



DEN 3594 C19548

**IMPLEMENTING AGREEMENT  
ON**

**DEVELOPMENT OF IN-CORE SODIUM LOOP FOR IRRADIATION OF MULTIPLE  
SAMPLES AT JHR**

**BY AND BETWEEN**

THE INDIRA GANDHI CENTRE for ATOMIC RESEARCH of the Department of Atomic Energy, Government of India located at Kalpakkam – Tamil Nadu – India, duly represented by Dr P. R. VASUDEVA RAO, Director, INDIRA GANDHI CENTRE for ATOMIC RESEARCH,

hereinafter called as “IGCAR”

**AND**

**COMMISSARIAT À L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES**, a French state-owned research entity with a scientific, technical or industrial activity duly organised under the laws of France and having its registered office located Bâtiment Le Ponant D - 25, rue Leblanc - Paris 15<sup>ème</sup> (France) - and declared at the Paris, Register of Commerce and Trade (“Registre du Commerce et des Sociétés de Paris”) under the following registration number: R.C.S. PARIS B 775 685 019,

Represented by Mr. Christophe BEHAR as Director of the Nuclear Energy Division and duly authorised for the purpose hereof,  
hereinafter referred to as "CEA"

hereinafter also referred to as individually as a “Party” or collectively as the “Parties”,



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WHEREAS the Government of the French Republic and the Government of the Republic of India signed on September 30, 2008 an Agreement on the Development of Peaceful Uses of Nuclear Energy (hereinafter “the Framework Agreement”);

WHEREAS the Government of the French Republic and the Government of the Republic of India signed on December 6, 2010 an Agreement concerning intellectual property rights on the development of the peaceful uses of nuclear energy (hereinafter “the Intellectual Property Agreement”);

WHEREAS CEA and DAE signed on December 6, 2010 an agreement in the field of nuclear science and technology for peaceful uses of nuclear energy with the aim to establish a general framework for their cooperation (hereinafter “Cooperation Agreement”);

WHEREAS CEA has launched the construction of the Jules Horowitz Reactor, a new Material Testing Reactor, as an international user facility for material and fuel testing under irradiation (the “JHR” or “JHR Project”);

WHEREAS CEA and DAE signed on January 25, 2008 a bilateral agreement for the Jules Horowitz Reactor construction and operation;

WHEREAS CEA and IGCAR have decided, pursuant to articles 4 and 5 of the Cooperation Agreement, to establish an Implementing Agreement to cooperate on a joint research project titled “Development of in core sodium loop for irradiation of multiple samples at JHR ” (hereafter referred to as the “Joint Research Project”).

WHEREAS the scope of the Joint Research Project within this Implementing Agreement does not involve any Indian nuclear installation, nuclear equipment or nuclear material or substance, it is understood that this Implementing Agreement is not subject to Indian nuclear civil liability.

Now therefore, in consideration of the foregoing and mutual covenants contained herein, the Parties agree as follows:



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#### ARTICLE 1 - DEFINITIONS

The words defined in Article 1 of the Agreement, have the same meaning in this Implementing Agreement.

(i) **"Implementing Agreement"** means the present agreement, its annexes and its prospective amendments.

(ii) **"Own Information and Technology"** means without limitation any know-how, data, studies, software, specifications or any information whether patented or not, in any and all medium belonging to one Party prior to the effective date of this Implementing Agreement or acquired or developed thereafter independently of this Joint Research Project of this Implementing Agreement,

(iii) **"Joint Results"** means any and all document and information whether in written form or not including but not limited to manuals, drawing, know-how, trade secrets, trademarks, copyrights, manufacturing process data, studies, software, designs, specifications, technical description and data whether patentable or not generated during the Joint Research Project.

#### ARTICLE 2 - OBJECTIVE OF THE IMPLEMENTING AGREEMENT

The objective of this Implementing Agreement is to define the terms and conditions under which the Parties shall co-operate on a balanced basis on the following Joint Research Project (taking into account the legal requirements of the agreement between CEA and DAE):

**"DEVELOPMENT OF IN-CORE SODIUM LOOP FOR IRRADIATION OF MULTIPLE SAMPLES AT JHR"**

The Parties agree to cooperate pursuant to the terms of this Implementing Agreement according to the provisions of the Cooperation Agreement, unless otherwise specified herein.

#### ARTICLE 3 – SCOPE OF THE COOPERATION

The scope of the cooperation and associated milestones are further described in Appendix 1.



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ARTICLE 4 – MILESTONES – DELIVERABLES

*\*T0: Date of entry into force of this implementing Agreement when both Parties have signed this Agreement.*

IGCAR to deliver a report on out-of-pile qualification tests of the loop	T0+6 months
CEA to deliver analysis on the qualification results	T0 + 9 months
CEA to depute one CEA engineer during tests at Dedicated Facility at IGCAR. The CEA engineer will be an observer whose works during this deputation will be to identify the relevant aspects for the adaptation of the loop to the JHR environment. He or she will not be involved in the loop operation, neither with any experimental activities.	December 2014
IGCAR to deliver a report on detailed design of the loop and first observations on loop operation in Dedicated Facility	T1 – June 2015
CEA to host one engineer from IGCAR to work within JHR team on the sodium loop design	T1+1 month
Presentation and Review of the completed activities by JHR Steering Committee for the subsequent activities (T2 & T3)	T1+3 months
CEA to deliver a report on detailed requirements and possibilities of loop adaptation for JHR conditions considering JHR safety requirements	T1 + 6 months
IGCAR to submit a report on design of a loop adapted to JHR conditions	T1+18 months
CEA to deliver a report on expected irradiation performances of the JHR adapted loop	T1 + 24 months
Steering committee of the JHR bilateral agreement to review and take decision for the JHR sodium loop detailed studies	T2
CEA to deliver detailed loop specifications and interface specifications	T2 + 6 months
IGCAR to deliver loop detailed design report	T2 + 24 months
Steering committee of the JHR bilateral agreement to review and take decision for the JHR sodium loop manufacturing	T3

At the end of this implementing agreement, the Franco-Indian Joint Committee on Atomic Energy DAE-CEA will take the final decision for the JHR sodium loop manufacturing.



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#### **ARTICLE 5 – NOMINATED CORRESPONDENTS:**

IGCAR	CEA
Dr P. Chellapandi Mr Kulbir Singh Address: Reactor Design Group Indira Gandhi Centre for Atomic Research Kalpakkam Tel:+91 44 274 80 106 Fax: +91 44 274 104 e-mail: <a href="mailto:pcp@igcar.gov.in">pcp@igcar.gov.in</a>	M. Christian GONNIER M. Pierre JAECKI Address: C.E.A. Cadarache, 13108 St Paul lez Durance Cédex Tel: +33 4 42 25 62 07 Fax: +33 4 42 25 33 83 e-mail: <a href="mailto:christian.gonnier@cea.fr">christian.gonnier@cea.fr</a> <a href="mailto:pierre.jaecki@cea.fr">pierre.jaecki@cea.fr</a>

The technical correspondents have to report the cooperation activities of the Joint Research Project to the Franco-Indian Joint Committee as stated in article 6 of the Cooperation Agreement.

#### **ARTICLE 6– FINANCIAL PROVISIONS**

Both Parties agree that all activities done in the framework of this Implementing Agreement are to be done on a self-financing basis.

Visits or meetings may be organised if necessary according to provisions of article 8.1 of Cooperation Agreement.

#### **ARTICLE 7 – CONFIDENTIALITY**

7.1. “Confidential Information” means:

- i. Own Information and Technology and/or any type of written information and in whatever form or medium that one Party discloses, whether directly or indirectly, to the other Party and relating to the Implementing Agreement.
- ii. The Results arising from the Joint Research Project

7.2. Each Party undertakes

- i. to disclose only Confidential Information it has the right to dispose of, according to the following;
- ii. to keep strictly confidential and not to disclose nor to communicate to any third party, by any means whatsoever, any Confidential Information received from the other Party, unless the communicating Party has explicitly notified to the receiving Party that such proprietary information was not subject to secrecy, and
- iii. to use such Confidential Information solely for the purpose of the Implementing Agreement.



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7.3. Each Party shall use at least the same degree of care in protecting Confidential Information against disclosure to any third party as it exercises in protecting its own Confidential Information.

7.4. Each Party undertakes to disseminate Confidential Information only to its employees on “a need to know” basis to use it within the scope of the performance of the Implementing Agreement, and the receiving Party shall take appropriate measures with such employees to ensure that the latter should be bound by equivalent confidentiality provisions as those stipulated herein.

Notwithstanding the above provisions, each of the Parties has the right to communicate Confidential Information received from the other Party to its government authorities and its national safety authorities subject to appropriate protection of the Confidential Information by the receiving government authorities.

7.5. However, the provisions of this article shall not apply to Confidential Information for which the receiving Party can prove in writing that:

- Such Confidential Information is or has become publicly known through no wrongful act on its part;
- Such Confidential Information is available to the public and already known, at the time of disclosure by the disclosing Party;
- Such Confidential Information was rightfully received by the receiving Party from a third party without breach of any confidentiality obligation;
- Such Confidential Information was independently developed or discovered by the receiving Party without use of any Information received under the Implementing Agreement;
- Such Confidential Information is disclosed pursuant to a judicial order, a lawful requirement of government agency; or by operation of law, but then only to the extent so ordered; in such case the receiving Party will make its best efforts to timely advise the disclosing Party prior to disclosure.

7.6. The provisions of this article shall remain in force during the term of this Implementing Agreement, and for ten (10) years after the expiration or termination of the Implementing Agreement.

7.7 Any scientific publication, presentation or release paper relating to all or part of the Confidential Information, all or part of the work carried out under the Implementing Agreement shall be submitted to the prior approval of the other Party, as the case may be through the Joint Committee. The other Party shall examine it promptly and notify the submitting Party of (i) its consent to the content of the paper or (ii) its request to amend and/or remove certain parts of the paper or (iii) to delay the paper publication, presentation or release as long as necessary to ensure adequate industrial and intellectual protection, provided that such period shall not exceed eighteen (18) months from the date of the receipt of the paper by the notified Party.

Any failure of the notified Party to communicate its decision to the submitting Party within thirty (30) calendar days shall be deemed as its consent and a waiver of any objection to the contents thereof.

Unless otherwise agreed between the Parties, any scientific publication, presentation or release paper by the submitting Party shall clearly mention the collaboration with the other Party.



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## **ARTICLE 8 – CLAIMS RESULTING FROM INFORMATION TRANSFERRED**

**8.1.** While the information (including Confidential Information as defined in article 7.1) given by one Party to the other under this Implementing Agreement is accurate, in the opinion and to the best of the communicating Party's knowledge, the communicating Party does not warranty the pertinence of such information to any use which may be made by the receiving Party or by a third party. The use of such information by the receiving Party (including the communication to a third party) shall be entirely at the receiving Party's risk.

**8.2.** No claim shall be made against a Party for any direct or consequential damages to its property, its personnel or to third parties, which might result from the use of information given to the other Party.

## **ARTICLE 9 – INDUSTRIAL PROPERTY AND RIGHTS OF USE**

Both Parties agree on the following principles:

### **9.1 Ownership**

#### **9.1.1 Ownership of Own Information and Technology**

Each Party shall remain the exclusive owner of its Own Information and Technology. As such, each Party shall be free to transfer to a third party its Own Information and Technology.

#### **9.1.2 Ownership of Results**

##### **9.1.2.1 General principles**

The Parties shall ensure adequate and effective protection of the Joint Results.

The Parties shall inform each other of any Joint Result which is likely to be protected and shall engage in a timely manner on ensuring protection for the Joint Results.

To this end, the Parties undertake not to oppose the seeking, by a Party, of protection of Results in countries authorising such protection.

Each Party shall on the basis of its respective domestic legislation grant the other Party non-discriminatory treatment regarding the property, allocation and exploitation of Joint Results.

##### **9.1.2.2 Co-ownership instrument**

Before any exploitation for industrial and/or commercial purposes by one Party, the Parties shall draw up a co-ownership instrument determining the rights of use of the said Joint Results, according to the following principles:

- The co-ownership instrument shall take into account the respective material, human, financial and intellectual contributions to the acquisition of the Intellectual Property of each Party, the benefits of



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exclusive and non-exclusive licences in each territory or field of use, the conditions required by the respective national legislation of the Parties or other factors deemed appropriate.

- If the Parties cannot reach agreement on instrument of co-ownership within a maximum of six (6) months from the date of expiry of the Implementing Agreement, each Party may directly or indirectly exploit Joint Results throughout the world subject to remuneration for the other co-owner. Each Party should notify the other Party of its intention to invoke this clause before beginning exploitation with industrial and commercial purposes with prior notice of at least two (2) months.

## **9.2 Rights of use**

### **9.2.1 Rights of use of Own Information and Technology**

Each Party undertakes to grant to the other Party a non-exclusive licence without the right to sublicense on its Own Information and Technology within the scope of this Implementing Agreement for the Joint Research Project. This licence shall be granted royalty-free.

Each Party undertakes to grant to the other Party a non-exclusive licence without the right to sublicense on its Own Information and Technology if needed for industrial and/or commercial exploitation of its Joint Results. This licence shall be granted with fair and reasonable conditions as agreed by the Parties in a specific agreement.

### **9.2.2 Rights of use of Results**

Each Party shall have the right of free use of the Joint Results for research and development purposes.

The Parties shall facilitate the effective exploitation of the Joint Results. To this end, the Parties agree to conclude a co-ownership instrument before any industrial and/or commercial exploitation of Joint Results, as mentioned above in article 9.1.2.2.

## **ARTICLE 10 – LIABILITY**

### **10.1. Personal damages to the staff of each Party:**

Each Party on its own account, is fully liable for the damages to its own staff, e.g. for the insurance coverage of its own staff for workmen's compensation and professional diseases, in accordance with the appropriate local regulatory and legal requirements. Consequently, each Party proceeds to the appropriate formalities, and sustains if any, all the costs associated to the insurances underwritten in order to cover its own staff against the risks.

Each Party shall inform the other Party of any claim or damage that has occurred during or consequent to any work, by the staff of other Party, employed by it, in order to proceed to the various regulatory and legal requirements.

Notwithstanding the above provisions, each Party is liable in compliance with the applicable law to damages caused by its staff to the staff of the other Party in case such damages were caused by or contributed to by the gross negligence or wilful misconduct of that staff.





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#### 10.2. Damages to the other Party's properties

Each Party keeps on its own account, without any right of recoveries against the other Party, the damages caused to its own property by the staff of the other Party when the staff thereof put to its disposal, unless such damages were caused by or contributed to by the gross negligence or wilful misconduct of that staff.

#### 10.3. Third party liability

In accordance with the appropriate local regulations, each Party remains liable for damages to third parties caused by its own staff, except if this staff is under the management and/or the control of the other Party, unless such damages were caused by or contributed to by the gross negligence or wilful misconduct of that staff.

### ARTICLE 11 – DURATION

- 11.1 Subject to the entry into force of the Cooperation Agreement according to article 16.1 of the said Cooperation Agreement, this Implementing Agreement shall come into force upon signature by both Parties and shall remain valid for 5 (five) years.
- 11.2 Three months before the date of termination, the Parties shall consult each other in order to decide whether this Implementing Agreement shall be extended or not.
- 11.3 Termination of this Implementing Agreement shall be without prejudice to the rights which may have accrued under this Implementing Agreement to either Party up to the date of termination.

### ARTICLE 12 – SETTLEMENT OF DISPUTES

The Parties agree that any dispute arising out of this Implementing Agreement will be settled amicably if possible with assistance of one or more independent experts.

All disputes which cannot be settled between the Parties will be finally settled under the Rules of conciliation and arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said Rules. Procedures of arbitration shall be conducted in English. The place of arbitration shall be in Geneva.

### ARTICLE 13 - AMENDMENT

The Implementing Agreement may be amended by mutual consent in writing of the Parties.

### ARTICLE 14 – LANGUAGE

This Agreement is drawn up and executed in English.



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**For the INDIRA GANDHI CENTRE for  
ATOMIC RESEARCH**

**For the Commissariat à l'Énergie Atomique et  
aux Énergies Alternatives:**

Full name: Dr P. R. Vasudeva RAO,


Full Name: Mr. Christophe BEHAR

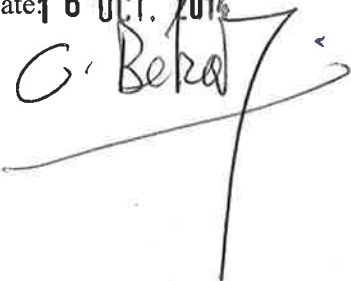
Title: Director, INDIRA GANDHI  
CENTRE for ATOMIC RESEARCH

Title : Director, Nuclear Energy Division,

Place and date:

Place and date: 16 OCT. 2014

  
(Signature) 11 Oct 2014

  
(Signature)



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## APPENDIX 1:

### Context

Sodium loops are of interest for JHR for structural materials high temperature testing, especially in the context of Gen-IV development.

JHR irradiation loop current design relies on an electromagnetic pump.

IGCAR has developed a new concept of sodium loop (gas pressure-based concept) which appears an interesting alternative to the current technology and IGCAR is currently testing this loop in the Designated Facility, under its sole responsibility and for its own purpose.

The possible adaptation of this concept for the JHR has been discussed during different meetings, in relation with the CEA-DAE bilateral agreement in JHR.

In March 2013 IGCAR presented the conceptual design of the loop and the CEA presented a preliminary review of the concept.

Due to fruitful discussions between CEA and IGCAR, it is the interest of both IGCAR and CEA to launch the present implementing agreement.

### Scope of the Cooperation

The scope of this activity is to design and manufacture a sodium loop dedicated to structural material irradiation, based on IGCAR concept, for JHR application.

### Milestones

See article 4 of this implementing agreement.