2010 Status Report

DOE Research Reactor Infrastructure Program

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Idaho National Laboratory

Program Management

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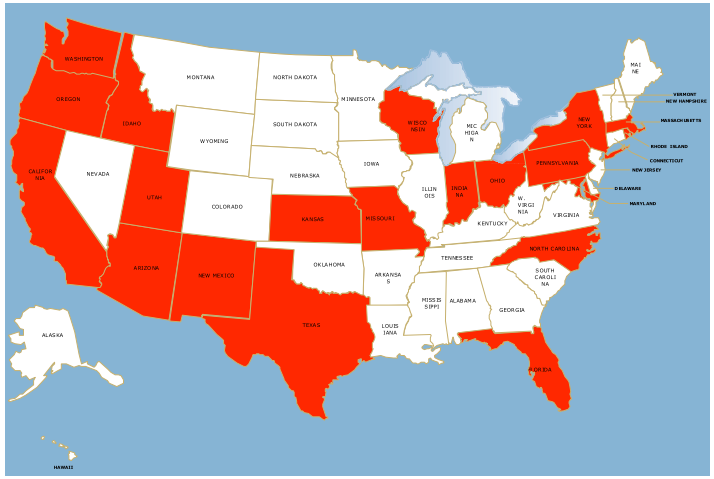
Purpose of Program

The purpose of the Research Reactor Infrastructure Program is to provide fresh nuclear reactor fuel to U.S. universities at no, or low, cost to the university. The title of the fuel remains with the U.S. government and when the universities are finished with the fuel, the fuel is returned to the U.S. government.

The Research Reactor Infrastructure Program

- Funded by the U.S. Department of Energy
- Managed by DOE-ID Field Office
- Contracted to the INL's Management and Operations Contractor – Battelle Energy Alliance
- Program has been at Idaho since 1977
  - INL subcontracts with 26 U.S. universities to supply fresh nuclear reactor fuel for operations
    - Thirteen TRIGA facilities
    - Nine plate fuel facilities
    - Three AGN facilities
    - One Pulstar fuel facility
    - One Critical facility



The RRI Program (continued)

Facility	Power
University of Missouri – Columbia	10 MW
Massachusetts Institute of Technology	4.9 MW
University of California – Davis	2 MW
Rhode Island Nuclear Science Center	2 MW
Oregon State University	1 MW
University of Texas, Austin	1 MW
North Carolina State University	1 MW
Pennsylvania State University	1 MW
Texas A&M University	1 MW & 5W
University of Massachusetts – Lowell	1 MW
University of Wisconsin	1 MW
Washington State University	1 MW
Ohio State University	500 kW

Facility	Power
Kansas State University	250 kW
Reed College	250kW
University of California – Irvine	250 kW
University of Maryland	250 kW
University of Missouri S&T	200kW
University of Arizona	100 kW
University of Florida	100 kW
University of Utah	100 kW
Worcester Polytechnic Institute	10 kW
Purdue University	1 kW
Idaho State University	5 W
University of New Mexico	5 W
Rennselaer Polytechnic Institute	1 W

Currently Undergoing D&D Activities

The RRI Program (continued)

- Fresh fuel needs:
  - MURR, MIT, Rhode Island
  - UC-Davis, Kansas State, University of Texas, Penn State, University of Maryland, University of Utah
  - NC State (Beryllium reflectors)
- Lightly Irradiated Fuel Transfers – Some Possibilities
- Spent Fuel Transfers to DOE Facilities
  - Routine Shipments – MURR, MIT
  - Decommissioning Facilities – University of Arizona, WPI
  - Other Shipments – UC Irvine, Texas, UC Davis, Reed College, Penn State

2010 Accomplishments

- Provided fuel to maintain university reactors with sufficient fuel to operate at current power levels – MURR, MIT, UC Davis, Rhode Island Nuclear Science Center
- Initiated fabrication of TRIGA fuel for Kansas State University, University of Texas, and Penn State – Scheduled for delivery in December 2011
- 3 shipments of spent nuclear fuel from MURR to SRS
- 1 shipment of spent nuclear fuel from MIT To SRS
- 1 shipment of spent nuclear fuel from University of Wisconsin to INL
- Completed licensing and fabrication activities for the new spent nuclear fuel cask to replace the BMI cask
- Publication and delivery of electronic TRTR newsletters

2011 Forecast

- Provide fuel to maintain university reactors with sufficient fuel to operate at current power levels – MURR, MIT, Kansas State University, University of Texas, Penn State
- Ship spent nuclear fuel from MURR, MIT, University of Arizona, and Worcester Polytechnic Institute
- Initiate fabrication of additional TRIGA fuel elements, reactor facilities to be determined
- Publication and delivery of the TRTR Newsletter
- Perform first spent fuel shipment using the BRR cask
- Design dry transfer system for the BRR cask

New DOE Owned Spent Fuel Shipping Cask

- Design and Fabrication performed by AREVA Federal Services
- Designed for both wet and dry loading/unloading operations
- Cask consists of body, closure lid, shield plug, impact limiters, and spent fuel baskets
- Currently licensed to ship MURR, MIT, ATR and TRIGA fuel

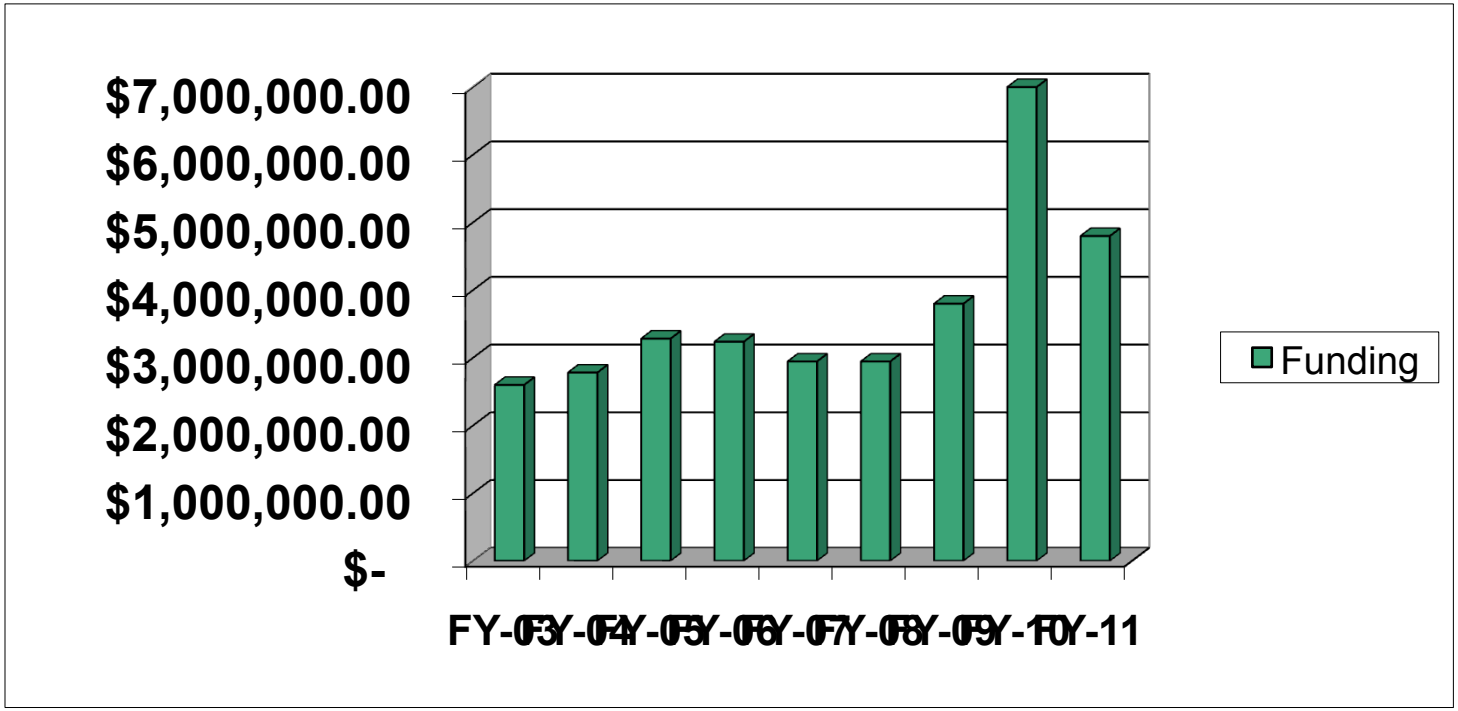
Requests for Assistance

- Reactor information for Program Plan – October 15th
- Future requests for fresh fuel or spent fuel shipments need to be communicated to program office – Provide documentation to justify request (E-mail or official letter notification preferred)
- Other university concerns or assistance requests should be communicated to program for consideration as part of future budget planning activities.

Future Challenges

- **Sufficient Funding For:**
  - **Fresh fuel fabrication for fuel needs**
  - **Spent fuel shipments**

Estimated $5,900,000 needed annually to meet all identified needs (Based on 2010 Dollars, does not include escalation)



TRTR Team Members

Thank You!

Easy Questions?