

Joyce L. Connery, Chairman  
Thomas A. Summers, Vice Chairman  
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## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Washington, DC 20004-2901



January 22, 2021

The Honorable David G. Huizenga  
Acting Secretary of Energy  
US Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Acting Secretary Huizenga:

On March 4, 2020, the Defense Nuclear Facilities Safety Board informed DOE that the Board had selected several standards to review in fiscal year 2020. Below is a summary of the standards reviews that the Board conducted in fiscal year 2020.

- **DOE Standard 1027-2018 Change Notice 1, Hazard Categorization of DOE Nuclear Facilities**—The Board issued a January 19, 2021, letter to the Secretary of Energy identifying concerns with this standard as well as two other standards that DOE allows its contractors to use when performing nuclear facility hazard categorization. The other two standards are: (1) DOE Standard 1027-92 Change Notice 1, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*, and (2) National Nuclear Security Administration's Supplemental Directive 1027 Admin Change 1, *Guidance on Using Release Fraction and Modern Dosimetric Information Consistently with DOE-STD-1027-92*. These concerns include deficiencies and inconsistencies with the three standards, which may lead to inappropriate facility hazard categorization across the complex. The Board will follow any DOE actions that result from this letter.
- **Draft DOE Standard 5506, Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities**—This standard provides assumptions, methods, and hazard controls to be used when developing safety basis documents for TRU waste facilities in the DOE complex. The Board sent a letter to DOE on January 29, 2020, documenting its most pressing concerns related to the standard. The Board issued Technical Report, DNFSB/TECH-46, *Potential Energetic Chemical Reaction Events Involving Transuranic Waste at Los Alamos National Laboratory*, in a letter to the Secretary of Energy on September 24, 2020, regarding the need to revise DOE Standard 5506. DOE is currently revising the standard, and the Board's staff provided comments to DOE in July 2020 on the May 2020 version of the draft standard. The Board's staff met with DOE personnel on several occasions to discuss its comments, and will continue the effort in fiscal year 2021.

- **DOE Handbook 3010-94**, *Airborne Release Fractions/Rates and Respirable Fractions for Nonreactor Nuclear Facilities*—This standard provides a systematic compilation of airborne release and respirable fraction experimental data for nonreactor nuclear facilities in the DOE complex. In 2020, the Board’s staff began reviewing the information in the handbook, some of which may be outdated. DOE personnel have indicated that they are revising select portions of the handbook, which should be available to the Board for comment in fiscal year 2021.
- **DOE Standard 1228-2019**, *Preparation of Documented Safety Analysis for Hazard Category 3 DOE Nuclear Facilities*—The Board’s staff began a review of this new DOE standard in 2020, and will continue its review into fiscal year 2021.
- **DOE Guide 423.1-1B**, *Implementation Guide for Use in Developing Technical Safety Requirements (TSR)*; **DOE Standard 1186-2016**, *Specific Administrative Controls*; and **DOE Order 232.2A**, *Occurrence Reporting and Processing of Operations Information*—The Board reviewed the implementation of these standards during its complex-wide analysis of TSR violations. The Board issued Technical Report, DNFSB/TECH-45, *Violations of the Nuclear Safety Basis*, in a letter to the Secretary of Energy on August 7, 2020, documenting the results of this review. The Board will follow any DOE actions that address the identified safety items.
- **DOE Order 226.1B**, *Implementation of Department of Energy Oversight Policy*; **DOE Order 426.1A**, *Federal Technical Capability Program*; and **DOE Order 426.2**, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*—The Board began reviewing the implementation of these standards in 2020 as part of its review of DOE oversight effectiveness. Due to travel restrictions of its staff to the DOE sites during the pandemic, the Board has postponed this effort until fiscal year 2021, but is reviewing site data through its normal resident inspector activities.
- **Draft DOE Order 452.2F**, *Nuclear Explosive Safety*—The Board’s staff reviewed the draft revision of this Order, and provided comments to DOE in March 2020. DOE incorporated these comments in the revised Order issued in July 2020.
- **Draft DOE Standard 1234**, *Nuclear Material Packaging*—The Board’s staff reviewed the development of this new standard. In May 2020, the Board’s staff provided comments to DOE on the March 2020 version of the draft standard. DOE has indicated that it will incorporate these comments when the standard is issued.
- **Draft DOE Standard 1195**, *Design of Safety Significant Safety Instrumented Systems Used at DOE Nonreactor Nuclear Facilities*—The Board’s staff reviewed the draft revision of this standard, and provided comments to DOE in June 2020. The staff will continue the effort in fiscal year 2021.

- **Draft DOE Standard 1269**, *Air Cleaning Systems in DOE Nuclear Facilities*, and **draft DOE Handbook 1169**, *Handbook for Use with DOE-STD-1269*—The Board’s staff reviewed the development of a new standard and the revision of the associated nuclear air cleaning handbook. In September 2020, the Board’s staff provided comments to DOE on the July 2020 version of the draft standard and handbook. The staff will continue the effort in fiscal year 2021.

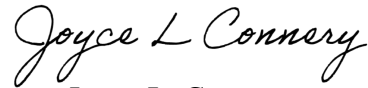
In determining which DOE standards and their implementations to review in fiscal year 2021, the Board has considered those that are planned for revision, those that have complex-wide effects, and those that establish controls for high-hazard activities. The Board has selected the following standards to review:

- **Draft DOE Standard 5506**, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*,
- **DOE Handbook 3010-94**, *Airborne Release Fractions/Rates and Respirable Fractions for Nonreactor Nuclear Facilities*,
- **DOE Standard 1228-2019**, *Preparation of Documented Safety Analysis for Hazard Category 3 DOE Nuclear Facilities*,
- **DOE Order 226.1B**, *Implementation of Department of Energy Oversight Policy*,
- **DOE Order 426.1A**, *Federal Technical Capability Program*,
- **DOE Order 426.2**, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*,
- **DOE Guide 424.1-1B**, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements*,
- **Draft DOE Handbook 1224**, *Hazard and Accident Analysis Handbook*,
- **Draft DOE Order 425.1**, *Verification of Readiness to Start Up or Restart Nuclear Facilities*,
- **Draft DOE Standard 1020**, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*,
- **Draft DOE Standard 1066**, *Fire Protection*,
- **Draft DOE Standard 1195**, *Design of Safety Significant Safety Instrumented Systems Used at DOE Nonreactor Nuclear Facilities*,
- **Draft DOE Handbook 1169**, *Handbook for Use with DOE-STD-1269, “Air Cleaning Systems in DOE Nuclear Facilities,”*

- **Draft DOE Standard 1269**, *Air Cleaning Systems in DOE Nuclear Facilities*, and
- **Draft DOE handbook replacing EH-0545**, *Seismic Evaluation Procedure for Equipment in U.S. Department of Energy Facilities*.

The Board may elect to add or change reviews of DOE standards as it deems appropriate.

Sincerely,

A handwritten signature in cursive script that reads "Joyce L. Connery".

Joyce L. Connery  
Chair

c: Mr. Joe Olencz