



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

June 17, 2025

MEMORANDUM TO: Michael Wentzel, Chief  
Advanced Reactor Projects Branch  
Division of Advanced Reactors and Non-power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

FROM: Jackie Harvey, Senior Project Manager /RA/  
Advanced Reactor Projects Branch  
Division of Advanced Reactors and Non-power  
Production and Utilization Facilities  
Office of Nuclear Reactor Regulation

SUBJECT: SUMMARY OF THE MAY 6, OBSERVATION MEETING WITH  
THE NUCLEAR ENERGY INSTITUTE TO DISCUSS NEI 24-05,  
REVISION 0, "AN APPROACH FOR RISK-INFORMED  
PERFORMANCE-BASED EMERGENCY PLANNING" (EPID NO.  
N-2024-ADV-0004)

**Meeting Information:**

Participant: THE NUCLEAR ENERGY INSTITUTE

Public Meeting Notice Agencywide Documents Access and Management System (ADAMS)  
Accession No.: ML25120A073

Applicant Presentation Slides ADAMS Accession No.: N/A

Meeting Attendees: See the enclosure for a list of meeting attendees.

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**Meeting Summary:**

The U.S. Nuclear Regulatory Commission (NRC) staff conducted the meeting in accordance with NRC Management Directive 3.5, "Attendance at NRC Staff-Sponsored Meetings" (ADAMS Accession No. [ML21180A271](#)). The main points of discussion during the meeting included:

- NRC staff asked for clarification on purpose and audience of NEI 24-05.
  - NEI responded that the purpose is to provide a framework and approach for an applicant to develop an emergency plan, and that the intended users would have a good understanding of an emergency preparedness (EP) program or would be working with consultants with experience in EP.
  - Staff asked if this document is meant to be a companion document to Regulatory Guide (RG) 1.242 "Performance-Based Emergency Preparedness for Small Modular Reactors, Non-Light-Water Reactors, and Non-Power Production or Utilization Facilities," for applicants using the Title 10 Code of Federal Regulations (10 CFR) 50.160 alternative emergency preparedness requirements. NEI responded that NEI 24-05 should be used in conjunction with RG 1.242, and that NEI is viewing this as supplemental guidance to that RG. NEI also discussed that the intent was to identify areas where NEI felt there wasn't any or detailed guidance available.
- Staff clarified its understanding that NEI 24-05 is intended for non-light water reactor applicants using NEI 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development." NEI 18-04 is also referred to as the Licensing Modernization Project (LMP) process. Staff noted that this could be clearer in some cases, and asked what if the applicant has a deviation from LMP. NEI stated that deviations are a possibility and NEI 24-05 provides an example regarding a hazard assessment, which could be augmented and applied to other assessments.
- Staff asked how NEI 24-05 is related to NEI 21-07, "Technology Inclusive Guidance for Non-Light Water Reactors," with respect to license application documentation.
  - NEI discussed that: NEI 24-05 tries to align with the Technology Inclusive Content of Application Project approach, and that it would be difficult to try and anticipate the full spectrum of deviations of a potential applicant. With respect to NEI 21-07, for sections that describe an emergency plan an applicant would follow NEI 18-04, "Risk-Informed Performance-Based Technology Inclusive Guidance for Non-Light Water Reactor Licensing Basis Development," or ensure they identify deviations from endorsed guidance document.
  - Staff further made an observation that there doesn't seem to be a section in NEI 24-05 that describes how to document in a construction permit or combined license application the decision and supporting documentation for the determination of the facility-specific plume exposure pathway emergency planning zone (EPZ). Staff observed that determination of the EPZ size is new for construction permit or combined license applicants and there could be consideration to provide additional clarity on documentation to support the license application.

- Staff asked how NEI expects the process outlined in NEI 24-05 to work for performing the licensing basis event (LBE) consequence evaluation when it is determined that implementation of protective measures are necessary. Specifically, staff noted that it seems that this process may be a circular loop for re-evaluating the LBE when protective measures are necessary and asked where this re-evaluation loop stops.
  - NEI discussed that it is intended to be a one-time through process barring if decisions are made to result in design changes. For instance, NEI discussed one would use the LBE and consequences to determine the EPZ, and if protective measures are warranted then circle back to the original evaluation and stop there. This would be a one-time flow back if protective measures are identified and if anything is impacted (e.g., structures, systems, and components (SSCs) classification). NEI further provided that SSC safety classification in the NEI 18-04 process is purely determined by site boundary doses and they don't see a scenario where the cumulative risk profile would impact classification.
  - Staff asked if in this process, would EPZ sizing take credit for protective measures. NEI responded that no, the protective measures process would not impact the EPZ sizing determination.
- Staff provided an observation that additional consistency and clarity throughout the paper would be helpful to avoid having to make assumptions. For instance, if doses are total effective dose equivalent (TEDE), they should be stated as such throughout the paper. NEI confirmed that all doses are TEDE. Staff also provided observations where additional clarity would be beneficial:
  - Specifying exposure period. NEI agreed.
  - Clarifying the difference between a 10 CFR Part 50 construction permit preliminary EPZ and emergency plan versus an operating license application under Part 50 or combined license application under Part 52 where the final determinations are provided. Staff noted that there will be different levels of information required at various phases of the different licensing pathways. For instance, when an applicant comes in and they are in the construction phase, they may only have the information for a preliminary EPZ based on preliminary design, so it is important that the evaluation is consistent between construction permit and operating license applications. NEI stated they will consider potentially providing additional clarification.
- Regarding the spectrum of events, staff asked for clarification on the meaning of "very low dose." NEI responded they would defer to the applicant, as there might be different thresholds, and it is difficult to define quantitative criteria.
  - Staff further asked if this is the same with timing and if the applicants would need to justify the specific timing used in the preliminary screening to scope out events for evaluation. NEI discussed that they are viewing that preliminary screening step as optional for an applicant, and that they will consider adding information to clarify.
  - Staff offered that this is a new process that is going to be heavily dependent on justification, so any additional information for a designer or potential applicant, such as adding clarity on what would classify as a low dose would be helpful. NEI agreed and noted that at a minimum how an applicant arrived at a screening number should be included in a submittal.
- Staff asked for additional background and reasoning on the use of information from

NUREG-0396, "Planning Basis for the Development of State and Local Government Radiological Emergency Response Plans in Support of Light Water Nuclear Power Plants." NEI staff replied that they wanted to leverage the thought process utilized in the NUREG given it is based on light water reactor accident considerations to support EPZ determinations.

- Staff requested additional clarity on security considerations. Staff commented that one section in NEI 24-05 discusses that although the LMP approach does not evaluate security-related initiating events, it is a process that is being used to provide a comprehensive assessment of potential accidents and consequences. But later in the document, there are statements that security has been comprehensively screened and is eliminated from detailed consideration in the EPZ sizing analysis. Staff reiterated its understanding regarding that discussion that LMP goes through event sequences and their associated failures that are possible. The staff asked NEI if the thought behind the NEI 24-05 discussion of security events is that even though the LMP evaluation doesn't necessarily start with a security-related initiating event, that a security event could not cause something worse than the consequences that have already been analyzed.
  - NEI responded that the staff's understanding of the basis for the NEI 24-05 discussion on security events is essentially correct, and that if one is designing against the design basis threat or 10 CFR Part 73 then the events from the LMP process will bound any security event that is credible for the facility. So, the EPZ sizing evaluation does not have to explicitly consider the security event, but the emergency plan would have to consider the security event.
  - Staff questioned if NEI 24-05 instructs applicants that they do not need to perform a security events accident assessment or analysis or if each applicant would need to come to their own conclusion related to security events. NEI responded that applicants should perform a security event assessment in their application as required and that each applicant would need to come to their own conclusions after going through their own data and application.
- Staff noted that the emergency action level (EAL) section is about 1.5 pages and that it does not seem that an applicant would be able to take that section and develop a complete set of EALs. Staff asked for clarification on the intent of that section. NEI responded that the document tries to provide a high-level framework for how to use the licensing basis events (the LMP approach). NEI discussed that NEI 24-05 was not intended to be a step-by-step discussion.
- Staff asked if NEI 24-05 has been socialized with industry, to which NEI responded yes.
- Staff provided feedback that more explanation related to the basis for using 200 rem TEDE for 96-hr exposure in Criterion B for early deterministic health effect (as compared to precedents) would be helpful for understanding.
- Staff provided feedback that more explanation of the basis and justification for the chosen event frequencies in Criteria A and B would be helpful for understanding.
- Staff provided an observation that NEI 24-05 does not seem to discuss the relation between uncertainty and cliff edge effects for the determination of EPZ size, and the uncertainty that has already been evaluated through the LMP.

- Staff provided an overarching comment that it would be helpful to make NEI 24-05 clear for an applicant on what needs to be justified and how.
- Staff asked if NEI had any advice for applicants who are incorporating NEI 24-05 into their methodologies currently, as it is still under review. NEI responded that they will wait to see formal NRC staff comments on NEI 24-05 before providing an answer to that, and that applicants do not have to reference NEI 24-05 but could lift the approach out.
- A member of the public expressed concern with how the submittal described scoping of security events for evaluation. The individual mentioned that they could think of several credible security events that would be scoped out per the discussion in the paper. The NRC staff responded that staff would continue to consider that feedback during the review.

No regulatory decisions were made as a result of this meeting.

Enclosure: List of Meeting Attendees

cc: Advanced Reactor Updates via GovDelivery

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**ADAMS Accession Number: [ML25168A022]****NRR-001**

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NAME	JHarvey	MWentzel	JHarvey
DATE	06/16/2025	06/16/2025	06/17/2025

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**LIST OF MEETING ATTENDEES**  
**FOR THE MAY 6, OBSERVATION MEETING WITH THE NUCLEAR ENERGY INSTITUTE TO**  
**DISCUSS NEI 24-05, REVISION 0, “AN APPROACH FOR RISK-INFORMED**  
**PERFORMANCE-BASED EMERGENCY PLANNING”**

<b>Name</b>	<b>Organization</b>
Jackie Harvey	U.S. Nuclear Regulatory Commission (NRC)
Michael Wentzel	NRC
Kristin McElwee	NRC
David Young	NEI
Jon Facemire	NEI
Karl Fleming	Public
Dave Grabaskas	ANL
Kenneth Mott	NRC
Lindsay Vance	TerraPower
Rory Flynn	Constellation Nuclear
Matt Osborne	TerraPower
Kristy Bucholtz	NRC
Vanessa Danese	DSHS
Owen Scott	TVA
Addison Hall	Dominion Energy
Eric Schrader	NRC
Jeffrey Herrera	NRC
Cindy Rosales-Cooper	NRC
David Skutt	Health (NY)
Forrest Weston	DSHS
Alex Spire	Deep Fission
Said Roubi	Westinghouse
Brandon Hartle	NRC
Nadir Chaudhry	NRC
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Ashleigh Burish	Dominion Energy
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Jonathan Fiske	NRC
Phil Lashley	Vistra Corp
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David Daigle	TVA
Robert Fisher	NRC
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James Thornton	TVA
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Enclosure

<b>Name</b>	<b>Organization</b>
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David OHehir	Health (NY)
Partha Chandran	AALO
Brandon Chisholm	Southern Company
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Tim Gibson	DSHS
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