

## Introduction

The Idaho Accelerator Center of the Idaho State University hosted a second annual Workshop on Accelerator-Driven Subcritical System (ADSS) Experiments on August 19 and 20, 2004. In this unique workshop nuclear engineering and physics faculty and research scientists from the Idaho State University, the University of Nevada, the University of Michigan, and the Texas A&M University met with scientists and engineers from Los Alamos and Argonne National Laboratories to discuss the use of accelerators in nuclear experiments for the Advanced Fuel Cycle Initiative (AFCI) of the U.S. Department of Energy (DOE) as well as for European programs. This is the only DOE-sponsored workshop on the coupling of neutron-generating accelerator systems and subcritical nuclear assemblies or reactors.

The workshop discussions were focused on the DOE-AFCI Reactor Accelerator Coupling Experiments (RACE) Project, which is a series of ongoing and future experiments to determine the performance of subcritical driven nuclear reactor systems. At ISU, UT-Austin, and Texas A&M the driving source uses gamma-n reactions produced by electron accelerators. In addition, recent and continuing European experiments were discussed, where neutrons have been produced by deuterium-deuterium and deuterium-tritium reactions. The ultimate goal of these experiments is to develop the ability to model and control large, high-power ADSS coupled to high-energy proton accelerators, such as the European TRADE Project.

The goal of the Workshop was to address practical issues, such as operating conditions and nuclear instrumentation, in current and planned U.S. experiments. In addition, these workshops foster closer collaborations between national labs and academia. Participants discussed work at their respective facilities, shared new ideas and future opportunities, and discussed plans and potential collaborations. These collaborations were further developed at a banquet and during tours of the IAC on the 19<sup>th</sup>.

These proceedings include all view graph presentations contributed by the authors. We thank them for their participation and contributions to this important work. We would also like to acknowledge the support of the DOE AFCI Program and the Idaho National Laboratory's Accelerator Based Nuclear and Radiation Science Outreach Program.



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