

NUCLEAR ENERGY UNIVERSITY PROGRAMS

The U.S. Department of Energy's Office of Nuclear Energy

DOE is committed to strengthening the Nation's nuclear education infrastructure.

The Office of Nuclear Energy (NE) supports the Department of Energy's (DOE) development of advanced nuclear science and technology through its Nuclear Energy University Programs (NEUP). NEUP funds nuclear energy research, helps educate and train the next generation of the nuclear-energy workforce through equipment and instrumentation upgrades and curriculum development at U.S. colleges and universities, and provides scholarships and fellowships to nuclear science and engineering students.

NEUP's goal is to support outstanding and innovative nuclear energy research at U.S. universities. The program aims to:

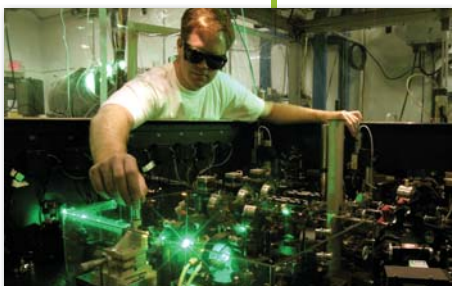
- Fund creative research ideas that can potentially produce breakthroughs in nuclear reactor technology;
- Attract the brightest students to the nuclear professions and support the Nation's intellectual capital in nuclear engineering and relevant nuclear science, such as Health Physics, Nuclear Materials Science, Radiochemistry, and Applied Nuclear Physics;
- Integrate research and development (R&D) at universities, national laboratories, and industry to revitalize nuclear education;
- Improve university and college infrastructures for conducting R&D and educating students; and
- Facilitate the transfer of knowledge from an aging nuclear workforce to the next generation of workers.

To accomplish these goals, NE will support:

- Nuclear energy-related R&D;
- Scholarships and fellowships;
- Curriculum development; and
- Infrastructure and equipment upgrades.

NUCLEAR ENERGY R&D

NEUP seeks to conduct nuclear energy research at U.S. colleges and universities to further DOE's mission and goals. The program supports R&D projects focused on the research needs and priorities of the Reactor Concepts Research, Development and Demonstration (RCRD&D), NE Fuel Cycle R&D (FCR&D), and Nuclear Energy Enabling Technologies (NEET) programs.



SCHOLARSHIPS AND FELLOWSHIPS

Increasing the number of students entering the nuclear science and engineering fields is a key goal for NE. While the demand for engineers and scientists in these areas is growing, about half of the nuclear industry's workforce will be eligible to retire in the next 10 years. If the United States is to stay competitive, it must keep the pipeline of key personnel filled. The average NEUP undergraduate scholarship is \$5,000 for 1 year, and graduate fellowship awards can be as high as \$150,000 over 3 years.



Center for Advanced Energy Studies at Idaho National Laboratory — a public/private partnership that integrates resources, capabilities and expertise to create new research capabilities.

INFRASTRUCTURE AND EQUIPMENT

NE recognizes that U.S. universities require proper support to conduct cutting-edge research and educate the next generation of nuclear science and engineering students. Infrastructure grants will be available for equipment and instrumentation for research reactors; other specialized facilities; classrooms and laboratories; non-reactor nuclear science and engineering research; and for developing the curriculum required to advance nuclear energy education and to support the university departmental missions.

AWARD PROCESS

In FY 2011, NE will designate up to 20 percent of funds appropriated to its R&D programs, as well as funds from the RE-ENERGYSE Initiative, for work to be performed at university and research institutions. These funds, competitively awarded, will support:

- Mission-specific applied R&D activities;
- Investigator-initiated basic research;
- Human capital development activities, such as fellowship and scholarships awards; and
- Curriculum development and infrastructure and equipment upgrades for universities, colleges, and other post-secondary institutions.

PLANNED PROGRAM ACCOMPLISHMENTS

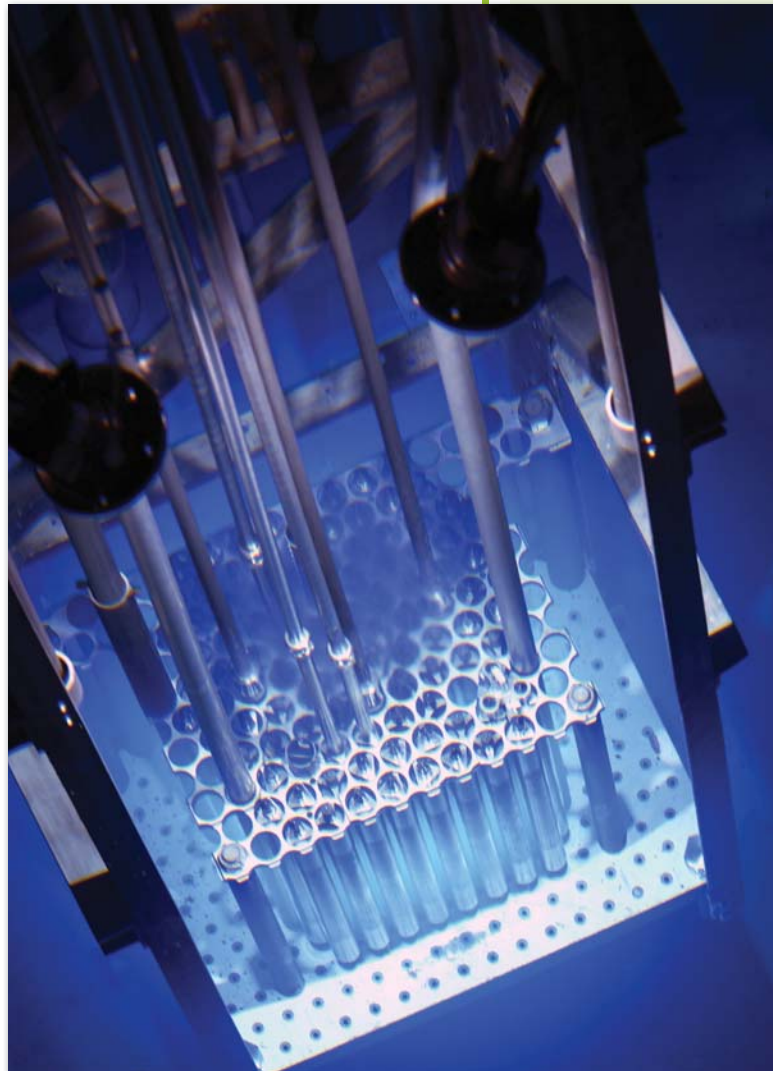
FY 2010

- Award NEUP R&D projects in support of NE Fuel Cycle R&D, Next Generation Nuclear Plant (NGNP), and Light Water Reactor Sustainability (LWRS) activities;
- Award grants to U.S. universities, colleges, and other post-secondary institutions for infrastructure and equipment to support nuclear energy-relevant education and R&D;
- Award scholarships and fellowships to students attending U.S. universities and colleges who major in nuclear science and engineering fields of study;
- Conduct workforce and infrastructure assessments to baseline program;

- Complete research on 33 R&D projects initiated in FY 2007 in the NGNP and FCR&D areas; and
- Conduct an NEUP workshop to plan for FY 2011 program solicitations.

FY 2011

- Solicit and competitively award new mission-specific NEUP R&D projects in support of the Reactor Concepts Research, Development and Demonstration (RCRD&D), NE Fuel Cycle R&D (FCR&D), and Nuclear Energy Enabling Technologies (NEET) programs;
- Solicit and competitively award university infrastructure and equipment support relevant to the R&D needs; and
- Solicit and competitively award scholarships and fellowships in nuclear engineering and science areas to students attending U.S. universities and colleges.



Fuel rods for a university reactor.

