DEPARTMENT OF ENERGY OFFICE OF GENERAL COUNSEL INTERPRETATION REGARDING THE APPLICATION OF DOE TECHNICAL STANDARD 1027-92, *HAZARD CATEGORIZATION AND ACCIDENT ANALYSIS TECHNIQUES FOR COMPLIANCE WITH DOE ORDER 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS,* UNDER THE PROVISIONS OF 10 C.F.R. § 830.202(b)(3)

In accordance with 10 C.F.R § 820.51, the Department of Energy (DOE) Acting General Counsel is responding to a request to provide an interpretation concerning a DOE Nuclear Safety Requirement: the application of DOE Technical Standard 1027-92, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports* (hereafter "TS 1027" or "Standard"), under the provisions of 10 C.F.R. § 830.202(b)(3). Specifically, the Acting General Counsel was asked:

> Whether it is permissible under 10 C.F.R. Part 830, *Nuclear Safety Management*, to rely on the technical guidance provided in Nuclear Safety Technical Position (NSTP) 2002-2 in order to categorize facilities initially categorized as Hazard Category (hereafter "H.C.") 3 facilities.

For the reasons explained below, the Acting General Counsel determines that it is permissible under 10 C.F.R. Part 830 to use the methodology provided in NSTP 2002-2 to finalize the hazard categorization of facilities initially categorized as H.C. 3 facilities.

Title 10 C.F.R. § 830.202(b)(3) requires DOE contractors responsible for a DOE hazard category 1, 2, or 3 nuclear facility to "[c]ategorize the facility consistent with DOE-STD-1027-92 ('Hazard Categorization and Accident Analysis Techniques for compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports,' Change Notice 1, September 1997)." TS 1027 requires that contractors follow a two-step process to categorize a facility: 1) an initial categorization, based on the quantities of specific radionuclides; and 2) a final categorization based on unmitigated release of all available material. TS 1027 provides for the preliminary categorization of H.C. 2 and 3 facilities by comparing the quantities of specific radionuclides in the facilities to Table A.1, *Thresholds for Radionuclides*. TS 1027 further states that, once the preliminary categorization is done, the hazard categorization can be "finalized," and provides a method for finalizing H.C. 2 facilities. It is not, however, clear that the same method applies to H.C. 3 facilities.

NSTP 2002-2 relies on § 3.1.2 of TS 1027 in specifying a method for finalizing the hazard categorization of H.C. 3 facilities. In fact, it quotes § 3.1.2 almost verbatim in its description of the third method for reducing a facility's or activity's hazard category. TS 1027, § 3.1.2, *Final Hazard Categorization*, states, in pertinent part:

> Once a Hazards Analysis has been performed as defined in Section 4, the hazard categorization can be finalized. The final categorization is based on an "unmitigated release" of available hazardous material. For the purposes of hazard categorization, "unmitigated" is meant to consider material quantity, form, location, dispersibility and interaction with available energy sources, but not to consider safety features (e.g.,

ventilation system, fire suppression, etc.) which will prevent or mitigate a release. The Hazards Analysis (or other existing safety analyses) provides an understanding of the material which can physically be released from the facility. This inventory should be compared against the Threshold Quantities (TQs) identified in Attachment 1.

TS 1027 § 3.1.2 further provides that "for final categorization, for facilities initially classified as Hazard Category 2, if credible release fractions can be shown to be significantly different than these values based on physical and chemical form and available dispersive energy sources, the threshold inventory values for Category 2 in Table A.1 may be divided by the ratio of the maximum potential release fraction found on Page A-9."

Although the Standard does not explicitly authorize adjustment of the H.C. 3 thresholds using alternate release fractions, neither does it explicitly prohibit doing so. The Acting General Counsel concludes that the failure to fully specify the method for finalizing H.C. 3 facilities was a non-preclusive omission. There is nothing in the Standard that suggests that the method for finalizing H.C. 3 facilities should be different from the method described for H.C. 2 facilities. The Standard specifies the method for finalizing H.C. 2 facilities in the same paragraph that allows both types of facilities to be finalized. (*See* § 3.1.2.) The Acting General Counsel has been advised by Department experts that there is no technical reason not to apply a reasonable adjustment of H.C. 3 thresholds based on release of material from a facility initially categorized as H.C. 3, as is specified by the Standard for H.C. 2 facilities and would be allowed by NSTP-2002-2 for H.C. 3 facilities.

Despite the omission noted above, the Standard does provide that "[t]he final categorization [for both H.C. 2 and H.C. 3 facilities] is based on an 'unmitigated release' of available hazardous material. For the purposes of hazard categorization, 'unmitigated' is meant to consider material quantity, form, location, dispersibility and interaction with available energy sources, but not to consider safety features (e.g., ventilation system, fire suppression, etc.) which will prevent or mitigate a release." NSTP 2002-2 is fully consistent with this limited instruction that TS 1027 provides for finalizing both H.C. 2 and H.C. 3 facilities.

NSTP 2002-2 uses the same approach authorized in TS 1027 § 3.1.2 for H.C. 2 facilities, and provides instructions on how to apply this approach to finalize the categorization of H.C. 3 facilities. For the foregoing reasons, the Acting General Counsel concludes that it is permissible under 10 C.F.R. Part 830 and TS 1027 to use the methodology provided in NSTP 2002-2 to categorize facilities whose initial categorizations indicate that they are H.C. 3 facilities. Inherent in this process is the possibility that the analysis may justify categorizing the facility as a radiological facility rather than an H.C. 3 facility.

October 13, 2011