



# STEWARDSHIP OF NUCLEAR ENGINEERING EDUCATION

Position Statement

November 2007

The American Nuclear Society (ANS) supports comprehensive, appropriate, and long-term stewardship funding for nuclear engineering education and research reactor programs. To maintain the nation's competitiveness, we believe that it is essential that Congress, the Executive Branch, and other stakeholders take the necessary steps to establish a strong and effective platform for meeting the technological and human resources need in the field of nuclear science and engineering (NSE). This must include appropriate funding and other tangible support for those disciplines central to our nation's energy, environment, and national security.

NSE plays a critical and expanding role in ensuring the world's energy supply, in reducing the global-warming gases, and in national security. NSE is the central component of major technological challenges, including the anticipated nuclear power renaissance, development of advanced fuel cycle technologies and reactor designs, exploration of the potential of fusion reactor concepts, development and deployment of nuclear materials detection technologies for homeland security, and prevention of nuclear proliferation.

A significant percentage of the current U.S. NSE workforce will reach retirement age in the next 10 years. As a result, the nuclear industry, national laboratories, Department of Energy (DOE), Department of Defense (DOD), Nuclear Regulatory Commission (NRC), National Nuclear Security Administration (NNSA), and Department of Homeland Security (DHS) will need to hire hundreds of new nuclear engineers and scientists to successfully achieve their business and policy objectives.

We believe this situation will require an expansion of the U.S. nuclear engineering education enterprise, including university research reactors, and that such an expansion will require significant support from universities, industry, and government.

In 2006, the ANS convened the Special Committee on Federal Investment in Nuclear Education to examine this issue. Its report, entitled "Nuclear's Human Element,"<sup>1</sup> found deficiencies in the scope and nature of current federal NSE investment and stewardship. Its recommendations include increasing funding for university nuclear programs through the DOE Office of Nuclear Energy, as authorized in the Energy Policy Act of 2005; commissioning a DOE-sponsored workforce study to better quantify the long-term, aggregate need for NSE professionals in both the public and private sectors; creating a new NSE program within the DOE Office of Science (as envisioned by S. 761 the America COMPETES Act) to diversify funding for the NSE discipline and maintain investment in basic research; and convening an interagency NSE working group, led by the DOE Office of Nuclear Energy, to ensure that federal NSE investment

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<sup>1</sup> [www.ans.org/pi/fine/docs/finereport.pdf](http://www.ans.org/pi/fine/docs/finereport.pdf)



decisions are coordinated and guided by government-wide technical workforce needs. It is noteworthy that Congress, first through the Atomic Energy Act of 1946<sup>2</sup> and then through subsequent legislation, has consistently recognized that stewardship of the U.S. NSE education system is a unique federal responsibility.

The ANS supports these recommendations and encourages Congress and the Executive Branch to act on them in an expeditious manner.

In summary, the field of NSE will play an increasingly important role in addressing U.S. energy and security policy challenges in the years ahead. In no small part, the nation's success in tackling these challenges will be predicated on our ability to educate the next generation of nuclear professionals. We support comprehensive stewardship for the U.S. academic NSE enterprise and believe that NSE investments should be equivalent in scope and structure to those received by other science/engineering disciplines.

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The American Nuclear Society, founded in 1954, is a not-for-profit scientific and educational society of over 10,000 scientists, engineers, and educators from universities, government and private laboratories, and industry.

Position Statements are the considered opinions and judgments of the Society in matters related to nuclear science and technology. They are intended to provide an objective basis for weighing the facts in reaching decisions on important national issues.

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<sup>2</sup> “Atomic Energy Act,” U.S. Government (1946).