U.S. Department of Energy
and the
National Science Foundation

March 4, 2003

Professor Richard F. Casten
Chairman
DOE/NSF Nuclear Science Advisory Committee
Wright Nuclear Structure Laboratory

Yale University
New Haven, CT 06520

Dear Professor Casten:

With this letter the National Science Foundation (NSF) and Department of Energy (DOE) request that the Nuclear Science Advisory Committee (NSAC) provide guidance beyond its recommendations in the most recent Long Range Plan with respect to three specific issues of interest to the agencies.

(1) NSAC is asked to do an assessment of how the present NSF and DOE educational investments relevant to nuclear science are being made and to identify key strategies for preparing future generations of nuclear physicists and chemists.

Education of young scientists is integral to any vision of the future of the scientific field and the nation's nuclear-related activities. It is an important responsibility for both agencies. A substantial fraction of the agencies' research funds is used for support of students at the undergraduate and graduate levels and junior scientists at the postdoctoral level. It is important that these investments be made in an optimal way. Your assessment should take into account such factors as: the necessary qualifications and skills of nuclear scientists and their roles in the public and private sectors; the annual number of Ph.D. degrees presently awarded; the number projected as needed in the future to maintain a world-leadership role in fundamental research and also to meet the nation's needs in applied areas such as nuclear medicine and national security; and the present and projected demographics of nuclear scientists, including the participation of women and under-represented minorities.

Your report should document the status and effectiveness of the present educational activities, articulate the projected need for trained nuclear scientists, identify strategies for meeting these needs, and recommend possible improvements or changes in NSF and DOE practices. Your report should also identify ways in which the nuclear science community can leverage its capabilities to address areas of national need regarding K-12 education and public outreach. We request that an interim report be submitted by September 2003 and a written report responsive to this charge be provided by November 2003.

(2) NSAC is asked to review and evaluate current NSF and DOE supported efforts in nuclear theory and identify strategic plans to ensure a strong U.S. nuclear theory program under various funding scenarios.

. . . .

(3) NSAC is requested to review and evaluate the current and proposed scientific capabilities for fundamental nuclear physics with neutrons and make recommendations of priorities consistent with projected resources.

. . . .

Thank you very much in advance for your efforts on these important issues.

Sincerely,

John B. Hunt
Acting Assistant Director
Directorate for Mathematical and Physical Sciences
National Science Foundation

Raymond L. Orbach
Director
Office of Science
Department of Energy