THE OHIO STATE UNIVERSITY REACTOR SHARING PROGRAM

During the period from August 15, 2000 through May 31, 2001 the OSU Research Reactor participated in the Reactor Sharing Program by providing services to nine colleges and universities and four secondary school organizations. A total of about 17 faculty and 170 students utilized our facilities.

The staff of the OSU Research Reactor is generally involved in four types of experiments at the Nuclear Reactor Laboratory. Included are introductions to nuclear research, neutron activation analysis, material irradiation, and classes that measure various reactor parameters.

1. Typically when we introduce students, faculty, or other experimenters to nuclear research we do the following:
 - a. Discuss nuclear reactions and radiological safety.
 - b. Operate the reactor at 10-50 kW.
 - c. Have individuals observe control room operations.
 - d. Complete a tour and demonstration of irradiation techniques.

This year seven organizations were introduced to nuclear research. Three were colleges or universities and four were secondary school groups.

2. Neutron activation analysis (NAA) experiments are routinely completed for students ranging from high school to graduate school. This year two universities, Case Western and Wittenberg, used NAA for research.
3. Material irradiation in the reactor, other than for NAA, is in three basic areas. These are isotope production, detector or component testing and irradiation of biological samples. Na-24 was produced for one Miami University professor. Gamma irradiations were completed for Bowling Green State University and the University of Memphis.
4. Various nuclear engineering and physics classes throughout Ohio utilize the reactor for the following basic experiments:
 - a. Approach to critical
 - b. Control rod calibration
 - c. Radiological surveys

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Students in the University of Cincinnati program completed an approach to critical.

This utilization is summarized in the enclosed tables. Not reflected in this utilization is the additional 45 hours of reactor time, 200 hours of spectroscopy system time, and 1440 hours of gamma irradiator time provided at no charge to eleven faculty and 160 students from eight institutions after this year's Reactor Sharing funds were expended.

University: The Ohio State University
Program Director: Richard D. Myser
Grant Number: DE-FG02-95NE38120

Location: Columbus, OH
Telephone: 614-688-8220
Reactor Type: Research, 500 kW

Participating Institution	Principle Investigator	Number of Students/Faculty	Description of Project/Program	Reactor Sharing Support
Ohio State University	Hajek, Faure, Lawrence, Hinkle, Barringer	100/5	Introduction to Nuclear Research	2450
Central Ohio Technical College	Hopewell	10/1	Introduction to Nuclear Research	100
Case Western Reserve University	Keefer	1/1	Neutron Activation Analysis of Crystals for Antimony content	4800
University of Cincinnati	Spitz	3/1	Approach to Critical Lab	100
Miami University	Marcum	-/1	Production of Na-24 for Physics Labs	110
Capital University	Richardson	19/1	Introduction to Nuclear Research	220
Wittenberg University	Frasca	1/1	NAA of Bullet Fragments	4600
Bowling Green State University	Woodruff	-/1	Gamma Irradiation of Fruit Flies	4538
University of Memphis	Lumsden	1/1	Gamma Irradiation of Geological Samples	40

Table 1 - Reactor Sharing Participation by Colleges and Universities 2000-2001

University: The Ohio State University
Program Director: Richard D. Myser
Grant Number: DE-FG02-95NE38120

Location: Columbus, OH
Telephone: 614-688-8220
Reactor Type: Research, 500 kW

Participating Institution	Principle Investigator	Number of Students/Faculty	Description of Project/Program	Reactor Sharing Support
Wayne High School	Howell	9/1	Introduction to Nuclear Research	210
New Albany High School	Benedict	1/1	Introduction to Nuclear Research	110
Columbus Home School Association	Baier	18/1	Introduction to Nuclear Research	200
Upper Arlington Middle School	Nemer	1/1	Introduction to Nuclear Research	100

Table II - Reactor Sharing Participation by Middle and High Schools 2000-2001