OFFICIAL USE ONLY

EXEC-2025-012441

Department of Energy
Washington, DC 20585

December 10, 2025

MEMORANDUM FOR THE ACTING UNDER SECRETARY OF ENERGY

FROM: THEODORE J. GARRISH
ASSISTANT SECRETARY FOR NUCLEAR ENERGY

SUBJECT: **ACTION:** Request for Variance to 10 CFR 851 Requirements for Office of Nuclear Energy Advanced Reactor Deployment Efforts (CLN251238)

ISSUE: A variance to 10 CFR 851 *Worker Safety and Health Program* for Office of Nuclear Energy (NE) contractors is being requested to support deployment of advanced reactor technology in accordance with the tenets and goals of Executive Order (E.O.) 14301 *Reforming Nuclear Reactor Testing at the Department of Energy* during the period it takes for the Department to amend the regulation consistent with this request.

BACKGROUND: E.O. 14301 *Reforming Nuclear Reactor Testing at the Department of Energy* discusses the need of the United States to have a reliable, diversified, and affordable supply of energy and states that nuclear energy is vital to this effort. It discusses the principal responsibility of the Idaho National Laboratory for constructing and testing new reactor designs. It also states that: "Our proud history of innovation has succumbed to overregulated complacency."

Section 4(b) of E.O. 14301 further required that "[w]ithin 90 days of the date of this order, the Secretary shall take appropriate action to revise the regulations, guidance, and procedures and practices of the Department, the National Laboratories, and any other entity under the Department's jurisdiction to significantly expedite the review, approval, and deployment of advanced reactors under the Department's jurisdiction. The Secretary shall ensure that the Department's expedited procedures enable qualified test reactors to be safely operational at Department-owned or Department-controlled facilities within two years following the submission of a substantially complete application."

Section 5 of E.O. 14301 identifies related actions to establish a reactor pilot program to support projects outside National Laboratories. Section 5(a) directs the Secretary to create a pilot program for reactor construction and operation outside the National Laboratories, pursuant to the Atomic Energy Act's authorization of reactors under the Department's sufficient control, including reactors "under contract with and for the account of' the Department, in accordance with 42 U.S.C. 2140. The Secretary is also directed to approve at least three reactors pursuant to this pilot program with the goal of achieving criticality in each of the three reactors by July 4, 2026.

NE seeks a variance that would enable NE contractors to adopt the requirements in proposed 10 CFR 851.46 as shown in this memorandum. This variance request is in line with the pending revisions to 10 CFR 851 and is necessary to meet the President's objectives in E.O. 14301. Separately from this memorandum, NE has submitted to EHSS a formal variance application that includes information required by Subpart D of 10 CFR 851 for such applications. NE has recommended that EHSS, in turn, recommend that the Under Secretary for Science approve the application in accordance with Subpart D. EHSS is processing that application pursuant to its normal process for Subpart D variance applications. If EHSS decides to recommend approval of the variance application and the Under Secretary for Science decides to approve the application, the variance will remain in effect until the proposed changes to 10 CFR 851 become effective and are verified by NE-ID to be consistent with the variance.

SENSITIVITIES: Given that this variance would effectively implement the same amendments to 10 CFR 851 that are currently in the rulemaking process, approving the variance may be perceived by some as circumventing the public comment requirement for rulemakings. In addition, some may perceive the streamlined contractor requirements provided by the variance as conflicting with DOE's statutory obligation to "subject to [42 U.S.C. 2282c(a)(3)], provide a level of protection for workers at such facilities that is substantially equivalent to the level of protection currently [i.e., as of December 2, 2002] provided to such workers at such facilities." 42 U.S.C. 2282c(a). However, variances are expressly permitted under the existing regulation (*see* 10 CFR 851, Subpart D (Variances)) which underwent notice-and-comment rulemaking when initially promulgated. Also, approving this variance provides NE contractors with flexibility that will enhance worker protection by, among other things, shifting focus away from bureaucratic compliance and towards safety-significant activities. This flexibility is of the type that the Secretary is statutorily required to provide. *See* 42 U.S.C. 2282c(a)(3) ("In promulgating [10 CFR 851], the Secretary shall include flexibility—(A) to tailor implementation of such regulations to reflect activities and hazards associated with a particular work environment[.]").

RECOMMENDATION: Approve the attached variance application for 10 CFR 851 to adopt the proposed authorities and requirements in the proposed 10 CFR 851.46 section until the proposed revisions to 10 CFR 851 become effective.

APPROVE:  DISAPPROVE: _____ NEEDS DISCUSSION: ____ DATE: 01/05/2026

Enclosure: NE Variance Application

EXEC-2025-012441

Department of Energy
Washington, DC 20585

December 23, 2025

MEMORANDUM FOR THE ACTING UNDER SECRETARY OF ENERGY

FROM: STEPHANIE K. MARTIN
ACTING DIRECTOR
OFFICE OF ENVIRONMENT, HEALTH, SAFETY AND SECURITY

STEPHANIE MARTIN
Digitally signed by STEPHANIE MARTIN
Date: 2025.12.23 09:05:26 -05'00'

SUBJECT: **ACTION:** Approval of a permanent variance from certain requirements in Title 10 CFR Part 851, *Worker Safety and Health Program* for Office of Nuclear Energy contractors related to Advanced Nuclear Facility Deployment Efforts

ISSUE: Whether to approve a permanent variance application submitted by the U.S. Department of Energy (DOE) Office of Nuclear Energy, on behalf of DOE contractors, to support deployment of advanced nuclear facility technology in accordance with Executive Orders (E.O.) 14301 *Reforming Nuclear Reactor Testing at the Department of Energy,* 14302 *Reinvigorating the Nuclear Industrial Base,* and 14299 *Deploying Advanced Nuclear Reactor Technologies for National Security*.

BACKGROUND: E.O. 14301 *Reforming Nuclear Reactor Testing at the Department of Energy* discusses the need of the United States to have a reliable, diversified, and affordable supply of energy and states that nuclear energy is vital to this effort. It discusses the principal responsibility of the Idaho National Laboratory for constructing and testing new reactor designs. Section 4(b) requires that "[w]ithin 90 days of the date of this order, the Secretary shall take appropriate action to revise the regulations, guidance, and procedures and practices of the Department, the National Laboratories, and any other entity under the Department's jurisdiction to significantly expedite the review, approval, and deployment of advanced reactors under the Department's jurisdiction. The Secretary shall ensure that the Department's expedited procedures enable qualified test reactors to be safely operational at Department-owned or Department-controlled facilities within two years following the submission of a substantially complete application."

Section 5 of E.O. 14301 identifies related actions to establish a reactor pilot program to support projects outside National Laboratories. Section 5(a) directs the Secretary to create a pilot program for reactor construction and operation outside the National Laboratories, pursuant to the Atomic Energy Act's authorization of reactors under the Department's sufficient control, including reactors "under contract with and for the account of' the Department, in accordance with 42 U.S.C. 2140. The Secretary is also directed to approve at least three reactors pursuant to this pilot program with the goal of achieving criticality in each of the three reactors by July 4, 2026.

The Office of Nuclear Energy is seeking a permanent variance, on behalf of their DOE contractors, from certain 10 CFR 851 requirements including § 851.11 worker safety and health (WSH) program approvals, § 851.23 *Safety and health standards*, § 851.24 *Functional Areas*, § 851.27 *Standards incorporated by reference*, and 10 CFR 851 Subpart D *Variances*.

Title 10 CFR 851.30 authorizes Under Secretaries[1] to approve variances after considering the recommendation of the Director of the Office of Environment, Health, Safety and Security (EHSS Director). Title 10 CFR 851.31(a) requires the contractor desiring the variance to submit a written application to the appropriate Cognizant Secretarial Officer (CSO)[2] who may forward the application to the EHSS Director. After receiving several variance requests from contractors and potential contractors, the Office of Nuclear Energy consolidated these requests into a single variance application which was submitted to the EHSS Director.

Upon receipt of the application from a CSO, 10 CFR 851.31(a)(3) requires the EHSS Director to review the application and make a written recommendation to approve the application, approve the application with conditions, or deny the variance application. Pursuant to 10 CFR 851.32(b), *Approval criteria*, "[a] variance may be granted if the variance: (1) Is consistent with section 3173 of the [Bob Stump National Defense Authorization Act (NDAA) for Fiscal Year 2003]; (2) Does not present an undue risk to worker safety and health; (3) Is warranted under the circumstances; and (4) Satisfies the requirements of § 851.31 [of part 851] for the type of variance requested."

JUSTIFICATION: Based on the information provided in the variance application and consistent with the E.O. 14301 requirement that all actions under the order be implemented "consistent with applicable law", the EHSS Director recommends approval of the permanent variance application with the following conditions:

- Office of Nuclear Energy CSO ensures implementation of this variance is performed in such a way that alternate conditions, practices, means, methods, operations, or processes provide workers with a place of employment that is as safe and healthful as would result from compliance with the standard from which a variance is sought [§ 851.31 (d)(2)]; and
- Office of Nuclear Energy CSO ensures all affected workers, and their authorized representatives, are informed of the variance. [§ 851.31 (c)(4)]; and
- Office of Nuclear Energy CSO ensures affected workers are notified of their right

[1] *Under Secretary* is defined in § 851.3 as "with respect to a particular situation, the DOE official who serves as the Under Secretary for Science and Innovation, or Under Secretary for Infrastructure, or the Under Secretary for Nuclear Security/Administrator for National Nuclear Security Administration who has primary line management responsibility for a contractor."

[2] *Cognizant Secretarial Officer* or CSO is defined in § 851.3 as "with respect to a particular situation, the Assistant Secretary, Deputy Administrator, Program Office Director, or equivalent DOE official who has primary line management responsibility for a contractor, or any other official to whom the CSO delegates in writing a particular function under this part."

to petition the EHSS Director for a conference [§ 851.31 (c)(5)].

RECOMMENDATION: That you approve the permanent variance application, conditioned on Office of Nuclear Energy CSO ensuring the conditions in this memo are met as required by 10 CFR 851.

APPROVE: AF DISAPPROVE:_____ NEEDS DISCUSSION:_____ DATE: 01/05/2026

Enclosure: NE Variance Application

Application for Variance to 10 CFR 851 for Office of Nuclear Energy (NE) Advanced Reactor Contractors

The contractors referenced below and NE seek a permanent variance that would enable NE contractors to follow the requirements in proposed 10 CFR 851.46 as stated in this application.

This variance is necessary to meet the President's objectives to streamline the DOE authorization process for nuclear facilities deployed under DOE's jurisdiction. *See* Executive Orders (EO) 14301 (*Reforming Nuclear Reactor Testing at the Department of Energy*), 14302 (*Reinvigorating the Nuclear Industrial Base*), and 14299 (*Deploying Advanced Nuclear Reactor Technologies for National Security).*

Upon approval, this variance will remain in effect until the proposed amendments to 10 CFR 851 are effective and verified by NE's Idaho Operations Office (NE-ID) to be consistent with the variance. To the extent that the variance applies to future NE contractors not currently named, NE-ID will provide information concerning such contractors to DOE's Office of Environment, Health, Safety and Security (EHSS) as early as practical after such information becomes available to NE-ID.

Below is information required by 10 CFR 851, Subpart D (Variances).

1. The name and address of the contractor (10 CFR 851.31(c)(1)).

Name	**Address**
Aalo Atomics Inc.	1075 S Utah Ave, Suite 201, Idaho Falls, ID 83402
Antares Nuclear Inc.	19501 Prairie Ave, Torrance, CA 90503
Atomic Alchemy Inc.	3875 American Way, Idaho Falls, ID 83402
Deep Fission Inc	2705 Webster St., PO Box 5985, Berkeley, CA 94705
Last Energy Inc.	1923 Vermont Ave NW, Washington, DC 20001
Oklo Inc.	3190 Coronado Dr, Santa Clara, CA 95054
Natura Resources LLC	400 Pine St., Suite 750, Abilene, TX 79601
Radiant Industries Inc.	1921 E Maple Ave, El Segundo, CA 90245
Terrestrial Energy Inc.	2730 W Tyvola Rd, Suite 100, Charlotte, NC 28217
Valar Atomics Inc.	4587 W 147th St, Hawthorne, CA 90250
Standard Nuclear	200 Europia Ave, Oak Ridge, TN 37830
TRISO-X Inc.	151 Lafayette Dr, Suite 300, Oak Ridge, TN 37830
Other NE contractors not currently named who will be pursuing DOE authorization under an Other Transaction Authority (OTA) agreement with DOE	NE will provide this information to EHSS as early as practical after such information becomes available to NE-ID.

2. **The address of the DOE site or sites involved (10 CFR 851.31(c)(2)).**

Name	**DOE Site or Sites Involved**
Aalo Atomics Inc.	Aalo-X reactor Idaho National Laboratory, 1955 Fremont Ave, Idaho Falls, ID 83415

Antares Nuclear Inc.	R1 reactor Idaho National Laboratory, 1955 Fremont Ave, Idaho Falls, ID 83415
Atomic Alchemy Inc.	Groves project 40-acre site in Caldwell County, approximately 7 miles southwest of Lockhart, TX. Coordinates: 29.785446, -97.698177.
Deep Fission Inc.	DBR reactor NE will provide this information to EHSS as early as practical.
Last Energy Inc.	PWR-5 reactor Texas A&M RELLIS Technology and Innovation Campus, 1041 Research Pkwy, Bryan, TX 77807
Oklo Inc.	Aurora reactor Idaho National Laboratory, 1955 Fremont Ave, Idaho Falls, ID 83415 Pluto reactor and Advanced Fuels Foundry Adjacent to Savannah River National Laboratory, Unnamed Road, Jackson, SC 29831
Natura Resources LLC	Abilene Christian University, 1600 Campus Ct, Abilene TX 79601
Radiant Industries Inc.	Kaleidos and RiPPer reactors Idaho National Laboratory,1955 Fremont Ave, Idaho Falls, ID 83415
Terrestrial Energy Inc.	TETRA-1 reactor Texas A&M RELLIS Technology and Innovation Campus, 1041 Research Pkwy, Bryan, TX 77807
Valar Atomics Inc.	Ward250 reactor Utah San Rafael Energy Laboratory, 800 N Coal Haul Rd, Orangeville, UT 84537
Standard Nuclear	SN-0 fuel line 200 Europia Avenue Oak Ridge, TN 37830 SN-T fuel line 620 Victorious Blvd. West, Oak Ridge, TN 37830
TRISO-X Inc.	TX-L fuel line Lot 7A in the Horizon Center industrial park, Oak Ridge, TN
Other NE contractors not currently named who will be pursuing DOE authorization under an Other Transaction Authority (OTA) agreement with DOE; or NE contractors named above who conduct activities at a DOE site not named above.	NE will provide this information to EHSS as early as practical.

3. A specification of the standard, or portion thereof, from which the contractor seeks a variance (10 CFR 851.31(c)(3)).

The contractors referenced above and NE seek a permanent variance that would enable NE contractors to follow the requirements in proposed 10 CFR 851.46 as follows:

> *§ 851.46 Direction to contractors operating under Office of Nuclear Energy responsibility.*
>
> *(a) This section applies only to DOE sites under DOE's Office of Nuclear Energy responsibility, including nuclear facilities authorized by DOE's Office of Nuclear Energy.*
>
> *(b) Notwithstanding any other provision of this part, the following provisions do not apply to facilities covered by paragraph (a) of this section:*
>
> *(1) Section 851.11(b) and any other requirements in § 851.11(a) and (c) of this part requiring approval by DOE of the contractor's worker safety and health programs and updates;*
>
> *(2) Section 851.23(a)(9), (10), and (12);*
>
> *(3) Section 851.24;*
>
> *(4) Section 851.27(b), (c)(1), and (c)(2); and*
>
> *(5) Subpart D.*
>
> *(c) Notwithstanding any other provision of this part, the following provisions apply to facilities covered by paragraph (a) of this section:*
>
> *(1) Appendix A to this part is applicable only as guidance, not as a requirement;*
>
> *(2) Variances to any requirement of this part are to be submitted to, and require the approval of the cognizant Head of DOE Field Element or DOE employee with authority to approve the relevant safety basis, as applicable; and*
>
> *(3) Any enforcement action taken under this part must be performed after consultation with the cognizant Head of DOE Field Element or DOE employee with authority to approve the relevant safety basis, as applicable.*

4. A description of the steps that the contractor has taken to inform the affected workers of the application, which must include giving a copy thereof to their authorized representative, posting a statement, giving a summary of the application and specifying where a copy may be examined at the place or places where notices to workers are normally posted (10 CFR 851.31(c)(4)).

NE contractors will be provided with documents associated with the granting of this variance, including this variance application, and such documents will be reflected in their OTAs and

management and operation (M&O) contracts. NE contractors will still be held accountable for meeting OSHA standards incorporated in 10 CFR 851 as outlined in the proposed 10 CFR 851 amendments.

5. A description of how affected workers have been informed of their right to petition the EHSS Director or designee for a conference (10 CFR 851.31(c)(5)).

Workers will be informed through their contractor management. NE seeks to apply OSHA requirements in a manner consistent with 10 CFR 851 with relief from 10 CFR 851 as specified in this request.

6. Any requests for a conference, as provided in § 851.34 (10 CFR 851.31(c)(6)).

There are no requests for conference as provided in § 851.34.

7. Additional information for a permanent variance (10 CFR 851.31(d)(2)).

a. A description of the conditions, practices, means, methods, operations, or processes used or proposed to be used by the contractor (10 CFR 851.31(d)(2)(i)).

NE seeks a variance to apply the provisions of proposed § 851.46, listed above, to contractors operating under NE's responsibility. Proposed section 851.46 would apply to activities related to the construction and operation of a nuclear facility, including an advanced nuclear reactor or a nuclear fuel cycle facility, by a DOE contractor when that facility is authorized by DOE, regardless of the location of the facility. It also would apply to all activities at DOE's Idaho National Laboratory (INL) undertaken by the M&O contractor which is under the responsibility of NE.

Proposed § 851.46 states that certain requirements, which would otherwise apply under part 851, are not required. In particular, proposed § 851.46 would remove overly-prescriptive, individualized approval requirements in § 851.11 concerning worker safety and health programs and updates in favor of more streamlined and efficient control by DOE of those programs and updates through DOE's normal oversight authorities and processes. Approval of the contractor's plan does not affect the quality of the submittal and therefore doesn't impact "safe and healthful" expectations.

Proposed § 851.46 also would exclude the following standards: American Conference of Governmental Industrial Hygienists (ACGIH®), *Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices* (2016); American National Standards Institute (ANSI/ASSE) Z88.2, "American National Standard Practices for Respiratory Protection" (2015); ANSI Z49.1, "Safety in Welding, Cutting and Allied Processes," sections 4.3 and E4.3 (2012); the requirement in § 851.24 relating to worker safety and health program functional areas; and materials incorporated by reference in § 851.27. DOE makes this proposal because those standards are overly conservative, as compared to Occupational Safety and Health Administration (OSHA) requirements (*e.g.*, 29 CFR parts 1910 and 1926), and impose unnecessary administrative and operational burdens to contractors. The Threshold Limit Values (TLVs) referenced above lead contractors to take excessive precautions or require personal protective equipment (PPE) when doing so would not be required for industry. For example, TLVs for cold stress require that special protection of the hands be used if fine work is to be performed with bare hands for more than 10 to 20 minutes in an environment below 60.8 degrees Fahrenheit. Special protection includes warm air jets, radiant heaters, or contact warm plates. However, the temperatures

requiring controls noted in the TLV are common working, almost everyday, temperatures at Idaho National Laboratory and local workers are acclimated to working in those conditions. Thus, the required special protections are neither feasible nor reasonable at INL. Consistent with other revisions, proposed § 851.46 provides that 10 CFR 851, appendix A ("appendix A") applies to NE contractors only as non-binding guidance and not as mandatory requirements. Operational experience has demonstrated that appendix A creates confusion by, for example, requiring contractors to develop sections of a worker safety and health program that do not apply to their scope of their work. Additionally, some sections of Appendix A include standards or codes that have been revised or updated, which contractors are not able to utilize because specific revision numbers are referenced. Furthermore, any contractor-requested variances to any requirement under part 851 may be submitted directly to, and may be approved by, the cognizant Head of DOE Field Element or DOE employee with authority to approve the relevant safety basis, as applicable, rather than following the existing variance process in subpart D. Finally, any enforcement action taken under part 851 for activities falling within the scope of proposed § 851.46 must be performed after consultation with the cognizant Head of DOE Field Element or DOE employee with authority to approve the relevant safety basis, as applicable.

b. A statement showing how the conditions, practices, means, methods, operations, or processes used or proposed to be used would provide workers a place of employment which is as safe and healthful as would result from compliance with the standard from which a variance is sought (10 CFR 851.31(d)(2)(ii)).

Granting this variance would provide significant advantages that can enhance operational efficiency and safety for NE contractors. These benefits include:

- *Increased Flexibility*: The revision of certain regulatory requirements would provide contractors with the ability to customize their safety and health programs to better align with their specific operational contexts. This flexibility allows contractors to implement tailored programs that can lead to the implementation of more effective and relevant measures that enhance overall safety.
- *Streamlined Processes*: By removing redundant compliance steps, the proposed changes are intended to reduce administrative burdens on contractors. This streamlining enables a greater focus on core operational activities, resulting in enhanced efficiency and productivity because contractors will only need to comply with the relevant compliance requirements. These streamlined processes also enhance overall safety by shifting focus away from bureaucratic compliance and towards safety-significant activities.
- *Cost Savings*: The reduction in compliance-related activities would likely increase cost savings, allowing contractors to reallocate resources previously devoted to paperwork and approvals toward strengthening safety programs, training initiatives, and other critical areas.
- *Enhanced Agility*: The diminished bureaucratic hurdles, such as the allowance in § 851.46(c)(2) for the cognizant Head of DOE Field Element or DOE employee with authority to approve the relevant safety basis to approve variances, would allow contractors to respond more swiftly to changes in project scope, emerging safety concerns, or advancements in technology. This agility could help maintain project timelines and minimize potential delays.

- *Encouragement of Best Practices*: The guidance model proposed through the new § 851.46 encourages contractors to explore and implement industry best practices that are most relevant to their operations. For example, removing requirements to meet specific editions of consensus standards, which may become quickly outdated, enables contractors to continually be aware of, and incorporate, industry best practices. This focus on continuous improvement is intended to lead to innovative safety protocols and enhanced worker protection.

- *Promotion of Collaboration:* The proposed flexible approach in proposed § 851.46 that removes overly-prescriptive requirements would foster collaboration between DOE and contractors, facilitating the sharing of knowledge and experiences and contributing to the enhancement of safety practices across the DOE network. In particular, this approach incentivizes NE contractors to seek new best practices from industry that increase efficiency while maintaining safety; once implemented, NE can share those practices with other contractors.

- *Focus on Risk Management*: The shift toward non-binding guidance rather than overly-prescriptive requirements for contractors operating under NE responsibility would enable contractors to prioritize risk management tailored to their unique operational hazards. Allowing for this risk-based approach could lead to more effective hazard identification, assessment, and control.

- *Improved Worker Engagement*: By removing overly-prescriptive requirements, the proposed changes will empower contractors to develop safety practices, based on industry and OSHA standards and informed by their own operational experience, rather than relying on DOE to dictate exactly which practices to use. Because many of those practices will be developed by the contractors' employees, the proposed changes would also foster a sense of ownership among those employees. Increased worker involvement in safety protocol development could enhance engagement and accountability, which NE believes is a necessary component for the successful operation of these facilities.

- *Alignment with Industry Standards*: The proposed changes would facilitate better alignment with evolving industry safety standards and best practices, allowing contractors to adapt more readily to advancements in safety technology and methodologies.

Overall, granting this variance would create a more efficient, innovative, and proactive safety environment for NE contractors. By minimizing bureaucratic constraints, granting this variance would allow NE contractors to better manage risks, protect worker safety, and enhance overall operational performance, thereby providing long-term benefits to DOE and its mission.