

## **ATOMIC ENERGY**

### **Nuclear Safety**

#### **Arrangement Between the UNITED STATES OF AMERICA and SINGAPORE**

Signed at Rockville and Singapore  
June 20 and July 3, 2017

*with*

Addenda and Annex



NOTE BY THE DEPARTMENT OF STATE

Pursuant to Public Law 89—497, approved July 8, 1966  
(80 Stat. 271; 1 U.S.C. 113)—

“ . . . the Treaties and Other International Acts Series issued under the authority of the Secretary of State shall be competent evidence . . . of the treaties, international agreements other than treaties, and proclamations by the President of such treaties and international agreements other than treaties, as the case may be, therein contained, in all the courts of law and equity and of maritime jurisdiction, and in all the tribunals and public offices of the United States, and of the several States, without any further proof or authentication thereof.”

## **SINGAPORE**

### **Atomic Energy: Nuclear Safety**

*Arrangement signed at  
Rockville and Singapore  
June 20 and July 3, 2017;  
Entered into force July 3, 2017.  
With addenda and annex.*

ARRANGEMENT  
BETWEEN  
THE UNITED STATES NUCLEAR REGULATORY  
COMMISSION  
AND  
THE NATIONAL ENVIRONMENT AGENCY  
OF THE REPUBLIC OF SINGAPORE  
FOR THE EXCHANGE OF TECHNICAL  
INFORMATION  
AND  
COOPERATION IN NUCLEAR SAFETY MATTERS

JULY 3, 2017

ARRANGEMENT  
BETWEEN  
THE UNITED STATES NUCLEAR REGULATORY COMMISSION  
AND  
THE NATIONAL ENVIRONMENT AGENCY  
OF THE REPUBLIC OF SINGAPORE  
FOR THE EXCHANGE OF TECHNICAL INFORMATION  
AND  
COOPERATION IN NUCLEAR SAFETY MATTERS

The United States Nuclear Regulatory Commission (hereinafter the USNRC), and the National Environment Agency of the Republic of Singapore (hereinafter the NEA), the two together hereinafter referred to as the Parties;

Having a mutual desire and interest in a continuing exchange of information pertaining to regulatory matters and of standards required or recommended by their respective organizations for the regulation of nuclear safety, security, and the environmental impact of constructing and operating nuclear facilities, and having recognized the benefits of such exchange and cooperation;

Have agreed as follows:

## I. SCOPE OF THE ARRANGEMENT

### A. Technical Information Exchange

To the extent that the Parties are permitted to do so under the laws, regulations, and policy directives of their respective countries, they shall exchange the following types of unclassified technical information relating to the regulation of nuclear safety, security, radioactive waste management, radiological safety, and the environmental impact of constructing and operating designated nuclear energy facilities, nuclear emergency preparedness and response, and to nuclear safety research programs:

1. Topical reports concerning nuclear safety, security, radioactive waste management, radiological safety, and environmental effects written by or for one of the Parties as a basis for, or in support of, regulatory decisions and policies.
2. Documents relating to significant licensing actions and safety and environmental decisions affecting nuclear facilities.
3. Detailed documents describing the USNRC process for licensing and regulating certain U.S. facilities and equivalent documents on such facilities licensed and regulated by the NEA, as identified and mutually agreed upon by the Parties.
4. Information in the field of reactor safety research that the Parties have the right to disclose, either in the possession of one of the Parties or available to it, including light water reactor safety information from the technical areas described in Addenda "A" and "B," attached hereto and made integral parts of this Arrangement. Cooperation in these itemized research areas may require a separate agreement, as determined to be necessary by the research organizations of one or both of the Parties. Each Party shall transmit immediately to the other information concerning research results that requires early attention in the interest of public safety, along with an indication of significant implications.
5. Reports on operating experience, such as reports on nuclear incidents, accidents and shutdowns, and compilations of historical reliability data on components and systems.
6. Regulatory procedures for nuclear safety, security, radioactive waste management, radiological safety, and environmental impact evaluation of nuclear facilities.
7. Early advice of important events, such as serious operating incidents, government-directed reactor shutdowns, and emerging technical issues, that are of immediate interest to the Parties.

8. Documents relating to nuclear emergency preparedness and response, such as response plans and counter measures to mitigate the impacts of nuclear incidents.

B. Cooperation in Nuclear Safety Research

The terms of cooperation for joint programs and projects of nuclear safety research and development, or those programs and projects under which activities are divided between the two Parties, including the use of test facilities and/or computer programs owned by either Party, shall be considered on a case-by-case basis and may be the subject of a separate agreement, if determined to be necessary by the research organizations of one or both of the Parties. When not the subject of a separate agreement, the terms of cooperation may be established by an exchange of letters between the research organizations of the Parties, and shall be subject to the terms and conditions of this Arrangement. Technical areas specified by such exchanges of letters may be modified subsequently by mutual consent.

C. Training and Assignments

Within the limits of available resources and subject to the availability of appropriated funds, the USNRC shall cooperate with the NEA in providing certain training and experience for NEA safety personnel. In addition, temporary assignments of personnel by one Party in the other Party's Agency shall also be considered on a case-by-case basis and shall, in general, require a separate agreement between the Parties. Unless otherwise agreed, costs of salary, allowances, and travel of participants shall be paid by the Party that incurs them. The following are typical of, but not necessarily exclusive of, the kinds of training and experience that may be provided:

1. NEA designated inspector accompaniment of USNRC inspectors on reactor operation and reactor construction inspection visits in the United States, including extended briefings at USNRC regional inspection offices.
2. Participation by NEA designated internal and external personnel on a case-by-case basis in USNRC staff training courses.
3. Assignment of NEA designated internal and external experts on a case-by-case basis for certain periods to be determined by the Parties within the USNRC staff to work on USNRC staff duties and gain on the job experience.
4. Training assignments of NEA designated internal and external personnel on a case-by-case basis within the radiation control program in the United States.

## II. ADMINISTRATION

- A. The exchange of information under this Arrangement shall be accomplished through letters, reports, and other documents, and by visits and meetings arranged in advance on a case-by-case basis. Periodic meetings shall be held at such times as mutually agreed to review the exchange of information and cooperation under this Arrangement, to recommend revisions to the provisions of this Arrangement, and to discuss topics coming within the scope of the cooperation. The time, place, and agenda for such meetings shall be agreed upon in advance. Visits which take place under this Arrangement, including their schedules, shall have the prior approval of the administrators referred to in Section II.B. of this Arrangement.
- B. An administrator shall be designated by each Party to coordinate its participation in the overall exchange under this Arrangement. Both administrators shall be the recipients of all documents transmitted under the exchange, including copies of all letters unless otherwise agreed. Within the terms of the exchange, both administrators shall be responsible for developing the scope of the exchange, including agreement on the designation of the nuclear energy facilities subject to the exchange, and on specific documents and standards to be exchanged. One or more technical coordinators may be appointed as direct contacts for specific disciplinary areas. These technical coordinators shall ensure that both administrators receive copies of all transmittals. These detailed arrangements are intended to ensure, among other things, that a reasonably balanced exchange giving access to equivalent available information is achieved and maintained.
- C. Both administrators shall determine the number of copies to be provided of the documents exchanged. Each document shall be accompanied by an abstract in English, 250 words or less, describing its scope and content.
- D. The application or use of any information exchanged or transferred between the Parties under this Arrangement shall be the responsibility of the receiving Party, and the transmitting Party does not warrant the suitability of such information for any particular use or application.
- E. Recognizing that some information of the type covered in this Arrangement is not available within the agencies that are Parties to this Arrangement, but is available from other agencies of the governments of the Parties, each Party shall assist the other to the maximum extent possible by organizing visits and directing inquiries concerning such information to appropriate agencies of its government. The foregoing shall not constitute a commitment of other agencies to furnish such information or to receive such visitors.

### III. EXCHANGE AND USE OF INFORMATION

#### A. General

The Parties support the widest possible dissemination of information provided or exchanged under this Arrangement, subject to the requirements of each Party's national laws, regulations and policies and the need to protect proprietary and other confidential or privileged information, and subject to the provisions of the Intellectual Property Rights Annex, which is an integral part of this Arrangement.

#### B. Definitions

1. The term "information" means unclassified nuclear energy-related regulatory, nuclear safety, security, radioactive waste management, scientific or technical data, including information on results or methods of assessment, research, and any other knowledge provided, created or exchanged under this Arrangement.
2. The term "proprietary information" means information made available under this Arrangement that contains trade secrets or other privileged or confidential commercial information (such that the person having the information may derive a commercial benefit from it or may have a commercial advantage over those who do not have it), and may only include information that:
  - a. has been held in confidence by its owner;
  - b. has not been transmitted by the owner to other entities (including the receiving Party), except on the basis that it be held in confidence;
  - c. is not otherwise available to the receiving Party from another source without restriction on its further dissemination; and
  - d. is not already in the possession of the receiving Party.
3. The term "other confidential or privileged information" means information, other than "proprietary information," that has been transmitted and received in confidence under this Arrangement and is protected from public disclosure under the laws, regulations, or policies of the country of the Party providing the information.

#### C. Marking Procedures for Documentary Proprietary Information

A Party receiving documentary proprietary information pursuant to this Arrangement shall respect the privileged nature of such information, provided that such proprietary information is clearly marked with the following (or substantially similar) restrictive legend:

"This document contains proprietary information furnished in confidence under an Arrangement dated July 3, 2017, between the United States Nuclear Regulatory Commission and the National Environment Agency of the Republic of Singapore

and shall not be disseminated outside these organizations, their consultants, contractors, and licensees, or concerned departments and agencies of the Government of the United States of America and the Government of the Republic of Singapore, without the prior written approval of (name of transmitting Party). This notice shall be marked on each page of any reproduction hereof, in whole or in part. These limitations shall automatically terminate when the proprietary information is disclosed by the owner without restriction.”

This restrictive legend shall be respected by the Parties to this Arrangement. Proprietary information bearing this restrictive legend shall not be made public or otherwise disseminated in any manner unspecified or contrary to the terms of this Arrangement without the prior written consent of the transmitting Party. Proprietary information bearing this restrictive legend shall not be used by the receiving Party or its contractors and consultants for any commercial purposes without the prior written consent of the transmitting Party.

D. Dissemination of Documentary Proprietary Information

1. In general, proprietary information received under this Arrangement may be disseminated by the receiving Party without prior consent to persons within or employed by the receiving Party, and to concerned Government departments and Government agencies in the country of the receiving Party, provided:
  - a. such dissemination is made on a case-by-case basis; and
  - b. such proprietary information bears the restrictive legend appearing in Section III.C. of this Arrangement.
2. Proprietary information received under this Arrangement may be disseminated by the receiving Party without prior consent to contractors and consultants of the receiving Party located within the geographical limits of that Party's country provided:
  - a. that the proprietary information is used by such contractors and consultants only for work within the scope of their contracts with the receiving Party relating to the subject matter of the proprietary information, and shall not be used by such contractors and consultants for any other private commercial purposes;
  - b. that such dissemination is made on a case-by-case basis to contractors and consultants who have executed a non-disclosure agreement; and
  - c. that such proprietary information shall bear the restrictive legend appearing in Section III.C. of this Arrangement.

3. With the prior written consent of the Party furnishing proprietary information under this Arrangement, the receiving Party may disseminate such proprietary information more widely than otherwise permitted under the terms set forth in this Arrangement. The Parties shall endeavor to grant such approval to the extent permitted by their respective national laws, regulations and policies, provided:
  - a. that the entities receiving proprietary information under Section III.D.3. of this Arrangement, including domestic organizations permitted or licensed by the receiving Party to construct or operate nuclear production or utilization facilities, or to use nuclear and materials radiation sources, have executed a non-disclosure agreement;
  - b. that the entities receiving proprietary information under Section III.D.3. of this Arrangement, including domestic organizations permitted or licensed by the receiving Party to construct or operate nuclear production or utilization facilities, shall not use such proprietary information for any private commercial purposes; and
  - c. that those entities receiving proprietary information under Section III.D.3. of this Arrangement that are domestic organizations permitted or licensed by the receiving Party, agree to use the proprietary information only for activities carried out under or within the terms of their specific permit or license.

E. Marking Procedures for Other Confidential or Privileged Information of a Documentary Nature

A Party receiving under this Arrangement other confidential or privileged information shall respect its confidential nature, provided such information is clearly marked so as to indicate its confidential or privileged nature and is accompanied by a statement indicating:

1. that the information is protected from public disclosure by the government of the transmitting Party; and
2. that the information is transmitted under the condition that it be maintained in confidence.

F. Dissemination of Other Confidential or Privileged Information of a Documentary Nature

Other confidential or privileged information may be disseminated in the same manner as that set forth in Section III.D. of this Arrangement, "Dissemination of Documentary Proprietary Information."

G. Non-Documentary Proprietary or Other Confidential or Privileged Information

Non-documentary proprietary or other confidential or privileged information provided in seminars and other meetings organized under this Arrangement, or information arising from the assignment of staff, use of facilities, or joint projects, shall be treated by the Parties according to the principles specified for documentary information in this Arrangement; provided, however, that the Party communicating such proprietary or other confidential or privileged information has placed the recipient on notice as to the character of the information communicated.

H. Consultation

If, for any reason, one of the Parties becomes aware that it will be, or may reasonably be expected to become, unable to meet the non-dissemination provisions of this Arrangement, it shall at the earliest reasonable opportunity inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

I. Other

Nothing contained in this Arrangement shall preclude a Party from using or disseminating information received without restriction by a Party from sources outside of this Arrangement.

**IV. FINAL PROVISIONS**

- A. Nothing contained in this Arrangement shall require either Party to take any action that would be inconsistent with its existing laws, regulations, or policy directives. Should any conflict arise between the terms of this Arrangement and those laws, regulations, or policy directives, the Parties agree to consult before any action is taken. No nuclear information related to proliferation-sensitive technologies shall be exchanged under this Arrangement.
- B. Unless otherwise agreed, all costs resulting from cooperation pursuant to this Arrangement shall be the responsibility of the Party that incurs them. The ability of the Parties to carry out their obligations is subject to the appropriation of funds by the appropriate governmental authority and to the laws, regulations and policies applicable to the Parties.
- C. Cooperation under this Arrangement shall be in accordance with the laws and regulations of the Parties. Any dispute or questions between the Parties concerning the interpretation or application of this Arrangement shall be settled by mutual agreement of the Parties.
- D. This Arrangement shall enter into force upon signature and, subject to paragraph E of this Section, shall remain in force for a period of five years. It may be extended for a further period of time by written agreement of the Parties.

- E. Either Party may terminate this Arrangement by providing the other Party written notice at least 180 days prior to its intended date of termination.

Done at Rockville, MD, on this 20<sup>th</sup> of JUNE 2017, and at Singapore on this 3<sup>rd</sup> of July 2017, in duplicate, in the English language.

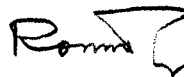
FOR THE UNITED STATES NUCLEAR  
REGULATORY COMMISSION:



---

Kristine L. Svinicki, Chairman

FOR THE NATIONAL ENVIRONMENT  
AGENCY OF THE REPUBLIC OF  
SINGAPORE:



---

Ronnie Tay, Chief Executive Officer

## **Addendum A**

### **USNRC - NEA Safety Research Exchange** **Areas in Which the USNRC Is Performing or Sponsoring Safety Research**

1. Digital Instrumentation and Control
2. Reactor and Electrical Equipment Qualification
3. Environmental Transport
4. Radionuclide Transport and Waste Management
5. Dry Cask Storage and Transport
6. Fire Safety Research
7. Nuclear Fuel Analysis
8. Severe Accident Analysis
9. Operating Experience and Generic Issues
10. Human Factors Engineering
11. Organizational Factors/Safety Culture
12. Human Reliability Analysis (HRA)
13. Probabilistic Risk Assessments
14. Radiation Protection and Health Effects
15. Seismic Safety
16. State of the Art Risk Consequences
17. Reactor Containment Structural Safety
18. Reactor Vessel and Piping Integrity
19. Regulatory Guide Update
20. New and Advanced Reactor Designs
21. Decommissioning
22. Thermal Hydraulic Code Applications and Maintenance
23. Uncertainty Analysis for Thermal Hydraulic Kinetics
24. Coupled 3D Neutronic and Plant Thermal Hydraulics
25. Medical Isotope Production
26. Long-term Operational Management
27. Plant and Systems Operations

## **Addendum B**

### **USNRC - NEA Safety Research Exchange**

#### **Areas in Which the National University of Singapore's Singapore Nuclear Research and Safety Initiative (SNRSI) Is Performing or Sponsoring Nuclear Safety Research**

1. Severe Accident Analysis
2. Environmental Transport
3. Radiation Protection and Health Effects
4. New and Advanced Reactor Designs
5. Probabilistic Risk Assessments

## **INTELLECTUAL PROPERTY RIGHTS ANNEX**

### **I. General Obligation**

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Arrangement and relevant implementing arrangements. Rights to such intellectual property shall be allocated as provided in this Annex.

### **II. Scope**

A. This Annex is applicable to all cooperative activities undertaken pursuant to this Arrangement, except as otherwise specifically agreed by the Parties or their designees.

B. For purposes of this Arrangement, "intellectual property" shall mean the subject matter listed in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967, and may include other subject matter as agreed by the Parties.

C. Each Party shall ensure, through contracts or other legal means with its own participants, if necessary, that the other Party can obtain the rights to intellectual property allocated in accordance with this Annex. This Annex does not otherwise alter or prejudice the allocation between a Party and its participants, which shall be determined by that Party's laws and practices.

D. Except as otherwise provided in this Arrangement, disputes concerning intellectual property arising under this Arrangement shall be resolved through discussions between the concerned participating institutions, or, if necessary, the Parties or their designees. Upon mutual agreement of the Parties, a dispute shall be submitted to an arbitral tribunal for binding arbitration in accordance with the applicable rules of international law. Unless the Parties or their designees agree otherwise in writing, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.

E. Termination or expiration of this Arrangement shall not affect rights or obligations under this Annex.

### **III. Allocation of Rights**

A. Each Party shall be entitled to a worldwide, non-exclusive, irrevocable, royalty-free license to translate, reproduce, and publicly distribute monographs, scientific and technical journal articles, reports, and books directly arising from cooperation under this Arrangement. All publicly distributed copies of a copyrighted work prepared under this Arrangement shall indicate the names of the authors of the work unless an author explicitly declines to be named.

B. Rights to all forms of intellectual property, other than those rights described in paragraph III.A above, shall be allocated as follows:

(1) Prior to participation in cooperative activities under this Arrangement by a visiting researcher, the host Party or its designee and the other Party or its designee employing or sponsoring the visiting researcher may discuss and determine with the other Party the allocation of rights to any intellectual property created by the visiting researcher. Absent such a determination, visiting researchers shall receive rights, awards, bonuses and royalties in

accordance with the policies of the host institution. For purposes of this Arrangement, a visiting researcher is a researcher visiting an institution of the other Party (host institution) and engaged in work planned solely by the host institution.

(2) (a) Any intellectual property created by persons employed or sponsored by one Party under cooperative activities other than those covered by Paragraph III.(B)(1) shall be owned by that Party. Intellectual property created by persons employed or sponsored by both Parties shall be jointly owned by the Parties. In addition, each creator shall be entitled to awards, bonuses and royalties in accordance with the policies of the institution employing or sponsoring that creator.

(b) Unless otherwise agreed in an implementing or other arrangement, each Party shall have within its territory a right to exploit and allow others to exploit intellectual property created in the course of the cooperative activities.

(c) The rights of a Party outside its territory shall be determined by mutual agreement considering, for example, the relative contributions of the Parties and their participants to the cooperative activities, the degree of commitment in obtaining legal protection and licensing of the intellectual property and such other factors deemed appropriate.

(d) Notwithstanding paragraphs III.B(2)(a) and (b) above, if either Party believes that a particular project is likely to lead to or has led to the creation of intellectual property not protected by the laws of the other Party, the Parties shall immediately hold discussions to determine the allocation of rights to the intellectual property. If an agreement cannot be reached within three months of the date of the initiation of the discussions, cooperation on the project in question shall be terminated at the request of either Party. Creators of intellectual property shall nonetheless be entitled to awards, bonuses and royalties as provided in paragraph III.B(2)(a).

(e) For each invention made under any cooperative activity, the Party employing or sponsoring the inventor(s) shall disclose the invention promptly to the other Party together with any documentation and information necessary to enable the other Party to establish any rights to which it may be entitled. Either Party may ask the other Party in writing to delay publication or public disclosure of such documentation or information for the purpose of protecting its rights in the invention. Unless otherwise agreed in writing, the delay shall not exceed a period of six months from the date of disclosure by the inventing Party to the other Party.

#### **IV. Business Confidential Information**

In the event that information identified in a timely fashion as business-confidential is furnished or created under this Arrangement, each Party and its participants shall protect such information in accordance with applicable laws, regulations, and administrative practices. Information may be identified as "business-confidential" if a person having the information may derive an economic benefit from it or may obtain a competitive advantage over those who do not have it, and the information is not generally known or publicly available from other sources, and the owner has not previously made the information available without imposing in a timely manner an obligation to keep it confidential.