IMPLEMENTING AGREEMENT

ON THE RADIATION PROTECTION

CODE ANALYSIS AND MAINTENANCE PROGRAM

BETWEEN

THE TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE IN THE UNITED STATES

AND

THE AMERICAN INSTITUTE IN TAIWAN

The Taipei Economic and Cultural Representative Office in the United States (hereinafter referred to as "TECRO") and the American Institute in Taiwan (hereinafter referred to as "AIT");

Considering that TECRO and AIT (hereinafter individually referred to as a "Party" and collectively referred to as the "Parties") and their designated representatives, the Atomic Energy Council of Taiwan (hereinafter referred to as the "AEC") for TECRO and the United States Nuclear Regulatory Commission (hereinafter referred to as "NRC") for AIT:

Have a mutual interest in cooperation in the field of radiation protection research, with the objective of improving and helping ensure the safety of radioactive material internationally;

Recognizing a need to share equitably both the resources resulting from this research and the effort required to develop those resources; and

Desiring to cooperate in implementation of the Arrangement Between the American Institute in Taiwan and the Taipei Economic and Cultural Representative Office in the United States for the Exchange of Technical Information and Cooperation in Nuclear Regulatory and Safety Matters, signed at Washington on January 8, 2016 (the Arrangement);

Have AGREED as follows:

ARTICLE I - PROGRAM COOPERATION

The Parties, in accordance with the provisions of this Implementing Agreement and subject to applicable laws and regulations in force in the respective territories of the authorities they represent, will join together, through their designated representatives, for cooperative research in radiation protection research programs sponsored by the Parties.

ARTICLE II - FORMS OF COOPERATION

Cooperation between the Parties, through their designated representatives, may take the

following forms:

A. Exchange of information in the form of executable computer codes, (listed in the Appendix), documentation, technical reports, experimental data, correspondence, newsletters, visits, joint meetings, and such other means as the Parties agree;

B. Execution of joint programs and projects, including those involving a division of activities between the Parties. Each joint program and project will be considered on a case-by-case basis and may be the subject of a separate agreement, if determined to be necessary by the Parties. Otherwise, it will be accomplished by an exchange of letters between the Parties, subject at least to the terms and conditions of the present Implementing Agreement;

C. Temporary assignment of personnel of one Party or designated representative or of either's contractors to laboratories or facilities owned by the other Party or designated representative or in which either sponsors research. Each assignment will be considered on a case-by-case basis.

D. Use by one Party of facilities that are owned by the other Party or its designated representative or in which research is being sponsored by the other Party or its designated representative. Use of these facilities may be subject to commercial terms and conditions;

E. Visits or assignment of personnel, or use of the facilities owned or operated by entities other than the Parties to this Implementing Agreement or their designated representatives. The Parties recognize that prior approval by such entities will in general be required regarding terms upon which such visit, assignment, or use should be made;

F. Any other form agreed between the Parties.

ARTICLE III - SCOPE OF IMPLEMENTING AGREEMENT

A. Program Objectives:

1. Share user experience on code maintenance, development, benchmarking and uncertainty studies for radiation protection and dose assessment codes;

2. Share experience on code errors and inadequacies and cooperate in resolving the deficiencies and maintaining a single, internationally recognized version of each code;

3. Share experience on dose assessment analyses performed using the codes. These include analyses of generating a source term, environmental fate and transport and internal and external dosimetry assessment. This also includes accident management and operator procedures-related studies;

4. Maintain and improve user expertise and document user guidelines for applying

the codes.

B. AIT Scope of Responsibility

Subject to the availability of appropriated funds, AIT, through its designated representative, will provide over the duration of this Implementing Agreement the following specified goods and services:

1. Coordination and Program Management of RAMP: The Radiation Protection Code Analysis and Maintenance Program (RAMP) will be coordinated by AIT's designated representative. Program information will be documented and circulated via websites, newsletters and NUREG/IA documents, where applicable. Error corrections and model improvements will be made within the limits of available resources allocated for each code, taking into account a priority list as administered by AIT's designated representative. Contributing countries' input on priorities for code modifications will be solicited by AIT's designated representative and considered when establishing priorities.

2. Code and Documentation: AIT's designated representative will provide to TECRO's designated representative codes listed in Appendix A, and associated documentation, if applicable. Code updates will be supplied during the agreement period and will be available on machine-readable media and code configuration control will be maintained to provide an internationally recognized version of each code.

3. Code Support: AIT's designated representative will provide to TECRO's designated representative the ability to submit code-related questions to AIT's designated representative list serve email groups for the particular code and receive answers in a timely manner. AIT's designated representative also will accommodate reasonable requests for assistance from TECRO's designated representative for support in their implementation and use.

4. AIT's designated representative will grant permission for personnel sponsored by TECRO's designated representative to participate in technical program review and progress meetings except for those meetings concerned with administrative and fiscal matters.

C. TECRO Scope of Responsibility

1. Monetary Contribution for Code Maintenance and Improvements. On the date that this Implementing Agreement is signed and on the anniversary of that date each year for the duration of this Implementing Agreement, TECRO's designated representative will transmit to AIT's designated representative, through the Parties, $20,000.

ARTICLE IV - ADMINISTRATION OF THE IMPLEMENTING AGREEMENT

A. The Parties, through their designated representatives, will each designate one

administrator to coordinate and determine the detailed implementation of this cooperation. These administrators may, at their discretion, delegate this responsibility to the appropriate technical staff with respect to a given issue. The single designated representative will be referred to as the administrator of this Implementing Agreement. Any notices required under this Implementing Agreement will be addressed to the administrators using the most efficient communication method.

B. The Implementing Agreement restricts dissemination of proprietary and other confidential or privileged information.

C. The Parties, through their designated representatives, will endeavor to select technical personnel for assignment in the program who can contribute positively to the program. Technical personnel assigned to the program will be considered visiting scientists (nonsalaried) within the program and will be expected to participate in the conduct of the analyses and experiments of the program as mutually agreed.

D. Each Party will have access to all non-proprietary reports written by the other Party's technical personnel assigned to the respective programs that derive from its participation in the Implementing Agreement.

E. Administrative details concerning questions such as security, indemnity, and liability related to the assignees or trainees will be addressed in personnel assignment Implementing Agreements between the Parties.

F. Travel costs, living expenses, and salaries of visiting technical personnel or personnel participating in program review meetings shall be borne by the Party that incurred them unless specified otherwise.

ARTICLE V - EXCHANGE AND USE OF INFORMATION AND INTELLECTUAL PROPERTY

A. 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 Agreement, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

B. Other Considerations

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

2. All AIT's designated representative's computer codes disseminated under this Implementing Agreement are to be considered privileged information unless otherwise noted, are to be protected as such by AIT's designated representative and TECRO's designated representative respectively, and shall be treated

likewise by the Parties. They are, in particular, subject to all the provisions of this Article prior to dissemination. The codes are subject to this protection in both object and source forms and as recorded in any media.

3. The codes and other related analytical techniques covered under this Implementing Agreement, and any improvements, modifications, or updates to such codes or techniques are for the purpose of reactor safety, radiation safety and dose assessment research and licensing and will not be used for commercial purposes, or for other benefits without the prior consent of AIT's designated representative.

4. Among the code uses that will be permitted under this Implementing Agreement are those related to research in the reactor safety, radiation safety and dose assessment area and analyses performed by RAMP members or their contractors that can assist regulators and plant personnel in assessing the safety of the plant, analyzing operating events, and training of operators. Specific examples of permitted analyses include: design basis accidents (e.g., loss-of-coolant-accidents), emergency scenarios and dose assessments.

   Prohibited uses of AIT's designated representative codes include: (1) analyses to develop a new reactor design and (2) analyses to support power uprates and reload in the territory of the authorities represented by AIT unless performed by a subsidiary incorporated in the territory of the authorities represented by AIT.

5. AIT's designated representative codes and other related analytical techniques will not be advertised directly or by implication to obtain contracts related to the construction or servicing of nuclear facilities, nor shall advertising imply that AIT's designated representative or TECRO's designated representative has endorsed any particular analyses or techniques.

6. All reports published within the scope of this Implementing Agreement and all meetings held shall be in English.

ARTICLE VI - DISPUTES AND WARRANTY OF INFORMATION

A. All costs arising from this Implementing Agreement shall be borne by the Party that incurs them except when specifically agreed to otherwise. The activities of the Parties under this Implementing Agreement are subject to the availability of funds. It is also understood that the terms herein agreed to represent feasible commitments according to the best understanding regarding resources and costs of the Parties at the time of signature.

B. Cooperation under this Implementing Agreement shall be in accordance with the laws and regulations applicable in the respective territories of the authorities represented by the Parties. Any dispute or questions between the Parties concerning the interpretation

or application of the Implementing Agreement will be settled by mutual agreement.

C. Information furnished by one Party to the other under this Implementing Agreement shall be accurate to the best knowledge and belief of the Party supplying the information. However, the application or use of any information exchanged or transferred between the Parties under this Implementing Agreement shall be the responsibility of the Party receiving the information, and the Party supplying the information does not warrant the suitability of the information for any particular use or application.

D. Neither AIT nor its designated representative makes any warranties whatsoever for the ability or suitability of any AIT's designated representative's code or other analytical technique to perform in any particular manner for any particular purpose, or to accomplish any particular task. Neither AIT nor its designated representative accepts any liability for damages of any type that may result from the use of its codes or other analytical techniques provided under this Implementing Agreement.

ARTICLE VII - FINAL PROVISIONS

A. This Implementing Agreement shall enter into force upon signature and shall remain in effect for a period of 3 years, provided that the Arrangement remains in force. This Implementing Agreement may be extended for an additional period of time upon mutual agreement of the Parties, provided that the Arrangement remains in force.

B. The Parties enter into this Implementing Agreement with the understanding that reasonable allowances for normal delays will be made in completing the work. The Parties have the right to utilize information provided under this Implementing Agreement after its termination; however, all information protected by provisions of this Implementing Agreement as proprietary, confidential, privileged, or otherwise subject to restriction on disclosure shall remain so protected indefinitely unless mutually agreed to in writing.

C. A Party may terminate this Implementing Agreement after providing the other Party written notice of its intent to terminate at least 180 days in advance. The Party not terminating will notify the terminating Party before the effective date of termination if termination will result in the terminating Party receiving a disproportionate share of the expected benefit from this Implementing Agreement. Both Parties will endeavor to reach an equitable settlement of the matter through negotiation. This Implementing Agreement shall terminate upon the expiration or termination of the Arrangement.

D. The Parties to this Implementing Agreement reserve the right to modify or extend the specific activities described in Article III within the intended scope of the Implementing Agreement upon written concurrence of their administrators.

E. If the portion of the research program of any Party that is pertinent to this Implementing Agreement is substantially reduced or eliminated, the technical scope described in Article III may be adjusted to substitute research of equivalent programmatic interest upon mutual agreement of the Parties.

FOR THE TAIPEI ECONOMIC AND CULTURAL REPRESENTATIVE OFFICE IN THE UNITED STATES:

BY: James Lee
James K.J. Lee

TITLE: Deputy Representative

DATE: 01-15-16

PLACE: Washington D.C.

FOR THE AMERICAN INSTITUTE IN TAIWAN:

BY: Joseph R. Donovan, Jr.

TITLE: Managing Director

DATE: 01-15-16

PLACE: Washington D.C.

Appendix A
Description of Codes in
The Radiation Protection Code Analysis and Maintenance Program

RASCAL The RASCAL computer code is used for making dose projections for atmospheric releases during radiological emergencies. It is the premier computer code used by AIT's designated representative's emergency operations center. (INTERRAS is the International Version of the RASCAL Code.)

RADTRAD The RADTRAD computer code is used to assess occupational radiation exposures, typically in the control room; to estimate site boundary doses; and to estimate dose attenuation due to modification of a facility or accident sequence. RADTRAD models the accident dose consequences resulting from the release and transport of fission products and it is used by AIT's designated representative in the evaluation of licensees' amendment requests to assess dose consequences of design basis accidents.

HABIT The HABIT computer code is an integrated set of computer programs used mainly to estimate chemical exposures that personnel in the control room of a nuclear facility would be exposed to in the event of an accidental release of toxic chemicals.

DandD The DandD computer code is used by AIT's designated representative licensees to demonstrate in an application for decommissioning a materials license (and AIT's designated representative to verify) that residual soil or building contamination at the licensed site following decontamination and decommissioning complies with the radiological dose criteria for license termination in 10 CFR Part 20, Subpart E. The computer code was designed to simplify decommissioning in cases where low levels of contamination exist.

VARSKIN The VARSKIN computer code is used to perform confirmatory calculations of licensees' submittals regarding skin dose (from both beta and gamma sources) estimates at any skin depth or skin volume, with point, disk, cylindrical, spherical, or slab (rectangular) sources, and even enables users to compute doses from multiple sources.

PIMAL The PIMAL humanoid phantom models are considered an efficient and accurate tool for developing exposure models and performing dosimetry calculations for radiation workers and exposed members of the public. PIMAL is a graphical user interface.

Radiological Toolbox The Radiological Toolbox provides ready access to data of interest in radiation

protection of workers and members of the public. The data include dose coefficients for intakes of radionuclides, exposure to radionuclides distributed in the environment, and for exposures to photon and neutron radiation fields. Other supportive data include interaction coefficients for alpha, electron, photon and neutron radiations, nuclear decay data, biological and physiological data, and supplemental information on various topics.

GALE The gaseous and liquid effluent (GALE) codes, for a pressurized-water reactor (PWR) and a boiling-water reactor (BWR), estimates the quantities of radioactivity released by a plant through liquid and atmospheric discharges during routine operations.