

AGREEMENT FOR COOPERATION BETWEEN THE
GOVERNMENT OF THE UNITED STATES OF AMER-
ICA AND THE GOVERNMENT OF THE REPUBLIC
OF SINGAPORE CONCERNING PEACEFUL USES OF
NUCLEAR ENERGY

COMMUNICATION

FROM

THE PRESIDENT OF THE UNITED STATES

TRANSMITTING

AN AGREEMENT FOR COOPERATION BETWEEN THE GOVERNMENT
OF THE UNITED STATES OF AMERICA AND THE GOVERNMENT
OF THE REPUBLIC OF SINGAPORE CONCERNING 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 PUB-
LIC LAW 109-401, SEC. 104(e)); (120 STAT. 2734)



AUGUST 16, 2024.—Referred to the Committee on Foreign Affairs and
ordered to be printed

U.S. GOVERNMENT PUBLISHING OFFICE

THE WHITE HOUSE,
Washington, August 15, 2024.

Hon. MIKE JOHNSON,
Speaker of the House of Representatives,
Washington, DC.

DEAR MR. SPEAKER: I am pleased to transmit to the Congress, pursuant to subsections 123 b. and 123 d. of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2153 (b), (d)) (the “Act”), the text of an Agreement for Cooperation Between the Government of the United States of America and the Government of the Republic of Singapore Concerning 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 Secretary of State, in consultation with the Director of National Intelligence, summarizing relevant classified information, will be submitted to the Congress separately. The joint memorandum submitted to me by the Secretaries of State and Energy and a letter from the Chair 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 Republic of Singapore with respect to nuclear-related matters, including interactions with 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.

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 of America.

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 Republic of Singapore based on a mutual commitment to nuclear nonproliferation. It would permit the transfer of material, equipment (including reactors), components, and information for peaceful nuclear purposes. It would not permit the transfer of Restricted Data or sensitive nuclear technology. Any special fissionable material transferred could only be in the form of low enriched uranium, with the exception of small quantities of material for use as samples, standards, detectors, or targets, or for such other purposes as the parties may agree.

Through the Agreement, the Republic of Singapore would affirm its intent to rely on existing international markets for nuclear fuel services rather than acquiring sensitive nuclear technology (i.e., for enrichment and reprocessing), and the United States would affirm its intent to support those international markets to ensure a reliable supply of low enriched uranium fuel to the Republic of Singapore.

The Agreement has a term of 30 years, although it can be terminated by either party on 1 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, or components subject to the Agreement remain in the territory of the party concerned or under its jurisdiction or control anywhere, or until such time as the parties agree that such material, equipment, or components are no longer usable for any nuclear activity relevant from the point of view of International Atomic Energy Agency (IAEA) safeguards.

The Republic of Singapore strongly supports the nonproliferation of weapons of mass destruction and has consistently reiterated its commitment to nonproliferation. The United States and the Republic of Singapore have fostered a close relationship on strategic trade and interdiction issues. The Republic of Singapore is a party to the Treaty on the Non-Proliferation of Nuclear Weapons and has concluded a Comprehensive Safeguards Agreement and Additional Protocol thereto with the IAEA. The Republic of Singapore is a State Party to the Treaty on the Southeast Asia Nuclear Weapon-Free Zone. A more detailed discussion of the Republic of Singapore's domestic civil nuclear activities and its nuclear nonproliferation policies and practices is provided 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 123 b. and 123 d. of the Act. My Administration is prepared to immediately begin the consultations with the Senate Foreign Relations Committee and the House Foreign Affairs Committee, as provided in subsection 123 b. Upon completion of the 30 days of continuous session review provided for in subsection 123 b., the 60 days of continuous session review provided for in subsection 123 d. shall commence.

Sincerely,

JOSEPH R. BIDEN, Jr.

**AGREEMENT FOR COOPERATION BETWEEN
THE GOVERNMENT OF THE UNITED STATES OF AMERICA AND
THE GOVERNMENT OF THE REPUBLIC OF SINGAPORE
CONCERNING PEACEFUL USES OF NUCLEAR ENERGY**

The Government of the United States of America and the Government of the Republic of Singapore (hereinafter, the "Parties"),

MINDFUL of their respective rights and obligations under the Treaty on the Non-Proliferation of Nuclear Weapons done at London, Moscow, and Washington July 1, 1968 ("NPT"), to which both the United States of America and the Republic of Singapore are parties;

REAFFIRMING their commitment to ensuring that the international development and use of nuclear energy for peaceful purposes is carried out under arrangements that will to the maximum possible extent further the objectives of the NPT;

AFFIRMING their desire to promote universal adherence to the NPT;

AFFIRMING their support for the International Atomic Energy Agency ("IAEA") and its safeguards system, including the Additional Protocol (INFCIRC/540);

DESIRING to cooperate in the development, use, and control of peaceful uses of nuclear energy;

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

AFFIRMING in particular the goal of pursuing the safe, secure, and environmentally sustainable development of civil nuclear energy for peaceful purposes and in a manner that supports nuclear nonproliferation and international safeguards; and

AFFIRMING the intent of the Government of the Republic of Singapore to rely on existing international markets for nuclear fuel services, rather than acquiring sensitive nuclear technology, as a solution for peaceful, safe, and secure uses of civilian nuclear energy, and the intent of the Government of the United States of America to support the supply of reactor(s), material, and equipment in order to ensure reliable nuclear energy supply for the Republic of Singapore;

HAVE AGREED AS FOLLOWS:

ARTICLE 1 – DEFINITIONS

For the purposes of this Agreement:

(A) **"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;

(B) **"Component"** means a component part of equipment or other item so designated by agreement of the Parties;

(C) **"Conversion"** means any of the normal operations in the nuclear fuel cycle, preceding fuel fabrication and excluding enrichment, by which uranium is transformed from one chemical form to another—for example, from uranium hexafluoride to uranium dioxide or from uranium oxide to metal;

(D) **"Equipment"** means any reactor, other than one designed or used primarily for the formation of plutonium or uranium-233; reactor pressure vessel, including closure heads; reactor calandria; complete reactor control rod drive system; reactor primary coolant pump; online reactor fuel charging and discharging machine; or any other item so designated by agreement of the Parties;

(E) **"High enriched uranium"** means uranium enriched to twenty percent or greater in the isotope 235;

(F) **"Information"** means data, including Restricted Data and sensitive nuclear technology, of a scientific, commercial, technical or other nature in any form that is appropriately designated by agreement of the Parties to be provided or exchanged under this Agreement;

(G) **"Low enriched uranium"** means uranium enriched to less than twenty percent in the isotope 235;

(H) **"Major critical component"** means any part or group of parts essential to the operation of a sensitive nuclear facility;

(I) **"Material"** means nuclear material, byproduct material, moderator material, radioisotopes other than byproduct material, or any other such substance so designated by agreement of the Parties;

(J) **"Moderator material"** means heavy water or graphite or beryllium of a purity suitable for use in a reactor to slow down high velocity neutrons and increase the

likelihood of further fission, or any other such material so designated by agreement of the Parties;

(K) "**Nuclear material**" means source material or special fissionable material;

(L) "**Peaceful purposes**" include the use of information, nuclear material, equipment, and components in such fields as research, power generation, medicine, agriculture, and industry but do not include use in, research on, or development of any nuclear explosive device, or any military purpose;

(M) "**Person**" means any individual or any entity subject to the jurisdiction of either Party but does not include the Parties to this Agreement;

(N) "**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 source material, special fissionable material or any combination thereof;

(O) "**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 material in the production of energy, but shall not include data of a Party that it has declassified or removed from the category of Restricted Data;

(P) "**Sensitive nuclear facility**" means any facility designed or used primarily for uranium enrichment, reprocessing of nuclear fuel, heavy water production, or fabrication of nuclear fuel containing plutonium;

(Q) "**Sensitive nuclear technology**" means any information, including information incorporated in equipment or an important component, that is not in the public domain and that 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 agreement of the Parties;

(R) "**Source material**" means (1) uranium, thorium, or any other material so designated by agreement of the Parties, or (2) ores containing one or more of the foregoing materials in such concentration as the Parties may agree from time to time; and

(S) "**Special fissionable material**" means (1) plutonium, uranium-233, or uranium enriched in the isotope 235, or (2) any other material so designated by agreement of the Parties.

ARTICLE 2 – SCOPE OF COOPERATION

1. The Parties intend to cooperate in the safe and secure use of nuclear energy for peaceful purposes. Such cooperation shall be in accordance with the provisions of this Agreement and the Parties' applicable international agreements, national laws, and regulations.
2. The Parties intend to engage in and encourage the exchange of information, knowledge, material and equipment, as well as the development of human resources. Such activities and exchanges are intended to be related to nuclear safety, security, nonproliferation, and deployment in accordance with international best practices and standards.
3. Transfer of information, material, equipment, and components under this Agreement may be undertaken directly between the Parties or through Persons authorized by a Party's competent authority(ies) to engage in transfer activities. Such transfers shall be subject to this Agreement and to such additional terms and conditions as may be agreed in writing by the Parties.
4. This Agreement does not require the transfer of any information, material, equipment, or components that the Parties are not permitted under their respective international agreements, national laws, and regulations to transfer.

ARTICLE 3 – TRANSFER OF INFORMATION

1. Subject to paragraph 2 of this Article, information concerning the use of nuclear energy for peaceful purposes may be transferred under this Agreement. Transfers of information may be accomplished through various means, including reports, data banks, computer programs, conferences, visits, and assignments of staff to facilities.
2. Restricted Data and sensitive nuclear technology shall not be transferred under this Agreement.

**ARTICLE 4 – TRANSFER OF MATERIAL,
EQUIPMENT, AND COMPONENTS**

1. Material, equipment, and components may be transferred for applications consistent with this Agreement, including for the construction, maintenance, and operation of nuclear reactors. Any special fissionable material transferred to the Republic of Singapore under this Agreement shall be low enriched uranium, except as provided in paragraph 4 of this

Article. Sensitive nuclear facilities and major critical components shall not be transferred under this Agreement.

2. Low enriched uranium may be transferred, including by sale or lease, for use as fuel in reactors and reactor experiments, for conversion or fabrication, or for such other purposes as may be agreed in writing by the Parties.

3. The quantity of special fissionable material transferred under this Agreement shall not at any time be in excess of the quantity that, as agreed in writing by the Parties, is necessary for any of the following purposes: use in the loading of reactors or 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 for storage, disposition, or return; and the accomplishment of such other purposes as may be agreed in writing by the Parties.

4. Small quantities of special fissionable material may be transferred for use as samples, standards, detectors, or targets, or for such other purposes as the Parties may agree in writing. Transfers pursuant to this paragraph shall not be subject to the quantity limitations in paragraph 3 of this Article.

5. Nuclear material, equipment, and components transferred from the territory of one Party to the territory of the other Party, whether directly or through a third country or destination, shall be regarded as having been transferred pursuant to this Agreement only upon confirmation, by the appropriate authority of the recipient Party to the appropriate authority of the supplier Party, that such nuclear material, equipment, or components shall be subject to this Agreement.

6. Nuclear material, equipment, and components subject to this Agreement shall no longer be subject to this Agreement if:

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

(B) In the case of nuclear material, the Parties agree, 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 2 or 3 of Article 9, whichever is applicable, that the nuclear material is no longer usable for any nuclear activity relevant from the point of view of safeguards; or

(C) In the case of equipment and components, it is agreed by the Parties in writing.

7. The Government of the United States of America shall endeavor to take such actions as are necessary and feasible to ensure a safe, secure, and reliable supply of nuclear fuel to the Republic of Singapore, including the export of nuclear fuel on a timely basis during the period of this Agreement. The Government of the United States of America shall also give serious consideration to taking such actions as are feasible to assist the Government of the Republic of Singapore in safe and secure management, storage, transport, and disposition of irradiated special fissionable material produced through the use of material or equipment transferred pursuant to this Agreement.

ARTICLE 5 – STORAGE AND RETRANSFERS

1. Plutonium and uranium-233 (except as contained in irradiated fuel elements), as well as high enriched uranium, transferred pursuant to this Agreement or used in or produced through the use of material or equipment so transferred shall only be stored in a facility to which the Parties agree in writing.

2. Material, equipment, and components transferred pursuant to this Agreement and any special fissionable material, other transuranic elements, or tritium produced through the use of any such material or equipment shall not be transferred to unauthorized Persons or, unless the Parties agree, beyond the recipient Party's territorial jurisdiction.

3. In order to facilitate management of spent fuel, irradiated nuclear materials, or nuclear-related waste, material transferred or produced through the use of material, equipment and components transferred pursuant to this Agreement may be transferred to the United States of America if the Government of the United States of America designates a storage or disposition option, or to a third country or other destination as agreed by the Parties. In the event of a transfer to the United States of America, the Parties shall make appropriate implementing arrangements.

4. With respect to special fissionable material produced through the use of nuclear material transferred pursuant to this Agreement and not used in or produced through the use of equipment transferred pursuant to this Agreement, paragraphs 1 and 2 of this Article shall be applied to that proportion of special fissionable material produced that represents the ratio of transferred nuclear material used in the production of the special fissionable material to the total amount of nuclear material so used, and similarly for subsequent generations.

**ARTICLE 6 – REPROCESSING, OTHER 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 material or equipment so transferred shall not be reprocessed, enriched, or (in the case of plutonium, uranium-233, high enriched uranium, and irradiated nuclear material) otherwise altered in form or content (except by irradiation or further irradiation), unless the Parties agree.
2. With respect to special fissionable material produced through the use of nuclear material transferred pursuant to this Agreement and not used in or produced through the use of equipment transferred pursuant to this Agreement, paragraph 1 of this Article shall be applied to that proportion of special fissionable material produced that represents the ratio of transferred nuclear material used in the production of the special fissionable material to the total amount of nuclear material so used, and similarly for subsequent generations.

ARTICLE 7 – PHYSICAL PROTECTION

1. Adequate physical protection shall be maintained with respect to any nuclear material and equipment transferred pursuant to this Agreement and any special fissionable material used in or produced through the use of any nuclear material or equipment so transferred. The Parties shall keep each other informed in writing as appropriate.
2. To comply with the requirement in paragraph 1, each Party shall apply at a minimum measures in accordance with (i) levels of physical protection at least equivalent to the recommendations published in IAEA document INFCIRC/225/Rev.5 entitled "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities" and in any successor documents accepted by the Parties and (ii) the provisions of the Convention on the Physical Protection of Nuclear Material adopted at Vienna October 26, 1979, as amended at Vienna July 8, 2005, as well as any subsequent amendments to the Convention that enter into force for both Parties.
3. The adequacy of physical protection measures maintained pursuant to this Article shall be subject to visits and consultations by the Parties from time to time and whenever either Party is of the view that revised measures may be required to maintain adequate physical protection.
4. The Parties shall keep each other informed in writing, as appropriate, of the designated points of contact within their authorities to cooperate on matters related to physical protection of nuclear material and nuclear facilities in their territory or under their jurisdiction or control, response and recovery operations in the event of unauthorized use

or handling of nuclear material subject to this Article, out-of-country transportation, and other matters of mutual concern.

ARTICLE 8 – NO EXPLOSIVE OR MILITARY APPLICATION

1. Material, equipment, and components transferred pursuant to this Agreement and material used in or produced through the use of any material, equipment, or components 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.
2. Military purposes shall not include the supply of electricity to a military facility from any power network, or production of radioisotopes to be used for medical purposes in a military hospital.

ARTICLE 9 – SAFEGUARDS

1. Cooperation under this Agreement shall require the application of IAEA safeguards with respect to all nuclear activities within the territory of the Republic of Singapore, under its jurisdiction, or carried out under its control anywhere. Implementation of a Safeguards Agreement concluded pursuant to Article III(4) of the NPT shall be considered to fulfill this requirement.
2. Nuclear material transferred to the Republic of Singapore pursuant to this Agreement and any nuclear material used in or produced through the use of material, equipment, or components so transferred shall be subject to safeguards in accordance with the Agreement between the Republic of Singapore and the International Atomic Energy Agency for the Application of Safeguards in connection with the Treaty on the Non-proliferation of Nuclear Weapons, done at Vienna and Singapore October 6 and 18, 1977, which entered into force October 18, 1977, and the Additional Protocol thereto signed at Vienna September 22, 2005, which entered into force March 31, 2008.
3. Nuclear material transferred to the United States of America pursuant to this Agreement and any nuclear material used in or produced through the use of any material, equipment, or components so transferred shall be subject to safeguards in accordance with the provisions of 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, signed at Vienna November 18, 1977, which entered into force December 9, 1980, and the Additional Protocol thereto signed at Vienna June 12, 1998, which entered into force January 6, 2009.

4. Upon the written request of either Party, the other Party shall authorize the IAEA to make available to the requesting Party information on the implementation of the applicable safeguards agreement with the IAEA within the scope of cooperation under this Agreement. To the extent consistent with its applicable national law and regulations, each Party shall ensure that all information provided under this paragraph is not publicly disclosed and is accorded appropriate protections with a view to providing at least the equivalent level of protection accorded to such information by the IAEA. The Parties shall consult regarding the appropriate protections for such information.

5. If either Party becomes aware of circumstances that demonstrate that the IAEA for any reason is not or will not be applying safeguards in accordance with the agreements with the IAEA referred to in paragraph 2 or paragraph 3 of this Article, to ensure effective continuity of safeguards the Parties shall consult and immediately enter into arrangements with the IAEA or between themselves that conform with IAEA safeguards principles and procedures, that provide assurance equivalent to that intended to be secured by the system they replace, and that conform with the coverage required by paragraph 2 or paragraph 3 of this Article, as applicable.

6. Each Party shall take such measures as are necessary to maintain and facilitate the application of safeguards applicable to it provided for under this Article.

7. Each Party shall establish and maintain a system of accounting for and control of source material and special fissionable material transferred pursuant to this Agreement and source material and special fissionable material used in or produced through the use of any material, equipment, or components so 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 accepted by the Parties.

ARTICLE 10 – ADMINISTRATIVE ARRANGEMENT AND INVENTORIES

1. The appropriate authorities of the Parties shall establish, by mutual decision, an Administrative Arrangement in order to provide for the effective implementation of the provisions of this Agreement.

2. The principles of fungibility, equivalence, and proportionality shall apply to nuclear material subject to this Agreement. Details for applying these principles shall be set forth in the Administrative Arrangement.

3. For the purposes of this Agreement, each Party shall establish and maintain inventories of all nuclear material, equipment, and components subject to this Agreement. Each Party shall provide the other an updated report containing such inventories annually and upon request in writing. To supplement such reporting, upon the request in writing

of either Party, the other Party shall request and permit the IAEA to report to the requesting Party on the status of all inventories of nuclear material subject to this Agreement.

4. If an Administrative Arrangement is established pursuant to this Article, it may be modified in writing by mutual decision of its participants.

ARTICLE 11 – CESSATION OF COOPERATION AND RIGHT OF RETURN

1. If either Party at any time following entry into force of this Agreement:

(A) does not comply with the provisions of Article 5, 6, 7, 8, or 9 of this Agreement,
or

(B) terminates, abrogates, or materially violates a safeguards agreement with the IAEA;

the other Party shall have the rights to cease further cooperation under this Agreement or terminate this Agreement and, in either case, to require the return of any material, equipment, or components transferred under this Agreement and any special fissionable material produced through their use.

In determining whether to exercise its rights under this paragraph based on a "material violation," a Party shall consider whether the facts giving rise to the right to take such action in accordance with this Article were caused deliberately. In the event that it finds such material violation not to be deliberate, and to the extent which it judges that such material violation can be rectified, the non-breaching Party shall endeavor, subject to its national legislation and regulations, to afford the breaching Party an opportunity to cure the material violation within a reasonable period.

If either Party exercises its rights under this paragraph to require the return of any material, equipment, or components, it shall promptly, after removal from the territory of the other Party, reimburse the other Party for the fair market value of such material, equipment, or components.

2. If the Government of the Republic of Singapore at any time following entry into force of this Agreement detonates a nuclear explosive device, the Government of the United States of America shall have the same rights as specified in paragraph 1 of this Article.

3. If the Government of the United States of America at any time detonates a nuclear explosive using material, equipment, or components transferred pursuant to this Agreement or nuclear material used in or produced through the use of such items, the

Government of the Republic of Singapore shall have the same rights as specified in paragraph 1 of this Article.

ARTICLE 12 – CONSULTATIONS, REVIEW, AND ENVIRONMENTAL PROTECTION

1. The Parties shall undertake to consult at the request in writing of either Party regarding the implementation of this Agreement and the development of further cooperation in the field of peaceful uses of nuclear energy.
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 13 - SETTLEMENT OF DISPUTES

The Parties shall address any dispute concerning this Agreement by negotiation or any other mutually agreed upon peaceful means of dispute settlement.

ARTICLE 14 - ENTRY INTO FORCE, AMENDMENT, DURATION, AND TERMINATION

1. This Agreement shall enter into force on the date of the later note in an exchange of diplomatic notes between the Parties informing each other that they have completed their respective domestic requirements for the entry into force of this Agreement.
2. This Agreement shall remain in force for a period of thirty (30) years, unless terminated by either Party. This Agreement may be terminated at any time by either Party on one (1) year's written notice to the other Party. This Agreement may be amended by written agreement of the Parties. Amendments to this Agreement shall enter into force on the date of the later note of an exchange of diplomatic notes between the Parties informing each other that they have completed their respective requirements for entry into force. The Parties intend to open discussions on extension of this Agreement no less than two (2) years prior to the date of expiration.
3. Notwithstanding the termination or expiration of this Agreement or any cessation of cooperation hereunder for any reason, Articles 5, 6, 7, 8, 9, and 11 of this Agreement shall continue in effect so long as any material, equipment, or components subject to

Articles 5, 6, 7, 8, 9, and 11 of this Agreement remain in the territory of the Party concerned or under its jurisdiction or control anywhere, or until such time as the Parties agree that such material, equipment, or components are no longer usable for any nuclear activity relevant from the point of view of IAEA safeguards.

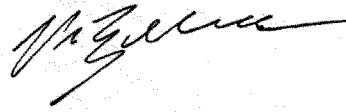
IN WITNESS WHEREOF the undersigned, being duly authorized, have signed this Agreement.

DONE at Singapore, this 31st day of July, 2024, in duplicate, in the English language.

FOR THE GOVERNMENT OF THE
UNITED STATES OF AMERICA:



FOR THE GOVERNMENT OF THE
REPUBLIC OF SINGAPORE:



THE WHITE HOUSE

WASHINGTON

July 26, 2024

Presidential Determination
No. 2024-08

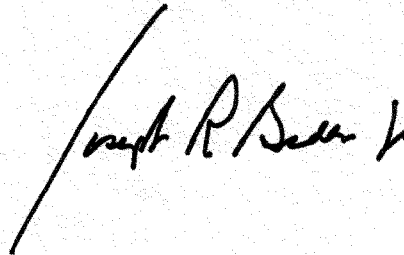
MEMORANDUM FOR THE SECRETARY OF STATE
THE SECRETARY OF ENERGY

SUBJECT: Presidential Determination on the Proposed Agreement for Cooperation between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy

I have considered the proposed Agreement for Cooperation between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy (the "proposed Agreement"), along with the views, recommendations, and statements of the 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. Pursuant to 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*.



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-1-

NUCLEAR PROLIFERATION ASSESSMENT STATEMENT**Pursuant to Subsection 123(a) of the Atomic Energy Act of 1954, as Amended, with Respect to the Proposed Agreement for Cooperation between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy****I. INTRODUCTION**

This Nuclear Proliferation Assessment Statement (NPAS) relates to the proposed Agreement for Cooperation between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy (the proposed Agreement). The Secretary of State and Secretary of Energy are jointly submitting the proposed Agreement to the President for his approval. The Chair of the Nuclear Regulatory Commission (NRC) will separately submit to the President, on behalf of the Commission, the NRC's views on the proposed Agreement.

Subsection 123(a) of the Atomic Energy Act of 1954, as amended (the Act), provides that an unclassified NPAS be submitted by the Secretary of State to the President for an agreement for cooperation concluded pursuant to that section ("123 agreement"). 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 Singapore's current baseline for a civil nuclear program, U.S.-

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-2-

Singapore civil nuclear-related cooperation, Singapore's civil nuclear-related cooperation with other countries, Singapore's nonproliferation policies, and Singapore'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. SINGAPORE'S NUCLEAR ACTIVITIES AND NONPROLIFERATION POLICIES

A. Overview of Singapore's Civil Nuclear Energy Activities

Singapore currently has no civil nuclear energy program but is seriously considering pursuing nuclear energy to meet its energy needs. To meet its net zero greenhouse gas emissions goals by 2050, the Government of Singapore is deliberately and methodically engaging with other governments and industry regarding nuclear energy. Singapore is looking ahead to build capacity in civil nuclear capabilities, policies, regulatory structure, and workforce.

Singapore's decision to pursue civil nuclear energy is driven by the significant challenges it faces for addressing issues related to climate change and its energy security concerns. The island's lack of natural resources, its climate, and geographical conditions mean that it cannot develop renewable energy such as hydropower, wind, or solar energy on a large scale. The Singapore Energy 2050 Committee Report, released by the Singapore Energy Management Authority (EMA) in March 2022, concluded that nuclear energy could supply more than 10% of Singapore's energy needs.

Capability Building for Nuclear Energy

Singapore is currently strengthening its capabilities in nuclear science and technology and is coordinating regional cooperation for nuclear safety and

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-3-

security. Singapore is allocating significant funds (\$3.7 billion, SGD \$5 billion) to spur its transition to low-carbon energy alternatives including advanced nuclear reactors that will enable Singapore to decarbonize its power sector. The Government of Singapore's commitment of funds toward seeking nuclear energy options is a seismic shift in Singapore's public posture toward nuclear energy. As of April 2024, Singapore plans to build a pool of approximately 100 nuclear energy experts in the near term.

Singapore conducted a Nuclear Energy Pre-Feasibility Study from 2010-2012, which examined the possibility of deploying nuclear energy in Singapore. Since the conclusion of the study, Singapore has slowly built capabilities for pursuing nuclear energy. In 2013, the Singapore National Research Foundation (NRF), a department within the Singaporean Prime Minister's Office, approved a five-year budget of \$47 million (SGD \$63 million) to establish the Singapore Nuclear Research and Safety Initiative (SNRSI) with the intent to build credible capabilities in nuclear science and safety. Since then, Singapore has continued to invest in SNRSI's capabilities in nuclear safety analysis, radiobiology and radiochemistry, as well as nuclear policy research.

Part of the original initiative for SNRSI included developing a Nuclear Safety Research and Education Programme (NSREP). According to the Singapore National Research Foundation, in recognition of the fact that it would take more than 10 years to build credible capability in nuclear science and safety, and to demonstrate a long-term commitment to attract scientists and engineers to this discipline, NSREP was given approval for a 15-year implementation period, subject to review before the end of each five-year funding period. After the midterm review of the NSREP's activities in 2017, the NRF allocated a second tranche of funding of 22.1 million (SGD \$30 million) for SNRSI activities until 2021. In recent meetings with senior Department of State leaders, Permanent Secretary for Trade and Industry Beh Swan Gin indicated more than forty professionals had graduated through NSREP.

UNCLASSIFIED

UNCLASSIFIED

-4-

Strengthening Regulatory Infrastructure

While there is currently no organization promoting the use of nuclear power in Singapore, Singaporean officials have indicated a commitment to effectively separating any potential future organization promoting nuclear power from the EMA to ensure regulatory independence. In 1998, Singapore became a party to the Convention on Nuclear Safety (CNS) and the Singapore National Environment Agency (NEA)'s Radiation Protection and Nuclear Science Group (RPNSG) is the national regulatory authority for radiation protection in Singapore. In October 2022, the International Atomic Energy Agency (IAEA) Integrated Regulatory Review Service (IRRS) team completed its first mission to Singapore. The IRRS team determined that Singapore has a well-established legal and regulatory system for radiation sources safety but will need to update its safety regulations to align fully with IAEA Safety Standards.

Additionally, since 2014, Singapore has collaborated with the IAEA to implement national Technical Cooperation projects, including on cooperation in nuclear power technology and safety aimed at building the required core technical capacity in nuclear power technology and safety.

Looking Ahead

On March 1, 2023, Second Minister for the Singapore Ministry of Trade and Industry Tan See Leng noted in Parliament that Singapore is collaborating with overseas institutes to build capabilities in fusion energy. Singapore has become increasingly interested in potential deployment of future civil nuclear technologies, such as small modular reactors (SMRs), as a means for it to achieve its net-zero targets by 2050. As a low-lying island city-state, Singapore is vulnerable to the effects of climate change, and it is considering every method of clean energy power generation, including solar, electricity imports, hydrogen, geothermal, biofuels, and – more publicly during this past year – nuclear power. The country's small size and very limited domestic supply of natural resources create challenges to energy diversification.

UNCLASSIFIED

UNCLASSIFIED

-5-

Due to its geographic constraints, which limit where and how many reactors can be built, Singapore is considering various options for potential SMR or microreactor deployments. A study through the Department of Chemical and Biomolecular Engineering, College of Design and Engineering, National University of Singapore published in Nuclear Engineering International, aimed to identify the types of reactors that have contributed the most to nuclear accidents, as well as the common causes of safety system failures, with application to technology deployment in Singapore. The study committee noted that such incidents primarily involved large conventional reactors and may not accurately reflect the safety risks associated with the SMRs that Singapore is considering. To prepare for a full-fledged nuclear facility by 2050, the study recommended a pilot project to retrofit an SMR into an existing power station. Due to sensitivities in the Southeast Asia region surrounding civil nuclear energy following the Fukushima incident, nuclear safety and security considerations and public engagement is critical for Singapore as they consider energy mix and technology options. Singapore is working to understand the potential safety, security, affordability, and environmental implications within the country. Moreover, because neighboring countries are likely to deploy nuclear reactors, Singapore considers increased technical knowledge to be necessary to understand, assess, and monitor future deployment in the region.

B. Nuclear-Related Cooperation with the United States

This is the first bilateral agreement for peaceful nuclear cooperation between the Government of the United States and the Government of the Republic of Singapore. Singapore is a longstanding partner of the United States and considers the United States as its preferred partner in its efforts to build nuclear capabilities and better understand advanced nuclear technologies. Since 2022, Singapore has conducted deliberate consultations with relevant U.S. government departments and agencies, including the Nuclear Regulatory Commission (NRC), the Environmental Protection Agency (EPA), the Department of Commerce, and the Department of Energy's (DOE) National Nuclear Security Administration (NNSA) to develop

UNCLASSIFIED

UNCLASSIFIED

-6-

Singapore's civil nuclear capabilities with the United States and to prepare for the growth of nuclear energy in the region.

Singapore's Energy Market Authority (EMA) has an existing Cooperative Research and Development Agreement (CRADA) with Sandia National Laboratories (Sandia), which includes cooperation in nuclear power technology and safety. SNRSI is collaborating with Sandia to build up capabilities in safety analysis of advanced nuclear energy technologies. Singapore's EMA and SNRSI are also currently in discussions with Idaho National Laboratory (INL) on signing a CRADA on collaboration in nuclear safety.

Singapore NEA also has an information exchange agreement with the U.S. NRC for the exchange of technical information and cooperation in nuclear safety issues. SNRSI collaborates with the NRC's Cooperative Severe Accident Research Program and is a user of NRC's severe accident simulation code (MELCOR).

Singapore collaborates closely with the U.S. government, including the Department of State's Bureau of International Security and Nonproliferation, the Office of Export Control Cooperation's (ECC) Export Control and Border Security (EXBS) program on strategic trade and export control capacity building, the Offices of Counterproliferation Initiatives (CPI) and Missile, Biological, and Chemical Nonproliferation (MBC) on ongoing interdiction, transshipment, and counterproliferation policy efforts, including a formal bilateral interagency counterproliferation dialogue, and the Office of Cooperative Threat Reduction (CTR) on broader efforts including research security, cybersecurity, biotechnology issues, counterproliferation finance, and vulnerabilities and risks for intangible technology transfers.

Singapore's Interest in U.S. Nuclear Technology

In December 2022, a delegation of Singaporean officials – primarily from EMA – visited the United States to engage with NuScale Power and Kairos Power, as well as with the Idaho and Sandia National Laboratories.

UNCLASSIFIED

UNCLASSIFIED

-7-

Singaporean officials have continued to reference NuScale in their discussions about their consideration of SMRs. EMA, the Singapore NEA, and SNRSI have existing non-disclosure agreements with U.S. industry SMR design companies to better understand how to tailor the developing technologies to the island's unique needs.

Singapore has also sent policymakers and technical experts to the United States to study a developmental fusion project using a smaller-scale tokamak reactor, and to understand how the technology is going to evolve. This includes interest and collaboration on a U.S. academic and industry initiative known as Sparc, a collaboration between the Massachusetts Institute of Technology's Plasma Science and Fusion Centre and private fusion start-up Commonwealth Fusion Systems, the compact reactor is predicted to produce between 50MW and 100MW of fusion power.

C. Nuclear-Related Cooperation with Other Countries and Organizations

Singapore has well established cooperation with several of its partners, including the United States, Australia, China, Denmark, Finland, France, Russia, and the UK, regarding nuclear safety and nuclear science and technology. Additionally, as a member of the Association of Southeast Asian Nations (ASEAN), Singapore actively engages in several ASEAN-related fora regarding nuclear-related cooperation in which the United States also participates, including the East Asia Summit (EAS), ASEAN Defense Ministers Meeting (ADMM+), and ASEAN Regional Forum (ARF). Singapore and the United States are also both member economies of the Asia Pacific Economic Cooperation (APEC) and participate in the Indo-Pacific Economic Framework (IPEF) initiative.

Singapore's Civil Nuclear Cooperation as an ASEAN Member State
Singapore engages with the relevant technical and policy agencies of ASEAN Member States to determine the suitability of nuclear energy within Singapore's domestic energy mix, and is currently working on domestic policy, workforce development, and technical resourcing for civil nuclear technology design. Singapore has also been in discussions on a regional

UNCLASSIFIED

UNCLASSIFIED

-8-

approach with other ASEAN Member States, as other ASEAN Member States are exploring deployment of nuclear power plants, especially SMRs.

Singapore and other ASEAN Member States have expressed interest in seeing ASEAN Member States developing standards together, training people together and, in case of emergencies, pooling resources together, for areas including disposal of nuclear waste, looking at the full life cycle of the technology.

Singapore has committed significant resources to building up nuclear safety capabilities both domestically and in the Southeast Asia region. Singapore has built up its domestic and regional capabilities in environmental monitoring of radiation and has deployed a network of sensors around Singapore. It advocated for a regional radiation monitoring network in Southeast Asia, which was supported by ASEAN Member States and the European Commission.

Singapore has also been an active player in the ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM), where it advocates for the formation of Technical Working Groups in ASEANTOM to develop a structured approach to capacity building for nuclear and radiological incident emergency preparedness; and co-developing the ASEAN Protocol for Preparedness and Response to a Nuclear or Radiological Emergency with Cambodia, Malaysia, and Thailand, in close coordination with the IAEA.

Singapore's Cooperation with France

In 2023, Singapore's Nanyang Technological University (NTU), under the Ministry of Education, signed a series of agreements with French partners, [including one between NTU and the French Alternative Energies and Atomic Energy Commission (CEA) to initiate *the Singapore Alliance with France for Fusion Energy (SAFE)*, focused on research of new nuclear fusion technologies]. The agreements included funding for a new multimillion-dollar research building (with approximately SGD \$20 million of support) at the National University of Singapore – the NTU Singapore-CEA Alliance for

UNCLASSIFIED

UNCLASSIFIED

-9-

Research in Circular Economy (SCARCE) – which will house about 100 researchers to study SMRs and radioactive material safety.

Singapore's Cooperation with UK, Danish, Australian, and Finnish Partners
Singapore has established several collaborations with regulators and organizations across the world. These collaborations include a Letter of Intent (LOI) between the Singapore NEA and the Danish Emergency Management Agency (DEMA) on collaboration in the areas of nuclear and radiation safety, and emergency preparedness and response (EPR), renewed in 2018. In 2017, the Singapore NEA signed a Memorandum of Arrangement with the Australian Radiation Protection and Nuclear Safety Agency for the exchange of technical information and cooperation in nuclear safety and radiation protection; in 2015 and 2019, Memoranda of Understanding (MOU) were signed between the National University of Singapore and the French IRSN to cooperate on training and education in nuclear safety; and a 2020 MOU was signed between the Singapore NEA and the Radiation and Nuclear Safety Authority of Finland for cooperation and exchange of information on radiation and nuclear safety and regulatory matters.

Singapore is a founding member and a committed and active participant in the Asia-Europe Meeting (ASEM), which launched in 1996. As an ASEM participant, Singapore attends the Asia-Europe Meeting Seminar on Nuclear Safety (ASNS), which aims to promote greater cooperation and dialogue on nuclear safety throughout Southeast Asian nations via consultation with the European Union to establish a global nuclear safety framework. The most recent ASNS was held in China in 2018.

D. Nonproliferation Policies

Singapore strongly supports disarmament and the non-proliferation of weapons of mass destruction. Singapore is party to the following international disarmament, non-proliferation, and nuclear security treaties: Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (1975); Treaty on the Non-Proliferation of Nuclear Weapons

UNCLASSIFIED

UNCLASSIFIED

-10-

(NPT) (1976); Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (1997); Treaty on the Southeast Asia Nuclear-Weapon-Free Zone (1997); Comprehensive Nuclear Test-Ban Treaty (2001); Convention on the Physical Protection of Nuclear Material and its 2005 Amendment (2014); and International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) (2017).

Singapore is an active participant in the United Nations, the IAEA, and ASEAN, and in initiatives such as the U.S. Department of State's Proliferation Security Initiative (PSI), the European Union's Chemical, Biological, Radiological and Nuclear (CBRN) Centre of Excellence (CoE), and the Financial Action Task Force (FATF).

Singapore has demonstrated its commitment to effective implementation and rigorous national legislation and standards regarding nonproliferation. Singapore was the first country in Southeast Asia to put in place a stringent export controls system to regulate the transfer of strategic goods and safeguard against the illicit movement of goods and technology that relate to the development, production and use of nuclear, chemical, and biological weapons, missiles capable of delivering such weapons, as well as conventional arms and military equipment.

Singapore's Radiation Protection Act of 2007 (RPA) controls the import, export, manufacture, sale, disposal, transport, storage, possession, and use of radioactive materials and irradiating apparatus. In addition, the RPA contains provision addressing the non-proliferation of nuclear weapons and establishes a system for the imposition and maintenance of nuclear safeguards. The Strategic Goods (Control) Act (SGCA) controls the transfer and brokering of goods and technology capable of being used to develop, produce, operate, stockpile or acquire weapons of mass destruction and their means of delivery. Other relevant Singaporean laws include the Terrorism (Suppression of Misuse of Radioactive Material) Act of 2017, which implements ICSANT; the Radiation Protection (Transport of Radioactive Materials) Regulations; the Terrorism (Suppression of Bombings)

UNCLASSIFIED

UNCLASSIFIED

-11-

Act; Singapore's Penal Code; the Terrorism (Suppression of Financing) Act; and the Monetary Authority of Singapore Act.

E. Export Controls

The United States and Singapore have fostered a close relationship on strategic trade and interdiction issues. Singapore is a regional leader in export controls and continues to be a steadfast partner to the United States in this area. Singapore is not a member of the four major multilateral export control regimes (Australia Group, Missile Technology Control Regime, Nuclear Suppliers Group, or Wassenaar Arrangement), but largely follows them and maintains a national list of controlled goods based on the most recent European Union control list.

Singapore's regulatory controls on strategic goods are based on the SGCA implemented in 2003 to regulate the trade in strategic goods and strategic goods technology. The SGCA contains a "catch-all" provision that subjects all goods and technology intended or likely to be used for weapons of mass destruction purposes to controls. The SGCA controls the transfer and brokering of strategic goods, strategic goods technology, goods and technology capable of being used to develop, produce, operate, stockpile or acquire weapons capable of causing mass destruction, and missiles capable of delivering such weapons; and for purposes connected therewith. Controlled goods require proper authorization including advance notification, license or certificate approval from Singapore authorities and follow the Harmonized System code.

Singapore has one of the world's most active container ports and is a transshipment hub for the world's busiest sea lanes. Over the last five years, the U.S. Department of State Export Control and Border Security (EXBS) Program and Singapore interagency partners have made significant strides in cooperation on strategic trade and nonproliferation, including a large-scale regional Strategic Trade Summit, serving as a regional platform to address strategic trade control in Southeast Asia. Separately, EXBS hosts an annual Strategic Trade Interdiction Tabletop Exercise to test export and

UNCLASSIFIED

UNCLASSIFIED

-12-

import control processes at the working and policy levels which continue to enhance the strategic relationship between the U.S. and Singapore.

Singapore also hosts a Joint Industry Outreach event to maintain the dialogue on export controls and strategic trade with industry, attracting participation from over 25 countries, alongside notable entities such as the Nuclear Suppliers Group, the other major multilateral export control regimes, the United Nations Office for Disarmament Affairs, the World Bank, and others.

III. ANALYSIS OF THE PROPOSED AGREEMENT

The proposed Agreement builds on the existing limited cooperation between the United States and Singapore and establishes the conditions for U.S. civil nuclear trade with Singapore. In general, as set forth in Articles 2 through 4 of the proposed Agreement, and in accordance with their applicable international agreements, national laws, and regulations, the Parties (directly or through authorized Persons) may transfer material, equipment, components, and information under the proposed Agreement.

The transfer of restricted data and sensitive nuclear technology would be prohibited under the proposed Agreement. Any special fissionable material transferred to Singapore may only be in the form of low enriched uranium, with the exception of small quantities of special fissionable material for use as samples, standards, detectors, targets, or for such other purposes as the Parties may agree in writing.

The proposed Agreement would have a duration of 30 years. It may be terminated at any time by either Party prior to the expiration of the 30 years by providing one year's written notice to the other Party. In the event of termination or expiration of the proposed Agreement, key nonproliferation conditions and controls would continue in effect as long as any nuclear material, equipment, or components subject to the proposed Agreement remain in the territory of the Party concerned or under its jurisdiction or control anywhere, or until such time as the Parties agree that such items are

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no longer usable for any nuclear activity relevant from the point of view of IAEA safeguards.

According to the proposed Agreement, retransfer of nuclear material, equipment, and components transferred under the proposed Agreement and any special fissionable material, other transuranic elements, or tritium produced using such material or equipment requires the consent of both Parties.

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

A. Requirements 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, eight of those requirements are relevant with respect to and satisfied by the proposed Agreement.

1. Application in Perpetuity of Safeguards:

Pursuant to subsection 123(a)(1) of the Act, the Republic of Singapore, 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 Republic of Singapore], irrespective of the duration of other provisions in the

UNCLASSIFIED

-14-

agreement or whether the agreement is terminated or suspended for any reason.

The “safeguards as set forth in the agreement” are found in Article 9 of the proposed Agreement, and the guaranty that they will be maintained after the proposed Agreement’s termination or expiration or any cessation of cooperation is found in Article 14(3) of the proposed Agreement.

Article 9 stipulates that (a) cooperation under the proposed Agreement shall require the application of IAEA safeguards with respect to all nuclear material in all nuclear activities within the territory, under the jurisdiction, or under the control of the Republic of Singapore; (b) nuclear material transferred to the Republic of Singapore pursuant to the proposed Agreement and any nuclear material used in or produced through the use of material, equipment or components so transferred shall be subject to safeguards in accordance with the Agreement between the Republic of Singapore and the IAEA for the Application of Safeguards in connection with the Treaty on the Non-Proliferation of Nuclear Weapons, done at Vienna and Singapore October 6 and 18, 1977, which entered into force on October 18, 1977, and the Additional Protocol thereto, signed at Vienna September 22, 2005, which entered into force on March 31, 2008; and (c) in the event the Republic of Singapore-IAEA safeguards agreement is not being applied, the Republic of Singapore is to immediately enter into equivalent arrangements with the IAEA or the United States to establish equivalent safeguards (“fall-back” safeguards).

Both the primary safeguards requirements and the requirement to create fall-back safeguards would, according to Article 14(3) of the proposed Agreement, continue in effect so long as any nuclear material, equipment, or components subject to the relevant articles of the proposed Agreement remain in the territory of the Republic of Singapore or under its jurisdiction or control anywhere, unless the Parties agree that such material, equipment, or components are no longer usable for any nuclear activity relevant from the point of view of safeguards. These requirements would survive termination or expiration of the proposed Agreement or any

UNCLASSIFIED

UNCLASSIFIED

-15-

cessation of cooperation under the proposed Agreement. This provision removes any ambiguity over whether the expiration of the proposed Agreement would have the effect of lifting the Republic of Singapore's safeguards obligations.

2. "Full-Scope" Safeguards:

Subsection 123(a)(2) of the Act requires,

as a condition of continued U.S. nuclear supply under an agreement for cooperation, maintenance by the cooperating party – if, like the Republic of Singapore, it is a non-nuclear-weapon state under the NPT – of IAEA safeguards on all nuclear material in all peaceful nuclear activities in the state or under its jurisdiction or control anywhere.

Article 9(1) of the proposed Agreement satisfies this requirement. It provides that "[c]ooperation under this Agreement shall require the application of IAEA safeguards with respect to all nuclear activities within the territory of the Republic of Singapore; under its jurisdiction, or carried out under its control anywhere. Implementation of a Safeguards Agreement concluded pursuant to Article III (4) of the NPT shall be considered to fulfill this requirement."

3. No Explosive or Military Use:

Subsection 123(a)(3) of the Act requires agreements to include a guaranty by the cooperating party that no nuclear material, equipment, or sensitive nuclear technology transferred pursuant to the agreement for cooperation, and no special nuclear material produced through the use of 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.

UNCLASSIFIED

UNCLASSIFIED

-16-

Article 8(1) of the proposed Agreement satisfies this requirement. It provides that “[m]aterial, equipment, and components transferred pursuant to this Agreement and material used in or produced through the use of any material, equipment, or components 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.”

A specific guaranty of no explosive or military use with respect to sensitive nuclear technology or material produced through such technology is not required because no such technology is authorized to be transferred under the proposed Agreement. Article 3(2) provides that sensitive nuclear technology shall not be transferred under the proposed Agreement.

4. Right of Return:

Subsection 123(a)(4) of the Act requires the agreement to 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. Article 11 of the proposed Agreement satisfies this requirement. Indeed, as is true in many existing cooperation agreements, the right to require return set forth in Article 11 applies not only to situations as required in the Act, but also to situations in which the Republic of Singapore does not comply with the storage, retransfer consent, enrichment or reprocessing consent, physical protection, or safeguards requirements of the proposed Agreement. The right of return in Article 11 would also survive termination or expiration of the proposed Agreement.

Article 11 of the proposed Agreement satisfies this requirement. Indeed, as is true in many existing civil nuclear cooperation agreements, the right to require return set forth in Article 11 applies not only to situations as required in the Act, but also to situations in which the Republic of Singapore does not comply with the storage, retransfer consent, enrichment or

UNCLASSIFIED

UNCLASSIFIED

-17-

reprocessing consent, physical protection, or safeguards requirements of the proposed Agreement. The right of return in Article 11 would also survive termination or expiration of the proposed Agreement under Article 14(3).

Article 11(1) of the proposed Agreement requires that a Party, in determining whether to exercise its rights under Article 11(1) based on a "material violation", shall consider whether the facts giving rise to the right to take such action in accordance with Article 11(1) were caused deliberately. In the event that a Party finds such material violation not to be deliberate, and to the extent that it judges that such material violation can be rectified, that Party is obligated to endeavor, subject to its national legislation and regulations, to afford the breaching Party an opportunity to cure the violation within a reasonable period.

5. Retransfer Consent:

Subsection 123(a)(5) of the Act requires agreements to include a guaranty by the cooperating party that certain transferred items – material, restricted data, and production or utilization facilities (i.e., reactors and certain major component parts of reactors) – and any special nuclear material produced through use of such material or facilities shall not be transferred to unauthorized persons or beyond the jurisdiction or control of the cooperating party without U.S. consent.

According to Article 3(2), restricted data cannot be transferred under the proposed Agreement. Article 5(2) of the proposed Agreement includes the necessary guaranty for all other required items.

6. Physical Security:

Subsection 123(a)(6) of the Act requires agreements to include a guaranty by the cooperating party 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

UNCLASSIFIED

UNCLASSIFIED

-18-

transferred pursuant to such agreement. 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" promulgated pursuant to subsection 304(d) of the NNPA. 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 7 of the proposed Agreement meets this requirement. Article 7(1) requires maintenance of "[a]dequate" physical protection with respect to nuclear material and equipment transferred pursuant to the proposed Agreement as well as special nuclear material used in or produced from any nuclear material or equipment so transferred. Article 7(2) further sets forth that compliance requires application of measures in accordance with levels at least equivalent to the IAEA INFCIRC/225/Revision 5 recommendations and any successor documents accepted by the Parties, and requires measures to be in accordance with the provisions of the Convention on the Physical Protection of Nuclear Material and its 2005 amendment, and any subsequent amendments to that Convention that enter into force for both Parties.

7. Enrichment/Reprocessing/Alteration Consent:

Subsection 123(a)(7) of the Act requires a guaranty by the cooperating party that no material transferred pursuant to the 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."

UNCLASSIFIED

UNCLASSIFIED

-19-

This requirement is met by Article 6 of the proposed Agreement.

Article 6(1) establishes that nuclear material transferred pursuant to the proposed Agreement and nuclear material used in or produced through the use of any material or equipment so transferred shall not be reprocessed, enriched, or (in the case of plutonium, uranium-233, high enriched uranium, and irradiated nuclear material) otherwise altered in form or content (except by irradiation or further irradiation), unless the Parties agree. With respect to irradiation and re-irradiation, these basic operations do not raise proliferation concerns as such types of alteration do not lead to the separation of uranium or plutonium in such a manner that they may be easily useable for malicious purposes. Rather, such forms of alteration are a standard type of activity contemplated when nuclear material is exported for commercial power or research reactors, or for other civilian research and development activities, and providing such consent within the proposed Agreement is consistent with section 123.

8. Storage:

Subsection 123(a)(8) of the Act requires agreements for cooperation to include a guaranty by the cooperating party that specified nuclear materials – plutonium, uranium 233, and high enriched uranium – transferred under the agreement or recovered from any source or special nuclear material that was transferred or used in transferred production and utilization facilities will only be stored in facilities approved in advance by the United States.

Article 5(1) of the proposed Agreement contains this guaranty. It provides that “[p]lutonium and uranium-233 (except as contained in irradiated fuel elements), as well as high enriched uranium, transferred pursuant to this Agreement or used in or produced through the use of material or equipment so transferred shall only be stored in a facility to which the Parties agree in writing.”

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9. Sensitive Nuclear Technology:

Subsection 123(a)(9) of the Act addresses the need for a guaranty by the cooperating party applicable to certain situations that may result when sensitive nuclear technology is transferred pursuant to an agreement for cooperation. This requirement is not applicable to the proposed Agreement because, according to Article 3(2), sensitive nuclear technology shall not be transferred under the proposed Agreement.

B. 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 (42 U.S.C. § 2153a(b)) precludes the transfer under an agreement for cooperation of component parts determined to be essential to the operation of a complete 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 "sensitive nuclear facilities" and "major critical components" shall not be transferred under the proposed Agreement. The definition of "sensitive nuclear facility" in Article 1(P) of the proposed Agreement encompasses the facilities described in Section 402(b) of the NNPA, and "major critical component" is defined in Article 1(H) of the proposed Agreement as any part or group of parts essential to the operation of such a facility.

2. Environment:

Section 407 of the NNPA (42 U.S.C. § 2153e) 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 12(2) of the proposed Agreement

UNCLASSIFIED

-21-

provides for consultation about international environmental implications and cooperation in protection of the international environment from radioactive, chemical, or thermal contamination as well as in related matters of health and safety.

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 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.

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July 3, 2024

MEMORANDUM FOR THE PRESIDENT

FROM: Antony Blinken
Jennifer Granholm

Antony Blinken
Jennifer Granholm

SUBJECT: (U) Proposed Peaceful Nuclear Cooperation Agreement with the Republic of Singapore

(U) The Government of United States of America and the Government of the Republic of Singapore have negotiated a proposed Agreement for Cooperation Concerning 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 of material, equipment, components, and information for peaceful nuclear purposes, 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 Republic of Singapore'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

UNCLASSIFIED

UNCLASSIFIED

-2-

NPAS submitted separately. The Director of National Intelligence is submitting separately an addendum to the NPAS on the Republic of Singapore's export control system with respect to nuclear-related matters, including interactions with countries of proliferation concern and the actual or suspected nuclear, dual-use, or missile-related transfers to such countries. The Nuclear Regulatory Commission also is submitting its views separately.

Attachments:

- Tab 1 – Draft Presidential Determination
- Tab 2 – Draft Transmittal Letter to the Congress (to be held until after the Agreement is signed)
- Tab 3 – Text of Proposed Agreement between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy
- Tab 4 – Nuclear Proliferation Assessment Statement

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



July 11, 2024

The President
The White House
Washington, DC 20500

Dear President Biden:

In accordance with the provisions of Section 123 of the Atomic Energy Act of 1954, as amended, the Nuclear Regulatory Commission reviewed the proposed Agreement for Cooperation between the Government of the United States of America and the Government of the Republic of Singapore Concerning Peaceful Uses of Nuclear Energy. It is the view of the Commission that the proposed Agreement meets all of the provisions required by law and establishes a sufficient framework for civilian nuclear cooperation between the United States and the Republic of Singapore. The Commission therefore recommends that you make the requisite positive statutory determination, approve the proposed Agreement, and authorize its execution.

Respectfully,

A handwritten signature in black ink, appearing to read "C. T. Hanson".

Christopher T. Hanson