

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 6, 2026

TO: Technical Director
FROM: Sandia National Laboratories (SNL) Cognizant Engineer
SUBJECT: SNL Report for January 2026

Defense Nuclear Facilities Safety Board (DNFSB) Staff Interactions: On January 8, 2026, the DNFSB staff held a teleconference with personnel from National Technology and Engineering Solutions of Sandia, LLC (NTESS) and the NNSA Sandia Field Office (SFO) to discuss preliminary observations from the DNFSB staff's ongoing review of the fuel health program for the Annular Core Research Reactor (ACRR) facility. On January 27, 2026, the DNFSB staff held a teleconference with NTESS and SFO personnel to discuss the DNFSB staff's ongoing review of safety documentation for the Combined Radiation Environments for Survivability Testing project.

Safety Basis: This month, SFO issued a Safety Evaluation Report addendum approving NTESS's 2025 annual update to the ACRR safety basis. Annual updates, such as this one, typically incorporate the results of any recent unreviewed safety question determinations, potential inadequacies of the safety analysis, or other routine items. This annual update also includes several other important changes.

First, the annual update changes thresholds for the material-at-risk (MAR) for an individual experiment (i.e., the components and systems intentionally subjected to irradiation in one of ACRR's cavities or other locations). MAR is used to determine potential dose consequences and classify and credit safety controls; at ACRR, these thresholds are used to determine the level of confinement credited for and designed into experiments (e.g., safety class or safety significant). This update lowered the amount of plutonium-239 (or equivalent) that a single experiment may have before safety-class confinement is required.

Second, the update removes fission product inventory from MAR calculations for experiments. Previous versions of the safety basis assumed that any experiment being conducted at ACRR could have as much MAR as the overall ACRR facility limit; however, this would mean that fission products created during irradiation of the experiment itself could potentially be additive and exceed the facility MAR limit. While this assumption was conservative, DOE safety basis standards only require analysis within the administratively controlled facility MAR limit.

Third, this annual update incorporates information gained from computed tomography imaging that NTESS personnel performed on fuel elements (see SNL report for November 2024). Results of that imaging drove them to reevaluate facility worker consequences for several potential accidents, such as certain impact scenarios and natural phenomena, and revise the hazards analysis accordingly. While there were some changes to the worker consequence analysis, the revisions did not result in the need for any new safety controls not already credited elsewhere in the safety basis.