



Alternative Physical Security Requirements for Advanced Reactors

April 21, 2021

Agenda

- Welcome / Introductions
- NRC Presentation/Remarks
- NEI Presentation/Remarks
- Questions/Comments



Welcome

Speakers/Presenters:

- Dennis Andrukat, Office of Nuclear Materials Safety and Safeguards – Rulemaking PM & Meeting Facilitator
- Nanette Valliere, Office of Nuclear Regulation – Program Office Lead
- Pete Lee – Office of Nuclear Security and Incident Response – Security Lead
- David Young – Lead for Nuclear Energy Institute (NEI)

Public Meeting Slides:

ADAMS Accession No. ML21106A003

Purpose

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- The purpose of this meeting is to discuss recent clarifications on the draft implementation guidance document (NEI 20-05) related to proposed rulemaking on alternative physical security requirements for non-light water reactors and small modular reactors.
 - Specifically, the staff's response (issued 4/13/2021) to NEI's clarification email dated 3/22/2021 regarding Criterion A and the term "unmitigated"

Logistics

- Today's meeting is an "Observation" meeting, which means that attendees are invited to observe the meeting and discuss regulatory issues with, and pose questions to, the NRC representatives at a designated point or points identified on the agenda.-
- No regulatory decisions will be made at today's meeting.

Background

Rulemaking

- NRC currently developing *Alternative Physical Security Requirements for Advanced Reactors* – proposed rule
- More information about this rulemaking and its supporting guidance can be found:
 - www.regulations.gov under docket ID: NRC-2017-0227

Supporting Guidance

- Implementation guidance for this proposed rulemaking will consist of DG-1365 and may endorse NEI 20-05.
- The NRC staff is developing DG-1365 which focuses on the physical security alternatives and will serve as the vehicle for endorsing any external implementing guidance for this rulemaking.
- NEI is developing NEI 20-05 which focuses on the eligibility criteria contained in the proposed rulemaking.

NRC Presentation

NEI Presentation

Open Discussion

References

- Draft B of NEI 20-05, “METHODOLOGICAL APPROACH AND CONSIDERATIONS FOR A TECHNICAL ANALYSIS TO DEMONSTRATE COMPLIANCE WITH THE PERFORMANCE CRITERIA OF 10 CFR 73.55[(a)(7)],” (Agencywide Documents Access and Management System (ADAMS) Accession No. [ML20107D894](#))
- NRC staff comments dated March 2, 2021, on Draft B of NEI 20-05 (ADAMS Accession No. [ML21049A029](#))
- NEI’s clarification email dated March 22, 2021 with NRC’s response email dated April 13, 2021 (ADAMS Accession No. [ML21104A109](#))

Background Slide:

Preliminary Proposed Rule Language

10 CFR 73.55, Requirements for physical protection of licensed activities in nuclear power reactors against radiological sabotage.

§ 73.55(a)(7)(i) Eligibility criteria.

(A) The radiological consequences from a hypothetical, unmitigated event involving the loss of engineered systems for decay heat removal and possible breaches in physical structures surrounding the reactor, spent fuel, and other inventories of radioactive materials result in offsite doses below the reference values defined in §§ 50.34(a)(1)(ii)(D) and 52.79(a)(1)(vi) of this chapter; or

(B) The plant features necessary to mitigate an event and maintain offsite doses below the reference values in §§ 50.34(a)(1)(ii)(D) and 52.79(a)(1)(vi) of this chapter cannot reasonably be compromised by an adversary as defined by the design basis threat for radiological sabotage; or

(C) Plant features include inherent reactor characteristics combined with engineered safety and security features that allow for facility recovery and mitigation strategy implementation if a target set is compromised, destroyed, or rendered nonfunctional, such that offsite radiological consequences are maintained below the reference values defined in §§ 50.34(a)(1)(ii)(D) and 52.79(a)(1)(vi) of this chapter.

Background Slide:

ANS 2.26

... unmitigated consequence analysis shall be performed considering only the inherent physical or chemical characteristics of the hazardous material and the energy sources for dispersing the material ...

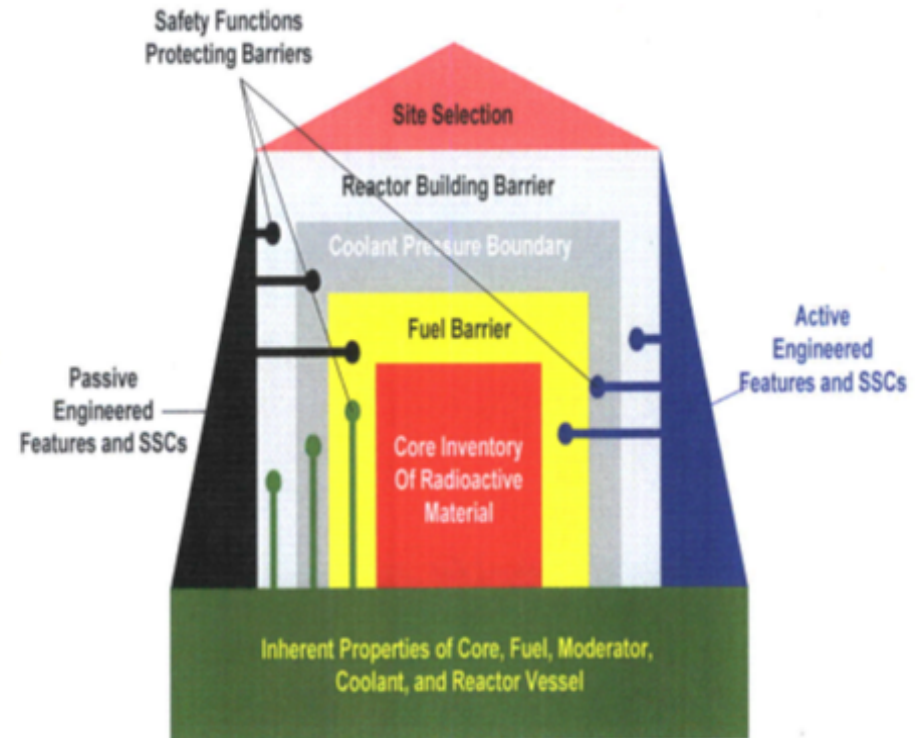


Figure 3-6. Elements of safety design approach incorporated into *Plant Capability Defense-in-Depth*.



Thank You!

Questions/Comments?



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Project Manager – NMSS/REFS



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Regulations.gov docket ID: [NRC-2017-0227](#)

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<https://www.nrc.gov/public-involve/public-meetings/contactus.html>