

AGREEMENT
BETWEEN THE
DEPARTMENT OF ENERGY OF THE UNITED STATES OF AMERICA
AND THE
COMMISSARIAT À L'ÉNERGIE ATOMIQUE OF FRANCE
CONCERNING COOPERATION IN
FUNDAMENTAL SCIENCE SUPPORTING STOCKPILE STEWARDSHIP

Whereas:

The Department of Energy (DOE) of the United States of America and the Commissariat à l'Énergie Atomique of France (CEA), hereafter referred to as the "Parties";

Noting that the Parties share a mutual interest in enhancing fundamental sciences activities supporting their respective stockpile stewardship programs, at DOE's National Nuclear Security Administration (NNSA) and at CEA's Direction des Applications Militaires (DAM); and

Recognizing that both Parties are already engaged in comprehensive, unclassified fundamental science research and development (R&D) activities in support of their stockpile stewardship programs with the common objective of developing predictive capabilities increasingly based on a "first-principles," physics-based approach;

Therefore, it is agreed as follows:

Article 1 – Objective

The purpose of this Agreement is to establish and conduct a joint program of scientific cooperation between NNSA and DAM in:

- 1.1. R&D activities in areas of unclassified fundamental science that broadly support the Parties' respective stockpile stewardship programs, including theoretical, computational, and experimental R&D activities in the disciplinary scientific fields of condensed matter and materials physics, atomic and plasma physics, and nuclear physics;

- 1.2. Enhancement of fundamental scientific contributions towards the development of predictive capabilities supporting the Parties' respective stockpile stewardship programs; and
- 1.3. Augmenting, and complementing the Parties' existing fundamental science programs.

Article 2 - Areas of Cooperation

Some specific fundamental science areas of the Parties' mutual interest include:

- 2.1. Condensed Matter and Materials Physics: Thermodynamic properties (including equation of state) and phase diagrams of materials, high-pressure reactive chemistry, properties of "warm" dense matter, constitutive properties and dynamic response of materials, radiation-induced aging and phase stability of materials, and development of experimentally validated high-performance materials simulation software.
- 2.2. Atomic and Plasma Physics: Modeling of non-local thermal equilibrium (NLTE) effects in plasmas, production of hard x-rays, electron transport in plasmas, investigations of local thermal equilibrium (LTE) plasmas, and studies of Stark profiles in non-uniform fluctuating micro-fields.
- 2.3. Nuclear Physics: Theoretical and experimental nuclear fission studies, actinides, neutron-induced reactions, isomer studies, nuclear reaction theory and codes, and radioactive ion beams.

Additional specific areas of cooperation consistent with the general objectives of Article 1 may be added by written agreement of NNSA and DAM.

Article 3 - Forms of Cooperation

Cooperation under this Agreement may include the following forms:

- 3.1. Exchange of information - results of computational simulations, experimental data, and theoretical analyses;
- 3.2. Exchange of samples, materials and equipment for experiments, testing and evaluation in accordance with Article 6;
- 3.3. Exchange of scientists, engineers, and other specialists for agreed periods of time in order to participate in experiments, numerical simulation and analysis, theoretical developments, and other research and development activities in accordance with Article 5;

- 3.4. Meetings, workshops, and conferences of various forms and scope to discuss and exchange information on scientific and technological aspects of general or specific subjects in the areas listed in Article 2 and to identify additional cooperative actions that may be usefully undertaken; and

Other specific forms of cooperation may be added by agreement of NNSA and DAM.

Article 4 - Management

- 4.1. To supervise the execution of this Agreement, each Party shall name a Management Point of Contact (MPOC). The MPOCs shall meet at least once each year, alternately in the United States and in France, or at such other times and places as jointly agreed.
- 4.2. The MPOCs shall ensure that all activities conducted and all information shared under the Agreement are unclassified. The MPOCs shall consider for the Parties' approval any new proposals for cooperation.
- 4.3. At their meetings, the MPOCs shall evaluate the status of cooperation under this Agreement. This evaluation may include a review of the past year's activities and accomplishments under this Agreement, a review of the activities planned for the coming year within each of the areas of cooperation listed in Article 2, an assessment of the balance of exchanges within each of the areas of cooperation, and a consideration of measures to correct any imbalances.
- 4.4. Day-to-day management of the cooperation under this Agreement shall be carried out by Technical Coordinators designated by the MPOCs and representing the scientific fields of collaboration. The Technical Coordinators shall agree on specific details of cooperation in the technical areas listed in Article 2 within policy guidelines established by the MPOCs. The Technical Coordinators shall be responsible for working contacts between the Parties in their respective areas of cooperation.

Article 5 - Visits and Assignments

- 5.1. Each Party shall permit visits and assignments to its government establishments, agencies and laboratories, those of its subcontractors by personnel or agents of the other Party or by personnel or agents of the other Party's contractor(s), provided that the visit(s) and assignment(s) is/are authorized by both Parties.

- 5.2. All visiting personnel shall be required to comply with security regulations of the host Party. Any information disclosed or made available to visitors shall be treated as if supplied to the Party sponsoring the visiting personnel, and shall be subject to this Agreement.
- 5.3. Requests for visits by personnel of one Party to a facility of the other Party shall conform to the established visiting procedures of the host Party.
- 5.4. Assignment of personnel shall conform to the laws and regulations of the host Party.
- 5.5. Lists of personnel of each Party to visit, on a continuing basis, facilities of the other Party shall be submitted through official channels.
- 5.6. Whenever an assignment or exchange of personnel is contemplated, each Party shall use its best efforts to ensure that qualified personnel are selected for assignment or exchange to the other Party.
- 5.7. In accordance with applicable laws and regulations, each Party shall be responsible for the salaries, insurance, travel, and living expenses of its personnel while on assignment to the other Party, unless otherwise agreed by the Parties in writing.
- 5.8. The receiving Party shall assist in locating accommodations for the assigned staff and families of the other Party and provide assistance in other administrative matters on a mutually agreeable reciprocal basis.
- 5.9. Assigned staff shall be required to conform to the general and special rules of work and safety regulations in force at the establishment of the receiving Party. Such special rules of work may include restrictions on access to sensitive or classified facilities or areas.

Article 6 - Exchange of Equipment and Materials

- 6.1. Any equipment or materials provided by the Parties shall be used only for purposes of this Agreement.
- 6.2. In accordance with U.S. and French laws and regulations, the Parties may exchange equipment and materials to facilitate cooperative efforts under this Agreement. Use of such property by either Party shall be permitted in accordance with the following provisions:
 - 6.2.1. The owner of the equipment and materials (the "property owner") shall retain title to such property;

- 6.2.2. The recipient of the property (the “receiving entity”) shall maintain property control records and shall make such records available to the property owner for inspection at reasonable times;
- 6.2.3. Upon delivery of such equipment and materials from one Party to the other Party, the receiving entity shall assume the risk and responsibility for its loss or damage, except for reasonable wear and tear and to the extent equipment or material is consumed in carrying out the purposes of this Agreement.
- 6.3. At its own expense, the receiving entity may repair or modify such equipment. Any repair or modification shall not affect the title of the ownership of such property.
- 6.4. The receiving entity shall follow the directives of the property owner regarding the disposition of all such equipment or materials not consumed in activities undertaken under this Agreement or previously returned to the property owner.
- 6.5. Neither Party makes any warranty of any kind with respect to equipment or materials, information, or services that may be furnished for use in connection with the activities undertaken under this Agreement.
- 6.6. The export of material or equipment by either Party to the other Party shall be subject to the export control regulations of that Party’s country.

Article 7 - Funding

- 7.1. Each Party shall, unless otherwise agreed, bear the full costs it incurs for performing, managing, and administering its activities under this Agreement. These costs include financial and non-financial contributions.
- 7.2. All obligations of the Parties under this Agreement are subject to the availability of appropriated funds, personnel, and resources.

Article 8 - Intellectual Property Rights

8.1. General

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 Article.

8.2. Scope

- 8.2.1. This Article is applicable to all cooperative activities undertaken by the Parties or by the relevant entities (hereinafter “cooperative entities”) pursuant to this Agreement, except as otherwise specifically agreed by the Parties or their cooperative entities.
- 8.2.2. 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.
- 8.2.3. This Article addresses the allocation of rights, interests and royalties between the Parties. Each Party shall ensure that the other Party or cooperative entities can obtain the rights to intellectual property allocated in accordance with this Article. The allocation between a Party and participants on behalf of this Party in the cooperative activities, which shall be determined by the Party’s laws and practices, shall not be altered or prejudiced by application of this Article.
- 8.2.4. 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, the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL) shall govern.
- 8.2.5. Termination or expiration of this Agreement shall not affect the rights or obligations under this Article.

8.3. Allocation of Rights

- 8.3.1. Each Party, subject to the restrictions of paragraph 8.4 of this Article, shall be entitled to a nonexclusive, irrevocable, royalty-free license in all countries to translate, reproduce, and publicly distribute scientific and technical journal articles, and publicly available reports directly arising under this Agreement. All publicly distributed copies of a copyrighted work prepared under this provision shall indicate the names of the authors of the work unless an author explicitly declines to be named. Each Party or its cooperative entities shall have the right to review a translation prior to public distribution.
- 8.3.2. Rights to all forms of intellectual property, other than those rights described in Article 8.3.1. above, shall be allocated as follows:

- 8.3.2.1. Visiting researchers, for example, scientists visiting primarily in furtherance of their education, shall receive intellectual property rights under the rules of the host institution, unless a specific agreement is or has been signed between the host and forwarding institutions. In addition, each visiting researcher named as an inventor shall be entitled to treatment as a national of the host country with regard to awards, bonuses, benefits, or any other rewards, in accordance with the policies of the host institution.
- 8.3.2.2. a) For intellectual property created during joint research, the Parties or their cooperative entities shall jointly develop a technology management plan either prior to the start of their cooperation, for example in research areas likely to lead rapidly to industrial applications, or within a reasonable time from the time a Party becomes aware of the creation of intellectual property. The technology management plan shall consider the relative contributions of the Parties and their cooperative entities, the benefits of exclusive or non-exclusive licensing by territory or for field of use, requirements imposed by the Parties' domestic laws, and other factors deemed appropriate. If needed, the technology management plan shall be jointly modified or completed in a timely fashion, subject to the approval of both Parties or their cooperative entities.
- b) If the Parties or their cooperative entities cannot reach agreement on a joint technology management plan within a reasonable time not to exceed six months from the time a Party becomes aware of the creation of the intellectual property in question, each Party may designate one co-exclusive licensee to have world-wide rights to said intellectual property. Each Party shall notify the other two months prior to making a designation under this paragraph. When both Parties (or their licensees) exploit the intellectual property in a country, they shall share equally the reasonable cost of intellectual property protection in that country.
- c) A specific program of research will be regarded as joint research for purposes of allocating rights to intellectual property only when it is designated as such in the relevant implementing agreement, otherwise the allocation of rights to intellectual property will be in accordance with Article 8.3.2.1.
- d) In the event that either Party believes that a particular joint research project under this Agreement will lead, or has led, to the creation or furnishing of intellectual property of a type not protected by the applicable laws of one of the Parties, the Parties shall immediately hold discussions to determine the allocation of the rights to the said intellectual property; the joint activities in question will be suspended during the discussions, unless otherwise agreed by the Parties thereto. If

no agreement can be reached within a three-month period from the date of the request for discussions, the Parties shall cease the cooperation in the project in question. Notwithstanding Articles 8.3.2.2.a. and b., rights to any intellectual property which has been created will be resolved in accordance with the provisions of Article 8.2.4.

8.4. Business-Confidential Information

In the event that information identified in a timely fashion as business-confidential is furnished or created under the Agreement, each Party and its cooperative entities shall protect such information in accordance with applicable laws, regulations, and administrative practice. Information may be identified as business-confidential information 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, 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. Without prior written consent, neither of the Parties shall disclose any business-confidential information provided by the other Party except to appropriate employees and government personnel. If expressly agreed between the Parties, business-confidential information may be disclosed to prime and subcontractors. Such disclosures shall be for use only within the scope of their contracts with the Parties relating to cooperation under the Agreement. The Parties shall impose, or shall have imposed, an obligation on those receiving such information to keep it confidential. If one of the Parties becomes aware that, under its laws or regulations, it will be, or may reasonably expect to become, unable to meet the non-disclosure provisions, it shall immediately inform the other Party. The Parties shall thereafter consult to define an appropriate course of action.

Article 9 - Project Annexes

When the Parties agree to undertake a cooperative activity under Article 2 that involves the creation of intellectual property or the sharing of costs, they shall conclude a Project Annex, which shall be subject to this Agreement. Each Project Annex shall include detailed provisions for carrying out the activity, and shall cover such matters as technical scope, total costs, cost-sharing between the Parties, project schedule, management of the cooperation, exchange of equipment, and any special provisions specific to the particular project. Activities under Project Annexes may involve, as appropriate, associated firms or laboratories of the Parties or their contractors or subsidiaries.

Article 10 - Legal Provisions

Each Party's activities under this Agreement shall be in accordance with its national laws and regulations. All questions related to the Agreement arising during its term shall be settled by the Parties by mutual agreement.

Article 11 – Security Obligations

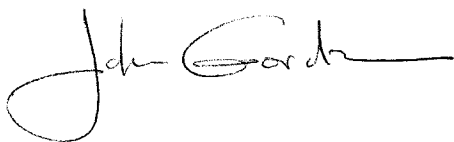
All activities conducted under this Agreement will be unclassified. Discussions resulting from this Agreement will not include classified information, including Restricted Data and Formerly Restricted Data. If either Party believes that information or equipment proposed to be provided or exchanged under this Agreement requires protection in the interest of that Party's national defense or foreign relations, the proposed exchange shall stop and the concerned Party shall notify the other Party.

Article 12 - Duration, Amendment, and Termination

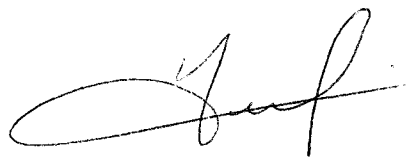
- 12.1. This Agreement shall enter into force upon signature and shall remain in force for five (5) years. This Agreement shall be automatically renewed for further five (5) year periods unless either Party notifies the other in writing at least six months prior to the expiration of the first five-year period or any succeeding five-year period of its intent to terminate the Agreement. The Agreement may be amended in writing by the Parties.
- 12.2. This Agreement may be terminated at any time at the discretion of either Party upon six (6) months advance notification in writing by the Party seeking to terminate the Agreement. Such termination shall be without prejudice to the rights and obligations that may have accrued under Article 8 of this Agreement to either Party up to the date of such termination.
- 12.3. Joint efforts and experiments not completed at the expiration or termination of this Agreement may be continued until their completion under the terms of this Agreement.

DONE at Bruyères-le-Châtel, this 13th day of March 2002, in duplicate, in the English and French languages, each text being equally authentic.

FOR THE DEPARTMENT OF ENERGY
OF THE UNITED STATES OF AMERICA:

A handwritten signature in black ink, appearing to read "John Gordon", written over a horizontal line.

FOR THE COMMISSARIAT A L'ENERGIE
ATOMIQUE OF FRANCE:

A handwritten signature in black ink, appearing to read "Jean-François", written over a horizontal line.