



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



September 24, 1998

Professor Konrad Gelbke
Chairman
DOE/NSF Nuclear Science Advisory Committee
Michigan State University
East Lansing, MI 48824

Dear Professor Gelbke:

This letter requests that the DOE/NSF Nuclear Science Advisory Committee (NSAC) establish a task force to perform a technical study and evaluation of the options for a next-generation facility in the United States for beams of radioactive nuclei, based on the Isotope-Separator-On-Line (ISOL) technique.

The 1996 NSAC Long Range Plan identified the scientific opportunities made available by the development of radioactive beam facilities to be very compelling. The plan strongly recommended: (1) the immediate upgrade of the National Superconducting Cyclotron Laboratory at Michigan State University (MSU) and (2) the development of a cost-effective plan for a next-generation ISOL-type facility. The upgrade of the MSU Facility has been approved by the NSF and construction is well underway. With DOE support, considerable progress has been made on the development of possible designs for facilities that could address the scientific opportunities envisioned for a next-generation ISOL facility. The options incorporated into these designs differ significantly. DOE believes that the next step toward a national next-generation ISOL facility is to evaluate the feasibility, cost-effectiveness, and capabilities of the proposed technical options.

The task force should provide a technical analysis of the various options for subsystems of such a new facility for a research program along the lines indicated by the benchmark experiments outlined in the 1997 physics report: "Scientific Opportunities with an Advanced ISOL Facility." It should assess the advantages and disadvantages of these options, utilizing the current state of knowledge around the world. Preferred technologies should be identified, where possible, and, priorities and needs for R&D should be identified. Consideration should be given to the maximum effective use of U.S. accelerator facilities, of major detector facilities, and of technical expertise. The result of this study should point toward the best options for a truly forefront facility that can be constructed and that is likely to produce the optimal scientific returns in a cost-effective manner.

We envision the task force to be operational for approximately one year. However, an interim report is requested after approximately 6 months (April 1999) which will provide some guidance for developing realistic budget projections and time lines for the project. The interim report should include an evaluation of the technical aspects of proposed facility options, identification of areas of maximum technical or cost uncertainty, and a prioritization of R&D areas identified. A final detailed report is expected in October 1999.

Sincerely,



Robert Eisenstein
Assistant Director
Mathematical and Physical Sciences
National Science Foundation



Martha A. Krebs
Director
Office of Energy Research
U.S. Department of Energy