

MEMORANDUM OF UNDERSTANDING
between
THE IDAHO NATIONAL LABORATORY and
THE INSTITUT DE RADIOPROTECTION ET DE SÛRETÉ NUCLÉAIRE
FOR COOPERATION IN
TRANSIENT TESTING OF NUCLEAR FUELS AND MATERIALS

The purpose of this Memorandum of Understanding (MOU) is to describe certain mutual understandings between the Idaho National Laboratory (INL), which is managed and operated by Battelle Energy Alliance, LLC (BEA) for the United States Department of Energy under DOE Contract No. DE-AC07-05ID14517, and the Institut de Radioprotection et de Sûreté Nucléaire (IRSN) (hereinafter referred to collectively as the "Participants"), regarding the Participants' intentions to pursue bilateral collaboration focused on transient testing of nuclear fuels and materials.

The Participants intend that coordination and discussions between the Participants are to be on the basis of mutual benefit, equality, and reciprocity.

Article 1: OBJECTIVES

The intended overall objective of this non-binding MOU is to promote and facilitate discussions and exploration of potential cooperation between the Participants in the field of transient testing of nuclear fuels and materials as well as potential areas of research and development (R&D) related thereto.

Article 2: AREAS OF COOPERATION

Areas of cooperation may include, but are not limited to, the following, as the Participants may describe in more detail in a Technical Annex to this MOU:

- 2.1 Transient Reactor Operations;
- 2.2 Experiment Device Design;
- 2.3 Test Vehicle and Instrumentation Development;
- 2.4 Sample Preparation and Post Irradiation Examination;
- 2.5 Modeling and Simulation; and
- 2.6 Program Development.

Additional topics of potential cooperation may be considered based on mutual written consent by the Participants.

Article 3: FORMS OF COOPERATION

Planned areas of collaboration under this MOU may include the following:

- 3.1 Exchange of publicly available scientific and engineering information and results and methods of R&D;
- 3.2 Organization of and participation in seminars or other meetings on specific topics in the areas listed in Article 2 of this MOU;
- 3.3 Short visits by specialist teams or individuals to the facilities of the other Participant, subject to the prior written agreement of that Participant;
- 3.4 Assignment of the staff of one Participant, its contractors or subsidiaries to the facilities of the other Participant, its contractors or subsidiaries for participation in agreed research, development, design, analysis or other experimental activities;
- 3.5 Exchange of materials and equipment for testing;
- 3.6 Exchange of technology and engineering drawings (including specifications of components and of industrial plants) as appropriate to the areas of cooperation listed in Article 2 of this MOU and as agreed to by the Participants;
- 3.7 Joint projects in which the Participants agree to share the work and/or costs; and
- 3.8 Such other specific forms of cooperation as the Participants may agree.

Article 4: MANAGEMENT OF THE COOPERATION

Initial General Coordinators for each Participant are set out below, and each Participant may replace its General Coordinator at any time upon written notice to the other Participant. The General Coordinators are to receive and review all proposals for specific topics of cooperation (STC) under this MOU and mutually approve all STC proposals to be advanced for collaboration. For each approved STC, the Participants are to assign a Technical Coordinator, which is to develop a specific Work Package for each collaborative task who will direct technical execution of these collaborative tasks: each Work Package will provide a scope of work consisting of a set of technical tasks to be completed with associated schedule, deliverables, milestones, and responsible parties. The General Coordinators are to monitor progress of the cooperation and collect periodic status reports for each approved STC.

The General Coordinators are as follows:

For INL: Phillip J. Finck

Title: Chief Scientist

Address: Battelle Energy Alliance, LLC
Idaho National Laboratory
2525 N. Fremont Ave, MS 3695
Idaho Falls, ID 83415-3695

Telephone: (208) 526-9447

Facsimile: (208) 526-4563

E-mail: Phillip.Finck@inl.gov

For IRSN: François Barré

Title: Safety Research deputy director

Address:
B.P.3
13115 Saint Paul Lez Durance Cedex
France

Telephone: +33 442199415

Facsimile: +33 442199157

E-mail: francois.barre@irsn.fr

Each Participant should conduct the activities contemplated by this MOU in accordance with all applicable laws, regulations and other requirements to which it is subject, including, without limitation, export control laws and environment, health and safety laws and regulations, and international agreements to which its Government is party.

Any action taken pursuant to this MOU excluding those contemplated in Article 3.1 will be undertaken only pursuant to an appropriate written agreement.

Article 5: FINANCIAL OBLIGATIONS

Except as the Participants may otherwise agree in writing, each Participant is to be responsible for the costs it incurs in participating in cooperative activities under this MOU. The conduct of cooperative activities under this MOU is subject to the availability of personnel, appropriated funds, and other resources. Nothing in (i) this MOU or (ii) discussions or correspondence leading up to or relating to this MOU creates any legally binding obligations between the Participants.

Independent Entities: The Participants understand that nothing contained herein is intended to authorize either Participant to bind or act for, or assume any obligations or responsibilities on behalf of, the other Participant. Neither Participant intends for this MOU to create any responsibility or liability for an indebtedness or obligation of the other Participant. In no event is this MOU intended to be construed to create a partnership, joint venture, alliance or any other affiliation between the Participants.

Liability: In no event is this MOU to be construed to cause either Participant to be liable to the other Entity or its affiliates for loss of profits, loss of products, loss of use or for indirect, consequential or special damages.

Consent: This MOU is not intended to commit nor obligate either Participant to provide any products, or perform any services, or accept any responsibilities, without the other Participant's prior written consent.

Article 6: INFORMATION AND INTELLECTUAL PROPERTY

The Participants do not intend, or expect, to create intellectual property under this MOU. If it appears that cooperative activities under this MOU may result in the creation of intellectual property, the Participants should enter into a written agreement therefor or restructure the cooperative activities to avoid the creation of intellectual property.

Article 7: DURATION, AMENDMENT, AND TERMINATION

- 7.1 Activities under this MOU may commence upon signature and may continue until five (5) years after signature unless discontinued in accordance with paragraph 3 of this Article. This MOU may be modified or extended by mutual written consent of the Participants.
- 7.2 The Participants intend that any questions of interpretation or implementation relating to this MOU arising during its term are to be resolved by consultations between them.
- 7.3 This MOU may be discontinued at any time by mutual written consent of the Participants. Alternatively, a Participant that wishes to discontinue its participation in this MOU should endeavor to provide at least [90] days advance written notice to the other Participant. The Participants intend that any discontinuance of this MOU should be without prejudice to any rights and obligations that may have accrued under separate executed agreements to effectuate the intended collaborations, activities, and exchanges contemplated under this MOU.
- 7.4 The Participants understand that INL may assign or transfer this MOU to the U.S. Department of Energy or to its designee without notice or prior consent to IRSN.

SIGNED:

FOR THE IDAHO NATIONAL
LABORATORY:

SIGNATURE: PF-ch for MP

NAME: Mark Peters

TITLE: Laboratory Director

DATE: 2/29/2016

PLACE: Idaho Falls

FOR THE INSTITUT DE RADIOPROTECTION
ET DE SÛRETÉ NUCLÉAIRE:

SIGNATURE: p.i. Georges-Henri MOUTON
Directeur Général Adjoint

NAME: Jacques Repussard

TITLE: Directeur Général

DATE: 04/14/16

PLACE: Fontenay-aux-Roses