



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

June 12, 2025

MEMORANDUM TO: John McKirgan, Director  
Division of Physical and Cybersecurity Policy  
Office of Nuclear Security and Incident Response

FROM: Christian Araguas, Director *Lauren Kate Gibson* Gibson, Lauren signing on behalf  
Division of Engineering signature of Araguas, Christian  
Office of Nuclear Regulatory Research on 06/12/25

SUBJECT: TECHNICAL LETTER REPORT (TLR-RES/DE/REB-2025-09)  
"HYPOTHETICAL NUCLEAR REACTOR FACILITY MODELING &  
SIMULATION DATA—SCENARIO COMPARISON"

Enclosed for your information and use is a technical letter report (TLR) entitled "Hypothetical Nuclear Reactor Facility Modeling & Simulation Data—Scenario Comparison" (ADAMS Accession ML25162A019). This report is the Task 1 deliverable for the Research Assistance Request (RAR) NSIR-2024-002, "Technical Assistance for the Assessment and Demonstration of Physical Security Modeling and Simulation Tools" ([ML23342A227](#)).

Licensees and potential applicants have publicly discussed their intent to use modeling and simulation to support the design and evaluation of their physical protection system. This report provides a demonstration of a technically sound method to use modeling and simulation to support the development and evaluation of a physical protection system (PPS). This demonstration deals with development and evaluation of a PPS, using modeling and simulation tools, for a fictitious small modular reactor facility. This report provides an example of how an evaluation of a PPS may be documented in submissions to the NRC.

Staff representatives from the Division of Physical and Cybersecurity Policy, Office of Nuclear Security and Incident Response, have reviewed a draft of this TLR. Nonetheless, please feel free to notify the responsible RES contact if you have any questions. This report is planned for public release.

CONTACT: Ellie Cohn, RES/DE/REB  
301-287-0982

C.Araguas

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RES established an online quality survey to collect feedback from user offices on the usefulness of RES products and services. The Research Operating Plan System (ROPS) will send the requesting office staff Point of Contact (POC) a link to complete the quality survey. The email will be from "RES OpPlan Admin [RESOpPlanAdmin@nrc.gov](mailto:RESOpPlanAdmin@nrc.gov)" with the subject line "ROPS Work Request Survey." We would appreciate the recipient completing the survey within the next 5 working days to represent your Office's views of the completed product and services.

If additional information is required, please contact Ellie Cohn of my staff at [brian.cohn@nrc.gov](mailto:brian.cohn@nrc.gov).

Enclosure:

TLR-RES/DE/REB-2025-09, "Hypothetical Nuclear  
Reactor Facility Modeling & Simulation Data—  
Scenario Comparison"

SUBJECT: TECHNICAL LETTER REPORT (TLR-RES/DE/REB-2025-09) "HYPOTHETICAL NUCLEAR REACTOR FACILITY MODELING & SIMULATION DATA—SCENARIO COMPARISON", DATED JUNE 12, 2025

**DISTRIBUTION:**

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**ADAMS Package Accession No.: ML25162A017; MEMO Accession No.: ML25162A018**

OFFICE	RES/DE/REB	RES/DE/REB	RES/DE
NAME	ECohn	Rlyengar	CAraguas
DATE	06/11/2025	06/11/2025	06/12/2025

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TLR-RES/DE/REB-2025-09 "Hypothetical Nuclear Reactor Facility Modeling & Simulation Data—Scenario Comparison" DATE June 12, 2025

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DATE	Jun 11, 2025	Jun 11, 2025	Jun 12, 2025	

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