

AGREEMENT
BETWEEN
THE UNITED STATES NUCLEAR REGULATORY COMMISSION (USNRC)
AND
THE RUSSIAN RESEARCH CENTER (RRC)
AND
THE NUCLEAR SAFETY INSTITUTE OF THE RUSSIAN ACADEMY OF SCIENCES (IBRAE)
RELATING TO
PARTICIPATION IN THE USNRC PROGRAM
OF SEVERE ACCIDENT RESEARCH

This Agreement is made among the United States Nuclear Regulatory Commission (hereinafter referred to as the USNRC), the Russian Research Center (hereinafter referred to as RRC), and the Nuclear Safety Institute of the Russian Academy of Sciences (hereinafter referred to as IBRAE), the three together hereinafter referred to as the "Parties":

Considering that the Parties:

1. Have a mutual interest in cooperation in the field of nuclear safety research with the objective of improving and thus ensuring the safety of civilian nuclear installations on an international basis;
2. Recognize a need to equitably share both the resources resulting from this research and the effort required to develop those resources;
3. Have an interest in cooperating in the area of severe accident research, and other related areas of nuclear safety research;
4. Have cooperated in the field of nuclear reactor safety under separate five-year *Implementing Agreements* signed with RRC on February 23, 1996, and with IBRAE on January 31, 1995.

The Parties have AGREED as follows:

ARTICLE I - PROGRAM COOPERATION

The Parties, in accordance with the provisions of this Agreement and subject to applicable laws and regulations in force in their respective countries, will join together in cooperative research for the Severe Accident Research Program (CSARP) sponsored by the USNRC and for similar research programs sponsored by RRC and IBRAE.

ARTICLE II - FORMS OF COOPERATION

Cooperation among the Parties may include:

- A. The exchange of information in the form of technical reports, experimental data, correspondence, newsletters, visits, joint meetings, and such other means as the Parties agree.
- B. The temporary assignment of personnel of one Party or of its contractors to the laboratory or facilities owned by the other Party or in which it sponsors research. Each assignment shall be considered on a case-by-case basis and will generally require a separate agreement.
- C. The execution of joint programs and projects, including those involving a division of activities between the Parties. Each joint program and project shall be considered on a case-by-case basis and may be the subject of a separate agreement, if determined to be necessary by either of the Parties to this Agreement or their research organizations. Otherwise, it will be accomplished by an exchange of letters between the research organizations of the Parties, subject at least to the terms and conditions of this present Agreement.
- D. The use by one Party of facilities that are owned by the other Party or in which research is being sponsored by the other Party; such use of facilities may be subject to commercial terms and conditions.
- E. If a Party wishes to visit, assign personnel, or use the facilities owned or operated by entities other than the Parties to this Agreement, the Parties recognize that prior approval by such entities will, in general, be required regarding terms upon which such visit, assignment, or use shall be made.
- F. Any other form agreed between the Parties.

ARTICLE III - SCOPE OF AGREEMENT

A. USNRC Scope of Responsibility

Subject to the availability of appropriated funds, and within the above guidelines, the USNRC shall provide over the duration of this Agreement the following specified goods and services related to the USNRC severe accident safety research program areas specified in Part I of the Appendix.

Within the above guidelines the USNRC will provide RRC and IBRAE with the following:

- (a) Copies of all pertinent technical program documents such as quick-look reports, technical memoranda and notes, and laboratory reports as soon as they have received appropriate management review.
- (b) On request, make available to RRC and IBRAE relevant severe accident codes and related documentation developed under this program and accommodate reasonable requests for assistance from RRC and IBRAE for support in their implementation and use.
- (c) Permit RRC and IBRAE personnel sponsored by RRC and IBRAE to participate in technical program review meetings and technical progress meetings except for those meetings concerned with administrative and fiscal matters.

B. RRC and IBRAE Scope of Responsibility

Subject to the availability of appropriated funds, RRC, in coordination with IBRAE, will participate in the USNRC CSARP program by in-kind technical contributions elements described in the Appendix, Part II and Part III, respectively, attached hereto and made a part hereof. RRC and IBRAE will employ their best efforts to perform severe accident research work complementary to the USNRC program, subject to the constraint that the objective of its research program is to address Russian nuclear safety concerns and issues.

RRC and IBRAE will provide the USNRC with:

- (a) Results of the RRC and IBRAE research programs in severe accidents as described in the Appendix, Part II and Part III, respectively.
- (b) Copies of reports, technical memoranda, and notes which are derived from its analyses using codes and data obtained from the USNRC's program, and which are at the disposal of RRC and IBRAE.
- (c) All updates, modifications, and corrections made by the RRC and IBRAE to codes that have been supplied by the USNRC and documentation sufficient to enable an evaluation to be made by the USNRC.
- (d) Timely access to the results of the RRC and IBRAE safety research corresponding to those technical areas which constitute the scope of this cooperation.

ARTICLE IV - ADMINISTRATION OF THE AGREEMENT

- A. The Parties will each designate one representative to coordinate and determine the detailed implementation of this Agreement. These representatives may, at their discretion, delegate this responsibility to the appropriate technical staff within their

agencies with respect to a given issue. The single designated representative will be referred to as an Administrator of this Agreement. For this Agreement, RRC will be the designated Administrator for both RRC and IBRAE organizations and will act for and represent RRC and IBRAE as a single administrator, as necessary, with the USNRC.

- B. The Agreement states restrictions concerning dissemination of proprietary, confidential, or privileged information. Other information that may be restricted includes matters related to organization, budget, personnel, or management.
- C. The Parties will endeavor to select technical personnel for assignment to these cooperative programs who can contribute positively to the programs. Technical personnel assigned to the program will be considered visiting scientists (non-salaried) 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 to this Agreement will have access to all nonproprietary reports written by the other Party's technical personnel assigned to the respective programs that derive from its participation in this Agreement.
- E. Administrative details concerning questions such as security, indemnity, and liability related to the assignees or trainees will be addressed in personnel assignment agreements between the respective Parties.
- F. Travel costs, living expenses, and salaries of visiting technical personnel or personnel participating in program review meetings will be borne by their respective organizations.

ARTICLE V - EXCHANGE AND USE OF INFORMATION AND INTELLECTUAL PROPERTY

A. General

The Parties support the widest possible dissemination of information provided or exchanged under this Agreement, subject both to the need to protect proprietary and other confidential or privileged information as may be exchanged hereunder, and to the provisions of the Intellectual Property Addendum, which is an integral part of this Agreement.

B. Definitions (As used in this Agreement)

1. The term "information" means nuclear energy-related regulatory, safety, safeguards, waste management, scientific, or technical data, including information on results or methods of assessment, research, and any other knowledge intended to be provided or exchanged under this Agreement.
2. The term "proprietary information" means information created or made available under this Agreement which contains trade secrets or other privileged or confidential commercial information (such that the person having the information may derive an economic benefit from it or may have a competitive advantage over those who do not have it), and may only include information which:
 - a. has been held in confidence by its owner;

- b. is of a type which is customarily held in confidence by its owner;
 - c. has not been transmitted by the owner to other entities (including the receiving Party) except on the basis that it be held in confidence;
 - d. is not otherwise available to the receiving Party from another source without restriction on its further dissemination; and
 - e. is not already in the possession of the receiving Party.
3. The term "other confidential or privileged information" means information, other than "proprietary information," which is protected from public disclosure under the laws and regulations of the country of the Party providing the information and which has been transmitted and received in confidence.

C. Marking Procedures for Documentary Proprietary Information

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

"This document contains proprietary information furnished in confidence under an Agreement dated _____ between the United States Nuclear Regulatory Commission and the Russian Research Center and the Nuclear Safety Institute of the Russian Academy of Sciences and will not be disseminated outside these organizations, their consultants, contractors, and licensees, and concerned departments and agencies of the Government of the United States and the Government of Russia without the prior approval of the (name of transmitting Party). This notice will be marked on any reproduction hereof, in whole or in part. These limitations will automatically terminate when this information is disclosed by the owner without restriction."

This restrictive legend will be respected by the receiving Party, and proprietary information bearing this legend will not be used for commercial purposes, made public, or disseminated in any manner unspecified by or contrary to the terms of this Agreement without the consent of the transmitting Party.

D. Dissemination of Documentary Proprietary Information

- 1. In general, proprietary information received under this Agreement may be freely 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.
- 2. In addition, proprietary information may be disseminated without prior consent:
 - a. to prime or subcontractors or consultants of the receiving Party located within the geographical limits of that Party's State, for use only within the scope of work of their contracts with the receiving Party in work relating to the subject matter of the proprietary information;

- b. to domestic organizations permitted or licensed by the receiving Party to construct or operate nuclear production or utilization facilities, or to use nuclear materials and radiation sources, provided that such proprietary information is used only within the terms of the permit or license; and
- c. to domestic contractors of organizations identified in D.2.b., above, for use only in work within the scope of the permit or license granted to such organizations;

Provided that any dissemination of proprietary information under D.2.a., b., and c., above, will be on an as-needed case-by-case basis, will be pursuant to an agreement of confidentiality, and will be marked with a restrictive legend substantially similar to that appearing in C. above.

3. With the prior written consent of the Party furnishing proprietary information under this Agreement, the receiving Party may disseminate such proprietary information more widely than otherwise permitted in subsections 1. and 2. The Parties will cooperate in developing procedures for requesting and obtaining approval for such wider dissemination, and each Party will grant such approval to the extent permitted by its national policies, regulations, and laws.

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

A Party receiving under this Agreement other confidential or privileged information will 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 paragraph D., 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 arranged under this Agreement, or information arising from the attachments of staff, use of facilities, or joint projects, will be treated by the Parties according to the principles specified for documentary information in this Agreement 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 Agreement, it will immediately inform the other Parties. The Parties will thereafter consult to define an appropriate course of action.

I. Other

1. Nothing contained in this Agreement will preclude a Party from using or disseminating information received without restriction by a Party from sources outside of this Agreement.
2. All USNRC computer codes disseminated under this Agreement are to be considered privileged information unless otherwise noted, are protected as such by the USNRC, and shall be treated likewise by RRC and IBRAE. They are, in particular, subject to all the provisions of this Article including the requirements for an agreement of confidentiality (Article V.D) prior to dissemination, with the exception that they need not be marked with the restrictive designation. The codes are subject to this protection in both object and source forms and as recorded in any media.
3. The USNRC codes and other related analytical techniques covered under this Agreement and any improvements, modifications or updates to such codes or techniques, are for the purpose of reactor and plant systems safety research and licensing and will not be used for commercial purposes, or for other benefits not related to the study of reactor safety without the prior consent of USNRC.

Among the code uses that will be permitted under this Agreement are those related to research in the reactor safety area and analyses performed by the 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), anticipated transients, accident management and emergency operating procedures, mid-loop operation, analysis to support PRA success criteria, power upgrades and reload.

Prohibited uses of the code include (1) analyses to develop a new reactor design and (2) analyses to support power upgrades and reload in the U.S. unless performed by a U.S. subsidiary.

4. The USNRC 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 will advertising imply that the USNRC has endorsed any particular analyses or techniques.
5. All reports published within the scope of this Agreement and all meetings held will be in English.

ARTICLE VI - DISPUTES AND WARRANTY OF INFORMATION

- A. Information furnished by one Party to the other Parties under this Agreement will 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 Agreement will be the responsibility of the Party receiving the information, and the Transmitting Party does not warrant the suitability of the information for any particular use or application.
- B. The USNRC makes no warranties, whatsoever, for the ability or suitability of any USNRC code or other analytical technique to perform in any particular manner for any particular purpose, or to accomplish any particular task. The USNRC accepts no liability for damages of any type that may result from the use of its codes or other analytical techniques provided under this Agreement.
- C. Cooperation under this Agreement will be in accordance with the laws and regulations of the respective countries. Any dispute or questions between the Parties concerning the interpretation or application of this Agreement arising during its term will be settled by mutual agreement of the Parties.

ARTICLE VII - FINANCIAL CONSIDERATIONS

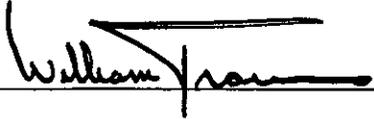
All costs arising from implementation of this Agreement will be borne by the Party that incurs them except when specifically agreed to otherwise. It is understood that the ability of the Parties to carry out their obligations is subject to the availability of funds. It is also understood that the terms herein agreed to represent feasible commitments according to the best understanding regarding resources and costs of the Parties at the time of signature.

ARTICLE VIII - FINAL PROVISIONS

- A. This Agreement will enter into force upon signature, with effect from January 1, 2000 and shall remain in force for a period of five years, unless it is extended for an additional period of time via an exchange of letters of the Administrators
- B. The Parties enter into this 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 Agreement after the expiration date; however, all information protected by provisions of this Agreement as proprietary, confidential, privileged, or otherwise subject to restriction on disclosure will remain so protected indefinitely, unless mutually agreed to in writing.
- C. A Party may terminate this Agreement after providing the other Parties written notice of its intent to terminate 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 Agreement. All Parties will endeavor to reach an equitable settlement of the matter through negotiation.

- D. The Parties to this Agreement reserve the right to modify or extend the specific activities described in Article III within the intended scope of the Agreement upon written concurrence of its Administrators.
- E. If the portion of the research program of any Party that is pertinent to this Agreement is substantially reduced or eliminated, the technical scope described in Article III may be revised to substitute research of equivalent programmatic interest upon mutual agreement of the Parties.

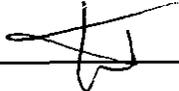
FOR THE UNITED STATES NUCLEAR
REGULATORY COMMISSION:

BY: 
NAME: William D. Travers
TITLE: Executive Director
for Operations
DATE: 7/17/00
PLACE: Rockville, Maryland

FOR THE RUSSIAN RESEARCH
CENTER:

BY: 
NAME: Vladimir E. Asmolov
TITLE: Director for R and D
DATE: 14.08.2000
PLACE: Moscow

FOR THE NUCLEAR SAFETY INSTITUTE
OF THE RUSSIAN ACADEMY OF SCIENCES:

BY: 
NAME: LEONID A. BOLSHOV
TITLE: DIRECTOR
DATE: 14,08,2000
PLACE: MOSCOW

INTELLECTUAL PROPERTY ADDENDUM

Pursuant to Article V of this Agreement:

The Parties shall ensure adequate and effective protection of intellectual property created or furnished under this Agreement and relevant implementing arrangements. The Parties agree to notify one another in a timely fashion of any inventions or copyrighted works arising under this Agreement and to seek protection for such intellectual property in a timely fashion. Rights to such intellectual property shall be allocated as provided in this Addendum.

I. SCOPE

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

B. For purposes of this Agreement, "intellectual property" shall have the meaning found in Article 2 of the Convention Establishing the World Intellectual Property Organization, done at Stockholm, July 14, 1967; viz., "intellectual property" shall include the rights relating to:

- literary, artistic and scientific works,
- performances of artists, phonograms, and broadcasts,
- inventions in all fields of human endeavor,
- scientific discoveries,
- industrial designs,
- trademarks, service marks, and commercial names and designations,
- protection against unfair competition,

and all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields."

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

D. Disputes concerning intellectual property arising under this Agreement should 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 Agreement shall not affect rights or obligations under this Addendum.

II. ALLOCATION OF RIGHTS

- A. Each Party shall be entitled to a non-exclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, reports, and books directly arising from cooperation under this Agreement. All publicly distributed copies of copyrighted work prepared under this provision 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 Section II(A) above, shall be allocated as follows:
1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the policies of the host institution. In addition, each visiting researcher named as an inventor shall be entitled to share in a portion of any royalties earned by the host institution from the licensing of such intellectual property.
 2. (a) For intellectual property created during joint research, for example, when the Parties, participating institutions, or participating personnel have agreed in advance on the scope of work, each Party shall be entitled to obtain all rights and interests in its own country. The Party in whose country the invention was made shall have first option to acquire all rights and interests in third countries. If research is not designated as "joint research," rights to intellectual property arising from the research will be allocated in accordance with paragraph II.B.1. In addition, each person named as an inventor shall be entitled to share in a portion of any royalties earned by either institution from the licensing of the property.

(b) Notwithstanding paragraph II.B.2.(a), if a type of intellectual property is available under the laws of one Party but not the other Party, the Party whose laws provide for this type of protection shall be entitled to all rights and interests worldwide. Persons named as inventors of the property shall nonetheless be entitled to royalties as provided in paragraph II.B.2.(a).

APPENDIX

Part I. USNRC SEVERE ACCIDENT RESEARCH PROGRAM AREAS

1. INTEGRATED SEVERE ACCIDENT CODE
 - MELCOR code development, assessment, and maintenance
 - MELCOR Cooperative Assessment Program (MCAP)
2. DETAILED IN-VESSEL ANALYSIS CODE
 - SCDAP/RELAP5 code development, assessment, and maintenance
3. CONTAINMENT ANALYSIS CODES
 - CONTAIN code assessment, and maintenance
4. FISSION PRODUCT BEHAVIOR CODE
 - VICTORIA code development, assessment, and maintenance

APPENDIX

Part II. RRC SEVERE ACCIDENT RESEARCH PROGRAM AREAS

A. INTEGRATED SEVERE ACCIDENT CODE (MELCOR)

1. MELCOR Cooperative Assessment Program (MCAP)
2. Code Validation Against the VVER Nuclear Power Plant (NPP) Transients
3. Full Plant Calculations
4. Code-to-Code Comparisons (Cross verification of domestic integrated severe accident codes)

B. DETAILED IN-VESSEL ANALYSIS CODE (SCDAP/RELAP)

1. SCDAP/RELAP Cooperative Assessment Program (SR5 CAP)
2. Code Validation Against VVER NPP Transients for the Thermal Hydraulic Phase
3. Code-to-Code Comparisons (Cross verification of domestic in-vessel analysis codes)

APPENDIX

Part III: IBRAE SEVERE ACCIDENT RESEARCH PROGRAM AREAS

A. INTEGRATED SEVERE ACCIDENT CODE (MELCOR)

1. MELCOR Cooperative Assessment Program (MCAP)
2. Code Verification Against Available Experimental Data
3. Code-to-Code Comparisons (Cross verification of domestic integrated severe accident codes)

B. DETAILED IN-VESSEL ANALYSIS CODE (SCDAP/RELAP)

1. SCDAP/RELAP Cooperative Assessment Program (SR5 CAP)
2. Code Verification Against Available Experimental Data
3. Code-to-Code Comparisons (Cross verification of domestic in-vessel analysis codes)