UNITED STATES
NUCLEAR REGULATORY COMMISSION
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MEMORANDUM TO: Jon Greives, Acting Director
Division of Advanced Reactors and
Non-Power Production and Utilization Facilities
Office of Nuclear Reactor Regulation

Michele Sampson, Director
Division of New and Renewed Licenses
Office of Nuclear Reactor Regulation

FROM: Jeremy Groom, Acting Director /**RA Jeremy Bowen for**/
Office of Nuclear Reactor Regulation

SUBJECT: EXPECTATIONS FOR NRC STAFF INVOLVEMENT WITH PROSPECTIVE NRC LICENSE APPLICANTS PLANNING TO REFER TO DOE AND DOW AUTHORIZATION PROCESSES

The purpose of this memo is to provide expectations around the U.S. Nuclear Regulatory Commission (NRC) staff's involvement with prospective applicants planning to utilize a prior U.S. Department of Energy (DOE) or U.S. Department of War (DOW) reactor facility authorization when pursuing NRC licensing of a same or similar design.

On May 23, 2025, President Trump signed Executive Order (EO) 14300, "Ordering the Reform of the Nuclear Regulatory Commission." Section 5 of EO 14300 directs the NRC to revise its regulations and guidance documents to facilitate nuclear technology deployment. As part of these efforts, Section 5(d) directs the NRC to establish an expedited pathway to approve reactor designs that the DOW or the DOE have tested and that have demonstrated the ability to function safely. The NRC staff are working to implement the direction in the EO and continue to coordinate with DOE and DOW on connected activities.

Participants in the DOE/DOW authorization programs that are considering future NRC licensing may choose to seek early engagement with the NRC to ensure they are positioned to appropriately leverage existing DOE/DOW authorizations. The NRC encourages such engagements. Stakeholders have found that early interactions with the NRC yield significant benefits, including increased efficiency and reduced review durations during the license application process. The direction provided in the above executive order further expands on these opportunities by providing for even more potential efficiency gains through an "all of government" approach. While the initiation of these engagements is voluntary and remains in prospective applicant's control and responsibility, the NRC staff should proactively work to facilitate these engagements as noted in this memorandum and its enclosure.

CONTACT: Jon Greives, NRR/DANU
(301) 415-1585

Enclosure: DOE Authorization Information and NRC Staff Direction

DOE Authorization Information and NRC Staff Direction

This memo provides NRC staff with background information on the DOE authorization process and direction on expected stakeholder engagement. This will help enable future NRC license applicants to receive NRC licensing efficiency benefits from prior DOE or DOW authorizations and associated reactor facility operation activities. It is important to note that the NRC is not a party to the decision-making involved in the DOE authorization process, but instead can observe selected portions of the process at the prospective applicants' election to gain familiarity with both the technology and the safety cases being developed by the prospective applicants, with the intent of achieving greater efficiency in the subsequent NRC licensing proceeding.

DOE RFA and Pilot Program Selections

On May 23, 2025, President Trump signed EO 14301, "Reforming Nuclear Reactor Testing at the Department of Energy." Section 5 of EO 14301 directs the DOE to start a new pilot program to expedite the testing of advanced reactor designs. In response, the DOE's Reactor Pilot Program is establishing a new DOE pathway for advanced reactor demonstration to fast track commercial licensing. On June 18, 2025, the DOE issued a Request for Application (RFA). On August 12, 2025, the DOE announced that it would initially work with 11 advanced reactor projects to move their technology toward deployment.

Pursuant to the Atomic Energy Act's (AEA's) authorization of reactors under DOE's sufficient control, including reactors "under contract with and for the account of" the Department in accordance with 42 U.S.C. § 2140, DOE "intends to approve at least three reactors under this RFA with the goal of achieving criticality in each of these reactors by July 4, 2026." To achieve this, the DOE published an RFA, as previously stated, and reviewed applications for qualified test reactors under their newly established Reactor Pilot Program.

The DOE established this pilot program for Qualified Test Reactor construction and operation based on the reactor meeting the following thresholds: a sufficiently mature design, an established fuel plan, adequate financial resources, and execution readiness. EO 14301 states that the purpose of constructing and operating these reactors is to establish fundamental technological viability under DOE's authority to foster research and development in nuclear reactors and not to demonstrate the reactors' commercial suitability. Therefore, these reactors fall under the jurisdiction of DOE.

DOE Authorization Process

The DOE implementing standard DOE-STD-1271-2025 provides a pathway for authorization by the DOE's Office of Nuclear Energy (NE) of nuclear facilities. The standard identifies applicable authorization requirements and provides a methodology for meeting those requirements for NE authorized facilities. This standard discusses the authorization process and includes sections on: Agreements-Alignment, Preliminary Design, Final Design, Readiness Review, and Initial Start-up Testing/Joint Test Group. The DOE will review the contractor's submittals and ensure that each document represents a technically sufficient product based upon the requirements identified in this standard prior to acceptance.

- The "Agreements-Alignment" section outlines the foundational agreements between DOE and the contractor, including the initial contract and the Nuclear Safety Design Agreement (NSDA). These agreements define roles, responsibilities, safety

requirements, regulatory engagement, and the application of codes and standards. The Code of Record (COR) is also introduced as a living document that captures applicable codes and any justified deviations.

- The “Preliminary Design” section details the authorization process when the facility design reaches approximately 50 % completion, with key systems and components identified and analyzed for safety. The Preliminary Documented Safety Analysis (PDSA) is submitted to DOE, to establish regulatory confidence and guide further design and procurement. Review and approval of the PDSA by DOE provides an integrated perspective on the safety and performance of the facility as well as a set of performance requirements for systems which will satisfy the associated regulatory requirements.
- The “Final Design” section reflects the as-built condition of the facility, incorporating all changes from construction and fabrication. The Final Documented Safety Analysis (DSA) is submitted by the contractor and approved by DOE. This section emphasizes the implementation of safety management programs and operating procedures to ensure safe facility operation. Approval of the DSA by DOE indicates acceptance of the proposed design and safety case and a determination that the design is suitably safe and compliant to support operations.
- The “Readiness Review” section involves review by a multi-disciplinary team to ensure that facility procedures and staff training are adequate to support safe operation. The readiness review also documents that the facility and equipment have been established consistent with the approved design with correct safety equipment functions and that the safety management programs identified in the agreements have been implemented as required. At this stage DOE will also evaluate security and emergency management. Satisfactory completion of the DOE Readiness Review results in DOE issuing startup approval which allows for commencement of nuclear operations in a controlled manner consistent with the startup plan.
- The “Initial Start-up Testing/Joint Test Group” section describes how, after completion of the Readiness Review and startup approval is granted by the DOE, a test plan is performed by the facility under the direction of a Joint Test Group (JTG). The JTG will include DOE approved tests or “hold points” that must be completed satisfactorily, prior to proceeding to the next phase. The JTG is responsible for overseeing the initial startup testing, which includes verifying that all systems and components function as intended and meet safety requirements and that the key behavioral predictions in safety analyses are correct as demonstrated in the actual operating plant.

The NRC staff should pay particular attention to the NSDA, as many of elements used in that agreement may be aligned with NRC requirements. The regulatory engagement portion of the NDSA describes the applicant’s planned engagement with regulatory bodies, including those outside the DOE.

DOW Authorization Process

On May 23, 2025, President Trump signed EO 14299, “Deploying Advanced Nuclear Reactor Technologies for National Security,” directing the Department of War to commence operation of an Army-regulated nuclear reactor at a domestic military instillation. On October 14, 2025, the Department of Army announced the launch of the Janus Program, a next-generation nuclear power program to deliver resilient, secure, and assured energy to support national defense installations and critical missions. The program will build microreactors in partnership with the Defense Innovation Unit (DIU), accelerating delivery of advanced energy solutions to the

warfighter. The NRC will continue to engage the DOW to understand the Army's nuclear regulatory process as it evolves.

Expectations for NRC Staff Observation of DOE and DOW Authorization Activities

Because some vendors intend to leverage DOE- or DOW- authorized designs to support future commercial licensing under the NRC's regulatory framework, prospective applicants may seek to engage with the NRC staff early to facilitate an understanding of their authorization timeline and to identify specific opportunities for the NRC staff to observe the authorization review. It is important to note that such engagements are strictly voluntary. The NRC's licensing staff has no regulatory authority in either DOE's or DOW's authorization processes and staff participation in the process will be only as an observer. However, NRC staff's participation at the appropriate points can yield tangible benefits for future licensing, including increased familiarity with the proposed design, early identification of issues that may be barriers to NRC licensing, and operating experience with the design, once constructed. It is therefore appropriate to treat this activity as pre-application engagement with the vendor as described in Appendix A to DANU-ISG-2022-01, "ARCAP Roadmap Interim Staff Guidance."

The NRC staff should seek to understand the assumptions and aspects of the application that were reviewed by either the DOE or DOW, such that they could determine how that previously authorized application by the DOE or DOW may support meeting the NRC's regulatory requirements. Guidance is being developed for NRC license applicants and NRC staff to clarify how they may best be able to leverage DOE and DOW authorizations in support of NRC licensing. The guidance will summarize key NRC requirements and available implementing approaches, with a focus on foundational Safety Analysis Report content. Additionally, the NRC staff is coordinating with the DOE to develop a crosswalk between the NRC's regulations and the DOE's authorization requirements that is expected to assist NRC license applicants in identifying opportunities for leveraging prior DOE or DOW authorizations.

To that end, NRC staff should take the following actions to ensure staff's participation in the process delivers the maximum possible benefit:

1. The NRC project manager should engage with current and future potential applicants to understand whether they intend to pursue DOE or DOW authorization and their timeline for doing so.

2. For those applicants that intend to pursue DOE/DOW authorization and wish to engage the NRC during that process, the NRC project manager should coordinate with the applicant to identify relevant points in the process where NRC staff observation would yield the most benefit to either the applicant or staff. For example, NRC staff observation or awareness of the vendor's NSDA with DOE will help the staff understand fundamental concepts of the design, such as codes and standards being applied and the structures, systems, and components classification process.

3. If it is agreed that the vendor would desire NRC observation of the DOE authorization process to support their future NRC licensing plans, the vendor should request that the NRC staff observe specific portions of the authorization process via their regulatory engagement plan or through a standalone letter. The vendor's request should identify the specific points for NRC staff observation and describe the intended outcome for staff's participation, and any specific feedback requested. This will help to formalize NRC staff's participation in the process, as well as to align on a common understanding of the

expected outcome. An EPID will be established at the appropriate time for this activity to track staff time and ensure appropriate billing of the activity to the vendor.

4. The vendor should coordinate with DOE or DOW, as necessary, to make the relevant information available to the NRC staff observing the authorization activities. Because of contracting requirements associated with the authorization process, DOE and DOW cannot share the information with the NRC without vendor approval. Therefore, the most efficient method would be for the vendor to make the information available to the NRC staff.

5. The specific NRC staff assigned to observe an activity will vary based on scope of the particular activity, but should generally consist of the cognizant project manager and lead technical reviewer, with others assigned, as needed, in consultation with the vendor.

6. In order to ensure a clear delineation in regulatory authority, the NRC staff assigned to observe the authorization process should limit participation to asking questions to increase understanding of key concepts of the design. NRC staff are encouraged to share their observations regarding the adequacy of the vendor's design with DOE/DOW. Ultimately, the technical details of a particular design are negotiated between the vendor and authorizing agency. The participating NRC staff should collect observations within the scope of the feedback requested, including identifying any potential issues that they believe could potentially challenge granting an NRC license. The NRC staff should share their feedback with the DOE and DOW at the agencies' request.

Summary

Proactive engagement with prospective applicants will help to establish an expedited pathway to approve reactor designs that the DOW or the DOE have tested and that have demonstrated the ability to function safely. Working with applicants to understand their plans for seeking regulatory approvals from NRC, DOE, or DOW; to identify meaningful early engagement opportunities, such as participation in DOE and DOW authorizations activities as observers; and to establish clear and predictable objectives for that participation are expected to yield tangible benefits for future NRC licensing of those designs.

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OFFICE	NRR/DANU/DD (A)	NRR/DNRL/D	NRR/OD (A)	
NAME	JGreives	MSampson	JGroom (JBowen for)	
DATE	11/21/2025	11/25/2025	12/11/2025	

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