, at a minimum, a guarantee that any special fissionable material, equipment, sensitive nuclear facilities, or major critical components produced or constructed under the jurisdiction of a Party by or through the use of any sensitive nuclear technology transferred under this Agreement shall be subject to the requirements of paragraph 2 of Article 4 and of Articles 5, 6, 7, 8, 9, and 10.

ARTICLE 4 – TRANSFER OF MATERIAL, EQUIPMENT, COMPONENTS, SENSITIVE NUCLEAR FACILITIES, AND MAJOR CRITICAL COMPONENTS

1. Material, equipment, components, sensitive nuclear facilities, major critical components, and other items as may be agreed in writing by the Parties, may be transferred for applications consistent with this Agreement.

2. Material, equipment, sensitive nuclear facilities, and major critical components transferred pursuant to this Agreement and any special fissionable material produced through the use of any nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components so transferred shall be transferred only to duly authorized persons and undertakings.

3. The quantity of special fissionable material that may be transferred under this Agreement shall be the quantity that the Parties or their competent authorities agree is necessary for any of the following purposes: the loading of reactors or use in reactor experiments; the reliable, efficient and continuous operation of reactors or conduct of reactor experiments; the storage of special fissionable material necessary for the efficient and continuous operation of reactors or conduct of reactor experiments; the transfer of irradiated nuclear material; or use as samples, standards, detectors, targets, radiation sources, or for such other purposes as the Parties may agree in writing.

ARTICLE 5 – STORAGE

1. Plutonium and uranium-233 (except as contained in irradiated fuel elements) and high enriched uranium transferred pursuant to this Agreement; plutonium, uranium-233, and high enriched uranium recovered from nuclear material transferred pursuant to this Agreement or recovered from nuclear material used in equipment, sensitive nuclear facilities, or major critical components transferred pursuant to this Agreement; and plutonium, uranium-233, and high enriched uranium used in or produced through the use of nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components so transferred may only be stored in facilities that are recorded on a list provided to the other Party. Such facilities at all times shall be subject, at a minimum, to the levels of physical protection that are set out in INFCIRC/225/Revision 5 as it may be revised and accepted by the Parties from time to time. A Party's list shall be held confidentially if that Party so requests.

2. Either Party may make changes to its list by notifying the other Party in writing and receiving a written acknowledgement. Such acknowledgement shall be given no later than 30 days after the receipt of the notification and the changes in question shall be deemed to have been acknowledged if no response is received from the notified Party within the 30-day period. If either Party believes that the obligations in paragraph 1 of this Article are not being fully complied with, it may request immediate consultations. Such consultations shall be held within 90 days of receipt of the request by the other Party. Following such consultations, each Party shall ensure that necessary corrective measures are taken immediately. If such measures are not feasible, the special fissionable material in question shall be transferred for storage at another appropriate, listed facility.

ARTICLE 6 – RETRANSFERS

Unless the Parties agree in writing, material, equipment, sensitive nuclear facilities, or major critical components transferred pursuant to this Agreement and any special fissionable material produced through the use of any nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components so transferred shall not be transferred beyond the territory, jurisdiction, or control of the recipient Party. The implementation of this Article shall be addressed in the Agreed Minute and Administrative Arrangement provided for in paragraph 1 of Article 18.

ARTICLE 7 – REPROCESSING, ALTERATION IN FORM OR CONTENT, AND ENRICHMENT

1. Nuclear material transferred pursuant to this Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred shall not be reprocessed, enriched, or otherwise altered in form or content (except by irradiation or further irradiation), unless the Parties agree in writing.

2. Pursuant to paragraph 1 of this Article, the Parties hereby agree and grant each other consent to reprocess or otherwise alter in form or content nuclear material transferred pursuant to this Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred. Such activities shall take place only in the territory of the recipient Party and such reprocessing of nuclear material and alteration in form or content of plutonium, uranium-233, and high enriched uranium shall take place only at facilities listed in Annex A, or as otherwise agreed by the Parties.

3. The Parties agree that conversion, fabrication of fuel, post-irradiation examination, blending or downblending of uranium and separation of radioisotopes from irradiated targets are permissible alterations in form or content for purposes of paragraph 2 of this Article.

4. The Parties hereby agree and grant each other consent within the territory of either Party, to enrich, up to twenty percent in the isotope uranium-235, uranium transferred pursuant to this Agreement, as well as uranium used in or produced through the use of nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred. Enrichment of such uranium to more than twenty percent in the isotope 235 and re-enrichment of such uranium already enriched to more than twenty percent in the isotope 235 may be carried out according to conditions agreed upon in writing, which shall be the subject of consultations between the Parties within 40 days of the receipt of a request from either Party.

5. Any reprocessing, alteration in form or content, or enrichment under paragraphs 2, 3 or 4 of this Article shall be conducted in accordance with storage standards set out in Article 5 of this Agreement, physical protection standards set out in Article 8 of this Agreement, environmental consultations set out in Article 16 of this Agreement, and such other provisions as may be agreed in writing by the Parties, including the application of safeguards.

ARTICLE 8 – NUCLEAR SECURITY

1. As specified in paragraph 2 of this Article, adequate nuclear security shall be maintained with respect to material, equipment, components, sensitive nuclear facilities, and major critical components transferred pursuant to this Agreement and special fissionable material used in or produced through the use of any material, equipment, components, sensitive nuclear facilities, or major critical components so transferred.

2. With respect to the obligation in paragraph 1 of this Article, each Party shall apply at a minimum measures in accordance with (i) levels of physical protection equivalent to the recommendations published in IAEA document INFCIRC/225/Revision 5 entitled "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities" and in subsequent revisions of that document accepted by both of the Parties, and (ii) the provisions of the CPPNM, as well as subsequent amendments to that Convention that enter into force for the United States and the United Kingdom.

3. The adequacy of nuclear security measures maintained pursuant to this Article shall be subject to reviews and consultations between the Parties from time to time and whenever either Party is of the view that revised measures may be required in order to maintain adequate nuclear security.

4. The Parties shall keep each other informed through diplomatic channels of those competent authorities having responsibility for ensuring that levels of nuclear security for nuclear material and facilities in their territory or under their jurisdiction or control are adequately met and having responsibility for coordinating response and recovery operations in the event of unauthorized use or handling of nuclear material subject to this Article. Each Party shall inform the other Party through diplomatic channels of the designated points of contact within its competent authorities to cooperate on matters involving transportation of nuclear material outside its territory, jurisdiction or control, and on other matters of mutual concern.

ARTICLE 9 – PEACEFUL USES

1. Cooperation under this Agreement shall be for peaceful uses only.

2. Material, equipment, components, sensitive nuclear facilities, major critical components, and sensitive nuclear technology transferred pursuant to this Agreement and material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, major critical components, or sensitive nuclear technology so transferred shall not be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any military purpose.

3. For the purposes of this Agreement, "peaceful uses" shall include such fields as scientific research, electric power generation, medicine, agriculture, and industry, but shall not include any military purpose. For the purposes of this Agreement, "military purpose" shall include military nuclear propulsion, and munitions (including depleted uranium munitions), but shall not include provision of power for military bases drawn from any power network, production of radioisotopes to be used for medical purposes in military hospitals, and such other similar purposes as may be mutually determined by the Parties.

ARTICLE 10 – SAFEGUARDS

1. Nuclear material transferred to the United Kingdom pursuant to this Agreement and any nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred shall be subject to the United Kingdom-IAEA Safeguards Agreement.

2. Nuclear material transferred to the United States pursuant to this Agreement and any nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred shall be subject to the United States-IAEA Safeguards Agreement.

3. In the event that the IAEA safeguards agreement referred to in paragraph 1 or in paragraph 2 of this Article is not being implemented, the Parties shall consult and establish a mutually acceptable alternative to that safeguards agreement consistent with their status as Nuclear Weapon States parties to the NPT.

4. Each Party shall establish and maintain a system of accounting and control of nuclear material transferred pursuant to this Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components transferred. The procedures for this system shall be comparable to those set forth in IAEA document INFCIRC/153(corrected), or in any revision of that document agreed to by the Parties.

ARTICLE 11 – MULTIPLE SUPPLIER CONTROLS

If any agreement between either Party and another nation or group of nations provides such other nation or group of nations rights equivalent to any or all of those set forth under Articles 5, 6, or 7 with respect to material, equipment, components, sensitive nuclear facilities, or major critical components subject to this Agreement, the Parties may, upon request of either of them, agree that the implementation of any such rights shall be accomplished by such other nation or group of nations.

ARTICLE 12 – INTERNATIONAL OBLIGATIONS EXCHANGES

The Parties shall establish expeditious procedures to be applied when nuclear material is to be made subject to this Agreement or removed from the coverage of this Agreement. These procedures shall include provisions on international exchanges of obligations, and shall be set out in the Administrative Arrangement provided for in paragraph 1 of Article 18.

ARTICLE 13 – ONGOING COOPERATION

1. Any cooperation between the Parties previously subject to the 1996 U.S.-EURATOM Agreement shall continue in accordance with the provisions of this Agreement upon its entry into force, and the provisions of this Agreement shall apply to such cooperation.

2. The provisions of this Agreement shall apply to nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, and major critical components included in the initial inventories jointly established by the Parties pursuant to Section 6 of the Agreed Minute to this Agreement, and such nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, and major critical components shall be considered to have been transferred pursuant to this Agreement.

ARTICLE 14 – CONFIDENTIALITY OF INFORMATION

1. The Parties shall take all appropriate precautions to preserve the confidentiality of commercial and other sensitive information, such as personal data, received as a result of the operation of this Agreement.

2. Except as required by a receiving Party's national laws or regulations, information transferred under this Agreement shall not be disclosed to third parties without the consent in writing of the other Party, and shall be used exclusively in accordance with this Agreement and not for any other purpose.

ARTICLE 15 – INTELLECTUAL PROPERTY

On a case by case basis, the Parties shall agree on protections for and allocations of intellectual property that may be developed as a result of Government to Government technical cooperation under this Agreement.

ARTICLE 16 – CONSULTATIONS

1. The Parties shall consult at any time at the request of either Party, to ensure the effective fulfilment of the obligations of this Agreement. The IAEA may be invited to participate in such consultations upon the request of both Parties.

2. The Parties shall consult, with regard to activities under this Agreement, to identify the international environmental implications arising from such activities and shall cooperate in protecting the international environment from radioactive, chemical or thermal contamination arising from peaceful nuclear activities under this Agreement and in related matters of health and safety.

ARTICLE 17 – SETTLEMENT OF DISPUTES

Any dispute between the Parties concerning the interpretation or application of the provisions of this Agreement shall be promptly discussed by the Parties with a view to resolving that dispute. Disputes that remain unresolved following such discussions shall, if both Parties agree, be settled by mediation, conciliation or other similar procedure, or arbitration. In the event of arbitration, the Parties shall agree on procedural arrangements.

ARTICLE 18 – ADMINISTRATIVE ARRANGEMENT AND INVENTORIES

1. The competent authorities of the Parties shall establish an Administrative Arrangement in order to effectively apply the provisions of this Agreement.

2. Each Party shall establish and maintain inventories of all nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, and major critical components subject to this Agreement.

3. Upon the request of either Party, the other Party shall provide a report containing such inventories. To supplement such reporting, upon request of either Party, the other Party shall request and permit the IAEA to report to the first Party on the status of relevant inventories of nuclear material subject to this Agreement.

4. The principles of fungibility, equivalence, and proportionality shall apply to nuclear material subject to this Agreement. Detailed provisions for applying these principles, including provisions for accounting of nuclear material, shall be set forth in the Administrative Arrangement established pursuant to paragraph 1 above.

ARTICLE 19 – CESSATION OF COOPERATION

1. If either Party at any time following entry into force of this Agreement does not comply with the provisions of Articles 5, 6, 7, 8, 9, or 10 of this Agreement, the other Party shall have the right to cease further cooperation under this Agreement.

2. If either Party at any time following entry into force of this Agreement detonates a nuclear explosive device using material transferred pursuant to this Agreement or material used in or produced through the use of material, equipment, components, sensitive nuclear facilities, or major critical components so transferred or terminates or abrogates a safeguards agreement with the IAEA and the safeguards agreement so terminated or abrogated has not been replaced in accordance with paragraph 3 of Article 10 of this Agreement, the other Party shall have the same right as specified in paragraph 1 of this Article and shall have the right to require the return of any material, equipment, components, sensitive nuclear facilities, or major critical components transferred under this Agreement and material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred.

3. Before either Party takes any action described under paragraph 1 or 2 of this Article, the Parties shall consult with a view to reaching a decision on whether corrective or other measures are needed, and if so, the measures to be taken and the timeframes within which such measures shall be taken.

4. If either Party exercises its rights under this Article to require the return of any material, equipment, components, sensitive nuclear facilities, or major critical components, it shall, after removal from the territory, jurisdiction or control of the other Party, reimburse that Party for the fair market value of such material, equipment, components, sensitive nuclear facilities, or major critical components. If the return of such items is to be required, the Parties shall determine jointly the relevant quantity of such items, taking account of the circumstances involved. The Parties shall further satisfy themselves that full safety, radiological and physical protection measures, in accordance with their existing obligations, are taken in relation to the return of such items, that no unreasonable risks are incurred and that the return of such items takes place in a manner consistent with the respective laws and regulations of the Parties.

ARTICLE 20 – ENTRY INTO FORCE AND DURATION

1. This Agreement shall enter into force on the date specified by the Parties in an exchange of notes between the Parties indicating completion of their internal procedures necessary for its entry into force.

2. This Agreement shall remain in force for a period of 30 years, unless terminated by either Party with at least one year advance written notice to the other Party. The Parties shall open discussions on extension, or revision of this Agreement, as necessary, no less than two years prior to the date of expiration.

3. Notwithstanding the termination, including by expiration, of this Agreement or of any cooperation hereunder, Articles 5, 6, 7, 8, 9, and 10 of this Agreement and the Agreed Minute shall continue in effect as long as any material, equipment, component, sensitive nuclear facilities, or major critical components subject to these Articles remains in the territory or under the jurisdiction or control of either Party, or until such time as the Parties agree in writing that such nuclear material or non-nuclear material are no longer usable for any nuclear activity relevant from the point of view of international safeguards or have become practically irrecoverable, or that such equipment, components, sensitive nuclear facilities, or major critical components are no longer usable for nuclear purposes, unless otherwise agreed in writing by the Parties.

IN WITNESS WHEREOF, the undersigned, being duly authorized, have signed this Agreement.

DONE at Washington, this 4 th day of May 2018, in duplicate.

FOR THE GOVERNMENT OF THE UNITED STATES OF AMERICA:

FOR THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND:

AGREED MINUTE

During the negotiation of the Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (the Agreement), signed today, the following understandings, which shall be an integral part of the Agreement, were reached.

1. COVERAGE OF AGREEMENT

A. Material, equipment, components, sensitive nuclear facilities, and major critical components transferred from the territory, jurisdiction, or control of one Party to the territory, jurisdiction, or control of the other Party, whether directly or through a third country or destination, shall be regarded as having been transferred pursuant to the Agreement only upon confirmation in writing, by the appropriate competent authority of the recipient Party to the appropriate competent authority of the supplier Party, that such material, equipment, components, sensitive nuclear facilities, and major critical components shall be subject to the Agreement.

B. With respect to the definition of "Restricted Data" in paragraph 17 of Article 1 of the Agreement, it is the understanding of the Parties that all information on the use of special fissionable material in the production of energy from standard civilian reactors has been declassified or removed from the category of "Restricted Data."

C. For the purposes of implementing the rights specified in Articles 5, 6, and 7 of the Agreement, with respect to special fissionable material produced through the use of nuclear material transferred pursuant to the Agreement and not used in or produced through the use of equipment, sensitive nuclear facilities, or major critical components transferred pursuant to the Agreement, such rights shall in practice be applied to that proportion of special fissionable material produced that represents the ratio of transferred material used in the production of the special fissionable material to the total amount of material so used, and similarly for subsequent generations.

D. Material, equipment, components, sensitive nuclear facilities, major critical components, and sensitive nuclear technology shall no longer be subject to the Agreement if:

(1) Such items have been transferred beyond the territory of the receiving Party in accordance with the relevant provisions of the Agreement and are no longer under its jurisdiction or control;

(2) In the case of nuclear material, the Parties agree in writing that the nuclear material is no longer usable for any nuclear activity relevant from the point of view of safeguards, taking into account, among other factors, an IAEA determination, if any, in accordance with the provisions for the termination of safeguards in the relevant agreement referred to in paragraphs 1 or 2 of Article 10 of the Agreement, whichever is applicable, or it is otherwise agreed in writing by the Parties;

(3) In the case of non-nuclear material, byproduct material, equipment, and components, it is agreed in writing by the Parties; or,

(4) In the case of sensitive nuclear facilities, major critical components or sensitive nuclear technology, the Parties agree in writing that the sensitive nuclear facility, major critical component or sensitive nuclear technology will be subject to another agreement to which the Party that transferred the sensitive nuclear facility, major critical component or sensitive nuclear technology is a Party.

2. FALLBACK SAFEGUARDS

A. If either Party becomes aware of circumstances referred to in paragraph 3 of Article 10 of the Agreement, either Party shall have the rights listed below, which rights shall be suspended if both Parties agree in writing that the need to exercise such rights is being satisfied by the application of IAEA safeguards under arrangements pursuant to paragraph 3 of Article 10 of the Agreement:

(1) To review in a timely fashion the design of any equipment transferred pursuant to the Agreement, or of any facility that is to use, fabricate, process, or store any material so transferred or any special fissionable material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred;

(2) To require the maintenance and production of records and of relevant reports for the purpose of assisting in ensuring accountability for nuclear material transferred pursuant to the Agreement and any nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred; and

(3) To designate personnel acceptable to the other Party (hereinafter "the safeguarded Party"), who shall have access to all places and data necessary to account for the nuclear material referred to in paragraph (2) of this Section, to inspect any equipment or facility referred to in paragraph (1) of this Section, and to install any devices and make such independent measurements as may be deemed necessary to account for such nuclear material. The safeguarded Party shall not unreasonably withhold its acceptance of personnel designated by the safeguarding Party under this paragraph. Such personnel shall be accompanied by personnel designated by the safeguarded Party, unless otherwise agreed in writing by the Parties.

B. Upon the request of either Party, the other Party shall authorize the IAEA to make available to the requesting Party the requested information on the implementation of the applicable safeguards agreement with the IAEA within the scope of cooperation under the Agreement.

3. TRANSFERS

The Parties shall implement paragraph 2 of Article 4 of the Agreement in accordance with procedures under their respective national laws and regulations.

4. APPROVED RETRANSFERS

A. The Parties agree to the retransfer of material, other than irradiated nuclear material, and equipment subject to Article 6 of the Agreement to third countries or destinations identified as provided for in this subsection A:

(1) Upon entry into force of the Agreement, the Parties shall exchange lists of third countries or destinations to which retransfers of material, other than irradiated nuclear material, and equipment subject to Article 6 of the Agreement may be made by the other Party.

(2) To be eligible for inclusion on the list, third countries or destinations shall have made effective non-proliferation commitments, normally by being party to, and in full respect of their obligations under the NPT or the Treaty of Tlatelolco of February 14, 1967, and by being in compliance with the conditions of INFCIRC/254/Revision 13/Part 1.

(3) In the case of retransfer from the territory, jurisdiction, or control of the United Kingdom, to be eligible for inclusion on the list, third countries or destinations shall, at a minimum, be party to a nuclear cooperation agreement with the United States.

B. The Parties agree to the retransfer of irradiated nuclear material subject to Article 6 of the Agreement for storage and reprocessing to third countries or destinations identified as provided for in this subsection B:

(1) Should retransfers for storage and reprocessing of irradiated nuclear material subject to Article 6 of the Agreement be requested in the future by a Party, a list of third countries or destinations to which such retransfers may be made shall be provided by the other Party. In connection with this, the Parties shall take into account the criteria included in subsection A (2) and (3) of this section and the following additional criteria:

(a) Consistency of the proposed action with the guidelines contained in IAEA document INFCIRC/225/Revision 5 and with the provisions of the CPPNM, as they may be revised and accepted by the Parties from time to time;

(b) The nature and content of the peaceful nuclear programs of the third country or destination in question; and

(c) The potential proliferation and security implications of the transfer for either Party.

C. Either Party may at any time add eligible third countries or destinations to either of the lists it has provided under subsections A and B of this Section. Either Party may delete third countries or destinations from either of such lists temporarily or permanently following consultations with the other Party. Neither Party shall delete third countries or destinations from such lists for the purpose of obtaining commercial advantage or of delaying, hampering or hindering the peaceful nuclear programs of the other Party or its peaceful nuclear cooperation with third countries or destinations. The Parties shall cooperate in efforts to obtain as soon as possible on a generic basis a confirmation from the third countries or destinations on such lists that any retransferred items will be subject to any agreement for cooperation in force between the receiving country or destination and the non-retransferring Party. The receipt of such confirmation shall not constitute a pre-condition for the addition of a third country or destination to such lists.

D. Retransfers to third countries or destinations not included on the lists provided under subsections A and B of this Section may be considered on a case by case basis.

5. REPROCESSING OR OTHER ALTERATION IN FORM OR CONTENT

With regard to paragraph 2 of Article 7 of the Agreement, either Party, acting through its competent authorities, may change the facilities in its territory listed in Annex A by notifying the other Party in writing in accordance with the procedures set forth below and receiving a written acknowledgement. Such acknowledgement shall be given no later than 30 days after the receipt of the notification and shall be limited to a statement that the notification has been received.

A. For an addition of a facility within its territory, a Party's notification shall contain:

(1) the name, type and location of the facility and its existing or planned capacity;

(2) a confirmation that the Party's relevant regulations regarding nuclear material control are fully applied to the facility;

(3) for a facility at which IAEA safeguards are being applied pursuant to a safeguards agreement referred to in Article 10, paragraph 1 or 2 of the Agreement, a confirmation of those relevant safeguards which have been agreed upon with the IAEA and that those arrangements will permit the IAEA to exercise fully its rights under such safeguards agreement;

(4) such non-confidential information as is available to the Party on the IAEA safeguards approach; and

(5) confirmation that nuclear security measures as required by Article 8 of the Agreement will be applied.

B. Either Party may delete a facility from Annex A by providing to the other Party a notification containing the facility name and other relevant information available.

C. A Party may suspend its consent for the activities referred to in paragraph 2 of Article 7, in whole or in part, if it considers, pursuant to the procedures set out below, on the basis of objective evidence, that the continuation of such activities would entail a serious threat to the security of either Party, or a significant increase in the risk of nuclear proliferation. The Party considering that such objective evidence may exist shall consult with the other Party, at Cabinet level for the United States and at Minister level for United Kingdom, before reaching any decision.

6. ITEMS SUBJECT TO THE AGREEMENT

The Parties shall jointly establish initial inventories of the nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, and major critical components that are in the territory or under the jurisdiction or control of a Party and that will be subject to the Agreement.

7. FACILITATION OF NUCLEAR TRANSFERS

The Parties note their intention to facilitate the timely and efficient transfer of nuclear items listed in IAEA document INFCIRC/254/Revision 13/Part 1 as revised from time to time and nuclear technology consistent with their national laws and regulations. The Parties may conclude a separate arrangement to facilitate transfers of such nuclear items and nuclear technology.

ANNEX A: List of Facilities for Reprocessing and Alteration in Form or Content

United Kingdom

1. Reprocessing Facilities
   a. Name and Location: Sellafield Ltd, Cumbria, United Kingdom
      Licensed Capacity: 2,550 tonnes of heavy metal per year
2. Alteration in Form or Content Facilities
   None

United States

1. Reprocessing Facilities
   None
2. Alteration in Form or Content Facilities
   a. Name and Location: Nuclear Fuel Services, PO Box 337, MS123, Erwin, TN 37650
      Type: Uranium downblending
      Licensed Capacity: 7,000 kg U-235

UNCLASSIFIED

MEMORANDUM FOR THE PRESIDENT

FROM: John J. Sullivan
Acting Secretary of State

Rick Perry
Secretary of Energy

SUBJECT: (U) Proposed Peaceful Nuclear Cooperation Agreement with the United Kingdom

(U) The United States and the United Kingdom have negotiated a proposed Agreement for Cooperation in Peaceful Uses of Nuclear Energy (the proposed Agreement). If you so authorize, the proposed Agreement will be signed and, in accordance with subsections 123 b. and d. of the Atomic Energy Act of 1954, as amended (the Act), be sent to lie before Congress for review for 90 days of continuous session. Unless a joint resolution of disapproval is enacted, the proposed Agreement may then be brought into force.

(U) The proposed Agreement would permit the transfer to the United Kingdom of material, equipment, components, sensitive nuclear facilities, major critical components, and information for nuclear research and nuclear power production, and would permit the transfer of sensitive nuclear technology if the parties later agree on conditions in writing. It would support U.S. nonproliferation, foreign policy, and commercial interests and satisfies all requirements of U.S. law. Therefore, pursuant to the Act, we recommend that you determine that the proposed Agreement will promote, and will not constitute an unreasonable risk to, the common defense and security, and that you approve it and authorize its execution.

(U) A discussion of the United Kingdom's civil nuclear program and its nuclear nonproliferation policies and practices is in the Nuclear Proliferation Assessment Statement (NPAS) and the classified annex to the NPAS submitted

separately. The Director of National Intelligence is submitting separately an addendum to the NPAS on the United Kingdom's export control system with respect to nuclear-related matters. The Nuclear Regulatory Commission also is submitting its views separately.

Although not required by the Act, the Secretary of Energy, with the concurrence of the Department of State, has determined that the advance consents and approvals provided in the proposed Agreement will not be inimical to the common defense and security; and has made the judgment that the advance consent regarding reprocessing will not result in a significant increase in the risk of proliferation beyond that which now exists.

Recommendation

(U) That you sign the determination at Tab 1 and the transmittal letter to Congress at Tab 2.

Attachments:

Tab 1 – Draft Presidential Determination
Tab 2 – Draft transmittal letter to the Congress (to be held until after the proposed Agreement is signed)
Tab 3 – Text of Proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy
Tab 4 – Nuclear Proliferation Assessment Statement
Tab 5 – Analysis of Consents and Approvals, and Determination and Judgement by the Secretary of Energy

NUCLEAR PROLIFERATION ASSESSMENT STATEMENT

Pursuant to Subsection 123 a. of the Atomic Energy Act of 1954, as Amended, with Respect to the Proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy

I. INTRODUCTION

This Nuclear Proliferation Assessment Statement (NPAS) relates to the proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (the proposed Agreement). The Acting Secretary of State and Secretary of Energy are jointly submitting the proposed Agreement to the President for his approval. If brought into force, the proposed Agreement would enable continued civil nuclear cooperation between the United States and the United Kingdom (UK) following the UK's withdrawal from the European Atomic Energy Community (EURATOM). It would provide the legal framework required by the Atomic Energy Act of 1954, as amended (the Act) for U.S. nuclear industries, when licensed by the Nuclear Regulatory Commission (NRC), to export material, equipment (including reactors), components, sensitive nuclear facilities, major critical components, and information for nuclear research and nuclear power production. It would also permit the transfer of sensitive nuclear technology if the parties later agree on conditions in writing.

Subsection 123 a. of the Act provides that an NPAS be submitted by the Secretary of State to the President on each agreement for cooperation concluded pursuant to that section. Pursuant to subsection 123 a., the NPAS must analyze the consistency of the text of the proposed Agreement with all the requirements of the Act, with specific attention to whether the proposed Agreement is consistent with each of the criteria set forth in that subsection. The NPAS must also address the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the proposed Agreement to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

With this statutory mandate in mind, this NPAS (a) provides background information on the UK's civil nuclear activities, the UK's nonproliferation policies, and the UK's export controls (Part II); (b) describes the nature and scope of the cooperation contemplated in the proposed Agreement (Part III); (c) reviews the applicable substantive requirements of the Act and the Nuclear Nonproliferation Act of 1978 (NNPA) and details how they are met by the proposed Agreement (Part IV); and (d) addresses the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in the proposed Agreement and sets forth

the net assessment and conclusions of the Department of State as contemplated by subsection 123 a. of the Act (Part V).

II. THE UNITED KINGDOM'S CIVIL NUCLEAR ACTIVITIES, NONPROLIFERATION POLICIES, AND EXPORT CONTROLS

A. Civil Nuclear Activities

In 1956, the UK opened Calder Hall 1, the world's first commercial nuclear power plant. Today, the UK has 15 civilian nuclear power reactors (14 advanced gas-cooled reactors and one pressurized water reactor) with a generating capacity of 10 GWe and 1 research reactor, the Rolls Royce zero-power Neptune reactor. Due to the age of the power reactors and demands for clean energy, the UK plans to build 12 new nuclear power reactors that would generate16GWe of capacity by 2030.

Twelve new nuclear power reactors incorporating third generation advanced light water reactor technologies are expected to deliver around 16 GWe of new nuclear power across six sites (Hinkley Point, Sizewell, Bradwell, Wylfa Newydd, Oldbury, and Moorside) by 2030. Over the longer term, the UK is exploring the development and deployment of more cost-effective nuclear energy options, including small modular reactors (SMRs). In 2016, the UK launched a government competition to identify the best SMR design, and in 2017, it announced an investment of £56 million to support the innovative development of advanced modular reactors.

The UK historically has participated in all aspects of the nuclear fuel cycle, though it is moving toward an open fuel cycle. Uranium mining, milling, and conversion services are foreign supplied, but the UK continues to enrich uranium for use in nuclear fuel at Urenco UK's Capenhurst facility. Urenco is constructing a new Tails Management Facility to treat tails from its three European sites (Capenhurst, Almelo, and Gronau) for storage in a more stable form. The plant is expected to become operational at Capenhurst in late 2018. The Westinghouse Springfields facility fabricates nuclear fuel to supply UK nuclear power plants and has the ability to fabricate nuclear fuel for all major nuclear power reactor designs worldwide. Domestic reprocessing of spent nuclear fuel from UK civilian nuclear power stations is scheduled to stop in 2020 when existing contracts expire. After 2020, the UK plans to store spent nuclear fuel until a domestic geological repository is constructed and operational.

The UK accepted International Atomic Energy Agency (IAEA) international safeguards on its civilian nuclear facilities through a 1976 trilateral (UK-IAEA-EURATOM) safeguard agreement, which entered into force in 1978, and brought an Additional Protocol to its safeguards agreement into force in 2004. IAEA safeguards requirements are satisfied in EURATOM Member States

through compliance with EURATOM safeguards, with installations jointly inspected by the European Commission (EC) and the IAEA. The UK has committed to entering into a bilateral UK-IAEA safeguards regime that will come into force on the day that the existing trilateral safeguards regime is no longer in force. The UK's Office for Nuclear Regulation (ONR) will manage the new bilateral safeguards regime. Official UK Government statements assert that the forthcoming bilateral safeguards regime will apply standards no less rigorous than those found in the existing trilateral safeguards regime.

UK safeguards practices are fully consistent with nuclear peer states. The trilateral with the IAEA permits the IAEA to designate any UK civilian nuclear facility for safeguards inspection based upon a UK-supplied Facilities List. Amendments to listed facilities or the scope of material to be inspected can be made by the UK for national security reasons. The breadth and scope of UK nuclear activities subject to safeguards inspection is extensive. At present, more than 100 UK facilities and other duty holders are subject to safeguards. Sections of the Sellafield reprocessing facility and the Capenhurst enrichment facility are among the IAEA-designated and inspected locations due to the inherent proliferation risks associated with their operations. Accordingly, the UK is among the most heavily inspected states in Europe. More than 450 individual EC inspections were conducted at UK facilities from 2013 to 2014.

Generally, international inspections and assessments have found no cause for concern with UK control and accountancy of nuclear material. The latest IAEA safeguards assessment (2016) positively reported that nuclear material in selected UK facilities "remained in peaceful activities."

Cooperation between the governments of the United States and the UK includes work between the U.S. Department of Energy's (DOE) Office of Environment Management and the UK Nuclear Decommissioning Authority on radioactive waste management technology and an arrangement for the exchange of technical information and cooperation in nuclear safety and security matters between the NRC and ONR. ONR has also signed agreements with the NRC to join the Code Applications and Maintenance Program and the Cooperative Severe Accident Research Program.

B. Nonproliferation Policies

As one of the five nuclear-weapon states under the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), including one of the NPT's three depositary states, and one of five permanent members (P5) of the United Nations Security Council, the UK holds an important leadership role in the global nonproliferation regime and the larger international security architecture. As a major diplomatic initiative, the UK initiated in 2009 the annual meeting of the P5. The idea of a

P5 consultation – originally intended to be a technical conference of P5 nuclear laboratories to increase transparency and confidence-building measures – was broadened to bring together policy officials, military staff, and nuclear scientists.

The UK is a member of and major contributor to the four major multilateral export control regimes: the Nuclear Suppliers Group (NSG), the Australia Group (AG), the Missile Technology Control Regime (MTCR), and the Wassenaar Arrangement (WA). In addition, the UK has provided financial, technical, and leadership support to key nonproliferation mechanisms such as the Global Threat Reduction Program, the Global Initiative to Combat Nuclear Terrorism, the Elimination of Weapons-Grade Plutonium Production Program, the IAEA Technical Cooperation Program, the IAEA Department of Safeguards, the G7 Global Partnership against the Spread of Weapons of Mass Destruction, and the Proliferation Security Initiative. The UK's role was critical in the elimination of Libya's nuclear and other WMD programs, which was a significant international nonproliferation success.

In support of nuclear disarmament, UK scientists are pioneering innovative research and developing international best practices in the technical domain of disarmament verification, and the UK, with the United States, initiated a technical cooperation program to jointly investigate warhead dismantlement verification. The UK-Norway Initiative, launched in 2007, was the first case of a nuclear-weapon state partnering with a non-nuclear-weapon state to address the verifiability of nuclear reductions and weapon dismantlement. The UK continues to expand the scope of its technical leadership in this area; for example, in 2017, it joined the Quad Nuclear Verification Partnership, partnering with the United States, Norway, and Sweden to explore arms control simulations.

The UK is also involved extensively in efforts to improve international safeguards, routinely supplying technical and financial support to the international community. The UK Safeguards Support Programme, established in 1981, provides technical support, training, and non-commercially available services to the IAEA Department of Safeguards. The National Nuclear Laboratory administers the program on behalf of the UK government. Specialized UK nuclear competencies acquired through domestic operation of an extensive nuclear fuel cycle program over many decades have assisted the IAEA in strengthening international safeguarding techniques, particularly with respect to reprocessing facilities and gas centrifuge plants.

C. Export Controls

The UK employs an exemplary export control regime. As a member of the NSG, AG, WA, and MTCR, its control lists are fully synchronized with the requirements of those groups. UK regulatory authority for the export of strategic goods rests with the Export Control Organization

(ECO) in the Department for International Trade (DIT), which considers both military and dual-use items to be strategic goods. The ECO primarily maintains and implements export control legislation, principally the Export Control Order 2008. Additional controlled items for which it is responsible can be found in the Export of Radioactive Sources (Control) Order 2006. Radionuclides above certain activity levels, as defined in the IAEA Code and Categorization of Radioactive Sources, are barred from export without a valid export license. This control legislation followed efforts to keep radioactive sources from falling into the possession of terrorist groups. Specific items controlled for export purposes, whether products, software, or technology, are consolidated and detailed in the UK Strategic Export Control Lists (updated every six months). Where permitted, the DIT's Export Control Joint Unit issues licenses for the export of controlled goods. Any off-list item that raises specific concern about use in foreign military or weapon of mass destruction programs may still be subject to export denials through end-use controls.

III. ANALYSIS OF THE PROPOSED AGREEMENT

The proposed Agreement is designed to be a uniquely flexible, forward-looking agreement, as a reflection of our deep and historic relationship with the UK. As such, it builds on the existing broad cooperation between the United States and the UK, conducted through the U.S.-EURATOM agreement for cooperation, and establishes the conditions for continued U.S. civil nuclear trade with the UK after its withdraw from EURATOM. In general, as set forth in Article 2 of the proposed Agreement, and in accordance with their respective international agreements, national laws, regulations, and license requirements, the parties (directly or through authorized persons and undertakings) may transfer material, equipment, components, information, sensitive nuclear facilities, and major critical components under the proposed Agreement. Sensitive nuclear technology may be transferred pursuant to conditions as agreed in writing.

The proposed Agreement provides for the transfer of information in fields including research, development, design, construction, operation, maintenance and use of reactors, reactor experiments, and decommissioning; the use of material in physical and biological research, medicine, agriculture, and industry; fuel cycle studies of ways to meet future world-wide civil nuclear needs, including multilateral approaches to guaranteeing nuclear fuel supply and appropriate techniques for management of nuclear wastes; safeguards and nuclear security of material, equipment, and components; health, safety and environmental considerations; and assessing the role nuclear power may play in national energy plans. Restricted data may not be transferred under the proposed Agreement.

According to the proposed Agreement, prior consent is required for the parties to retransfer material, equipment, sensitive nuclear facilities, or major critical components transferred under the proposed Agreement and any special fissionable material produced through the use of such transferred nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components. In the Agreed Minute to the proposed Agreement, and consistent with existing civil nuclear cooperation with the United Kingdom under the terms of the U.S.-EURATOM agreement for cooperation, both parties grant each other consent to retransfer such material, other than irradiated nuclear material, and equipment to third countries or destinations named on lists that will be exchanged upon entry into force of the proposed Agreement. Both parties additionally grant each other consent to retransfer irradiated nuclear material for storage or reprocessing to third countries or destinations named on a list that will be provided should such retransfers be requested in the future.

In the proposed Agreement, prior consent is also required for the parties to reprocess, enrich, or otherwise alter in form or content nuclear material transferred under the proposed Agreement and any nuclear material produced through the use of transferred nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components. Both parties grant consent for the other to reprocess and alter in form or content such material and to enrich uranium to up to 20 percent in the isotope 235. Enrichment of uranium to more than 20 percent in the isotope 235 may be carried out according to conditions agreed upon in writing. All reprocessing, enrichment, or alteration activities must take place only in the territory of the recipient party, and reprocessing and alteration of plutonium, uranium-233, and high enriched uranium must take place at facilities listed in an annex to the proposed Agreement. Such advance consents are consistent with existing civil nuclear cooperation with the United Kingdom under the terms of the U.S.-EURATOM agreement for cooperation.

While the UK is subject to the terms of the EURATOM Treaty, its nuclear program is safeguarded under the auspices of the trilateral UK-IAEA-EURATOM safeguards agreement. As part of its preparations for withdrawal from EURATOM, the UK currently is negotiating a bilateral UK-IAEA safeguards agreement, which will be supplemented by an Additional Protocol. The bilateral UK-IAEA safeguards agreement is intended to enter into force from the date that the trilateral UK-IAEA-EURATOM safeguards agreement is no longer in force. As a result, there will be no gap in the UK's safeguards agreements. Further, Article 10 of the proposed Agreement requires that any nuclear material transferred to the UK or used in or produced through nuclear and non-nuclear material or items so transferred be subject to either the bilateral UK-IAEA safeguards agreement or the trilateral UK-IAEA-EURATOM safeguards agreement, whichever is in force at any particular time.

The UK is withdrawing from the European Union (EU) and EURATOM on March 29, 2019. The UK and the EU are currently in negotiations for an agreement governing the UK's

withdrawal. In recent public statements, the UK and the EU have announced that such an agreement would provide for a transition period from March 29, 2019, to December 31, 2020, during which time the UK would continue to be treated as an EU member state for purposes of EU law and certain international agreements between the EU and third parties. It is not clear when this withdrawal agreement will be concluded. Moreover, the United States is still considering the UK-EU announcement and its possible implications for the US-EURATOM agreement for cooperation. The proposed Agreement, however, pursuant to Article 20(1), would enter into force on a date specified by the parties in an exchange of notes, which provides the parties flexibility as to when to bring the proposed Agreement into force once the required Congressional review period is complete, allowing them to take into consideration the outcome of the UK-EU negotiations governing the UK's withdrawal from the EU and EURATOM, as appropriate. The parties could agree to bring the proposed Agreement into force on the date of the UK's withdrawal from EURATOM, the date the transition period following the UK's withdrawal ends, or another date as may be determined more appropriate.

The proposed Agreement would have a term of 30 years. It may be terminated by either party prior to the expiration of the 30 years by providing one year's written notice. In the event of termination or expiration of the proposed Agreement, key nonproliferation conditions and controls will continue in effect as long as any material, equipment, component, sensitive nuclear facilities, or major critical components subject to the proposed Agreement remains in the territory of either party or under its jurisdiction or control, or until such time as the parties agree that such nuclear or non-nuclear material are no longer usable for any nuclear activity relevant from the point of view of safeguards or have become practically irrecoverable, or that such equipment, components, sensitive nuclear facilities, or major critical components are no longer usable for nuclear purposes.

IV. REQUIREMENTS OF THE ATOMIC ENERGY ACT AND NUCLEAR NONPROLIFERATION ACT

A. Requirements of Section 123 of the Atomic Energy Act

The provisions of the proposed Agreement satisfy the applicable requirements of the Act. Subsection 123 a. of the Act sets forth nine specific requirements that must be met in most agreements for cooperation. As noted below, seven of those requirements are relevant with respect to the proposed Agreement.

1. Application in Perpetuity of Safeguards

Pursuant to subsection 123 a.(1), the UK, as the "cooperating party," must provide a guaranty:

> that safeguards as set forth in the agreement for cooperation will be maintained with respect to all nuclear materials and equipment transferred pursuant [to the agreement], and with respect to all special nuclear material used in or produced through the use of such nuclear materials and equipment, so long as the material or equipment remains under the jurisdiction or control of [the UK], irrespective of the duration of the other provisions in the agreement or whether the agreement is terminated or suspended for any reason.

The "safeguards as set forth in the agreement" are found in Article 10 of the proposed Agreement and the Agreed Minute, and the guaranty that they will be maintained in perpetuity is found in Article 20.

Article 10 stipulates that nuclear material transferred to the United Kingdom pursuant to the proposed Agreement and any nuclear material used in or produced through the use of nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred shall be subject to the United Kingdom-IAEA Safeguards Agreement. Article 1(23) defines "UK-IAEA Safeguards Agreement" as either the Agreement between the United Kingdom of Great Britain and Northern Ireland, the European Atomic Energy Community and the International Atomic Energy Agency for the Application of Safeguards in the United Kingdom of Great Britain and Northern Ireland in Connection with the Treaty on the Non-Proliferation of Nuclear Weapons, done at Vienna on September 6, 1976, and the Protocol Additional to the Agreement, done at Vienna on September 22, 1998 (the "Trilateral Safeguards Agreement") or a new bilateral safeguards agreement with the IAEA, supplemented by an Additional Protocol, for the application of safeguards in connection with the NPT, that will be in force from the date on which the Trilateral Safeguards Agreement is no longer in force, whichever is in force at any particular time. Article 10(3) provides for "fall-back" safeguards in the event the applicable IAEA safeguards agreement with the United Kingdom is not being implemented. The requirement for creation of such "fall-back" safeguards is further amplified in section 2 of the Agreed Minute, which establishes certain rights the United States would have in that situation. Those rights would include the right to review in a timely fashion the design of any transferred equipment or relevant facilities, to require maintenance and production of records and reports to assist in ensuring accountability for material subject to the proposed Agreement, and to designate personnel for inspection visits.

Both the primary safeguards requirements and the requirement to create fall-back safeguards would, according to Article 20, continue in effect as long as any material, equipment, component, sensitive nuclear facility, or major critical component subject to the proposed

Agreement remains in the territory of the United Kingdom or under its jurisdiction or control, or until such time as the parties agree that such nuclear material or non-nuclear material is no longer usable for any nuclear activity relevant from the point of view of safeguards or has become practically irrecoverable, or that such equipment, components, sensitive nuclear facilities, or major critical components are no longer usable for nuclear purposes, unless otherwise agreed in writing by the parties. (Any proposed agreement to end the application of the primary safeguards requirement or the requirement to create fall-back safeguards would require legal review to ensure it was consistent with the Act.) These requirements would therefore survive termination or expiration of the proposed Agreement.

2. Full-Scope Safeguards

The requirement for full-scope safeguards as a condition of cooperation mandated by subsection 123 a.(2) is not applicable because the United Kingdom is a nuclear-weapon state party to the NPT.

3. No Explosive or Military Use

Subsection 123 a.(3) requires that agreements include a guaranty that no nuclear material, equipment, or sensitive nuclear technology transferred, and no special nuclear material produced from such transferred items, will be used for any nuclear explosive device, for research on or development of any nuclear explosive device, or for any other military purpose. Article 9 of the proposed Agreement satisfies this requirement. Like many other U.S. nuclear cooperation agreements, it includes an even broader guaranty than is required under the Act: it applies to any material – not just special nuclear material (referred to in the proposed Agreement as "special fissionable material"), but also source material, non-nuclear material, and byproduct material – used in or produced through transferred nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, major critical components, or sensitive nuclear technology, as well as transferred equipment, components, sensitive nuclear facilities, major critical components, and sensitive nuclear technology.

Article 9(3) of the proposed Agreement clarifies that military nuclear propulsion and munitions (including depleted uranium munitions) are considered military purposes under the proposed Agreement, and specifically excludes from that term the provision of power for military bases, production of radioisotopes for medical purposes at military hospitals, and other similar purposes as mutually determined by the parties.

4. Right of Return

Subsection 123 a.(4) requires that agreements, other than agreements with nuclear-weapon states parties to the NPT, provide that the United States has a right to require the return of any nuclear materials and equipment transferred pursuant to an agreement for cooperation and any special nuclear material produced through the use of such transferred items in the event of a nuclear detonation by the cooperating party or its termination or abrogation of an IAEA safeguards agreement. This requirement does not apply to the proposed Agreement because the UK is a nuclear-weapon state party to the NPT. The proposed Agreement nevertheless contains, in Article 19(2), the right to require the return of any material, equipment, components, sensitive nuclear facilities, or major critical components transferred and material used in or produced through transferred nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components if the UK detonates a nuclear explosive device using material transferred pursuant to the Agreement or material used in or produced through the use of transferred material, equipment, components, sensitive nuclear facilities, or major critical components or terminates or abrogates a safeguards agreement with the IAEA without replacement in accordance with Article 10(3) of the Agreement. The United States would be required to reimburse the UK for the fair market value of any returned items.

5. Retransfer Consent

Subsection 123 a.(5) requires agreements to include a guaranty that certain transferred items – material, restricted data, and production or utilization facilities – and any special nuclear material produced through the use of such material or facilities will not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party without U.S. consent. According to Article 3(3) of the proposed Agreement, Restricted Data cannot be transferred under the proposed Agreement. Article 4(2) of the proposed Agreement includes the guaranty that all other required items will only be transferred to authorized persons, and Section 3 of the Agreed Minute confirms that this provision will be implemented by the parties in accordance with procedures under their national laws and regulations. Article 6 of the proposed Agreement includes the guarantee that those items will not be transferred beyond the territory, jurisdiction, or control of the UK without U.S. consent. In the Agreed Minute, however, the parties provide advance consent to certain retransfers.

In Section 4.A of the Agreed Minute, the parties provide advance consent to retransfers of material, other than irradiated nuclear material, and equipment subject to Article 6 of the Agreement to third countries or destinations identified on lists to be exchanged by the parties upon entry into force of the Agreement. Such third countries or destinations must meet two criteria. First, they must have made effective non-proliferation commitments, normally by being party to, and in full respect of their obligations under the NPT or the Treaty of Tlatelolco of February 14, 1967, and by acting consistently with the conditions of the Nuclear Suppliers Group Guidelines for Nuclear Transfers (INFCIRC/254/Revision 13/Part 1). For retransfers from the

UK, the third country or destination must, at a minimum, be a party to a nuclear cooperation agreement with the United States.

In Section 4.B of the Agreed Minute, the parties provide advance consent for the retransfer of irradiated material for storage and reprocessing to third countries or destinations included on a list to be provided to the other party in the future on request. Such third countries or destinations must meet the two criteria listed in Section 4.A, and the parties must also take into account: the consistency of the proposed action with the physical protection guidelines contained in INFCIRC/225/Revision 5 and the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities, as they may be revised and accepted by the parties; the nature and content of the peaceful nuclear programs of the third country or destination; and the potential proliferation and security implications of the transfer for either party.

The United States would unilaterally decide which countries or destinations meeting these criteria would be included on its lists. Section 4.C makes clear that either party may add eligible third countries or destinations to either of its lists at any time. It may also delete third countries or destinations from either of its lists following consultations with the other party. In addition, it may decide to limit its consent to retransfer to only certain types of material or equipment covered by the proposed Agreement. For example, the United States does not intend, on its initial list provided under Section 4.A, to authorize retransfer of uranium enriched to more than 20 percent in the isotope 235 or recovered plutonium.

As a general matter, the Act permits advance consents incorporated into agreements for cooperation entered into pursuant to section 123. Sections 123 and 127 of the Act require that the United States receive certain approval rights from the cooperating party, including with respect to retransfer and reprocessing, but no provision of the Act precludes the United States from giving such approvals in advance. Advance consents appear in, among others, U.S. nuclear cooperation agreements with Norway, the Republic of Korea, Japan, EURATOM, Switzerland, the United Arab Emirates, and the authorities on Taiwan. Congress, after careful and detailed consideration of both the principles of including advance long-term consents in nuclear cooperation agreements and their implementation in specific agreements, has not blocked their use in any of these agreements.

Section 131 of the Act establishes procedural requirements for arrangements entered into by the United States after conclusion of an agreement for cooperation. Such "subsequent arrangements," as they are defined by the Act, can reflect, among other things, approvals for transfer of nuclear material and equipment where prior approval is required by an agreement for cooperation. Under the terms of the Act, these "subsequent arrangements" must meet certain nonproliferation requirements and be published in the Federal Register, and in certain cases notified to Congress in advance.

Although advance consent provisions contained in agreements for cooperation are outside the scope of section 131 and, thus, do not constitute a "subsequent arrangement," the United States nevertheless has taken the position that all such advance consents in an agreement for cooperation should satisfy the terms of section 131 as a matter of policy.

Consistent with that policy, the Department of Energy has prepared an analysis demonstrating that the advance consent arrangements contained in the proposed Agreement, including with regard to retransfers, are consistent with the criteria of section 131, including the determination that U.S. consent on retransfers would not be inimical to the common defense and security of the United States. The Department of State has concurred in the Department of Energy's analysis. The Department of Energy's analysis will also be included in the submission to the President requesting his approval and authorization to sign the proposed Agreement.

Other criteria under section 131 relate to public and congressional notice. All subsequent arrangements must be published in the Federal Register at least 15 days before they take effect, and in addition, certain subsequent arrangements involving reprocessing of special nuclear material must lie before Congress for fifteen days of continuous session before they can become effective. The requirements of section 123 for the proposed Agreement, however, including congressional review for 90 days of continuous session, are more stringent in these areas. Thus, although not required, the advance retransfer consent contained in the proposed Agreement would satisfy the criteria set out in section 131 for subsequent arrangements.

Section 4.D of the Agreed Minute provides that retransfers to third countries or destinations not included on the lists may be considered on a case-by-case basis. U.S. consents to such "ad hoc" retransfers would be treated as subsequent arrangements under Section 131 of the Act, as would a U.S. consent to a request for retransfer of uranium enriched to more than 20 percent in the isotope 235 or of recovered plutonium.

6. Physical Security

Subsection 123 a.(6) requires agreements to include a guaranty that "adequate physical security" will be maintained with respect to any nuclear material transferred pursuant to an agreement for cooperation and any special nuclear material used in or produced through the use of any material, production facility, or utilization facility transferred. The term "adequate physical security" is not defined in section 123, but section 127(3) of the Act says that physical security measures shall be deemed adequate if they "provide a level of protection equivalent to that required by the applicable regulations." The Nuclear Regulatory Commission, in regulations set forth at 10 C.F.R. § 110.44, requires that physical security measures in recipient countries provide

protection at least comparable to the current IAEA recommendations, published at INFCIRC/225/Revision 5.

Article 8 of the proposed Agreement meets this requirement. It requires maintenance of "adequate" nuclear security, a term which the negotiating delegations understood to include physical security, with respect to transferred material, equipment, components, sensitive nuclear facilities, and major critical components, as well as special fissionable material used in or produced through the use of any material, equipment, components, sensitive nuclear facilities, or major critical components transferred. It further sets forth that compliance requires application of measures in accordance with levels of physical protection at least equivalent to the IAEA INFCIRC/225/Revision 5 recommendations and any subsequent revisions accepted by the parties. Moreover, it requires measures to be in accordance with the provisions of the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities and any subsequent amendments to that Convention that enter into force for both parties.

7. Enrichment/Reprocessing/Alteration Consent

Subsection 123 a.(7) requires a guaranty that no material transferred pursuant to an agreement for cooperation or used in or produced through the use of any material, production facility, or utilization facility transferred pursuant to the agreement "will be reprocessed, enriched or (in the case of plutonium, uranium 233, or uranium enriched to greater than twenty percent in the isotope 235, or other nuclear materials which have been irradiated) otherwise altered in form or content without the prior approval of the United States."

Article 7(1) of the proposed Agreement sets forth the basic rule that nuclear material transferred pursuant to the Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components transferred shall not be reprocessed, enriched, or otherwise altered in form of content unless the parties agree. In Article 7(2), (3) and (4), the parties provide that approval in advance for certain activities.

In Article 7(2) of the proposed Agreement, the parties consent to allow each other to reprocess or otherwise alter in form or content nuclear material transferred pursuant to the Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred. These activities may take place only in the territory of the recipient party, and the reprocessing of nuclear material and alteration in form or content of plutonium, uranium-233, and high enriched uranium may take place only at facilities listed in Annex A, or as otherwise agreed by the parties. Article 7(3) identifies conversion, fabrication of fuel, post-irradiation examination, blending or downblending of uranium, and separation of radioisotopes from

irradiated targets as permissible alterations in form or content for this purpose. Requests by the UK for reprocessing or alteration in form or content outside of the facilities listed in Annex A may be considered on a case-by-case basis, and U.S. consent to such a request would be subject to the subsequent arrangement procedures of section 131 of the Act.

With regard to Article 7(2), Section 5 of the Agreed Minute provides that either party may change the facilities in its territory listed in Annex A through a notification to the other party. It also provides that a party may suspend its consent for the activities referred to in Article 7(2), in whole or in part, "if it considers . . . on the basis of objective evidence, that continuation of such activities would entail a serious threat to the security of either Party, or a significant increase in the risk of nuclear proliferation." Prior to taking such action, a party shall consult with the other party, at cabinet level for the United States and at minister level for the UK.

In Article 7(4) of the proposed Agreement, the parties consent to allow each other, within their territory, to enrich up to 20 percent in the isotope uranium-235, uranium transferred pursuant to the Agreement, as well as uranium used in or produced through the use of nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred. Enrichment to more than 20 percent in the isotope uranium-235 may only be carried out according to conditions agreed in writing by the parties. Such conditions shall be the subject of consultations between the parties, which shall take place within forty days of receipt of a request by either party. A future agreement by the United States to allow such activity in the United Kingdom would be subject to the subsequent arrangement procedures of section 131 of the Act.

As discussed above with regard to the advance consents for retransfer, consent provided within an agreement for cooperation does not constitute a "subsequent arrangement" under section 131. As a matter of policy, however, the United States has taken the position that all such advance consent arrangements in agreements for cooperation should satisfy the criteria of section 131 and shown that they meet such criteria. Consistent with that policy, the Department of Energy's analysis of the advance consent arrangements contained in the proposed Agreement under the criteria of section 131 also addresses the advance consents with regard to enrichment, reprocessing, and alteration in form or content and shows that they meet the criteria of section 131, including a determination that the U.S. consent for these activities would not be inimical to the common defense and security of the United States, as well as, in the case of the U.S. consent for reprocessing, a judgment that such reprocessing will not result in a significant increase of the risk of proliferation beyond that which exists at the time the approval is requested. The Department of Energy's analysis will also be included in the submission to the President requesting his approval and authorization to sign the proposed Agreement.

8. Storage

Subsection 123 a.(8) requires agreements for cooperation to include a guaranty that specified nuclear materials – plutonium, uranium 233, and highly enriched uranium – transferred under the agreement or recovered from nuclear material that was transferred or used in transferred production or utilization facilities will only be stored in facilities approved in advance by the United States. Article 5 of the proposed Agreement, which was modeled on the corresponding provision in the U.S.-EURATOM agreement, satisfies this requirement and also provides advance consent to the UK for storage of such nuclear materials at specified facilities identified by each party that meet the appropriate standards for physical protection promulgated by the IAEA and accepted by the United States and the international community.

Article 5(1) of the proposed Agreement provides that plutonium, uranium 233, and highly enriched uranium transferred pursuant to the Agreement; such materials recovered from nuclear material transferred or recovered from nuclear material used in equipment, sensitive nuclear facilities or major critical components transferred; and such materials used in or produced through the use of nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components transferred, may only be stored in facilities that are on a list provided to the other party. It further provides that such facilities shall be subject, at a minimum, to the levels of physical protection set out in INFCIRC/225/Revision 5 as it may be revised and accepted by the parties from time to time.

Article 5(2) of the proposed Agreement permits a party to make changes to its list by notifying the other party in writing and receiving a written acknowledgement. Article 5(2) also provides for consultations within 90 days of receipt of a request from a party that believes that the obligations in Article 5(1) are not being fully complied with, and for corrective measures to be taken immediately or, if such measures are not feasible, for the special fissionable material to be transferred for storage at another appropriate, listed facility. Thus, the United States has the ability to require corrective action in regard to facilities storing nuclear material subject to the Agreement in any credible situation involving an increase in the risk of proliferation or a threat to national security.

As noted above with respect to retransfers, and again with respect to enrichment, reprocessing, and alteration in form or content, an advance consent provided within an agreement for cooperation does not constitute a "subsequent arrangement" under section 131. As a matter of policy, however, the United States has taken the position that all advance consent arrangements in agreements for cooperation should satisfy the criteria of section 131. Consistent with that policy, the Department of Energy's analysis of the advance consent arrangements contained in the proposed Agreement under the criteria of section 131 also addresses the advance consent on storage and shows that it meets the criteria of section 131, including a determination that the U.S.

consent on storage would not be inimical to the common defense and security of the United States. The Department of Energy's analysis will also be included in the submission to the President requesting his approval and authorization to sign the proposed Agreement.

9. Sensitive Nuclear Technology

Section 123 a.(9) requires a guaranty that any special nuclear material, production facility, or utilization facility produced or constructed under the jurisdiction of the cooperating party by or through the use of any sensitive nuclear technology transferred pursuant to an agreement for cooperation will be subject to all of the requirements of subsection 123 a. This requirement is satisfied by Article 3(5) of the proposed Agreement. Article 3(5) provides that sensitive nuclear technology may be transferred under the Agreement pursuant to conditions agreed in writing by the parties. It further provides that such conditions shall include, at a minimum, a guarantee that any special fissionable material, equipment, sensitive nuclear facilities, or major critical components produced or constructed under the jurisdiction of a party by or through the use of any sensitive nuclear technology transferred shall be subject to the requirements of Articles 4(2) (transfers), 5 (storage), 6 (retransfers), 7 (reprocessing, alteration in form or content, and enrichment), 8 (nuclear security), 9 (peaceful uses), and 10 (safeguards). A future agreement to transfer such technology to the United Kingdom would be subject to the subsequent arrangement procedures of section 131 of the Act.

B. Requirements of Section 127 of the Atomic Energy Act

Section 127 of the Act requires that: (1) IAEA safeguards as required by Article III(2) of the NPT will be applied to any previously exported nuclear material or equipment that is made subject to an agreement for cooperation; and (2) no such nuclear material or equipment will be used for any nuclear explosive device or research or development of any nuclear explosive device. This requirement is satisfied by Article 13(2) of the proposed Agreement and the Agreed Minute.

Since the UK's entry into EURATOM in 1972, the United States has exported nuclear material and equipment to the UK pursuant to agreements for cooperation with EURATOM. The Agreed Minute requires the parties to jointly establish initial inventories of the nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, and major critical components that are in the territory or under the jurisdiction or control of a party and that will be subject to the Agreement. Article 13(2) of the proposed Agreement provides that the provisions of the Agreement shall apply to items included in the initial inventories and that such items shall be considered to have been transferred pursuant to the Agreement. Therefore, previously

exported nuclear material and equipment that is made subject to the proposed Agreement will be subject to the safeguards and peaceful uses provisions of the proposed Agreement.

C. Requirements of the Nuclear Non-Proliferation Act

As relevant to the proposed Agreement, sections 402 and 407 of the NNPA also address the content of agreements for peaceful nuclear cooperation.

1. Major Critical Components

Section 402(b) of the NNPA precludes the transfer under an agreement for cooperation of component parts determined to be essential to the operation of a uranium enrichment, nuclear fuel reprocessing, or heavy water production facility unless the agreement specifically designates such components as items to be exported. Article 4(1) of the proposed Agreement specifies that such "major critical components" may be transferred under the Agreement.

2. Environment

Section 407 of the NNPA urges the inclusion in agreements for cooperation of provisions for cooperation in protecting the environment from radioactive, chemical, or thermal contamination arising from peaceful nuclear activities. Article 16(2) of the proposed Agreement provides for consultation about such environmental implications and cooperation in protection of the international environment as well as in related matters of health and safety. In addition, the preamble to the proposed Agreement includes a provision indicating that the parties are mindful that peaceful nuclear activities must be undertaken with a view to protecting the international environment from radioactive, chemical, and thermal contamination.

The proposed Agreement thus satisfies all of the substantive requirements specified for agreements for cooperation by the Act and the NNPA.

V. CONCLUSION

Entry into force of the proposed Agreement will create a bilateral framework for mutually beneficial civil nuclear cooperation between the two countries and provide an avenue for continued collaboration on nuclear nonproliferation goals.

On the basis of the analysis in this NPAS and all pertinent information of which it is aware, the Department of State has arrived at the following assessment and conclusions.

1. The safeguards and other control mechanisms and the peaceful use assurances in the proposed Agreement are adequate to ensure that any assistance furnished thereunder will not be used to further any military or nuclear explosive purpose.

2. The proposed Agreement meets all the legal requirements of the Act and the NNPA.

3. Execution of the proposed Agreement would be compatible with the nonproliferation program, policy, and objectives of the United States.

The Secretary of Energy
Washington, DC 20585

DETERMINATION AND JUDGMENT
UNDER SECTION 131 OF THE ATOMIC ENERGY ACT
CONCERNING THE ADVANCE CONSENT ARRANGEMENT IN THE
AGREEMENT BETWEEN
THE GOVERNMENT OF THE UNITED STATES OF AMERICA
AND
THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN
AND NORTHERN IRELAND
FOR COOPERATION IN PEACEFUL USES OF NUCLEAR ENERGY

The advance consent arrangement contained in the proposed Agreement Between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (hereinafter "the proposed Agreement") would constitute a subsequent arrangement under section 131 of the Atomic Energy Act of 1954, as amended, if agreed to separately. It is the policy of the Executive Branch to evaluate an advance consent arrangement contained in an agreement for cooperation to ensure that it meets the substantive requirements of section 131. Based on my review of the proposed Agreement and the "Analysis of Consents and Approvals Agreed Upon in the Proposed Agreement Between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in the Peaceful Uses of Nuclear Energy" prepared by my staff, I make the determination and judgment set forth below.

As required by section 131 a., I hereby determine that approval of the advance consent arrangement will not be inimical to the common defense and security of the United States.

As required by section 131 b., I hereby make the judgment that the advance consent regarding reprocessing will not result in a significant increase in the risk of proliferation beyond that which now exists.

I believe the determination and judgment are supported by many factors, including those demonstrating the strong commitment of the United Kingdom to the application of effective, comprehensive safeguards in the United Kingdom by the International Atomic Energy Agency under the Treaty on the Non-Proliferation of Nuclear Weapons. Additionally, the United Kingdom, a nuclear weapon state, has strong nonproliferation commitments, is a party to the Treaty on the Non-Proliferation of Nuclear Weapons, adheres to Nuclear Suppliers Group Guidelines, and has close and important relationships, including long-standing civil nuclear cooperation, with the United States. Finally, the United Kingdom

has previously been authorized to reprocess U.S.-obligated material under the advance consent provided in the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy between the United States of America and the European Atomic Energy Community, which entered into force on April 12, 1996, and which reflects only minor differences from the advance consent regarding reprocessing provided in the proposed Agreement.

These factors indicate that approval of advance consent regarding reprocessing will not result in a significant increase in the risk of proliferation as contemplated in the Atomic Energy Act of 1954, as amended.

Rick Perry

Rick Perry

ANALYSIS OF CONSENTS AND APPROVALS AGREED UPON IN THE PROPOSED AGREEMENT BETWEEN THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT OF THE UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND FOR COOPERATION IN PEACEFUL USES OF NUCLEAR ENERGY

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I. Overview

A. Background and Purpose of This Analysis

Subsection 123 a. of the Atomic Energy Act of 1954 (hereinafter "AEA"), as amended, by among other things the Nuclear Non-Proliferation Act of 1978 (hereinafter "NNPA"), prescribes nine requirements that must be included in an agreement for civil nuclear cooperation. This analysis focuses on the following requirements under section 123 a.: paragraph (5), which, in pertinent part, requires U.S. consent to any transfers of material or equipment subject to the agreement for civil nuclear cooperation beyond the jurisdiction or control of the cooperating party; paragraph (7), which in pertinent part requires a guaranty by the cooperating party that no material subject to the agreement for civil nuclear cooperation will be reprocessed, enriched or otherwise altered in form or content without prior U.S. approval; and paragraph (8), which, in pertinent part, requires a guaranty by the cooperating party that certain material subject to the agreement for civil nuclear cooperation or recovered from material so transferred will not be stored in any facility that has not been approved in advance by the United States.

U.S. consent or approval for these activities may be granted in the agreement for cooperation itself (as is the case in the United States' agreement for civil nuclear cooperation with the European Atomic Energy Community[1] (EURATOM) or by "subsequent arrangement" (as provided for in section 131 of the AEA) in response to a request by a cooperating state or group of states for a proposed activity. With respect to the proposed cooperative relationship with the United Kingdom (UK), the United States is providing advance consents and approvals within the proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (hereinafter "the proposed Agreement"). Because these consent and approval provisions are an integral part of the proposed Agreement, they do not constitute a "subsequent arrangement" subject to the requirements of section 131. However, in view of the significance of the requirements of section 131, and acknowledging that the consents and approvals would be "subsequent arrangements" if agreed to separately, it is the policy of the Executive Branch to evaluate advance consent arrangements contained in an agreement for civil nuclear cooperation to ensure that they meet the substantive requirements of both section 123 and section 131. In light of the breadth and complexity of the consents and approvals being given to the UK, and their relationship to the consents and approvals that persist for the remaining Member States of EURATOM, a standalone analysis was deemed to be an appropriate approach to undertaking that evaluation.

[1] EURATOM comprises the following Member States: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom (subject to its planned withdrawal in March 2019). France and the United Kingdom are nuclear weapon states and all other Member States are non-nuclear-weapon states.

B. Need for the Agreement for Cooperation

Currently, U.S. civil nuclear cooperation with the UK, a present Member State of EURATOM, is occurring under the framework established in the Agreement for Cooperation in the Peaceful Uses of Nuclear Energy Between the United States of America and the European Atomic Energy Community (hereinafter "the U.S.-EURATOM Agreement").[2] The U.S.-EURATOM Agreement, which entered into force in 1996, reflects EURATOM's role in implementing the safeguards, security, and nuclear material accountancy obligations on all civil nuclear material and facilities in the UK and in all other European Union (EU) Member States under the Treaty establishing the European Atomic Energy Community (hereinafter "EURATOM Treaty").

In January 2017, the UK announced that it intends to withdraw from the EURATOM Treaty, as part of its larger undertaking to withdraw from the EU at the end of March 2019. Under U.S. law, once the U.S.-EURATOM Agreement is no longer applicable to the UK, civil nuclear cooperation between the United States and the UK under section 123 of the AEA can only continue if the countries have brought into force a bilateral agreement for civil nuclear cooperation that sets out specific nuclear safeguards and physical security obligations required by the AEA. The proposed Agreement is such a bilateral agreement.

II. Framework of This Analysis

A. Legal Basis for the Evaluation of the Consents and Approvals in the Proposed Agreement

The AEA, as amended, sets out criteria for the consents and approvals that must be given by the United States during the course of a cooperative relationship under an agreement for cooperation in the peaceful uses of atomic energy. Generally, these criteria are found within section 123, for consents and approvals within an agreement for cooperation, and in section 131, for consents and approvals provided in a subsequent arrangement that implements an agreement for cooperation. As previously noted, although the advance consents and approvals provided in the proposed Agreement do not constitute a subsequent arrangement, they are analyzed for consistency with the substantive requirements of both section 123 and section 131 as a matter of Executive Branch policy.

[2] As provided under section 123 of the AEA, agreements for cooperation establish the legal framework for significant U.S. exports of complete nuclear reactors, major components of nuclear reactors, associated equipment, and nuclear material.

1. Criteria for Agreements for Civil Nuclear Cooperation.

Section 123 of the AEA addresses the substantive and procedural requirements for a new agreement for cooperation. Section 123 a. prescribes nine requirements that must be included in any such agreement, including reservation of U.S. consent or approval rights for certain nuclear fuel cycle activities. The Nuclear Proliferation Assessment Statement (NPAS) that has been prepared to accompany the proposed Agreement analyzes the agreement's conformance to these requirements. Section 123 b. requires the President to determine that performance of any proposed agreement for cooperation "will promote, and will not constitute an unreasonable risk to, the common defense and security."

2. Criteria for Subsequent Arrangements.

Section 131 of the AEA authorizes the Secretary of Energy to enter into "subsequent arrangements" permitting specified activities, including the reprocessing, alteration and retransfer of certain U.S.-obligated material by the other party to any agreement for cooperation, provided that the subsequent arrangement meets specific criteria. Sections 131 a. and 131 b. contain the legal criteria that must be met:

a) Non-Inimicality to the Common Defense and Security of the United States Determination.

Section 131 a.(1) applies to all subsequent arrangements and requires the Secretary of Energy to determine in writing that each subsequent arrangement permitting a particular activity to be carried out by the cooperating party involving U.S.-obligated material will "not be inimical to the common defense and security" of the United States.

b) No Significant Increase of the Risk of Proliferation Assessment.

Section 131 b.(2) precludes the Secretary of Energy from entering into a subsequent arrangement permitting a foreign party to reprocess special nuclear material exported by the United States or produced through the use of nuclear material and equipment or sensitive nuclear technology exported by the United States in a facility that began its reprocessing operations after 1978 unless, "in [his/her] judgment, and that of the Secretary of State, such reprocessing . . . will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested."[3] Among all of the factors in making this judgment, the Secretaries of Energy and State are directed to give foremost consideration to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to the United States of any diversion well in advance of the time at which the non-nuclear weapon state could transform the diverted material into a nuclear explosive device.

No such assessment is required for subsequent arrangements regarding reprocessing in facilities that conducted operations before 1978. However, section 131 b.(3) charges the Secretary of

[3] Section 131 b.(2) also imposes this requirement on any proposed subsequent arrangement for the retransfer to a non-nuclear weapon state of any plutonium in quantities greater than 500 grams resulting from reprocessing of U.S.-obligated material that has already been approved or authorized by the United States. Because the proposed Agreement does not provide any advance consent or approval for such retransfers, this requirement is not assessed in this analysis. Any future retransfers of U.S.-obligated recovered plutonium in quantities greater than 500 grams will be handled by subsequent arrangement.

Energy with attempting to ensure application of the same standards to those facilities as would be applied to a newer facility.

3. Procedural Requirements for a Subsequent Arrangement to Come into Effect

Subsequent arrangements are done pursuant to an in-force agreement for civil nuclear cooperation and are entered into by the Secretary of Energy, with the concurrence of the Secretary of State, after consultation with the Nuclear Regulatory Commission and the Secretary of Defense. Notice of any proposed subsequent arrangement is to be published in the *Federal Register* at least 15 days before it becomes effective, together with the written determination of the Secretary of Energy that the arrangement will not be inimical to the common defense and security. An NPAS is required if, in the view of the Secretary of State, Secretary of Energy, Secretary of Defense or the Nuclear Regulatory Commission, a proposed subsequent arrangement might significantly contribute to proliferation. The NPAS is to focus on the adequacy of the safeguards and other control mechanisms and the application of the peaceful use assurances of the relevant agreement for civil nuclear cooperation to ensure that assistance to be furnished pursuant to the subsequent arrangement will not be used to further any military or nuclear explosive purpose.

If the subsequent arrangement is associated with reprocessing of U.S.-obligated nuclear material, or the retransfer of a threshold quantity of plutonium resulting from such reprocessing, the Secretary of Energy must provide the House Committee on Foreign Affairs and the Senate Committee on Foreign Relations with a report containing his reasons for entering into the arrangement, and a period of 15 days of continuous session must elapse before the subsequent arrangement can become effective.

B. Analytical Approach

1. Overlapping Requirements Satisfied in the Course of Submission of the Proposed Agreement

a) Nuclear Proliferation Assessment Statement

Section 131 a. requires preparation of an NPAS for only those subsequent arrangements that, in the view of the Secretary of State, Secretary of Energy, Secretary of Defense or the Nuclear Regulatory Commission, might significantly contribute to proliferation. When required, the NPAS is to focus on the adequacy of the safeguards and other control mechanisms and the application of the peaceful use assurances of the relevant agreement for civil nuclear cooperation to ensure that assistance to be furnished pursuant to the subsequent arrangement will not be used to further any military or nuclear explosive purpose. With respect to a U.S.-UK civil nuclear cooperative relationship, the relevant agreement for cooperation to be considered by an NPAS would be the proposed Agreement.

An NPAS is mandatory for any proposed agreement for civil nuclear cooperation under section 123. One prescribed element of that NPAS is an assessment of the adequacy of the safeguards and other control mechanisms and the peaceful use assurances contained in that agreement. While the Department of Energy does not believe an NPAS would be required in the hypothetical scenario of a subsequent arrangement covering the activities to which the United States is giving advance consent and approval to the UK in the proposed Agreement, this discretionary element of section 131 is nevertheless satisfied for all advance consents given in the proposed Agreement because the NPAS required by section 123 addresses the factors that a section 131 NPAS would need to evaluate.

b) Executive Branch Coordination

Consistent with section 131 and implementing procedures established thereunder, the Department of Energy coordinates supporting documents and texts for subsequent arrangement proposals with the Department of State, Department of Defense, Department of Commerce, and the Nuclear Regulatory Commission. Agreements for civil nuclear cooperation done under section 123 are statutorily required to be submitted to the President jointly by the Secretary of State and the Secretary of Energy after the Department of State has obtained the concurrence of the Department of Energy and consulted with the Nuclear Regulatory Commission. The Executive Branch also routinely coordinates with the Department of Defense and the Department of Commerce. All statutory requirements and routine practices are being followed for the proposed Agreement. As a result, all agencies that are required to be consulted under either section 123 or section 131 will have been consulted about the proposed Agreement text and supporting documentation before the advance consents take effect.

c) Congressional Review

Section 131 requires that subsequent arrangements dealing with reprocessing of U.S.-obligated nuclear material cannot take effect until "a period of 15 days of continuous session . . . has elapsed" after submission of the above rationale statement to the House Foreign Affairs Committee and the Senate Foreign Relations Committee.[4] Section 123 requires that the proposed Agreement lie before Congress for an aggregate period of 90 continuous session days (and not be subject to a resolution of disapproval in that time period). The section 131 review period is more than satisfied by compliance with the longer review period observed for an agreement for civil nuclear cooperation.

d) Public Notice

Section 131 requires that subsequent arrangements and their accompanying non-inimicality findings be publicly noticed, through publication in the *Federal Register*. When proposed agreements for civil nuclear cooperation are submitted to Congress, the submitted documents and text are published in the *Congressional Record* and as a House document, which renders any

[4] Only those subsequent arrangements relating to reprocessing of U.S.-obligated nuclear material or the retransfer of at least 500 grams of plutonium recovered from such reprocessing need to be submitted to Congress.

relevant advance consents and approvals included within the agreement publicly noticed. Thus, the public notice requirement under section 131 will be effectively satisfied and indeed exceeded by implementation of the procedures set forth in section 123.

2. Section 131 Requirements Considered By This Analysis

a) Provision of Reasons for Entering into Arrangements

Section 131 b. requires that, when a subsequent arrangement is made for the retransfer of any U.S.-obligated nuclear material to a third country for reprocessing, for the reprocessing of any such material, or for the subsequent retransfer of any plutonium in quantities greater than 500 grams resulting from the reprocessing of any such material, the Secretary of Energy submit "a report containing his reasons for entering into such arrangement" to the Committee on Foreign Affairs of the House of Representatives and the Committee on Foreign Relations of the Senate. The proposed Agreement includes advance consent for the reprocessing of U.S.-obligated nuclear material, and for retransfers to third countries of such material for storage and reprocessing. It does not provide advance consent for the subsequent retransfer of any recovered plutonium. Any such consents would be handled as a subsequent arrangement.

Section I of this analysis contains the reasons for entering into the agreement for peaceful cooperation, namely that the proposed Agreement is necessitated by the UK's decision to withdraw from EURATOM, with which the United States continues to have an agreement for civil nuclear cooperation, and it is in the interest of both the United States and the UK to continue civil nuclear cooperation that has been ongoing under the U.S.-EURATOM Agreement. Additional information is also found in other documents accompanying the text of the proposed Agreement.

b) Judgment of Whether Reprocessing Authorization Would Result in a Significant Increase in the Risk of Proliferation

As noted above, the proposed Agreement authorizes reprocessing of U.S.-obligated material and retransfers for the purpose of reprocessing. Section 131 compels both the Secretary of State and the Secretary of Energy to judge whether reprocessing of U.S.-obligated nuclear material authorized by a subsequent arrangement would result in a significant increase in the risk of proliferation beyond that which exists at the time that approval is required.

Many of the inputs and factors that would drive this determination with respect to the authorized reprocessing are considered in the context of the NPAS. However, this analysis consolidates and contextualizes those elements for a particularized discussion, with a particular focus on differences between the structure under which the UK has been cooperating with the United States pursuant to the U.S.-EURATOM Agreement and the newly proposed structure, and how those differences may impact any proliferation risk associated with the proposed Agreement.

c) Determination Regarding Impacts to Common Defense and Security

Under the approval provisions of section 123 b. of the AEA, the President approves and authorizes proposed agreements for civil nuclear cooperation and makes a determination in writing that the performance thereof will promote, and will not constitute an unreasonable risk to, the common defense and security. In contrast, the subsequent arrangement procedures in section 131 of the AEA require the determination of the Secretary of Energy only that the arrangement will not be inimical to the common defense and security.

While both findings are supported by the analysis in the NPAS, in the interest of advancing the policy of the Executive Branch to consider the requirements of section 131 when advance consents are provided within the text of an agreement for civil nuclear cooperation, and given the breadth and complexity of the advance consents included in the proposed Agreement, the Department of Energy has prepared this analysis to inform the Secretary of Energy's decision-making with respect to the non-inimicality of the arrangement.

III. Some Basic Elements of the Evaluation

A. Comparison of Consents and Approvals Afforded to the UK under the Proposed Agreement and under the U.S.- EURATOM Agreement

The proposed Agreement builds upon a long history of peaceful nuclear collaboration with the UK, as a Member State of EURATOM, pursuant to the U.S.-EURATOM Agreement. The U.S.-EURATOM Agreement included advance consent for enrichment, reprocessing, other alteration in form or content, storage, and retransfers of certain materials and items to certain third countries or destinations. Thus, the UK has already been authorized to undertake many of the activities for which U.S. consent is required by the AEA. The proposed Agreement was negotiated with the contours of the existing relationship in mind, and contains similar – and, in some places, identical – long-term advance consents. What follows is a comparison of those consents.

1. Advance Consents and Approvals Addressed in Article 5 of the Proposed Agreement – Storage of Plutonium, U-233 and High Enriched Uranium (HEU)

a) Required Element for an Advance Consent

Section 123 a.(8) of the AEA requires any new agreement for cooperation to provide for the advance approval by the United States of any facility in which the cooperating party intends to store any plutonium, U-233, or HEU transferred from the United States pursuant to the Agreement, or recovered from any source or special nuclear material so transferred or from any source or special nuclear material used in any facility so transferred.

b) Consents Provided in the Proposed Agreement

Paragraph 1 of Article 5 of the Agreement permits the UK to store, in facilities which meet specified standards for physical protection, the following nuclear materials: (1) plutonium and

U-233 (except as contained in irradiated fuel elements), and HEU which has been transferred from the United States pursuant to the Agreement; (2) plutonium, U-233 and HEU recovered from nuclear material transferred from the United States pursuant to the Agreement; (3) plutonium, U-233 and HEU recovered from nuclear material used in equipment, sensitive nuclear facilities or major critical components transferred pursuant to the Agreement; or (4) plutonium, U-233 and HEU used in or produced through the use of nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major crucial components so transferred.

The facilities in which the transferred or recovered plutonium, U-233 or HEU may be stored must, at all times, at a minimum, be subject to the levels of physical protection set out in the International Atomic Energy Agency (IAEA) document "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities" (INFCIRC/225/Rev. 5), as it may be revised and accepted by the UK and the United States. The facilities to be used for such storage by the UK are to be identified on a list provided to the United States. If so requested by the UK, the United States is required to keep the list confidential. The UK may make changes to its list by notifying the United States in writing and receiving a written acknowledgement from the United States to be made within 30 days after receipt of the notification. If no response is given, the changes made by the UK are deemed to have been acknowledged.

If the United States believes that an unlisted facility is being used or the physical protection being provided to any facility on the UK's list is not at the required level, it may request immediate consultation with the UK. The purpose of such consultation is to ensure that sufficient corrective measures are taken immediately. If that is not feasible, the special fissionable material in question is to be transferred for storage to another facility on the UK's list.

c) Consents Provided in the U.S.-EURATOM Agreement

Paragraph 3 of Article 8 of the U.S.-EURATOM Agreement permits EURATOM to store, in facilities which meet specified standards for physical protection, the following nuclear materials: (1) plutonium, U-233, or HEU not contained in irradiated fuel, which has been transferred from the United States pursuant to the Agreement; (2) plutonium, U-233 or HEU recovered from the nuclear material transferred from the United States pursuant to the Agreement; or (3) plutonium, U-233 or HEU recovered from nuclear material used in equipment so transferred.

The facilities in which the transferred or recovered plutonium, U-233 or HEU may be stored must, at all times, as a minimum, be subject to the levels of physical protection set out in Annex C to the Nuclear Suppliers Group (NSG) Guidelines (INFCIRC/254/Rev. 13/Part 1), as it may be revised and accepted by EURATOM, its Member States, and the United States. The facilities to be used for such storage by EURATOM or its Member States are to be identified on a list provided to the United States. If so requested by EURATOM, the United States is required to keep the list confidential. EURATOM may make changes to its list by notifying the United States in writing and receiving a written acknowledgement from the United States to be made within 30 days after receipt of the notice, consisting only of a statement that the notice has been received.

If the United States has grounds to believe that the physical protection being provided to any facility on EURATOM's list is not at the level called for in Annex C to the NSG Guidelines, immediate consultation with EURATOM may be requested. The purpose of such consultation is to ensure that sufficient corrective measures are taken immediately to restore the specified levels of physical protection to the facility in question. If that is not feasible, the nuclear material in question is to be transferred for storage to another facility on EURATOM's list.

d) Analysis

The consent concerning storage of U.S.-obligated plutonium, U-233, and HEU provided in the proposed Agreement are nearly identical to the consent afforded to the UK under the U.S.-EURATOM Agreement. Although the references for physical protection standards stated in the proposed Agreement and the U.S.-EURATOM Agreement are different, it should be noted that the guidelines in Annex C of INFCIRC/254/Part 1, as revised, are consistent with the relevant IAEA recommendations set out in INFCIRC/225/Rev.5.

2. Advance Consents Addressed in Article 6 of the Proposed Agreement – Retransfers to Third Countries or Destinations

a) Required Element for an Advance Consent

AEA section 123 a.(5) requires new agreements for cooperation to provide for U.S. consent prior to the transfer outside the jurisdiction or control of the cooperating party of any material or facility transferred from the United States or of any special nuclear material produced through the use of such material or facility.

b) Consents Provided in the Proposed Agreement

The consents provided in the proposed Agreement concerning the retransfer of material and equipment transferred to the UK pursuant to the Agreement (or special fissionable material produced through the use of any nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components so transferred), to third countries or destinations are discussed in the NPAS.

Article 6 of the Agreement, and Section 4 of the Agreed Minute, which is an integral part of the Agreement, read together, permit the UK to retransfer material and equipment, transferred to it pursuant to the Agreement (or special fissionable material produced through the use of any nuclear material, non-nuclear material, equipment, sensitive nuclear facilities, or major critical components so transferred), to third countries or destinations identified in lists given by the United States to the UK. The United States does not intend, in its initial list, to authorize the retransfer of plutonium recovered from otherwise authorized reprocessing to any third country or destination. Such retransfers would be addressed as a subsequent arrangement.

Paragraph A. of Section 4 of the Agreed Minute permits the UK to retransfer material (other than irradiated nuclear material) and equipment subject to the Agreement to third countries or

destinations identified on a list provided to it by the United States upon entry into force of the Agreement. Paragraph A lists specific criteria that must be met for a country to be an authorized destination. First, it must have made effective non-proliferation commitments, normally by being party to, and in full respect of their obligations under the Nuclear Non-Proliferation Treaty (NPT) or the Treaty of Tlatelolco of February 14, 1967, and by being in compliance with the conditions of the Trigger List for the Nuclear Suppliers Group Guidelines (INFCIRC/254/Rev. 13/Part 1). For retransfers from the UK, the third country or destination must, at a minimum, be a party to a nuclear cooperation agreement with the United States.

Paragraph B. of Section 4 of the Agreed Minute permits the retransfer of irradiated nuclear material subject to the Agreement for storage and reprocessing to certain third countries or destinations. If the UK requests the right to retransfer for storage and reprocessing, the United States is to provide it with a list of third countries or destinations to which such retransfers may be made. Third countries or destinations on that list must meet the two criteria listed in Section 4.A, and must also take into account: the consistency of the proposed action with the physical protection guidelines contained in INFCIRC/225/Rev. 5 and the Convention on the Physical Protection of Nuclear Material and Nuclear Facilities, as they may be revised and accepted by the parties; the nature and content of the peaceful nuclear programs of the third country or destination; and the potential proliferation and security implications of the transfer for either party.

The United States would unilaterally decide which countries or destinations meeting these criteria would be included on its lists. Paragraph C. of Section 4 of the Agreed Minute sets out the criteria for altering the lists of approved retransfers to third countries or destinations. Under this paragraph, the United States may add other third countries or destinations to either list contemplated in Paragraph A. or B. at any time, and may delete third countries or destinations—temporarily or permanently—from the list it has provided after consultation with and upon written notice to the other Party.

Paragraph D. of Section 4 of the Agreed Minute sets out that retransfers to third countries or destinations not included on the lists may be considered on a case by case basis.

c) Consents Provided in the U.S.-EURATOM Agreement

Within Article 8 of the U.S.-EURATOM Agreement are advance consents for certain retransfers. Low enriched uranium (LEU), non-nuclear material, equipment, and source material transferred under the Agreement or LEU produced through nuclear material or equipment so transferred may be retransferred for nuclear fuel cycle activities other than the production of HEU. The parties exchanged lists of third countries to which such retransfers may be made by the other party. The Agreed Minute lays out criteria for eligibility for continued inclusion on such lists, and includes minimum criteria for the continued inclusion of a country on the list or the addition of a country to the list (which would constitute a subsequent arrangement). Deletion of a country from a list requires consultation with the other party.

Irradiated nuclear material transferred under the U.S.-EURATOM Agreement or used in or produced through the use of nuclear material, non-nuclear material, or equipment so transferred

may be retransferred for storage or disposal not involving reprocessing. Other nuclear material transferred under the U.S.-EURATOM Agreement and other special fissionable material produced through non-nuclear material, nuclear material or equipment so transferred may be retransferred for other nuclear fuel cycle activities, including reprocessing and alteration in form or content of plutonium, U-233 and HEU.

d) Analysis

The consents for retransfers to third countries or destinations are nearly the same with one exception. The proposed Agreement provides consent for the retransfer of irradiated nuclear material for storage and reprocessing, whereas the U.S.-EURATOM Agreement only provides consent to retransfer irradiated nuclear material for storage.

3. Advance Consents Addressed in Article 7 of the Proposed Agreement – Reprocessing, Other Alteration in Form and Content, and Enrichment

a) Reprocessing

(1) Required Elements for an Advance Consent

Section 123 a.(7) of the AEA requires any new agreement for cooperation to provide for approval by the United States before any material transferred from the United States pursuant to the Agreement or any material used in or produced through the use of any material or facility so transferred may be reprocessed, enriched, or otherwise altered in form or content by the cooperating party. Under the section 131 regime, additional requirements may need to be met if the intended reprocessing facility began reprocessing power reactor fuel assemblies after March 10, 1978. In such a scenario, the Secretaries of Energy and State must also judge that such reprocessing will not result in a significant increase of the risk of proliferation beyond that which exists at the time that approval is requested. Even if reprocessing would occur in a plant that began operations before 1978, section 131 b.(3) makes it clear that the Secretary of Energy should endeavor to apply the same standards to older facilities.

(2) Consent Provided in the Proposed Agreement

Paragraph 2 of Article 7 of the proposed Agreement permits the UK, within its territory, to reprocess nuclear material transferred from the United States pursuant to the Agreement and nuclear material used in or produced through the use of nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred. The facilities in which reprocessing may be carried out are listed in Annex A to the proposed Agreement. The UK may change the facilities listed in Annex A in accordance with the procedures in Section 5 of the Agreed Minute. Reprocessing activities may only take place in accordance with storage standards set out in Article 5, physical protection standards set out in Article 8, and environmental consultation requirements set out in Article 16 of the proposed Agreement, and such other provisions as may be agreed in writing by the parties, including the application of safeguards.

Procedures by which the UK may change the facilities listed Annex A are set forth in Section 5 of the Agreed Minute, which is an integral part of the Agreement. Written notice is to be given to the United States by the UK. The notice is to include:

(i) For an addition of a facility within its territory:
   a. The name, type, and location of the facility and its existing or planned capacity;
   b. A confirmation that the party's relevant regulations regarding nuclear material control are fully applied to the facility;
   c. For a facility at which IAEA safeguards are being applied pursuant to a safeguards agreement referred to in Article 10, paragraph 1 or 2 of the Agreement, a confirmation of those relevant safeguards which have been agreed upon with the IAEA and that those arrangements will permit the IAEA to exercise fully its rights under such safeguards agreement;
   d. Such non-confidential information as is available to the party on the IAEA safeguards approach; and
   e. Confirmation that nuclear security measures as required by Article 8 of the Agreement will be applied.

(ii) For a deletion of a facility from Annex A:
   a. The name of the facility; and
   b. Other relevant information available.

Notices by the UK of intended changes to Annex A are to be simply acknowledged by the United States within 30 days after receipt.

(3) Consent Provided in the U.S.-EURATOM Agreement

Paragraph 2(A) of Article 8 of the U.S.-EURATOM Agreement permits EURATOM within its territorial jurisdiction to reprocess, in facilities forming part of its "delineated peaceful nuclear programs," nuclear material transferred from the United States pursuant to the Agreement and nuclear material used in or produced through the use of non-nuclear material, nuclear material, or equipment so transferred. Two of the facilities in which reprocessing may be carried out are the British Nuclear Fuel plant in Sellafield and the UK Atomic Energy Authority (UKAEA) Technology plant[5] in Dounreay.

Procedures by which EURATOM may make changes in its delineated peaceful nuclear program are set forth in the Agreed Minute to the U.S.-EURATOM Agreement. Written notice is to be given to the United States by EURATOM of any facility intended to be added to its delineated peaceful nuclear program. The notice is to include:

(i) Identification of the facility, its type, location, and capacity;

[5] The UKAEA Technology plant ceased reprocessing spent fuel in 1996.

(ii) Confirmation that EURATOM's basic safeguards regulation, as amended, is fully applied to the facility;
(iii) In the case of a facility to be under IAEA safeguards inspection pursuant to one of the three safeguards agreements with the IAEA to which EURATOM is party, confirmation that relevant arrangements have been agreed with the IAEA and that those arrangements will permit the IAEA to exercise fully its rights under the relevant safeguards agreement over the life of the Agreement, so as to enable the IAEA to meet its objectives and inspection goal for the facility;
(iv) Non-confidential information on the safeguards approach and on EURATOM safeguards relevant to the facility; and
(v) Confirmation that physical protection measures as required by the Agreement will be applied to the facility.

Notices by EURATOM of intended additions to its delineated peaceful nuclear program are to be simply acknowledged by the United States within 30 days after receipt. Each such intended addition is to receive "fullest possible consideration" during consultations between the United States and EURATOM, which may include discussions on safeguards. EURATOM may delete a facility from its delineated peaceful program by written notice to the United States identifying the facility and including other relevant information.

(4) Analysis

The consents provided in the proposed U.S.-UK 123 Agreement and the U.S.-EURATOM 123 Agreement are similar concerning reprocessing of U.S.-obligated nuclear material.

b) Other Alteration in Form or Content

(1) Required Element for an Advance Consent

As noted above, section 123 a.(7) of the AEA requires any new agreement for cooperation to provide for prior approval by the United States before the alteration in form or content of plutonium, U-233, HEU, or other irradiated nuclear material transferred from the United States pursuant to the Agreement or used in or produced through the use of any material or facility so transferred.

(2) Consents Provided in the Proposed Agreement

In paragraphs 2 and 3 of Article 7 of the proposed Agreement, read together, the United States provides approval and consents to the following forms of alteration in form or content:[6] conversion, fabrication of fuel, post-irradiation examination, blending or downblending of uranium, and separation of radioisotopes from irradiated targets.

[6] By definition, as set out in paragraph 1 of Article 7, irradiation or further irradiation is not considered by the proposed Agreement to be a form of alteration in form or content for which prior U.S. consent is required.

Any such alteration may only take place at facilities listed in Annex A of the proposed Agreement or as otherwise agreed by the Parties, and must be done in accordance with storage standards set out in Article 5, physical protection standards set out in Article 8, and environmental consultation requirements set out in Article 16 of the proposed Agreement, and such other provisions as may be agreed in writing by the parties, including the application of safeguards. The procedures by which a facility may be added to or deleted from its list by the UK are set out in Section 5 of the Agreed Minute.

(3) Consents Provided in the U.S.-EURATOM Agreement

Paragraph 1(D) of Article 8 permits post-irradiation examination involving chemical dissolution or separation of irradiated nuclear material transferred from the United States pursuant to the agreement or irradiated nuclear material used in or produced through the use of non-nuclear material, nuclear material, or equipment so transferred. This post-irradiation examination may take place anywhere within EURATOM.

Paragraph 2(B) of Article 8 of the Agreement permits within the territorial jurisdiction of EURATOM the alteration in form or content, in facilities which form part of EURATOM's delineated peaceful nuclear program, of plutonium, U-233, and HEU transferred from the United States pursuant to the Agreement or used in or produced through the use of non-nuclear material, nuclear material or equipment so transferred. The facilities in which such alteration in form or content may take place include two in the UK.[7] The procedures by which a facility may be added to or deleted from its list by EURATOM are the same as those described above for the list of reprocessing facilities, including the specification of the content of each notice of an intended addition to the list.

(4) Analysis

The consents provided in the proposed Agreement and the U.S.-EURATOM Agreement are nearly identical regarding the alteration in form or content of U.S.-obligated nuclear material.

c) Enrichment of Uranium in the Isotope U-235

(1) Required Element for an Advance Consent

As noted above, section 123 a.(7) of the AEA also provides that no material transferred from the United States pursuant to an agreement for cooperation in the peaceful uses of atomic energy and no material used in or produced through the use of any material or in a facility so transferred may be enriched by the cooperating party without prior U.S. approval.

(2) Consents Provided in the Proposed Agreement

[7] The Sellafield mixed oxide plant shutdown in 2011. Dounreay is under a site closure program currently.

Paragraph 4 of Article 7 of the proposed Agreement provides advance approval for the enrichment of uranium transferred from the United States pursuant to the Agreement, or used in or produced through the use of nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred, to up to 20 percent in the isotope U-235 within the territory of the UK. Included in the paragraph is a statement that enrichment of such uranium to more than 20 percent in the isotope U-235, or re-enrichment, if it is already enriched to more than 20 percent in the isotope U-235, may be carried out according to conditions to be agreed upon with the United States. Those conditions are to be the subject of consultations between the parties within 40 days of the receipt of a request from the UK. Such a future agreement would be subject to the subsequent arrangement procedures of section 131 of the AEA.

(3) Consents Provided in the U.S.-EURATOM Agreement

Paragraph 1 (A) of Article 8 of the Agreement provides advance approval for the enrichment of uranium transferred from the United States pursuant to the Agreement, or used in or produced through the use of equipment so transferred, up to 20 percent in the isotope U-235, within the territorial jurisdiction of EURATOM. Included in the paragraph is a statement that enrichment of such uranium to more than 20 percent in the isotope U-235 or re-enrichment, if it is already enriched to more than 20 percent in the isotope U-235, may be carried out only according to conditions to be agreed upon with the United States.

(4) Analysis

The consents provided in the proposed Agreement concerning the enrichment of uranium in the isotope U-235 are similar to those contained in the U.S.-EURATOM Agreement.

B. Comparison of Suspension Rights of U.S. Consents and Approvals for Reprocessing or Alteration in Form and Content between the Proposed Agreement and the U.S.-EURATOM Agreement

The Agreed Minute to the proposed Agreement provides that a party may suspend, in whole or in part, its consent for the reprocessing or other alteration in form or content of material subject to the Agreement, if it considers on the basis of objective evidence that the continuation of such activities would entail a serious threat to the security of either party, or a significant increase in the risk of nuclear proliferation. Paragraph 5 of the Agreed Minute further calls for the party considering that such objective evidence may exist, to consult with the other party "at Cabinet level for the United States and at Minister level for [the] United Kingdom" before reaching any decision.

Similarly, the Agreed Minute to the U.S.-EURATOM Agreement provides that reprocessing of material subject to the Agreement and alteration in form or content (i.e., conversion and fuel fabrication) of plutonium, U-233 and HEU subject to the Agreement in the facilities listed in Annex A, may continue unless the United States considers, in accordance with the prescribed procedures, that such activities should be suspended, on the basis of objective evidence that their

continuation would entail a serious threat to the security of either EURATOM, any of its Member States or the United States, or a significant increase in the risk of nuclear proliferation, resulting from a situation of the same or greater degree of seriousness as are enumerated in detail in the Agreed Minute.

The U.S.-EURATOM Agreement contains significantly more detailed criteria and restrictions regarding the circumstances under which the United States may suspend its advance consent for authorized fuel cycle activities than are set forth in the proposed Agreement. Moreover, whereas the U.S.-EURATOM Agreement requires any such U.S. suspension decision to be made by the President of the United States, the proposed Agreement does not mandate the level at which such a suspension decision may be made. As a result, under the proposed Agreement the United States retains greater discretion to invoke its suspension rights for advance consents provided to the UK relative to its suspension rights under the U.S.-EURATOM Agreement.

C. Consultation with the Department of Defense Concerning Certain Exports and Subsequent Arrangements

Section 133 a. of the AEA requires the Nuclear Regulatory Commission and the Secretary of Energy to consult with the Secretary of Defense to ensure the physical protection of special nuclear material for subsequent arrangements under section 131 and exports of certain types and quantities of material.[8] If, in the view of the Secretary of Defense based on all available intelligence information, the export or transfer might be subject to a genuine terrorist threat, the Secretary shall provide to the Nuclear Regulatory Commission or the Secretary of Energy, as appropriate, a written assessment of the risk and a description of the actions the Secretary of Defense considers necessary to upgrade physical protection measures.

Under the proposed Agreement, any export from the UK of special nuclear material referenced in section 133 of the AEA would require U.S. approval through a subsequent arrangement. The proposed Agreement, therefore, preserves the prerogatives of the Secretary of Defense in assessing the export or international transfer of more than 2 kilograms of plutonium or more than 5 kilograms of HEU.

IV. Evaluation of Consents and Approvals for Which the Criteria in AEA Section 131 b. Are Relevant

In instances where U.S. consents and approvals are given for the reprocessing of any special nuclear material exported by the United States or produced through the use of any nuclear materials and equipment or sensitive nuclear technology exported by the United States, or for subsequent retransfer to a non-nuclear weapon state of any plutonium in quantities greater than 500 grams resulting from such reprocessing, section 131 b. requires that the Secretaries of Energy and State must judge that such reprocessing or retransfer will not result in a significant

[8] Subsection a. applies to the export or transfer or more than 2 kilograms of plutonium or more than 5 kilograms of uranium enriched to more than 20 percent in the isotope 233 or the isotope 235.

increase of the risk of proliferation beyond that which exists at the time that approval is requested.

The proposed Agreement includes advance consent for the reprocessing of nuclear material exported by the United States or used in or produced through the use of exported nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities and major critical components. Thus, it is incumbent upon the agencies to judge the effect to the risk of proliferation associated with that consent.

The proposed Agreement builds upon a long history of peaceful nuclear collaboration with the UK as a Member State of EURATOM pursuant to the U.S.-EURATOM Agreement. This analysis, therefore, considers the impact to the risk of proliferation from any changes between the status quo of the U.S.-EURATOM Agreement and the provisions included in the proposed U.S.-UK Agreement as well as differences in the UK system that may arise as a result of the UK's withdrawal from the EU and EURATOM.

A. The Standard Applied to Reprocessing Facilities Active Before 1978

Subsections 131 b.(2) and 131 b.(3) draw a distinction between facilities that have reprocessed power reactor fuel assemblies prior to March 10, 1978, and those that have not, and applies a stricter standard to U.S. approval of reprocessing in plants that began operation after that date. The UK has identified facilities at Sellafield, anticipating that some U.S.-obligated spent fuel will be reprocessed in the THORP facility which began operation in 1994 at the Windscale site in the UK. This analysis therefore focuses on the stricter standards for post-1978 plants in section 131 b.(2).

Even if some reprocessing in the UK would occur in a plant that began operation before 1978, subsection (3) of section b. makes it clear that, in enacting these provisions of the NNPA, Congress intended that the Secretary of Energy would endeavor to apply the standards in subsection (2) to all such reprocessing facilities, as well. In response to that intent, this analysis will apply subsection (2) criteria to the reprocessing approval in the Agreement, without regard to the date at which a facility began operation.

B. Factors to Consider in Making This Judgment

The fundamental question under section 131 b. applicable to this analysis is whether the reprocessing might give rise to "a significant increase of the risk of proliferation." Subsection (2) specifically refers to "all the factors in making this judgment," a phrase suggesting that the Secretaries of Energy and State are to engage in a broad-ranging inquiry, considering all relevant aspects of the specific situation. The UK is a nuclear-weapon state with strong nonproliferation and physical protection policies and credentials, a stable national security situation, and robust domestic institutions to protect nuclear material. The UK is a party to the NPT, adheres to NSG Guidelines, and has accepted IAEA safeguards.[9] It may also be noted that the UK now has

[9] As nuclear weapon state, the UK may be subject to IAEA safeguards pursuant to its respective voluntary offer agreement with the IAEA.

separate, unsafeguarded fuel cycle facilities to support its military applications of nuclear energy and would not have any technical reason to illegally divert plutonium subject to the proposed Agreement for its own military use.

Section 131 b.(2) also directs the Secretaries of Energy and State to give foremost consideration to whether or not the reprocessing or retransfer will take place under conditions that will ensure timely warning to the United States of any diversion. This direction refers to warning of "the time at which the *non-nuclear-weapon state* could transform the diverted material into a nuclear explosive device" (emphasis added). The UK is a nuclear-weapon state. Even in the extremely unlikely event that the UK Government would attempt to divert nuclear material subject to the proposed Agreement to its weapons program, this would not involve a "risk of proliferation," i.e., the acquisition of a nuclear explosive device by a non-nuclear weapon state. Diversion by a nuclear-weapon state is therefore not relevant to the present risk analysis.

C. Conclusions on Relevant Criteria in AEA Section 131 b.

When all of the relevant facts and circumstances are taken into account, U.S. consent to reprocessing would not increase the risk of proliferation beyond that which currently exists. The UK is a nuclear-weapon state. Additionally, the UK has evidenced a strong commitment in fostering nonproliferation objectives and is unlikely to divert material transferred under the proposed Agreement to a non-nuclear-weapon state. The UK has been authorized to reprocess U.S.-obligated material pursuant to the U.S.-EURATOM Agreement for over twenty years. The minor differences in the approvals given to the UK in the proposed Agreement from those that have already been applicable to it under the U.S.-EURATOM Agreement do not impact proliferation risk. Further, the UK has strong nonproliferation and physical protection policies and credentials, which would be undercut by any effort to divert material transferred under the proposed Agreement to its existing military program.

V. Basis for Findings with Respect to Common Defense and Security

This analysis now turns to the question of whether the proposed Agreement, and the consents and approvals within it, will have a negative impact on U.S. national security. As noted previously, to approve a subsequent arrangement subject to section 131 of the AEA, the Secretary of Energy must determine that the arrangement will "not be inimical to the common defense and security."

A. General Considerations: Nuclear Cooperation with the UK

Many of the factors already discussed in relation to AEA section 131 b. would also lend strong support to the conclusion that, taken as a whole, the proposed Agreement would not be inimical or pose an unreasonable risk to the common defense and security. These factors include the eligibility of all facilities covered by the proposed Agreement for the application of safeguards, the lack of evident motivation for the UK to illegally divert U.S.-obligated material to its weapons program, the firm non-proliferation policy of the UK, the long-standing civil nuclear cooperation relationship between the United States and the UK, and the close economic and

security ties between the United States and the UK. It can be assumed that the UK will remain stable, secure, and closely tied to the United States during the life of the proposed Agreement and for the foreseeable future thereafter.

It is therefore pertinent to examine the activities to which the United States gives its consent and approval under the proposed Agreement, and to examine whether those activities could be expected to unreasonably jeopardize U.S. controls on retransfers and the application of physical protection to U.S.-obligated materials and equipment. Remaining U.S. Government control over activities of possible proliferation concern is also examined.

B. Advance Consents and Approvals

The activities to which the United States has given its consent and approval under the proposed Agreement have been thoroughly discussed above, and examined in the context of their relationship to the approvals that have been longstanding under the U.S.-EURATOM Agreement. The UK has been authorized to store U.S.-obligated materials at the facilities listed in Annex A of the proposed Agreement; to retransfer U.S.-obligated material; and to reprocess, alter in form or content, or enrich U.S.-obligated material pursuant to the terms of the U.S.-EURATOM Agreement for over twenty years. The differences in the approvals given to the UK in the proposed Agreement from those that have already been applicable to it under the U.S.-EURATOM Agreement are substantively minor.

C. U.S. Controls over Activities of Concern

Under the proposed Agreement, the United States will retain a high level of control over activities involving nuclear materials subject to the proposed Agreement of the greatest proliferation concern: separation of plutonium, the production of HEU, or their retransfer to third countries or destinations. While advance consent is given in the proposed Agreement to reprocess U.S.-obligated material and to retransfer such material to third countries or destinations for reprocessing, the proposed Agreement does not provide advance consent for the subsequent retransfer of plutonium recovered from such reprocessing material. Any such subsequent retransfer of recovered plutonium will require conclusion of a subsequent arrangement by the United States. Under Section 4 of the Agreed Minute, the UK is not permitted to engage in such retransfers of plutonium except to countries or destinations listed by the United States to which such transfers may be made, or as agreed on a case-by-case basis. In preparing its lists, the United States may consider the potential proliferation and security implications of the transfer. Furthermore, the United States may, after consulting with the UK, delete countries or destinations from its list. The United States does not intend, in its initial list, to authorize the retransfer of recovered plutonium to any third country or destination. Retransfers of recovered plutonium would be considered as a subsequent arrangement and be subject to the procedures of section 131.

Additionally, the proposed Agreement includes discussion of the production of HEU using source material or LEU subject to the proposed Agreement, but notes that the activity can only be done subject to agreed terms that will need to be reached between the United States and the UK in the future. Such a future agreement would be subject to the subsequent arrangement

procedures of section 131 of the AEA. Thus, the United States still retains significant control over the conditions under which that activity could occur.

Under the proposed Agreement, advance consent to reprocessing of U.S.-obligated material transferred pursuant to the proposed Agreement and nuclear material used in or produced through the use of any nuclear material, non-nuclear material, equipment, components, sensitive nuclear facilities, or major critical components so transferred, is not irrevocable. The United States may suspend its consent in whole or in part if it considers, on the basis of objective evidence, that the continuation of such activities would entail a serious threat to the security of either Party, or a significant increase in the risk of nuclear proliferation. If the United States is considering that such objective evidence may exist, it is required to consult at a cabinet level with a minister level UK representative before reaching any decision.

D. Conclusion

Based on all these considerations and the other detailed points covered in this analysis, it is the conclusion of this analysis that the proposed Agreement will promote, and will not be inimical to or constitute an unreasonable risk to, the common defense and security.

VI. Final Conclusions

Based on the foregoing analysis, the following conclusions should be reached on the proposed Agreement and on the advance consents and approvals in Articles 5, 6, and 7 of that Agreement:

(a) The Agreement, including the advance consents and approvals, will not be inimical to the common defense and security.

(b) In the case of activities to which the standard in section 131 b. of the Atomic Energy Act applies, the consents and approvals will not result in a significant increase of the risk of proliferation.

These conclusions justify a recommendation to the Secretary of Energy that he determine that implementation of the Agreement as a whole will neither be inimical to the common defense and security nor result in an increase of the risk of proliferation.

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

April 23, 2018

The President
The White House
Washington, DC 20500

Dear Mr. President:

In accordance with the provisions of Section 123 of the Atomic Energy Act of 1954, as amended, the United States Nuclear Regulatory Commission reviewed the proposed Agreement between the Government of the United States of America and the Government of the United Kingdom of Great Britain and Northern Ireland for Cooperation in Peaceful Uses of Nuclear Energy (the "Agreement"). It is the view of the Commission that the proposed Agreement includes all of the provisions required by law and provides a sufficient framework for continued civilian nuclear cooperation between the United States and the United Kingdom. Accordingly, the Commission recommends that you make the requisite positive statutory determination, approve the proposed Agreement, and authorize its execution.

Respectfully,

Kristine L. Svinicki

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