

International Nuclear Energy Research Initiative

U.S. DEPARTMENT OF ENERGY INTERNATIONAL NUCLEAR ENERGY RESEARCH INITIATIVE DOE/France

ABSTRACT

Development of Gen IV Advanced Gas-Cooled Reactors with Hardened/Fast Neutron Spectrum

Principal Investigator (U.S.): T.Y.C. Wei, Argonne National Laboratory

Project Number: 2004-008-F

Principal Investigator (France): J. Rouault, Commissariat à l'Énergie Atomique (CEA)

Project Start Date: October 2004

Project End Date: October 2007

Collaborators: GA, Brookhaven National Laboratory, Idaho National Engineering and Environmental Laboratory, Massachusetts Institute of Technology

The objective of this GEN IV project is to continue the France-U.S. effort on developing and designing high temperature gas cooled fast/hardened spectrum reactors with a high degree of safety and an integrated fuel cycle. It will produce the report on GFR Preliminary Viability defined by the GEN IV GFR R&D Plan. CEA- Cadarache and Argonne National Laboratory, together with partners from both French and U.S. industry, sister national laboratories and academia are currently collaborating on the ongoing I-NERI project "Development of Gen IV Advanced Gas-Cooled Reactors with Hardened/Fast Neutron Spectrum". The cooperation project has reached the stage where it is being integrated into the GEN IV/ GIF effort. The I-NERI project continuation workscope that is being proposed in this I-NERI project is in accordance with the International Collaboration Plan drafted by the provisional GFR System Design and Safety Management Board at the March 2-3, 2004 meeting to respond to the Generation IV Nuclear Energy Systems GFR R&D Plan.

The effort will be carried out in coordination with the current ongoing U.S. - France I-NERI GFR development project between CEA-Cadarache and ANL which will reach the completion phase in February 2005. The work will be carried out under Work Package A0401J01 "GFR safety system optimization and transient analysis support'(System Design and Evaluation) The following are the main collaborative tasks:

- (1) GFR Exploratory Studies- Core Design (CY2005)
- (2) GFR Exploratory Studies-System Designs (CY2005)
- (3) GFR Safety Studies(CY2005-CY2007)
- (4) GFR Pre-Conceptual Design(CY2006-CY2007)
- (5) GFR Physics Experiments in MASURCA(CY2005-CY2007)
- (6) Code System benchmarking(CY2006-CY2007)
- (7) GFR/EDTR Mission Report(CY2005-CY2007)

Project Organization:

ANL Tasks;(1)-(8)

GA Tasks;(2),(3),(4)

BNLTask;(2),(3),(5)

MIT Tasks(2),(3),(5)

INEEL Tasks;(4),(6),(7)

CEA Tasks;(1)-(7)
