

# Session VI

## Fuel Issues (Continued)

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### **DOE Foreign Research Reactor Spent Nuclear Fuel Acceptance Policy**

**Keith Brown, SAIC**

*Abstract*

On May 16, 1996, the Department of Energy (DOE) in cooperation with the Department of State (DOS) issued an Environmental Impact Statement and Record of Decision which established a ten-year period during which the DOE would accept foreign research reactor fuel containing uranium enriched in the U.S. for management in the U.S. As part of the implementation of this policy, several foreign research reactors have been visited to perform a preliminary assessment of the fuel and the capabilities of the facility to support a spent nuclear fuel shipment to the U.S.

This presentation will provide an overview, the current status, and the future plans for the fuel acceptance program, as well as a description of the facilities and their irradiation programs for some of the foreign research reactors visited.

### **The October 1995 Settlement Agreement and its Impacts on Shipment of Spent Fuel to the INEEL**

**David Houck, Lockheed Martin Idaho Technologies Co.**

*Abstract*

The Idaho National Engineering and Environmental Laboratory (INEEL) through the INEEL Spent Nuclear Fuel (SNF) Program has performed the initial planning work to determine the needs of the sites planning to ship spent fuel to the INEEL. These shipments are in accordance with the Record of Decision (ROD) for the Department of Energy's (DOE's) Programmatic Spent Nuclear and Idaho National Laboratory, Environmental Restoration and Waste Management Programs, Final Environmental Impact Statement. The October 17, 1995, DOE/Navy/State of Idaho Consent Order/Settlement Agreement on Spent Fuel and Nuclear Waste resolved under what conditions spent fuel shipments could and could not occur. The INEEL SNF Program through its Domestic Research Reactor (DRR) Program is establishing a document package that includes all of the steps required to ship fuel into the INEEL and help shippers prepare and document their fuel for shipment to the INEEL.

## **Decommissioning of University Test Reactors and the National Low-Level Waste Management Program**

**Robert Hanson, Lockheed Martin Idaho Technologies Co.**

### *Abstract*

Decommissioning of nuclear reactors on university and college campuses is being considered and discussed throughout the country. Many factors must be considered in making the decision to decommission a campus nuclear reactor. These include movement of reactor fuel to a Department of Energy facility; identification, characterization and disposal of all waste (i.e., low-level waste, Greater than Class C waste, hazardous wastes) generated in the decommissioning activities; overall project management to assure efficient planning and coordination so that costs and schedule are controlled; and impacts on on-going nuclear related university programs.

Lockheed Martin Idaho Technologies Company (LMITCO) at the Idaho National Engineering and Environmental Laboratory (INEEL) manages the national Low-Level Waste Management Program. This program is responsible for assisting states and generators in managing low-level radioactive waste. As universities move toward decommissioning, the National Program is responsible to track the projected volumes of LLW. In addition, the INEEL has been associated with university reactor programs by purchasing fuel for the reactors and by supporting their operations. With LMITCO's experience with decommissioning activities on the INEEL and with the extensive waste handling activities, LMITCO may be able to assist the universities with decommissioning. In a cooperative effort with the university, work being conducted at the INEEL may also enhance the educational programs in nuclear engineering and nuclear decommissioning by allowing students the option of getting hands on experience. This presentation is intended to describe the role of the National Low-Level Waste Management Program and discuss potential university needs for decommissioning.

## **A New Multipurpose 10 MW TRIGA for Thailand**

**Junaid Razvi, Sorrento Electronics/TRIGA**

General Atomics (GA), has been selected to lead a team of firms from the United States, Japan, Australia and Thailand to design, build and commission the Ongkharak Nuclear Research Center near Bangkok, Thailand, for the Office of Atomic Energy for Peace.

The facilities to be provided comprise of:

- A Reactor Island, consisting of a 10 MW TRIGA reactor that takes full advantage of the inherent safety characteristics of uranium-zirconium hydride fuel;
- An Isotope Production Facility for the production of radioisotopes and radiopharmaceuticals using the TRIGA reactor;
- A Waste Processing and Storage Facility for the processing and storage of radioactive waste from the facility as well as other locations in Thailand.

The Centerpiece of the Center will be the TRIGA reactor, fueled with low enriched UZrH fuel, cooled and moderated by light water, and reflected by beryllium and heavy water. The UZrH fueled reactor will have a rated steady state thermal power output of 10 MW, and will be capable of performing the following:

- Radioisotope production for medical, industrial and agricultural uses
- Neutron transmutation doping of silicon

- Beam experiments such as Neutron Scattering, Neutron Radiography (NR), and Prompt Gamma Neutron Activation Analysis (PGNAA)
- Medical therapy of patients using Boron Neutron Capture Therapy (BNCT)
- Applied research and technology development in the nuclear field
- Training in principles of reactor operation, reactor physics, reactor experiments, etc.