



HEALTH PHYSICS SOCIETY

Specialists in Radiation Safety

**PUBLIC WITNESS TESTIMONY by the HEALTH PHYSICS SOCIETY and
HEALTH PHYSICS PROGRAM DIRECTORS ORGANIZATION for the
SENATE APPROPRIATIONS SUBCOMMITTEE on ENERGY and WATER
DEVELOPMENT regarding the NUCLEAR REGULATORY COMMISSION**

This written testimony for the record for fiscal year 2009 requests reinstatement of funding for the Nuclear Education program appropriated to the Nuclear Regulatory Commission (NRC) in fiscal year 2008 to include at least \$1,500,000 for support of health physics programs, students, and faculty. This support is necessary to address the shortage of health physicists, which is an issue of extreme importance to the safety of our nation's workers, members of the public, and our environment. As explained below, justification by the Office of Management and Budget (OMB) to rescind the NRC Nuclear Education program is not applicable to the health physics academic programs.

Health Physics is the profession that specializes in radiation safety, which is necessary for the safe and successful operation of the nation's **energy, healthcare, homeland security, defense, and environmental protection** programs. Although radiation safety is fundamental to each of these vital national programs, there is no single federal agency that serves as a home and champion for the health physics profession as this profession cuts across all these sectors. However, health physics is **necessary** for all these sectors to exist as it supports the principle disciplines in these programs that are championed by multiple federal agencies, such as engineers, medical professionals, law enforcement professionals, military personnel, and environmental scientists.

As the nation's development and use of radioactive materials grew following the end of World War II, the nation's demand for health physicists increased in the areas of energy, defense, public health, and environmental protection. This need was mainly supported by student fellowships and scholarships from the Atomic Energy Agency (energy and defense) and Public Health Service (public health and environmental protection). However, over the years agencies and their missions changed, the nuclear power industry faltered and the Department of Energy (DOE) nuclear weapons complex downsized following the end of the cold war. This resulted in the academic program support from federal agencies dwindling until the last remaining support from DOE was terminated in FY99. With this dwindling support, the supply of new health physicists declined and the age of the existing health physics workforce increased despite the continued need for health physicists in energy, defense, public health, and environmental protection programs as well as an exponential growth in the medical and academic community. Due to these circumstances a human capital crisis was created in health physics.

As the health physics human capital crisis grew and loomed in the early years of the 21st century, Congress and the DOE took action to add support to the nuclear engineering academic programs through DOE programs in the Office of Nuclear Energy (NE) and eventually agreed that this was an appropriate support mechanism for the health physics academic program. In fiscal year 2005, just 4 years ago, Congress appropriated money to DOE-NE for a health physics fellowship and scholarship program as part of the *University Reactor Fuel Assistance and Support* budget item. Shortly thereafter, Congress reinforced

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its position that DOE needed to support the health physics academic programs in provisions of Section 954 of the Energy Policy Act of 2005. Despite the fact that the need for an increased supply of health physics professionals continued to exist, the DOE ceased funding the Congressionally authorized DOE-NE health physics fellowship and scholarship program after only two fiscal years of funding the programs at minimal levels.

In fiscal year 2008, Congress transferred appropriations for a Nuclear Education program, including health physics programs, to the NRC. The Health Physics Society (HPS) applauds this insightful action. The NRC does have a vested interest in the radiation safety associated with most of the sectors covered by the health physics profession. Although the NRC quickly addressed the demands of starting a new education support program by opening two grant opportunities for student and faculty support, the Administration has not included continuation of the program in their budget for fiscal year 2009.

The OMB has provided a justification for rescission of the Nuclear Education program. This OMB assessment is patently wrong with regards to health physics programs.

The OMB states “. . . target levels for the undergraduate enrollment have been met . . .” and “Since the 1990s, enrollment levels in nuclear education programs have tripled . . .”

Specific to “target levels,” since DOE has only funded health physics programs for 2 years, they have never established “target levels” for health physics program enrollments nor has there been time to assess the effect of those 2 years of funding on health physics program enrollments. The DOE-NE HP fellowship and scholarship program thus far has **provided 3 graduate fellowships** in FY06 and **0 undergraduate scholarships**. In 2004, the HPPDO developed a plan for revitalizing the academic programs to a level that could meet the projected shortfall of health physicists. The Health Physics Program Directors Organization (HPPDO) plan calls for an initial target of **20 graduate fellowships** and **20 undergraduate scholarships**, i.e., target levels well above the actual performance of the Nuclear Education Programs.

In addition, the HPS does not feel that undergraduate levels are an appropriate metric to measure the success of an academic program. Undergraduate levels are not viewed significant by university Deans looking to justify graduate programs at the Masters and Doctorate level. Furthermore, university administrators will not commit to replacing an increasingly large number of retiring health physics faculty unless the federal government demonstrates its commitment to investing in the research and academic health physics infrastructure necessary to support new faculty hires in this vital profession.

The OMB justification also states “. . . and the number of universities offering nuclear-related programs also has increased.” Actually, the number of health physics programs graduating at least 5 students annually decreased from 20 programs in 1995 to less than half that number in 2005, which belies the OMB statement.

We find the OMB justification ignores the value of federal long-term investment in academic infrastructure and ignores the value of professional radiation safety professionals to the successful protection of workers, members of the public, and the environment while benefiting from the use of nuclear technologies.

We consider it would take approximately \$1,000,000 to get to the HPPDO plan of 20 fellowships and 20 scholarships in health physics. In addition, funding of \$500,000 should allow for up to two young faculty members in health physics academic programs to receive grant support at the level offered by the NRC FY08 grant opportunities. Considering the DOE budgets for the HP Fellowship and Scholarship programs for FY05 and FY06 combined have totaled \$500,000 and only produced 3 fellowships, we feel this request is very modest while we recognize it will not begin to provide the long term support that will eventually be required if we are to have enough safety professionals for our **energy, healthcare, homeland security, defense, and environmental protection** programs. However, it will go a long way to help building the student and faculty infrastructure needed to reach this goal.

The Committee's favorable consideration of this request will help meet our nation's radiation safety needs of the future.

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