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## Plan Overview

*A Data Management Plan created using DMPTool*

**Title:** Characterization and Shaping of the IPF Secondary-Neutron Spectrum

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**Template:** Department of Energy (DOE): Office of Science

### **Project abstract:**

A significant, useful flux of secondary neutrons is currently underutilized at the Los Alamos Isotope Production Facility (IPF). Work is proposed here to develop this secondary-neutron flux into a production-quality beam by thoroughly characterizing both its spectral and spatial distributions through a combination of particle-transport modeling and experiments at IPF and the Weapons Neutron Research (WNR) facility. Further, this work will seek to shape the secondary neutron flux by investigating the effect of physical geometry and insertion of “control materials” on the neutron population behind various production target stacks. The investigations proposed by this work will be crucial to the understanding of the spatial and spectral control of high-energy secondary-neutron fluxes for accelerator-based isotope production applications. The results of this study will determine whether the use of control materials will facilitate improved utilization of the existing neutron flux, resulting in higher product yields as well as allowing for the tuning of the energy spectrum to reduce unwanted byproducts in the targets.

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### **Copyright information:**

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# Characterization and Shaping of the IPF Secondary-Neutron Spectrum

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## 1. Data sharing and preservation

Data management plans should describe whether and how data generated in the course of the proposed research will be [shared](#) and [preserved](#). If the plan is not to share and/or preserve certain data, then the plan must explain the basis of the decision (for example, cost/benefit considerations, other parameters of feasibility, scientific appropriateness, or limitations discussed in #4). At a minimum, DMPs must describe how data sharing and preservation will enable [validation](#) of results, or how results could be validated if data are not shared or preserved.

Data will be generated using various experimental techniques as well as theoretical calculations and simulations. The results of these investigations will be published in peer-reviewed scientific and technical journals. It will be made available to other researchers on request and to students and postdocs for further analysis and validation. Data will not include any trade secrets.

## 2. Data used in publications

Data management plans should provide a plan for making all research data displayed in publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be made as accessible as possible to the public in accordance with the [Principles](#) published in the DOE Policy for Digital Research Data Management. The published article should indicate how these data can be accessed.

To the extent possible, all data used in the figures and analysis will be included in the publications. Additional data will be made available upon request on an individual basis.

## 3. Data management resources

Data management plans should consult and reference available information about data management resources to be used in the course of the proposed research. In particular, DMPs that explicitly or implicitly commit data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management at DOE Scientific User Facilities, researchers should consult the published [description of data management resources](#) and practices at that facility and reference it in the DMP. Information about other Office of Science facilities can be found in the [additional guidance from the sponsoring program](#).

The raw and processed data will be archived on local and institutional storage facilities.

## 4. Confidentiality, security and rights

Data management plans must protect confidentiality, personal privacy, [Personally Identifiable Information](#) and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation and U.S. competitiveness; and otherwise be consistent with all applicable laws, regulations, agreement terms and conditions, and DOE orders and policies. There is no requirement to share proprietary data.

The data generated will not contain PIO or compromise U.S. national, homeland, and economic security. It will recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all applicable laws, regulations, and DOE orders and policies. We will go through the internal LANL review process for all data released.