

Final Technical Report

DOE Matching Grant Program

AWARD NO. DE-FG02-95NE38103

Covering Activities Supported in Academic Years
1996-97, 1997-1996, 1998-1999, 1999-2001

Submitted to

Nancy Elizondo
DOE-Idaho
Tel: (208) 526-4169
Email: elizonna@id.doe.gov

and

Tonja L. Stokes
Contract Specialist
Office of Acquisition and Assistance
US Department of Energy
Tel: (630) 252-2136
Fax: (630) 252-5045
Email: tonja.stokes@ch.doe.gov

Submitted by:

Lefteri H. Tsoukalas, Head
School of Nuclear Engineering
Purdue University
W. Lafayette, IN 47907-1296
Tel: (765) 494-5742
Fax: (765) 494-9570
Email: nehead@ecn.purdue.edu

DOE Patent Clearance Granted
Mark P. Divorscak
(630) 252-2393
E-mail: mark.divorscak@ch.doe.gov
Office of Intellectual Property Law
Chicago Operations Office
Jan 22 2003
Date

January 11, 2003

DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.

DISCLAIMER

Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.

FINAL TECHICAL REPORT

DOE Matching Grant Program

AWARD NO. DE-FG02-95NE38103

Covering Activities Supported in Academic Years 1996-2001

School of Nuclear Engineering
Purdue University
W. Lafayette, IN 47907-1290
Tel: (765) 494-5742
Fax: (765) 494-9750
Email: nehead@ecn.purdue.edu

Background

The US Department of Energy (DOE) has funded Purdue University School of Nuclear Engineering during the period of five academic years covered in this report starting in the academic year 1996-97 and ending in the academic year 2000-2001. The total amount of funding for the grant received from DOE is \$416K.

In the 1990's, Nuclear Engineering Education in the US experienced a significant slow down. Student enrollment, research support, number of degrees at all levels (BS, MS, and PhD), number of accredited programs, University Research and Training Reactors, all went through a decline to alarmingly low levels. Several departments closed down, while some were amalgamated with other academic units (Mechanical Engineering, Chemical Engineering, etc).

The School of Nuclear Engineering at Purdue University faced a major challenge when in the mid 90's our total undergraduate enrollment for the Sophomore, Junior and Senior Years dropped in the low 30's. The DOE Matching Grant program greatly strengthened Purdue's commitment to the Nuclear Engineering discipline and has helped to dramatically improve our undergraduate and graduate enrollment, attract new faculty and raise the School of Nuclear Engineering status within the University and in the National scene (our undergraduate enrollment has actually tripled and stands at an all time high of over 90 students; total enrollment currently exceeds 110 students).

In this final technical report we outline and summarize how the grant was expended at Purdue University.

Student Support

Student support totaled \$158K or 38% of the total five year expenditure under the DOE Matching Grant program. This is by far the largest component of total expenditure. Twenty graduate students have been supported by the program, the vast majority being domestic students. Several domestic undergraduates were recruited for graduate school and supported from the program in total or in part (T. Kozlowski, J. Walters, C. Culbertson, D. Pollock, S. Spillane, M. Bartel, S. Spooner, T. Fieno, J. Steil, B. Henning, R. Bean). One female student (Lori Croy) transferred from the Department of Earth and Atmospheric Sciences and obtained her graduate degree (MS) in Nuclear Engineering at Purdue. In addition two Kansas State University (KSU) students (D. Tinkler and R. Reneke) were recruited to pursue their graduate education at Purdue (after the Department of Nuclear Engineering at KSU was eliminated). Five additional students (V. Krishnan, S. Leonardi, J. Chai, F. Zhong, A. Radhakrishnan) were supported in part during their graduate education at Purdue.

Computer Support for Students and Faculty

Several workstations were purchased either completely through the grant or via matching support funds from the grant. The total number of workstations is 27 of which 22 were purchased to upgrade the undergraduate computing laboratory and five were purchased to support the faculty of the School; particularly two new female faculty members (Professors Karen Vierow and Tatjana Jevremovic) recruited by the School. Total expenditure for workstation purchases is \$94,644.54.

Reactor Expenditures

The Purdue University Reactor 1 (PUR-1) is a pool type reactor commissioned in the early 60's, mostly used for undergraduate and graduate instruction. Several hardware items were purchased to support reactor operations using the DOE Matching Grant funds. Detail descriptions are found the Annual Reports. The total amount for the five year period is \$10,307.94

Miscellaneous Hardware

Several laboratory items were purchased through the grant including, undergraduate radiation lab supplies, peripherals, student design competition equipment, digital camera and supplies, and thermal-hydraulic lab upgrade hardware. The total amount expended in the five-year period covered by the report is \$33,558.21.

Miscellaneous for School Support

The total amount expended in this category is \$3,482.50. It includes publication/duplication and miscellaneous costs associated with research and education at the School of Nuclear Engineering.

Summary of Expenditures

\$3,482.50 TOTAL MISCELLANEOUS

\$10,307.94 TOTAL REACTOR

\$94,644.54 COMPUTERS FOR STUDENTS, FACULTY, STAFF

\$33,558.21 MISC. COMPUTERS, DIGITAL CAMERA SUPPLIES,

\$158,006.81 TOTAL FELLOWSHIP SUPPORT

LORI CROY
TOMASZ KOZLOWSKI
RICHARD RENNEKE
DANIEL TINKLER
JOSHUA WALTERS
CHRIS CULBERTSON
DOUG POLLOCK
VIJA KRISHNAN
SEAN SPILLANE
ARUN RADHAKRISHNAN
MICHAEL BARTEL
SETH SPOONER
THOMAS FIENO
LIANG XINQING
FUHONG ZHONG
JOHN STEILL
BRIAN HENNING
ROBERT BEAN
JIN CHAI
SERGO LEONARDI