

Capability Forecast: Engineering, Manufacturing, Construction and Operation
(Panel #2)

Educating the Future Nuclear Workforce – NRC's Education Grant Program

For more than a decade, the Office of Nuclear Energy, within the Department of Energy (DOE), conducted a very aggressive and beneficial program in nuclear science and engineering education to ensure that a properly educated and trained nuclear workforce would always be available for the future needs of the nuclear industry, universities, national laboratories and government. By 2007, the DOE program changed creating a temporary void in the area of Federal support for nuclear education and training.

In the face of this programmatic change at the DOE, the Congress determined that this type of nuclear education program was beneficial to the current and future energy health of the Nation and, therefore, funding was provided to the Nuclear Regulatory Commission to “develop a workforce capable of the design, construction, operation and regulation of nuclear facilities and the safe handling of nuclear materials.” To this end, funds were provided for undergraduate scholarships and graduate fellowships, faculty development, curriculum development and trade school and community college scholarships to benefit, not solely the NRC, but rather the nuclear sector broadly. A total of \$20 million is available annually to conduct these programs.

After three plus years of grants, the program can claim to have supported hundreds, perhaps thousands, of students and faculty as well as supporting hundreds of new nuclear and nuclear-related courses. Over 300 grants have been awarded in 33 states, Puerto Rico and DC. The continued need for the program seems clear as it continues to be a catalyst for enabling other entities to support nuclear education because the NRC continues to fund it. And while the DOE nuclear education program is now quite vibrant, the NRC grant program remains important as it differs from other Federal agency programs in that it supports two-year trade schools and community colleges in the trade and craft areas, rewards institutions that partner and cost share, requires participating students to sign service agreements to work in the nuclear sector in exchange for funding support, makes grants directly to universities instead of individual students and works with two-year institutions who are members of the Nuclear Energy Institutes' Nuclear Uniform Curriculum Program to develop much needed technicians for nuclear plants.

Since the mid-1990's, there has been a tremendous growth in the number of students pursuing a nuclear engineering career. This has been made possible by funding from Federal agencies, the promising job market brought about by the aging workforce, and the prospect of new plants being built in the U.S. and around the world. The NRC program not only supports nuclear engineering but other disciplines as well, including health physics and radiochemistry. These latter two disciplines are receiving increased attention from the NRC grant program as they are not as student-rich as nuclear engineering. NRC has also focused on supporting these disciplines at minority serving institutions building upon the very successful program begun by the DOE Office of Nuclear Energy almost a decade ago.

NRC has recently added program metrics to its grant program to better measure the results of its grants. These metrics, along with an ongoing DOE study of the current and needed nuclear workforce, should enable the Commission to redirect its future resources as necessary. Overall, while seemingly very effective to date based upon feedback received, the NRC program remains limited in what it can do as the scope of its mandate is fairly narrow focusing on the four grant areas mentioned above.