AGREEMENT

ON THERMAL-HYDRAULIC

CODE APPLICATIONS AND MAINTENANCE

BETWEEN

THE UNITED STATES NUCLEAR REGULATORY COMMISSION

AND

THE MINISTRY OF ECONOMY, REPUBLIC OF CROATIA

The United States Nuclear Regulatory Commission (USNRC) and the Ministry of Economy, Republic of Croatia (hereinafter referred to as the "Parties");

Considering that they have:

1. A mutual interest in cooperation in the field of reactor and plant systems research with the objective of improving and helping to ensure the safety of reactors internationally;

2. A mutual objective of reciprocity in the exchange of technical information;

Have reached the following understanding to guide their cooperation:

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 for cooperative research in thermal hydraulic research programs sponsored by the Parties. It is understood and accepted by both Parties that the Faculty of Electrical Engineering and Computing (FER), University of Zagreb, Republic of Croatia, will carry out the commitments of, and act as agent for, the Ministry of Economy under this Agreement.

ARTICLE II - FORMS OF COOPERATION

Cooperation between the Parties may take the following forms:

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 laboratories or facilities owned by the other Party or in which it sponsors research. Each assignment will 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 will 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 the 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. Use of these 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 the approval of such entities will in general be required by the Receiving Party.

F. Any other form agreed between the Parties.

ARTICLE III - SCOPE OF AGREEMENT

A. Program Objectives:

1. Share experience on code errors and inadequacies and cooperate in resolving the deficiencies and maintaining a single, internationally recognized code version. Software quality assurance procedures will be followed and code configuration control will be maintained. Standard programming language will be applied and code portability will be maintained.

2. Share user experience on code scalability, applicability, and uncertainty studies.

3. Share a well documented code assessment data base.

4. Share experience on full scale power plant safety-related analyses performed using the code. This includes analyses of operating reactors, advanced light

water reactors, transients, risk-dominant sequences including the front-end of severe accident sequences, and accident management and operator procedures-related studies.

5. Maintain and improve user expertise and documented user guidelines for applying the code.

B. USNRC Scope of Responsibility

1. *Coordination and Program Management. The Thermal-Hydraulic Code* Applications and Maintenance Program (CAMP) will be coordinated by the USNRC. Program information will be documented and circulated via newsletters and NUREG/IA documents. A Technical Program Committee (TPC) comprised of representatives from the Parties will meet regularly to report on code errors and modeling deficiencies, and recommend and assign rankings to code correction and improvement needs, including approaches to resolution. Error corrections and model improvements will be made, within the limits of available resources allocated for each code, taking into account a priority list recommended by TPC. TPC will also exchange information on applications and assessment results. TPC meetings will be held twice per year, once in the U.S. and once abroad.

2. Reactor Systems Simulation Codes. RELAP5/MOD3, TRAC-PF1/MOD2 and TRAC-BF1 will be maintained on a level consistent with the extent of participation by the Parties. Subject to the availability of appropriated funds, the USNRC plans to match the sum of the Parties' cash contributions, up to the maximum of $250K per year per code. However, the USNRC may transfer funds between codes to fulfill the minimum maintenance requirements for a particular code. Code updates will be provided in source form on machine-readable media. Complete available documentation will be maintained consisting of: code manual; models and correlations document; developmental assessment document; user guidelines document; and independent assessment *documents. Code configuration control will be maintained to provide an* internationally recognized code version.

3. Nuclear Plant Analyzer (NPA). The NPA operates as a dedicated workstation. It includes visual display of the plant state and graphical display of plant parameters. The NPA software and associated documentation will be provided. The USNRC will also provide subsequent updates of the NPA and associated documentation that are released during the Agreement period.

4. Provision of Codes and Documentation. At the Ministry of Economy's direction, the USNRC will provide to FER the RELAP5/MOD3, TRAC-PF1/MOD2, and TRAC-BF1 codes with their associated documentation. The USNRC will also provide subsequent updates of the codes and documentation that are released during the Agreement period.

C. FER Scope of Responsibility

1. Cash contribution for Code Maintenance and Improvements. At the time this Agreement is signed and on the anniversary of that date each year thereafter, FER, as agent for the Ministry of Economy under this Agreement, will transmit to the USNRC fifteen thousand U.S. dollars ($15,000) to receive the system reactor simulation codes from Section B.2. of Article III and the NPA software with their associated documentation. FER, in the same capacity, will also receive subsequent updates of the codes and the NPA with their associated documentation that are issued during the Agreement period.

D. Code Applications Analyses to be Exchanged by the Parties

1. Code Scaling Applicability and Uncertainty Evaluations. An example of such studies was documented in NUREG/CR-5249.

2. Issue Resolution. Issues may arise requiring that information be developed to determine whether a particular problem exists. Examples include pressurized thermal shock, interfacing systems LOCA, and long term cooling following a LOCA. The FER, as agent for the Ministry of Economy under this Agreement, will assure that any non-proprietary safety issue analyses performed using the codes specified in Section B.2. of Article III will be exchanged.

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 individual with respect to a given issue. The single designated representative will be referred to as the Administrator of this Agreement. The FER is the Ministry of Economy's designated representative hereunder.

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

C. The Parties 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 to this Agreement 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 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 shall 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 or 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

For purposes of 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 developed outside 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 Ministry of Economy, Republic of Croatia, or the Ministry's designated agent for this cooperation, the Faculty of Electrical Engineering and Computing, University of Zagreb, Republic of Croatia, 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 Croatia without the prior approval of (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 to:

   a. Prime or subcontractors or consultants of the Receiving Party located within the geographical limits of that Party's nation, 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. 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. Domestic contractors of organizations identified in Section D.2.b. of Article V, 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 Sections D.2.a., D.2.b., and D.2.c. of Article V shall be on an as-needed, case-by-case basis, shall be pursuant to an agreement of confidentiality, and shall be marked with a restrictive legend substantially similar to that appearing in Section C of Article V.

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 Sections D.1. and D.2. of Article V. The Parties shall 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 shall respect its confidential nature, provided that such information is clearly marked so as to indicate its confidential or privileged nature and is accompanied by a statement indicating that the information is:

1. Protected from public disclosure by the Government of the Transmitting Party; and

2. 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 D. of Article V, 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 attachments of staff, use of facilities, or joint projects, shall 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 shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

I. Other

1. Nothing contained in this Agreement shall 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 the Ministry of Economy and/or its designated agent, the FER. They are, in particular, subject to all of the provisions of this Article including the requirement for an agreement of confidentiality (Section D.2 of Article V) 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 research and licensing of Croatian plants and shall not be used for commercial purposes, or for other benefits not related to the study of reactor safety without the prior consent of the USNRC.

   Among the code uses that will be permitted under the CAMP agreements are those related to research in the reactor safety area and analyses performed by CAMP 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; (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 shall not be advertised directly or by implication to obtain contracts related to the construction or servicing of nuclear facilities, nor shall 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 shall be in English.

ARTICLE VI - DISPUTES AND WARRANTY OF INFORMATION

A. All costs arising from implementation of this Agreement shall 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.

B. Cooperation under this Agreement shall be in accordance with the laws and regulations of the Parties' respective countries. Any dispute between the Parties concerning the Parties' interpretation or application of the Agreement shall be settled by mutual agreement.

C. Information furnished by one Party to the other under this 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 Agreement shall 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.

D. 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.

ARTICLE VII - FINAL PROVISIONS

A. This Agreement shall be effective upon signing and remain in effect until August 31, 2002. This Agreement may be extended for an additional period of time, upon mutual agreement of the Parties.

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 its termination; however, all information protected by provisions of this 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 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 Agreement. Both 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 their 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 adjusted to substitute research of equivalent programmatic interest upon mutual agreement of the Parties.

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

BY: [signature]

NAME: L. Joseph Callan
(PRINT)

TITLE: Executive Director for Operations

DATE: 3/27/98

PLACE: _____

FOR THE MINISTRY OF ECONOMY, REPUBLIC OF CROATIA

BY: [signature]

NAME: Mr. ROMAN NOTA
(PRINT)

TITLE: ASSISTANT MINISTER

DATE: 5/15/98

PLACE: _____

FOR THE FACULTY OF ELECTRICAL ENGINEERING AND COMPUTING, UNIVERSITY OF ZAGREB, REPUBLIC OF CROATIA

BY: [signature]

NAME: Dr. [illegible]
(PRINT)

TITLE: VICE DEAN

DATE: 4/14/98

PLACE: ZAGREB, CROATIA

CERTIFIED A TRUE COPY
BY [signature]
Office of the Secretary

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. of this Addendum, 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 Section II.B.1. of this Addendum. 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 Section II.B.2.(a) of this Addendum, 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 Section II.B.2.(a) of this Addendum.