

# Session I

## Business Meeting and Organizational Reports

[TRTR Business Meeting and Chairman's Report](#) - Brian Dodd, Oregon State University

[University Reactor Support Committee Update](#) - Leo Bobek, Worcester Polytechnic

[Status of University Reactor Fuel Assistance Program](#) - Tony Vinnola, Lockheed Martin Idaho

[Report on Activities of the International Group on Research Reactors \(IGORR\)](#) - Kathy Rosenbalm, Oak Ridge National Lab

[The Health of US Research Reactors: Survey Results](#) - Brian Dodd, Oregon State University

[\[Next Session\]](#)

---

### **TRTR Business Meeting and Chairman's Report**

**Brian Dodd, Oregon State University**

*Abstract*

The Chairman's report will include a review of: the visits with the Chairman, Commissioners and senior staff of the NRC; the work done on, and the status of, the AEOD report; the incorporation of TRTR and other events over the past year. There will be a brief business meeting of TRTR which will include an election of the TRTR Board.

### **University Reactor Support Committee Update**

**Leo Bobek, Worcester Polytechnic**

*Abstract not available at time of printing.*

### **Status of University Reactor Fuel Assistance Program**

**Tony Vinnola, Lockheed Martin Idaho**

*Abstract*

- 1. Purpose and scope of University Reactor Fuel Assistance Program
- 2. Description of people involved in program
- 3. Status of recurring fuel needs
- 4. Status of low enriched uranium fuel conversion program
- 5. Current and future issues

The University Reactor Fuel Assistance Program is funded by the U.S. Department of Energy and managed by Lockheed Martin Idaho Technologies at the Idaho National Engineering and Environmental Laboratory in Idaho Falls, Idaho. The program has three basic goals; to keep all operating university reactor programs supplied with nuclear fuel, provide low enriched uranium nuclear fuel to those reactor facilities currently operating with highly enriched uranium fuel, and to provide transportation and casks for shipment of irradiated nuclear fuel from the universities.

*Paper*

**UNIVERSITY FUEL ASSISTANCE PROGRAM**

The URFA Program is:

- Funded by the Department of Energy Office of Nuclear Energy
- Managed by Lockheed Martin Idaho Technologies (LMITC)

LMITC Has No-Cost Subcontracts With 33 Universities

- To Supply Nuclear Fuel to the University
- To Assist in Arrangements For Removal of Fuel
- To Provide Funding For Fuel Transportation (These Subcontracts will be renewed in 1998)

**URFA PROGRAM MANAGEMENT**

- DOE HQ Office of Nuclear Energy: Bill Hartman
- DOE Idaho Operation Office: Willettia Amos

Lockheed Martin Idaho Technologies Company

- Program Management: Tony Vinnola
- Subcontract Administration-Vendors: Mike Stone
- Subcontract Administration-Universities: Lynda Keller
- Fuels Analysis: Gary Fillmore
- Quality Engineering: Vernon Wages
- Mechanical Engineering: Doug Morrell
- Spent Fuel Transportation: Keith Nelson
- Materials Management: Bryce Denning

**PROGRAM ACTIVITIES**

Replacement Fuel Activities

- Maintain University Reactors With Sufficient Fuel To Operate At Current Power Levels
- Uranium Feedstock Supplies
- First TRIGA Fuel Order From Facility at CERCA - Presentation Tomorrow
- Communication Of Fuel Needs To Program Office (See Next Slide)
- Spent Fuel Returns
- Current shipments to Savannah River: FY-1998 Iowa State, MIT, Mass, Michigan, MURR
- Future shipments to INEEL - Presentation Tomorrow

<b>Completed Low Enrichment Conversions</b>			
Ohio State	1988	Worcester	1988
Rensselaer	1988	Manhattan	1988
Iowa State	1991	Missouri-Rolla	1992

Rhode Island	1993	Virginia	1994
Georgia Tech	1996		
<b>Scheduled Low Enrichment Conversions</b>			
Mass-Lowell	1998	Purdue	1999
Florida	2000	Oregon State	2001
Texas A&M	2003	Wisconsin	2005
Washington State	2007		

<b>Fuel Element Needs</b>						
<b>Fiscal Year</b>	<b>98</b>	<b>99</b>	<b>00</b>	<b>01</b>	<b>02</b>	<b>03</b>
MURR	28	28	28	28	28	28
MIT	10	10	10	10	10	10
Michigan (Silicide begins 1999)	12 4-c	12 4-c	12 4-c	12 4-c	12 4-c	12 4-c
Lowell	24 2-p 1-r				5	
Purdue		22				
Florida			25			
Rhode Island		8				
Cornell	6	6	3		2	
Illinois	6 1-I		6 1-I		6 1-I	
Kansas State	2		4		2	
Penn State (12 wt%)			5 1-I			
Utah (From Hanford)	38					
Oregon State (20 wt%)				88 4-c 2-I		
Texas A&M (20 wt%)						25 1-c 2-I

#### Special Projects And Work By Others

- Used Fuel Opportunities: PULSTAR Fuel From SUNY-Buffalo to North Carolina State and TRIGA Fuel From Previous Users
- LEU Silicide Fuel Targeted for University Of Michigan
- Pathfinder and Other Legacy Fuels and DOE Material

## Kathy Rosenbalm, Oak Ridge National Lab

### *Abstract*

The fifth meeting of the International Group on Research Reactors (IGORR-V) was held in Aix-en-Provence, France on November 4-6, 1996. The format remained the same as in previous years, with the exception of a new session on Cold Neutron Sources. Also, two special reports were given on the results of IGORR surveys: one, by Albert Lee from the Atomic Energy of Canada, on containment design criteria and one, by Doug Selby from Oak Ridge National Laboratory, on cold neutron cross sections. Included in the presentations was one on the cold neutron moderator development research and measurement capabilities of several Russian research reactors given by D. Kir Konoplev., Deputy Director of the Petersburg Nuclear Physics Institute of the Russian Academy of Science. Significant interest in these capabilities was shown at the meeting, and as a result D. Konoplev has submitted, with support from several interested organizations, a proposal to the ISTC to perform measurements that would produce data desirable for the development of the next generation of cold hydrogen moderators. If you are interested in a copy of the Proceedings from IGORR-V, please contact Dr. Jean-Luc Minguet, Technicatome, Etablissement d'Aix-en-Provence, Rue Ampere - BP 34000, 13791 Aix-en-Provence - Cedex 03, France.

As the last item of business at the meeting, a new chairman was elected, Dr. Klaus Böning from the Technical University of Munich in Germany.

The next meeting of IGORR will be held on April 29 through May 1, 1998, and will be hosted by the Korea Atomic Energy Research Institute in Taejeon, Korea.

## **The Health of US Research Reactors: Survey Results**

**Brian Dodd, Oregon State University**

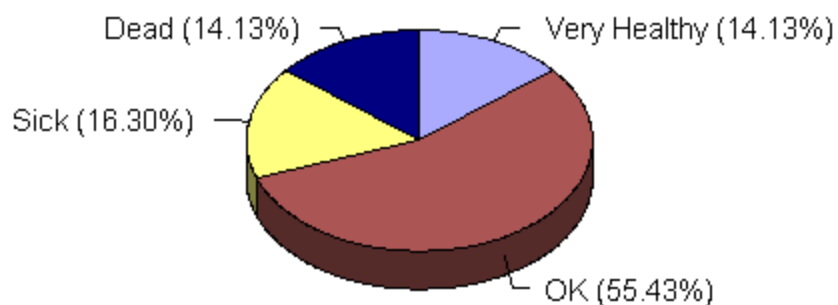
### THE SURVEY

- One page, check the boxes, stamped and addressed return envelope.
- Sent to US test, research and training reactors (and two Canadian) in summer 1997.

<b>Survey Universe</b>	<b>Universities</b>	<b>Private</b>	<b>Government (Non-DOE)</b>	<b>DOE</b>	<b>Total</b>
Facilities Polled	39	5	8	26	78
Responses	34	5	4	3	46
Percent	87%	100%	50%	12%	59%

### OVERALL HEALTH

# US Research Reactor Health



- In addition, several of the non-responding facilities are known to be dead or dying.
- No US university facility classed itself as "Very Healthy".

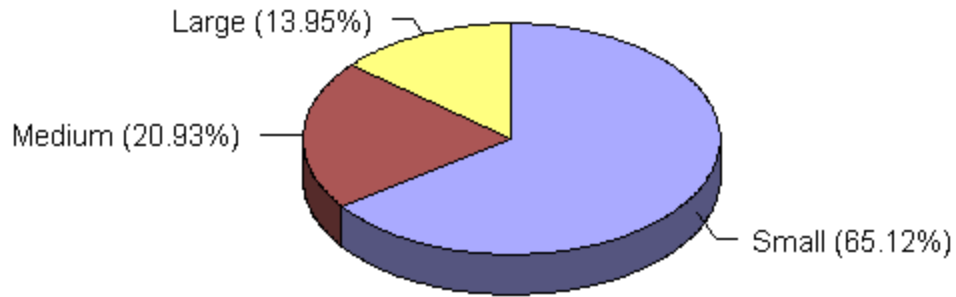
## MAIN ROUTINE USES OF THE FACILITY

Routine Uses	
Neutron Activation Analysis	32
Teaching	28
Isotope Production	16
Neutron Radiography	13
Radiation Damage Studies	12
Reactor Behavior	6
Neutron Diffraction	5
Argon Geochronology	4
Fission Track Geochronology	4
Stone Color Enhancement	4
Reactor Development	4
Si Doping	4
Neutron Capture Therapy Studies	3
Materials Science	2
Neutron Depth Profiling	2
Five others	1

- The "others" included standards development, positron beam, cold neutron work, prompt gamma analysis, and gamma irradiations from the shutdown core.

## STAFFING

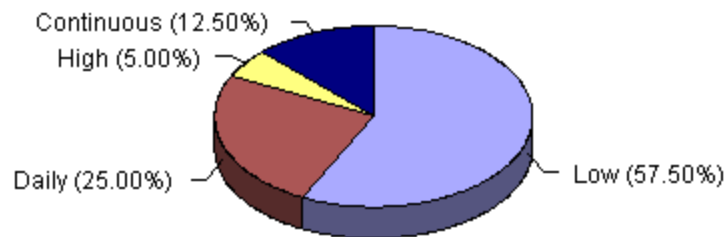
# Staffing Levels



- Small is one to five full time staff associated with the reactor and one or two licensed operators (28 facilities).
- Medium is six to fifteen full time staff and three to eight licensed operators (9 facilities).
- Large is more than 15 full time staff associated with the reactor, and more than eight operators (6 facilities).

## OPERATING FREQUENCY

# Operating Frequency



- Two or three times a week or less was considered low (23 facilities).
- Daily is during normal working hours (10 facilities).
- High means two or more shifts per day (two facilities).
- 24 hours per day, except for maintenance and refueling was considered continuous (five facilities).

## BIGGEST PROBLEM

Issue	No. Responses
Lack of sufficient funding	12
Staffing (Quality and number)	5

Lack of utilization	5
Poor administration/faculty support	4
Low power	4
Age of equipment	4
Fuel issues	3
Lack of students	3
Other	2

#### BIGGEST POSITIVE

<b>Good</b>	<b>No. Responses</b>
Experimental facilities/methods (NAA, NCT, scattering, cold neutron beam)	9
Utilization	8
Staff	6
Reactor facility	6
Administration/faculty support	5
Low cost	3
Other	9

- Others include: high power, simple operation, inherent safety, versatility, availability.
-