

FBNR Letter

FIXED BED NUCLEAR REACTOR – FBNR

<http://www.rcgg.ufrgs.br/fbnr.htm>

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Dear coworkers and potential coworkers around the world,

As the number of coworkers is increasing, we are issuing a circular letter to communicate about the matters of general interest to the FBNR project. Please consider this as a personal letter to yourself. Those who are not involved in the project as yet may participate at any appropriate moment. The project has manifold aspects including scientific, technological, economical, political, and sociological.

A new era of nuclear energy is emerging. The International Atomic Energy Agency has committed itself to “Help to ensure that nuclear energy is available to contribute in fulfilling energy needs in the 21st century in a sustainable manner; and to bring together both technology holders and technology users to consider jointly the international and national actions required to achieve desired innovations in nuclear reactors and fuel cycles.”- IAEA-TECDOC-1362.

The objective is to develop an innovative nuclear reactor to be inherently safe, passively cooled, small, modular, and simple in design with integrated primary circuit. Safety is achieved by design, and has reduced adverse impact on environment. It is to meet the requirements of GEN IV and IAEA-INPRO as being economic, safe, proliferation resistant and sustainable.

The FBNR may be called People’s Reactor. It is intended to be developed by the peoples for the peoples of the world in the spirit of cooperation and service to humanity. It is intended to be a near term deployment project. Let us form an international consortium to develop this reactor where all members are stakeholders.

An IAEA Coordinated Research Project (CRP) includes FBNR in its program.

Participate in the project and make a proposal on a particular activity of your interest.

FBNR Letter 05 July 26, 2004

The CRP on the development of small nuclear reactors has been approved. The FBNR is a candidate to receive research contracts.

The IAEA's Nuclear Energy and Safety Research Contracts Committee at its Forty Ninth Session on July 1, 2004, has approved the Coordinated Research Programme for a Coordinated Research Project on the Development of Small Reactors without On-Site Refuelling.

This CRP has the goal of increasing the capabilities in IAEA Member States to achieve progress in the development and deployment of Small Reactors without On-Site Refuelling by formulating major requirements for Small Reactors without On-Site Refuelling and increasing international cooperation for the development of key enabling technologies for such reactors, including long-life cores and passive safety features and systems. Small Reactors without On-Site Refuelling are the reactors which have a capability to operate without refuelling and reshuffling of fuel for a reasonably long period consistent with the plant economics and energy security, with no fresh and spent fuel being stored at the site outside the reactor during its service life. Such may offer a very attractive solution for cost-effective implementation of safeguards in scenario of large-scale global deployment of nuclear energy, as will be essential for providing long-term energy security to many developing and industrialized countries in an environmentally benign way. This CRP is the first one to address technology development issues relevant for small reactors without on-site refuelling, and is being conducted within the frame of activities of the IAEA's Department of Nuclear Energy's for Small and Medium Sized Reactors in cooperation with the IAEA's Division of Nuclear Installations Safety.

Small Reactors without On-Site Refuelling are defined herein as reactors which have a capability to operate without refuelling and reshuffling of fuel for a reasonably long period consistent with the plant economics and energy security, with no fresh and spent fuel being stored at the site outside the reactor during its service life. They also should ensure difficult unauthorized access to fuel during the whole period of its presence at the site and during transportation, and design provisions to facilitate the implementation of safeguards. In this context, the term "refuelling" is defined as the "removal and/or replacement of either fresh or spent, single or multiple, bare or inadequately confined nuclear fuel cluster(s) or fuel element(s) contained in the core of a nuclear reactor". This definition does not include replacement of well-contained fuel cassette(s) in a manner that prohibits clandestine diversion of nuclear fuel material.

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