

OE-3: 2023-01

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Implementation of the Unreviewed Safety Question (USQ) Process Following a New Probabilistic Seismic Hazard Analysis (PSHA)

PURPOSE

This Operating Experience Level 3 (OE-3) document is to raise awareness of recently issued guidance regarding the unreviewed safety question (USQ) process following a new probabilistic seismic hazard analysis (PSHA). The OE-3 also provides recommendations for potential action by field organizations that manage Department of Energy (DOE) nuclear facilities and implement a USQ process. The guidance, [Frequently Asked Questions \(FAQ\) Regarding DOE G 424.1-1C, Implementation Guide for Use in Addressing Unreviewed Safety Question Requirement](#), which supports the [Secretary of Energy's November 2, 2022 letter](#) on this topic is available through the DOE Directives portal.

BACKGROUND

On November 2, 2022, the Secretary issued a letter in response to a [Defense Nuclear Facilities Safety Board \(DNFSB\) letter dated June 16, 2022](#), requesting further clarification on the implementation of the USQ process following a probabilistic seismic hazard analysis (PSHA) update. The Secretary's response letter clarifies DOE expectations on timing for entry into the USQ process where a PSHA update identifies an increased seismic hazard that exceeds qualification assumptions for seismic safety controls.

DOE G 424.1-1C, *Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements* ("the Guide"), provides guidance for implementing a USQ process consistent with 10 CFR § 830.203, "Unreviewed safety question

process." Attachment C of the Guide provides "Guidance on Processing Potential Inadequacies of the Documented Safety Analysis (PISA)."

DOE-STD-1020-2016, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*, provides criteria and guidance for meeting the natural phenomena hazard (NPH) requirements of DOE Order (O) 420.1C, Chg. 1, *Facility Safety*, and currently points to the Guide for certain situations when a PISA is identified during NPH assessments.

DISCUSSION

On February 6, 2023, the Office of Nuclear Safety in the Office of Environment, Health, Safety, and Security published an FAQ to provide further USQ process guidance as it applies to a PSHA based on the DOE response letter.

The DOE response letter states, "... when the contractor determines that the increase in hazard identified in the PSHA update is potentially not bounded by the safety analysis, the contractor is required to follow the process in 10 CFR § 830.203(f) because there is a potential inadequacy in the safety analysis."

The FAQ provides clarification regarding the PISA process as it relates to the 10-year NPH review expectations and the expectations after a PSHA is completed. The FAQ also highlights potential difficulties in meeting the Guide's expectations regarding timing for completing USQ Determinations and clarifies expectations regarding the implementation of compensatory controls or operational restrictions.

RECOMMENDATIONS

DOE nuclear facilities that are required to implement a USQ Process should review the published FAQ document, and where applicable, use the information to:

1. Understand DOE's expectations regarding the USQ process guidance as it applies to a new PSHA.
2. Assess DOE's expectations regarding the USQ process and evaluate whether an update to the contractor USQ procedure is warranted.

REFERENCES

[DOE G 424.1-1C, Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements, Frequently Asked Questions](#)

[DOE G 424.1-1C, Implementation Guide for Use in Addressing Unreviewed Safety Question Requirements](#)

[DOE-STD-1020-2016, Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities](#)

[Department November 2, 2022, letter responding to the Board letter of June 16, 2022, on the implementation of the USQ process following a PSHA update as detailed in DNFSB TECH-47, Seismic Hazard Assessments.](#)

Questions regarding this OE-3 document can be directed to the Office of Nuclear Safety (EHSS-30) at NuclearSafety@hq.doe.gov.

This OE-3 document requires no follow-up report or written response.



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