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**DEFENSE NUCLEAR FACILITIES
SAFETY BOARD**

Washington, DC 20004-2901



December 5, 2019

The Honorable Dan Brouillette
Secretary of Energy
US Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Brouillette:

On October 28, 2019, we received the briefing offered by the Department of Energy regarding its rejection of Recommendation 2019-2, *Safety of the Savannah River Site Tritium Facilities*. At the briefing, DOE representatives reiterated the information from DOE's letter dated September 10, 2019, but did not dispute our technical analysis. There was no new substantive information provided in the briefing. Consequently, our concerns have not diminished, and we are reaffirming Recommendation 2019-2.

We are concerned that the Tritium Facilities have several analyzed credible accidents that could result in very high dose consequences to a significant number of workers. DOE validated at the public meeting that calculated worker dose consequences for some postulated accident scenarios exceed 6000 rem total effective dose. These calculated dose consequences significantly exceed the thresholds in DOE's current directives that would drive the need for additional credited safety controls (i.e., controls with increased assurance of performing a safety function) beyond safety management programs. Recommendation 2019-2 identified the need to execute both near-term and long-term actions to reduce the risks posed by these accident scenarios and the need for DOE to evaluate its emergency response capabilities.

In our opinion, DOE's basis for rejecting Recommendation 2019-2 is a difference in judgment regarding what constitutes adequate protection; DOE's judgment relies on the existence of uncredited controls and safety management programs. We conclude that DOE's staff is interpreting DOE standards in a way that allows the Tritium Facilities to have accident scenarios that result in very high dose consequences to its workers without additional credited safety controls. Such an interpretation is inconsistent with the safety approach used for high hazard facilities across the DOE complex that relies on credited safety controls in conjunction with robust safety management programs to protect against design basis accidents for workers and the offsite public.

The circumstances surrounding DOE's decision to reject Recommendation 2019-2 may relate to the fact that the potential harm is largely to onsite workers. Under the Atomic Energy

Act (AEA), the Board's jurisdiction includes workers at DOE facilities. Contrary to the AEA, DOE Order 140.1, *Interface with the Defense Nuclear Facilities Safety Board*, attempts to exempt onsite individuals and workers from our oversight. DOE confirmed this at the August 28, 2018, public hearing regarding Order 140.1. At the hearing, the Associate Under Secretary for Environment, Health, Safety and Security, stated that DOE may reject a formal recommendation regarding the Tritium Facilities concerning worker health and safety.

In rejecting Recommendation 2019-2, DOE presented several actions and plans in its September 10, 2019, letter and during the briefing on October 28, 2019, as addressing our concerns. We acknowledge that these ongoing and planned actions are aimed at addressing issues identified in Recommendation 2019-2. However, we are concerned these actions will not, in the near-term or long-term, fully address the high consequences to workers. Further, we do not agree that ongoing actions and plans obviate the need for Recommendation 2019-2.

In preparing Recommendation 2019-2, we considered these actions and plans, including the new safety basis, defense-in-depth controls, safety management programs, the contractor's proposed strategy, and the potential for a new facility (i.e., the Tritium Finishing Facility) to replace the H-Area Old Manufacturing Facility. After considering the actions and plans DOE has presented, we have concluded that: (1) even if all the plans are completed, these plans have not been shown to reduce the risk of credible accident scenarios to acceptably low values; (2) several of the plans are contractor products and DOE has not committed to executing the plans and actions; and (3) many of the plans are not expected to be completed for years (or over a decade, in the case of the new Tritium Finishing Facility), with no new compensatory measures identified in the interim.

Board Recommendations are the tool by which we communicate our most pressing concerns regarding public health and safety. DOE has rejected Recommendation 2019-2 despite presenting several new and ongoing actions to address our concerns. Without accepting Recommendation 2019-2 and developing an implementation plan, DOE's improvement plans are not transparent to the public; avoid formal scrutiny and accountability; and are inconsistent with its own safety standards.

In accordance with 42 USC § 2286d(e), following the rejection of a recommendation, the Board "shall either reaffirm its original recommendation or make a revised recommendation and shall notify the Secretary of its action." We hereby reaffirm Recommendation 2019-2.

Yours truly,



Bruce Hamilton
Chairman

c: The Honorable Lisa E. Gordon-Hagerty
Mr. Joe Olencz