Department of Energy
Washington, DC 20585

August 8, 2008

Professor Robert E. Tribble
Chair, DOE/NSF Nuclear Science Advisory Committee
Cyclotron Institute
Texas A&M University
College Station, TX 77843

Dear Professor Tribble:

The Fiscal Year (FY) 2009 President's Request Budget proposes to transfer the Isotope Production Program from the Department of Energy (DOE) Office of Nuclear Energy to the Office of Science's Office of Nuclear Physics, and rename it the Isotope Production and Applications Program. In preparation for this transfer, this letter requests that the Nuclear Science Advisory Committee (NSAC) establish a standing committee, the NSAC Isotope (NSACI) sub-committee, to advise the DOE Office of Nuclear Physics on specific questions concerning the National Isotope Production and Applications (NIPA) Program. NSACI will be constituted for a period of two years as a subcommittee of NSAC. It will report to the DOE through NSAC who will consider its recommendations for approval and transmittal to the DOE.

Stable and radioactive isotopes play an important role in basic research and applied programs, and are vital to the mission of many Federal agencies. Hundreds of applications in medicine, industry, national security, defense and research depend on isotopes as essential components. Over the years, individual communities and Federal agencies have conducted their own studies, identifying their needs in terms of isotope production and availability. Most recently, the DOE Office of Nuclear Energy and the Office of Science's Office of Nuclear Physics organized a workshop to bring together stakeholders (users and producers) from the different communities and disciplines to discuss the Nation's current and future needs for stable and radioactive isotopes, as well as technical hurdles and viable options for improving the availability of those isotopes.

The next step is to establish the priority of research isotope production and development, and the formation of a strategic plan for the NIPA Program, in which we expect NSACI to play a vital role. The NIPA's products and services are sold world-wide both to researchers and commercial organizations. The NIPA produces isotopes only where there is no U.S. private sector capability or when other production capacity is insufficient to meet U.S. needs. Commercial isotope production is on a full-cost recovery basis. The following two charges are posed to the NSAC subcommittee:

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Charge 1:

As part of the NIPA Program, the FY 2009 President's Request includes $3,090,000 for the technical development and production of critical isotopes needed by the broad U.S. community for research purposes.

NSACI is requested to consider broad community input regarding how research isotopes are used and to identify compelling research opportunities using isotopes.

The subcommittee's response to this charge should include the identification and prioritization of the research opportunities; identification of the stable and radioactive isotopes that are needed to realize these opportunities, including estimated quantity and purity; technical options for producing each isotope; and the research and development efforts associated with the production of the isotope. Timely recommendations from NSACI will be important in order to initiate this program in FY 2009; for this reason an interim report is requested by January 31, 2009, and a final report by April 1, 2009.

Charge 2:

The NIPA Program provides the facilities and capabilities for the production of research and commercial stable and radioactive isotopes, the scientific and technical staff associated with general isotope development and production, and a supply of critical isotopes to address the needs of the Nation. NSACI is requested to conduct a study of the opportunities and priorities for ensuring a robust national program in isotope production and development, and to recommend a long-term strategic plan that will provide a framework for a coordinated implementation of the NIPA Program over the next decade.

The strategic plan should articulate the scope, the current status and impact of the NIPA Program on the isotope needs of the Nation, and scientific and technical challenges of isotope production today in meeting the projected national needs. It should identify and prioritize the most compelling opportunities for the U.S. program to pursue over the next decade, and articulate their impact.

A coordinated national strategy for the use of existing and planned capabilities, both domestic and international, and the rationale and priority for new investments should be articulated under a constant level of effort budget, and then an optimal budget. To be most helpful, the plan should indicate what resources would be required, including construction of new facilities, to sustain a domestic supply of critical isotopes for the United States, and review the impacts and associated priorities if the funding available is at a constant level of effort (FY 2009 President's Request Budget) into the out-years (FY 2009 – FY 2018). Investments in new capabilities dedicated for commercial isotope production should be considered, identified and prioritized, but should be kept separate from the strategic exercises focused on the remainder of the NIPA Program.

An important aspect of the plan should be the consideration of the robustness of current isotope production operations within the NIPA program, in terms of technical capabilities and infrastructure, research and development of production techniques of research and commercial isotopes, support for production of research isotopes, and current levels of scientific and technical staff supported by the NIPA Program. We request that you submit an interim report containing the essential components of NSACI's recommendation to the DOE by April 1, 2009, and followed by a final report by July 31, 2009.

These reports provide an excellent opportunity for the Nuclear Physics program to inform the public about an important new facet of its role in the everyday life of citizens, in addition to the role of performing fundamental research. We appreciate NSAC's willingness to take on this important task, and look forward to receiving these vital reports.

Sincerely,

Jehanne Simon-Gillo
Acting Associate Director of the Office of Science
for Nuclear Physics