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ADD: John -Chau Nguyen,
Harriet Karagiannis, Bridget
Curran, Mary Neely

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Draft Regulatory Guide: Weather-Related Administrative Controls at Independent Spent Fuel Storage Installations

Comment On: NRC-2023-0107-0001

Draft Regulatory Guide: Weather-Related Administrative Controls at Independent Spent Fuel Storage Installations

Document: NRC-2023-0107-DRAFT-0004

Comment on FR Doc # 2023-11895

Submitter Information

Email: atb@nei.org

Organization: Nuclear Energy Institute

General Comment

See attached file(s)

Attachments

06-29-23_NRC_Comments on DG3057

ROD MCCULLUM*Sr. Director, Decommissioning and Used Fuel*

1201 F Street, NW, Suite 1100
Washington, DC 20004
P: 202.739.8082
rxm@nei.org
nei.org



June 29, 2023

Mr. John-Chau Nguyen
Division of Fuel Management
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: NEI Comments on Draft Regulatory Guide DG-3057 (Docket ID NRC-2023-0107)

Project Number: 689

Dear Mr. Nguyen:

On behalf of its members, the Nuclear Energy Institute (NEI)¹ is providing comments on Draft Regulatory DG-3057 and its endorsement of NEI 22-02, Revision 2, "Guidelines for Weather-Related Administrative Controls for Short Duration Outdoor Dry Cask Storage Operations" (ML22339A035). Issuance of the Regulatory Guide will further strengthen our shared understanding of how licensees can best use administrative controls as one method to demonstrate compliance with the requirements that structures, systems, and components (SSCs) important-to-safety (ITS) are designed to withstand the effects of severe weather without impairing their capability to perform their intended design functions during outdoor dry storage system (DSS) handling activities (ODHA).

Industry's DSS-ODHA activities have been the subject of considerable regulatory uncertainty over the last two years. Inspections during this period identified findings of non-compliance that differed from what industry's understanding of compliance has been since the time the DSS's were originally licensed. Recognizing this, on April 15, 2022, the NRC issued Enforcement Guidance Memorandum (EGM) 22-01, "Enforcement Discretion for Noncompliance of Tornado Hazards Protection Requirements at Independent Spent Fuel Storage Installations," (ML22087A496) to provide guidance to the NRC staff on exercising enforcement discretion while industry and NRC worked to address this uncertainty. The result of the ensuing dialogue was NEI's November 4, 2022, submittal of NEI 22-02, Revision 2.

¹ The Nuclear Energy Institute (NEI) is responsible for establishing unified policy on behalf of its members relating to matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include entities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect and engineering firms, fuel cycle facilities, nuclear materials licensees, and other organizations involved in the nuclear energy industry.

In DG-3057, NRC has endorsed NEI 22-02, Revision 2 with certain clarifications and exceptions – several of which we agree with. NEI has attached detailed comments on these clarifications and exceptions to further strengthen alignment on a stable, predictable, and efficient regulatory framework to assure the safety of DSS ODHAs. However, there are two areas in which we disagree with what has been included in DG-3057.

- On Page 2 of the Regulatory Analysis, in the Second Paragraph under Alternative 1, NRC states that “Many licensees are currently using administrative controls in contradiction to their design bases to meet regulatory requirements under the enforcement discretion provided by EGM 22-01.” This is a broad generalization and should be removed. Industry believes it has consistently been in compliance with the requirements in its respective DSS FSARs and 10 CFR 72.212(b)(6). We believe that this disagreement stems from a lack of clarity regarding the use of administrative controls in accordance with the design bases. Incorporation of our attached comments will resolve this uncertainty.
- In a public meeting held on June 13, the NRC staff explained the interconnected nature of Clarifications #3, #4, and #5. We agree that these clarifications have a combined effect, and we are very concerned that this effect could undermine the regulatory certainty that the completed Regulatory Guide would otherwise provide. These three clarifications expand the scope of the guidance in a way that will introduce new uncertainties going forward and deviate from established licensing precedent.² The added language is both prescriptive (calling for licensees to perform substantial additional analyses of system performance during a wide range of weather events) and vague (using undefined terms like “appropriate error margin”). This expansion in scope goes beyond both what was intended when the DSS’s were licensed and the focus on severe weather events (tornadoes, in particular) in related inspections that provided the impetus for this issue. Our detailed comments elaborate on this concern and recommend that these 3 clarifications be deleted.

We remain confident that DG-3057 can be finalized in a way that will restore regulatory stability and predictability to DSS ODHAs and improve efficiency. We look forward to finalization of RG 3.77 in the 4th quarter of 2023 so that the needed regulatory improvements, and any corresponding actions on the part of licensees, can be implemented prior to the expiration of EGM 22-01 in April 2024. Because a number of licensees plan loading campaigns in 2024 that could be affected by this guidance, NRC should consider allowing an implementation period for RG 3.77 and, if necessary, extending the date of EGM 22-01 until the end of that period.

We also request that NRC inspection procedures associated with RG 3.77 be updated and shared with the industry to enhance the licensees’ understanding of NRC expectations and to ensure regulatory compliance.

A more efficient regulatory framework is essential to the industry. The dialogue on this issue has been prolonged, diverting substantial NRC and industry resources away from more safety significant matters for the

² Interim Storage Partners license SNM-2515, issued September 13, 2021; Holtec license SNM-2516, issued May 9, 2023, and Orano-TN EOS CoC Amendment 3, to become effective July 17, 2023.

Mr. John-Chau Nguyen

June 29, 2023

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past two years. The lessons learned from this activity should be instructive as NRC works to modernize its regulatory framework.

Please contact me or Mark Richter of my staff (mar@nei.org) with any comments or questions on the content of this letter.

Sincerely,

A handwritten signature in black ink, appearing to read "Rod McCullum". The signature is fluid and cursive, with a prominent loop at the end.

Rod McCullum

Attachment

c: Mr. John Lubinski, NRC/NMSS
Ms. Shana Helton, NRC/NMSS/DFM
Mr. Jake Zimmerman, NRC/NMSS/DFM

DG-3057 Weather-Related Administrative Controls at ISFSI

Rev. 6.26.2023

| Clarification/Exception | NEI/Industry Comment | Recommended Resolution |
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| Item 1 – Clarification: | Industry has no comments on this clarification. | |
| Item 2 – Exception: “Lastly, the guidance only applies to a DSS when the DSS’s confinement boundary has been established as required by its licensing basis.” | The guidance addresses all outdoor DCS activities. The state of the canister and cask at any time while outdoors is a site-specific issue each licensee should consider in implementing the guidance, including in rare short-duration situations where the confinement boundary has not yet been established. Since there are situations in which the confinement boundary has not yet been established during which ODHAs must be protected by the use of administrative controls, this guidance should not be limited to apply only in cases where the confinement boundary is established. | Delete the sentence. |
| Item 3 – Clarification, Item 4 – Clarification, and Item 5 – Clarification: Industry concerns regarding the regulatory uncertainty likely to be created by the combined effect of these three clarifications | <p>The combined effect of Clarifications 3, 4, and 5 is to greatly expand the definition of “safe condition and forecast” to include a wide range of conditions that “would exceed an SSC’s design criteria.” This significantly, in turn, expands the scope of the guidance.</p> <p>This clarification has been written as an overly prescriptive task which will be difficult, if not impossible, to complete. It could cause licensees to chase information about things such as projected barometric pressures and monitoring weather below the threshold of severe weather. Additional monitoring of things below the threshold or below other bounding conditions</p> | Delete Clarifications 3, 4, and 5. It is important to maintain the definition of “safe condition and forecast” the same as proposed in the guidance to be consistent with previously licensed definition of the term ¹ . There is no safety benefit to expanding the definition. |

¹ Interim Storage Partners license SNM-2515, issued September 13, 2021; Holtec license SNM-2516, issued May 9, 2023, and Orano-TN EOS CoC Amendment 3, to become effective July 17, 2023.

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| | <p>would be an unnecessary burden that would divert resources away from more safety significant tasks. This could then cause licensees to have to go beyond the NWS severe weather alert system as a resource.</p> <p>This will subsequently trigger extensive design reviews based on this inevitably uncertain population of information. A significant level of effort will be required to conduct these reviews. Again, this will place an inordinate focus on items of little to no safety significance and further divert resources from more safety significant tasks.</p> <p>Most significantly, these design reviews would be of little to no use towards meeting the intended purpose of this guidance. This is because ensuring weather conditions and forecast would not exceed design criteria does not address the time when these cask systems would be in unanalyzed outdoor configurations, i.e., when the limiting criteria are unknown, for example, a storage cask being carried by a transporter (that may be NITS), or a storage cask without its lid. It is unclear how design criteria based on a prescribed configuration for a cask system can be extrapolated to an unanalyzed configuration to determine the triggers for weather conditions and outlooks.</p> <p>The purpose of the guidance is to avoid operations during severe weather, not to confirm and re-evaluate every design basis parameter that could be affected by any kind of weather.</p> | |
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| | <p>The search to do this would inevitably become open-ended and, absent any limiting principle, the extent to which it will have been completed would be subject to differing interpretations between and amongst licensees and NRC inspectors. This will create substantial regulatory uncertainty going forward.</p> <p>In accordance with 10 CFR 72.212(b)(6), licensees must comply with operating limits associated with normal and off-normal conditions established in the cask FSAR. It should be noted that NRC did not ask for the prescriptive design reviews called for in this clarification when staff approved the FSARs. To essentially require them now in operationally focused guidance would constitute a backfit. Before issuing these clarifications, NRC must thoroughly weigh the potential resources required against the safety benefits that would be gained.</p> | |
| <p>Item 5 – Clarification: “In this determination, forecast conditions should provide a conservative threshold, including an appropriate error margin, to ensure that SSCs ITS are not subjected to any load combinations beyond those analyzed.”</p> | <p>It is not clear what is meant by an “appropriate error margin” in the context of the paragraph.</p> | <p>Although we are recommending that Clarification 5 be deleted, we are making this comment to highlight the regulatory uncertainty that would be introduced by the open-ended expansion of the scope of this guidance.</p> |
| <p>Item 5 – Clarification: “From the load conditions, the qualitative or quantitative criteria that</p> | <p>The terms “qualitative or quantitative” and “quantitative and qualitative” are used interchangeably. This is confusing and</p> | <p>Although we are recommending in the comment above that Clarification 5 be deleted, we</p> |

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| <p>define/outline a “safe condition and forecast” should be determined. These criteria will form the acceptance criteria of the procedure establishing administrative control.”</p> <p style="text-align: center;">And</p> <p>“Based upon the licensee’s review described above, the licensee should determine quantitative and qualitative acceptance criteria...”</p> | <p>inconsistent with the regulatory and licensing precedent upon which the definition of “safe condition and forecast is based.”</p> | <p>make this comment to emphasize the importance of maintaining the established licensing precedent.</p> <p>The term “quantitative or qualitative” acceptance criteria is based on 10 CFR 72.150. This term has been used in the “definition of safe condition and forecast” that NRC approved in Reference. To avoid any possible misunderstanding, NRC should consistently use “quantitative or qualitative acceptance criteria,” to be consistent with the regulation. The definition in NEI 22-02 is verbatim the same as the referenced precedents.</p> |
| <p>Item 6 – Clarification: “Licensees should use the NWS’s hazardous weather outlook and forecast information unless another resource for the site is available that provides equivalent information in terms of timeliness and accuracy.”</p> | <p>The NRC’s clarification to the statement adds “and forecast,” but it also deletes “for the site” and retains “...that can be justified as providing...” This is an important distinction industry needs. If a licensee sees a severe weather alert in the region, but it does not include the site, they need the flexibility to make a site-appropriate decision to move forward.</p> <p>In addition, the closest NWS station to an ISFSI site may not represent the weather at the site as accurately as other</p> | <p>We suggest a simpler clarification that recognizes licensees may also use forecasts that are more representative of local conditions if such forecasts can be shown to provide equivalent (or better) weather information for the site than NWS.</p> |

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| | <p>sources. The NWS often provides a forecast based on data from the closest airport, which may not be near the site.</p> | |
| <p>Item 7 – Clarification: The licensee should determine the expected “duration of short-duration outdoor activities” by either benchmarking or dry runs. The ODHA duration should be periodically assessed based upon operating experience.</p> | <p>Industry believes that “benchmarking or dry runs” is too restrictive. These activities are largely site-specific when plant locations and facilities are layered on the generic operations described in the DSS FSAR. The most accurate estimate of ODHA durations is site operating experience.</p> | <p>Add “site operating experience” to “benchmarking or dry runs.”</p> |
| <p>Item 8 – Exception: “Licensees should have procedures to ensure the DSS can be placed into an analyzed condition in the event of a malfunction or delay”</p> | <p>The premise of this exception is that malfunctions and severe weather would occur at the same time.</p> <p>For the purposes of this guidance, malfunctions of handling equipment and other delays can be construed as “off-normal” events. Off-normal events occurring at the same time as design basis natural phenomena events would not be considered in the design of systems or require analysis of the condition as stated in NUREG-2215, Section 3.5.2.4, “External Conditions” as follows:</p> <p>“Off-normal” conditions and events are presumed to occur in combination with normal conditions that are not mutually exclusive. Nonetheless, it is not required that the SAR analyze, or the system be designed for, the simultaneous occurrence of independent off-normal conditions or events, design-basis accidents, or design-basis natural phenomena.</p> | <p>Revise this exception as a clarification to consider addressing malfunctions and unexpected delays in a more generic way in which equipment malfunctions during ODHAs that leave the DSS in an unanalyzed condition are entered into the corrective action program so that the situation can be promptly evaluated for safety significance with respect to contingency actions and/or returning the condition to an analyzed condition.</p> |

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| | <p>Conditions involving a “latent” equipment or instrument failure or malfunction (that is, one that occurs and remains undetected) should be presumed to exist concurrently with other off-normal or design-basis conditions and events. Typical latent malfunctions include a misreading instrument that is not detected as part of routine procedures, an undetected ventilation blockage, or undetected damage from an earlier design-basis event or condition if no provisions exist for detection, recovery, or remediation of such conditions.</p> <p>As ODHAs are inherently performed while personnel are in attendance, any equipment malfunction would be immediately detected, and would not fall into the category of “latent” as described in NUREG-225, Section 3.5.2.4 above.</p> <p>Because probability of the tornado event is small to begin with, postulating a concurrent equipment malfunction can be considered not credible. Requiring procedures to respond to a malfunction of equipment in the context of a concurrent tornado is unreasonable and could actually be detrimental to safety. Malfunctions are addressed in a controlled, deliberate, and timely manner commensurate with safety significance. Layering weather-related time pressure atop the normal manner in which the corrective action program is implemented adds unnecessary pressure and increases the likelihood of errors.</p> | |
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