DEFENSE NUCLEAR FACILITIES SAFETY BOARD

Public Meeting on Board Recommendation 2020-1, *Nuclear Safety Requirements*

Acronyms

10 CFR 830	Code of Federal Regulations, Title 10 Part 830, *Nuclear Safety Management*
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DOE-STD-1027	DOE Standard 1027, *Hazard Categorization of DOE Nuclear Facilities*
DSA	Documented Safety Analysis
ECFWG	Excess Contaminated Facilities Working Group
ESS	Evaluation of the Safety of the Situation
FISC	Facilities and Infrastructure Steering Committee
IAEA	International Atomic Energy Agency
IEC	Infrastructure Executive Committee
JCO	Justification for Continued Operation
LOB	Laboratory Operations Board
NDAA	National Defense Authorization Act
NNSA	National Nuclear Security Administration
NNSA SD 1027	NNSA Supplemental Directive 1027, *Guidance on Using Release Fraction and Modern Dosimetric Information Consistently with DOE STD 1027-92*
NRC	Nuclear Regulatory Commission
PISA	Potential Inadequacy of the Safety Analysis
SAC	Specific Administrative Control
SRPO	Senior Real Property Officer
TQ	Threshold Quantity
TSR	Technical Safety Requirement
USQ	Unreviewed Safety Question

Definitions

10 CFR 830: Federal rule on nuclear safety management at DOE nuclear facilities. It includes requirements for documented safety analyses and identifies safe harbors (i.e., methods to meet those requirements).

Administrative Control: Safety controls or measures that rely on worker actions as opposed to engineered systems, structures, and components.

Causal Analysis: A process used to analyze an incident and determine the actual factors that caused the incident, thus identifying which factors if corrected would prevent the recurrence of the incident. (*DOE Manual 450.4-1*)

Defense Nuclear Facility: As it pertains to the DNFSB, a term that means any of the following:

> (1) A production facility or utilization facility (as defined in 42 U.S.C. §2014 [§ 11 of the Atomic Energy Act]) that is under the control or jurisdiction of the Secretary of Energy and that is operated for national security purposes, but the term does not include—
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> > (a) Any facility or activity covered by Executive Order No. 12344, dated February 1, 1982 [50 U.S.C. § 2511 note], pertaining to the Naval nuclear propulsion program;
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> > (b) Any facility or activity involved with the transportation of nuclear explosives or nuclear material;
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> > (c) Any facility that does not conduct atomic energy defense activities; or
> >
> > (d) Any facility owned by the United States Enrichment Corporation.
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> (2) A nuclear waste storage facility under the control or jurisdiction of the Secretary of Energy, but the term does not include a facility developed pursuant to the Nuclear Waste Policy Act of 1982 (42 U.S.C. 10101 et seq.) and licensed by the Nuclear Regulatory Commission. (*42 U.S.C. § 2286g*)

Documented Safety Analysis: A documented analysis of the extent to which a nuclear facility can be operated safely with respect to workers, the public, and the environment, including a description of the conditions, safe boundaries, and hazard controls that provide the basis for ensuring safety. (*10 CFR 830*)

Evaluation of the Safety of the Situation: A document developed by DOE contractors after declaring that a PISA exists. After declaring a PISA, the contractor takes action, as appropriate, to place or maintain the facility in a safe condition, and completes a USQ determination. If a USQ determination is negative, the ESS should provide evidence that the immediate controls placed on the facility or activity to ensure a safe condition are not required and can be removed. If the USQ determination is positive, the ESS should provide the basis for how actions taken

(e.g., implementation of operational restrictions) and/or planned actions, ensure safety. (*based on 10 CFR 830 and DOE Guide 424.1-1B*)

Hazard Category: The hazard category is used by DOE to categorize its nuclear facility based on an unmitigated release of available hazardous material. Unmitigated is meant to consider material quantity, form, location, dispersibility, and interaction with available energy sources, but not to consider safety features that will prevent or mitigate the release.

> **Hazard Category 1—**The hazard analysis for the facility shows significant off-site consequences (e.g., Category A reactors).
>
> **Hazard Category 2—**The hazard analysis for the facility shows the potential for significant on-site consequences based on the quantity of material-at-risk and potential for criticality accidents.
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> **Hazard Category 3—**The hazard analysis for the facility shows the potential for significant by localized consequences based on the quantity of material-at-risk.
>
> **Below Hazard Category 3—**The hazard analysis for the facility shows the potential for consequences less than those that provide a basis for categorization as a hazard category 3 facility. *(DOE Standard 1027-1992, Change Notice 1)*

Justification for Continued Operation: A mechanism by which a contractor may request that DOE review and approve a temporary change to the facility safety basis that would allow the facility to continue operating in view of a specific and unexpected situation, considering the safety significance of the situation and any compensatory measures being applied during this period. (*based on DOE Guide 424.1-1B*)

Potential Inadequacy of the Safety Analysis: A declaration by a DOE contractor that a facility's documented safety analysis may not be bounding or may be otherwise inadequate. Examples of such situations include discrepant as-found conditions, operational events, or the discovery of new information. (*based 10 CFR 830 and DOE Guide 424.1-1B*)

Safety Basis: The documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that adequately protects workers, the public, and the environment. (*10 CFR 830*)

Specific Administrative Control: An administrative control that is identified to prevent or mitigate a hazard or accident scenario and has a safety function that would be safety significant or safety class if the function were provided by a structure, system or component. *(DOE Standard 3009-2014)*

Technical Safety Requirements: The limits, controls, and related actions that establish the specific parameters and requisite actions for the safe operation of a nuclear facility and include, as appropriate for the work and the hazards identified in the documented safety analysis for the facility: Safety limits, operating limits, surveillance requirements, administrative and

management controls, use and application provisions, and design features, as well as a bases appendix. (*10 CFR 830*)

Unreviewed Safety Question: A situation where

(1) The probability of the occurrence or the consequences of an accident or the malfunction of equipment important to safety previously evaluated in the documented safety analysis could be increased;

(2) The possibility of an accident or malfunction of a different type than any evaluated previously in the documented safety analysis could be created; or

(3) The documented safety analysis may not be bounding or may be otherwise inadequate. (*10 CFR 830*)