SUMMARY REPORT ON THE REGULATORY AUDIT OF "STAFFING PLAN VALIDATION METHODOLOGY" TOPICAL REPORT, REVISION 0

(EPID NO. L-2025-TOP-0003)

Applicant:	Oklo, Inc.
Applicant Address:	3190 Coronado Dr. Santa Clara, CA 95054
Plant Name:	Aurora Powerhouse
Project No.:	99902095

1.0 BACKGROUND

By letter dated February 3, 2026, Oklo, Inc. (Oklo) submitted a topical report (TR) titled "Staffing Plan Validation Methodology," Revision 0 (Agencywide Documents Access and Management System (ADAMS) package accession no. ML26034C407), to the U.S. Nuclear Regulatory Commission (NRC) staff. This topical report describes Oklo's methodology for developing and validating staffing plans to support a fleet-based concept of operations. Oklo requested NRC review and approval of Oklo's staffing plan validation methodology. By email dated March 5, 2026, the NRC staff informed Oklo that the TR provided sufficient information for the NRC staff to conduct a detailed technical review (ML26051A243).

2.0 AUDIT PURPOSE AND OBJECTIVES

The purpose of this audit was for the NRC staff to gain a better understanding of the staffing plan validation methodology TR by reviewing and discussing the material used to support statements or conclusions in the TR. A secondary purpose of the audit was to identify any information that would require docketing to support the NRC staff's safety evaluation (SE).

3.0 SCOPE OF THE AUDIT AND AUDIT ACTIVITIES

On April 9, 2026, the NRC staff provided its audit plan for the subject TR to Oklo (ML26089A12). The audit was conducted from April 14, 2026, to September 30, 2026, in a virtual format and followed the guidance in the Office of Nuclear Reactor Regulation's Office Instruction LIC-111, "Regulatory Audits," Revision 2 (ML24309A281). Oklo responded to the audit questions over the course of multiple audit meetings. The audit scope consisted of all chapters and appendices of the TR.

Members of the NRC audit team included:

- Maurin Sheetz, Reactor Engineer
- Camille Peres, Reactor Operations Engineer
- Amy D'Agostino, Senior Human Factors Specialist
- Donna Williams, Senior Project Manager
- Katie Wagner, Project Manager

The NRC staff did not acquire any documents during the audit. On September 30, 2026, the NRC staff confirmed to Oklo that all audit items had been resolved.

4.0 SUMMARY OF OBSERVATIONS

As indicated in the NRC staff's audit plan, the audit was focused on specific inquiries pertaining to the content of the TR. The NRC staff reviewed information through the Oklo electronic reading room (ERR) and held discussions with Oklo staff to understand and resolve questions. The table below replicates the transmitted audit questions and summarizes the resolution of the questions.

Number	Question	Resolution of Question
1	**Validation of staffing plan** NUREG-0711, Section 11.4.3.5.1, "Types of Performance Measures," includes six criteria for types of performance measures and includes instructions for the applicant to identify specific types of performance measurements that will be collected during validation scenarios. The staff notes that TR sections 8.3.1.2 and 8.3.1.3 include information about the type of measures (e.g., situation awareness, workload) but not any of the actual or specific measures that will be used during validation scenarios (e.g., Situation Awareness Global Assessment Technique-SAGAT).	Oklo stated that it will develop a performance-based, multidimensional, staffing validation testing plan that is consistent with the guidance in NUREG-0711, Chapter 11 and NUREG/CR-7190. Section 8.2 of the TR details how challenging operational conditions are identified and characterized and how this process supports the development of specific testing scenarios. The scenarios are designed to exercise the features of the powerhouse that are most likely to present challenging and varied conditions for personnel. Oklo proposed minor updates to the TR to improve clarity of discussion on Oklo's sampling approach for challenging operational conditions.
2	**Description of the scope of the TR** In the Conclusion, beginning on p.66, the statement at the end of first paragraph omits the determination of staffing for the onsite control room for staffing. The methodology should be used to determine the number of operators that are "on-shift" or responsible for safe plant operations regardless of whether they are licensed.	Oklo stated that it would revise section 9 of the TR so that, instead of calling out only Startup Operators, the conclusion will specify all "licensed operators."
3	**Implementation plans (Appendices)** In several sections (i.e., Sections A.4, A.10.4, D.3, D.5.5, and D.9), the TR discusses human actions and tasks "identified through deterministic or probabilistic analyses…". What are the plans for addressing NUREG-0711, Section 7, "Treatment of Human Actions"?	Oklo stated that it would update section A.10.4 of the TR to provide additional clarity on the treatment of important human actions as part of the human factors engineering program. Oklo stated that additional detail on how IHAs are addressed in human-system interface design, procedural development, and training program development will be provided in future licensing application submittals containing the implementation plans, results summary reports, and/or final safety analysis report, as appropriate.

Number	Question	Resolution of Question
4	**Tasks identified** Section D.4 of the Task Analysis Methodology IP includes a description of the methods for task selection and screening. Section D.2 addresses the scope of task analysis. The staff compared this to NUREG-0711, Section 5.4 (1) which describes the types of tasks that should be selected for analysis and includes "tasks related to monitoring of automated systems that are important to plant safety." The staff notes that the scope statement in TR Appendix D section D.2 does not include tasks for onsite monitors and their role in the operation of the plant which would include aspects of teamwork and communications and would like to understand the basis for omitting these types of tasks from task analysis and FRA/FA.	Oklo stated that it will update the TR to include the tasks of onsite monitors in the task analysis discussed in Appendix D and the functional requirements (FRA) and function allocation (FA) discussed in Appendix C of the TR.
5	**HFE Program management** a) In the introduction to section A.9, Table A-1 lists the HFE program elements, the documents that will be generated for those elements, and general sequence (e.g., with the COLA submission or prior). There is no explicit discussion regarding how the HFE elements will be integrated into the actual design of the plant, which is criterion 2.4.3 (4) of NUREG-0711. Some of this information is provided in specific IPs, but the HFE program plan does not clearly capture the interfaces. b) NUREG-0711 criterion 2.4.3 (5) requires information such as where the documents listed in table A-1 will ultimately be maintained, e.g.,	a) Oklo stated that it would include Figure A-1 in the TR Rev. 1 to better capture HFE program element interfaces. b) Oklo stated that it would make changes to section A.9 of the TR to clarify that Oklo will make this information available in future license application submittals.

Number	Question	Resolution of Question
	will they be maintained by Oklo and provided to any subsequent licensee or given to the licensee for them to maintain. The staff would like to understand why this information is not provided.	
6	Section A.6 of the TR lists the elements of the HFE program and section A.10 provides the descriptions of each of the elements. The staff finds this primarily satisfies the criterion 2.4.5 (1) of NUREG -0711 although no rational is given for the exclusion of an IP for procedures. Staff would like to know how procedure development is going to be handled. Criterion 2.4.5 (2) of NUREG -0711 states that the applicant should identify the approximate schedule for completing the schedule of HFE activities. Given that this is a TR, scheduling information that involved dates would not be appropriate. Although, the TR suggests that the FRA/FA and task analysis will be done before other HFE activities (e.g., section A.10.2. and A.10.3) this is not stated explicitly. Further, the TR states that the FRA/FA is an iterative process but does not describe how and when any iterations will occur. Again, there are generally few details regarding how the HFE program elements will be integrated into the design process for the Aurora powerhouse. For instance, the TR states that FRA/FA/TA will inform different parts of other elements but now how and when it will inform those elements or	Oklo stated that it will develop procedures as part of the FSAR supporting future license application submittals. The generic technical guidelines, procedure writers' guidelines, and full set of plant procedures will be included in the FSAR. In addition, figure A-1 illustrates the vision for the HFE program structure and inputs and outputs of the iterative processes (e.g. function allocation and task analysis) Oklo stated that the inclusion of a new figure A-1 (in response to question 5 above) demonstrates how this will be handled and addresses question 6.

Number	Question	Resolution of Question
	who will be doing the data collection and analysis. In the TR, it is also mentioned that HFE staff will be in design meetings and that they will have authority but not when in the process of the Aurora powerhouse design. It would be helpful to the staff to have a clearer understanding of the plans for integrating the HFE technical program into the design process. This is one of the key purposes of the HFE program plan.	
7	The HFE program plan (TR Appendix A) states: "An IP for staffing and qualifications will be developed to define the methodology used for the staffing analysis. This plan will support the development of an initial staffing plan..." The staff's understanding was that the TR was the staffing and qualification IP. Please clarify if there is a separate staffing and qualification IP and, if so, how it compares to the staffing TR.	Oklo stated that the TR is not intended to be the Aurora powerhouse staffing and qualification implementation plan. Oklo is not planning to develop an IP for staffing and qualification and will submit a results summary report (RSR) prior to fuel load at the Aurora powerhouse. All necessary details related to staffing and qualifications will be included in the RSR. Oklo noted that section A.10.5 of the TR states that an IP for staffing and qualifications will be developed which is inconsistent with Oklo's intent; Oklo stated that it would update the TR to remove this inconsistency.
8	NUREG 0711 Chapter 6 Section 6.4 criterion 6.4(5) states the applicant should address the basis for staffing and qualification levels considering specific staffing issues and lists a topic for Treatment of Important Human Actions (TIHA) with two aspects to consider (effect of staffing levels on performance of any identified IHAs and effect staffing levels on personnel coordination for IHAs). The TR does not address how TIHA will be considered for these two aspects. Please	Oklo stated that it did not include a TIHA implementation plan in this TR and is developing one for submittal prior to or concurrent with a future license application. The planned TIHA IP and RSR will address identification and treatment of IHAs throughout the HFE process. Staffing and qualification analysis will consider the effects of staffing levels on performance and coordination needed for performance of IHAs. Oklo proposed updates to section 6.7 of the TR to clarify that the staffing analysis will consider the effects of IHAs.

Number	Question	Resolution of Question
	explain why they were excluded. The staff expected this information to follow discussion of OER, FRA/FA and TA in section 6.4, 6.5, 6.6.	
9	NUREG 0711 Chapter 6 Section 6.4 criterion 6.4(5) states the applicant should address the basis for staffing and qualification levels considering specific staffing issues and includes the topics of Procedure Development and Training Program Development. The TR does not address how procedure development and training program development will be considered or identified. Please explain how this will be incorporated or why it is not included in the TR.	Oklo stated that it will include the necessary information for the procedure development and training program development as part of future licensing submittals. As part of this iterative process, Oklo will consider staffing related issues that are identified during procedure and training program development and track any potential human engineering discrepancies in the human factors issue tracking system for resolution.
10	Oklo developed a validation method that aligns with NUREG 0711 Chapter 11 which is for Design verification and Integrated System validation and not staffing plan validation. TR section 6.7 states that “this phase of staffing analysis is aligned with the guidance in Chapter 10 of NUREG-0711 which addresses staffing and qualifications.” Please clarify whether NUREG 0711 Chapter 10 and Chapter 11 were used since chapter 10 is training program development.	Oklo acknowledged that the reference to Chapter 10 of NUREG-0711 in section 6.7 of the TR is incorrect and will update to the correct reference (Chapter 6).
11	NUREG-1791 step 3 for review of operational conditions states that the applicant should provide a discussion of the rationale for selecting specific conditions and for not analyzing others. The staff did not find the following sampling dimensions in TR section 8.2.1 nor any justification for not including them:	Oklo stated it primarily uses deterministic analyses given limited operational data for the Aurora design which would be necessary to support probabilistic assessments. Oklo does not perform a PRA as part of its safety analysis, and based on the overall Aurora design, Oklo does not expect there to be important human actions to ensure safe operation. Oklo stated

Number	Question	Resolution of Question
	Plant conditions: 1. Common cause failures of the I&C systems during a design basis accident 2. Reasonable, risk-significant, beyond design basis events that should be determined from the plant-specific PRA Personnel Tasks: 1. Did not address important human actions or additional factors that contribute highly to risk as defined by the PRA. Because the set of operational conditions is incomplete, the staff request clarification or justification for the items not included from NUREG-0711 Section 11.4.1	that it will include the identified sampling dimensions in staffing studies and will update section 8.2.1 of the TR.
12	TR section 8.3.3.1 Scenario Selection and balance states that test procedures will be developed to "ensure that each test crew is evaluated under operationally relevant, technically representative, and methodologically balanced conditions" The staff would like to understand what "methodologically balanced conditions" means. In accordance with NUREG-1791 section 10.1.1 the sampling of operational conditions should sample a sufficient number of operational conditions such that the personnel and plant performance are challenged.	Oklo stated that methodologically balanced means the approach taken to reduce or eliminate potential bias in the test results. Oklo noted that section 8.2 of the TR describes the approach to identifying challenging operational conditions and developing a set of integrated test scenarios that challenge overall system and personnel performance. Section 8.2.2 provides a preliminary list of the types of scenarios considered. Oklo noted that section 8.3.3.1 of the TR describes Oklo's approach to balancing scenarios across crews.

Number	Question	Resolution of Question
	In accordance with NUREG 0711 Criterion 11.4.3.6.1(1) The applicant should balance scenarios across crews to provide each crew with a similar, representative range of scenarios.	
13	NUREG-1791 Section 10.1.2, "Human Performance Measures and Criteria" states the following: "The applicant needs to identify the measures of human performance used to evaluate individual and crew performance of the control personnel in the scenarios… In addition to defining the measures of human performance used in validating the staffing plan, the applicant should identify the criteria established to determine the acceptability of the results obtained." The staff did not see criteria (1)-(5) from NUREG-0711 section 11.4.3.5.1, "Types of Performance Measures Criteria", in the TR. The staff did not find NUREG 0711 Section 11 criteria 11.4.3.5.2(1) – (5) "Performance Measure Information and Validation Criteria" in the TR. The staff could not find information about specific human performance measures and criteria in the TR. Please provide the measures of human performance that will be used and the criteria to determine the acceptability of the results obtained or explain why they are omitted from the SPV methodology.	Oklo stated that it is not submitting a staffing and qualification IP or RSR or a verification and validation IP or RSR at this time. The TR describes Oklo's framework for developing and validating staffing plans but does not identify specific scenarios to be used in staffing plan validation testing. While Oklo is still identifying the scenarios that will be used for validation, it cannot provide the specific human performance success criteria that will be applicable to the individual scenarios. Oklo will use structure test plans to perform validation testing and these plans will describe the types of performance measures appliable to each scenario. This work will be formally reported in the RSR.

Number	Question	Resolution of Question
	Please explain the method for collecting measures including when data will be collected during the scenarios or after or explain why omitted from the SPV methodology.	
14	TR Section 8.3.2.1 Test Participants states that: In selecting personnel to participate in the tests, the applicant should consider the minimum, nominal, and maximum shift staffing levels, including shift supervisors, reactor operators, and shift technical advisors. These positions (RO, STA, Shift Supervisor) are directly from NUREG 0711 and do not appear to be revised for applicability to Oklo concept of operations Please clarify whether these position titles are correct.	Oklo stated that the position titles in the third paragraph of section 8.3.2.1 of the TR are incorrect and they will update the TR to correct.
15	The TR does not contain any information on the number of scenarios and number of crews planned for System Performance Verification (SPV). NUREG-0711 criterion 11.4.3.6 for test design includes criteria for scenario sequencing. Please provide the number of scenarios/number of crews (“trials”) for SPV method or explain why excluded from the SPV methodology.	Oklo stated that it will provide the specific number of scenarios and number of crews needed to obtain valid results in the formalized test plan to be submitted as part of the RSR.
16	The TR does not contain any specific information about how data will be analyzed and test results will be interpreted or Human Engineering Discrepancies (HED) collected. This doesn’t appear to meet the criteria in NUREG 0711 section 11.4.3.7.	Oklo stated that it will update section 8.5 of the TR to explicitly address and include information related to validation data analysis and human engineering discrepancy collection and resolution.

Number	Question	Resolution of Question
	Please provide specifics in accordance with criteria in NUREG-0711 or explain why excluded from the SPV methodology	
17	In the section on OER scope (B.2.4), the TR contains the statement, [redacted]]]	[redacted] .]] Oklo stated that it would update section B.2.4 of the TR to better align with Oklo's intent.
18	The TR describes the method for evaluating the relevance of any OE item identified as a method for meeting the criterion of NUREG-07 11 3.4.1 (1). However, many of the criterion are "double-barreled" meaning the items have two criteria in them, not just one. This is typically not used for these types of items because then it not clear how to score any OE item against the criterion. [redacted]] Staff would like clarification on the scoring method for these types of items.	Oklo stated that the impression of "double-barreled" criteria was an error in framing the criteria in the topical report. Oklo evaluates and scores each criterion independently. Oklo stated that it would update the criteria listed in Section B.3.4 of the TR such that each criterion is listed independently.
19	The TR lists that the OE items deemed relevant to the design will be grouped according to	[redacted]

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	NUREG/CR-6400. The use of this list meets the minimum for the criterion NUREG-0711 3.4.1 (2). Staff are curious whether Oklo has considered any additional possible categories given the first of kind nature of the Aurora plant. For instance, given the remote monitoring proposed in the IP, this might be a relevant grouping for any OE from alternative industries.	[redacted]]]
20	NUREG-0711, Chapter 5, section 5.4 (1) states that the scope of the applicant's task analysis should include a description of the types of tasks listed in this section of NUREG-0711. Appendix D, section D. 2 .14 of the TR contains descriptions of some of the types of tasks in the criteria, but not all of them. Specifically, there is no mention of the three types of tasks listed here. • tasks anticipated to impose high demands on personnel, e.g., little time or high workload (such as administrative tasks that contribute to workload and challenge ability to monitor the plant). • tasks important to plant safety that are undertaken during maintenance, tests, inspections, and surveillances. • tasks with potential concerns for personnel safety (such as maintenance tasks performed in the containment). Staff would like to understand why these types of tasks were excluded from the scope of consideration.	Oklo stated that it does not exclude the tasks noted by the staff from the task analysis; these tasks fall under the umbrella of the second bullet point in section D.2 of the TR. The task analysis RSR includes information on specific tasks selected for task analysis, to include the types of tasks noted by the staff. Oklo stated that it would update section D.2 of the TR to include the specific types of tasks.

Number	Question	Resolution of Question
21	One type of task listed in NUREG-0711, section 5.4 (1) is described as, "tasks related to identifying the failure or degradation of automation and implementing backup responses." Please confirm that the statement in section D.4 of the TR, p. 120 ([[ ]]), includes identifying the failure or degradation of the automation.	Oklo stated that the referenced statement does include the identification of the failure or degradation of the automated system.
22	Table 5-1 of NUREG-0711 section 5.4(3) lists elements that should be included as part of the task narratives and descriptions. However, in the TA IP, this table is referenced Appendix D, section D.1.5 when describing the task evaluation. Some elements in Table 5-1 are discussed in the task narrative section of the TA IP, but some are missing. The missing elements from the task narrative are listed below: • ingress and egress paths to the worksite, workspace needed to perform the task, typical environmental conditions (such as lighting, temp, noise) • overlap of task requirements • coordination needed between teams performing the work • task frequency The staff would like to understand why these elements are reserved for "task evaluation" instead of "task narratives", given how much the	Oklo stated that section D.5.1 of the TR includes both the workspace needed to perform the task and the typical environmental conditions associated with the task as part of the information included in detailed task analysis narratives. Oklo plans to include the other information identified by the staff in the task narratives. Oklo stated that it would update section D.5.1 of the TR for increased clarity.

Number	Question	Resolution of Question
	task narratives are leveraged throughout the TA process. The staff would also like to understand the reason for not including the missing elements from Table 5 – 1 of NUREG-0711	
23	NUREG-0711, section 5.4. (4) states that the applicant should identify the relationships among tasks. In the TA IP, Appendix D, section D.4.2, the applicant indicates that as part of a detailed task analysis and operational sequence diagram (OSD), the OSD will provide "a visual representation of the temporal relationships and dependencies between tasks, decisions, system responses, and other operator actions." However, this is the only mention in the TA IP of any examination of the relation between tasks. Thus, there is no description of the method the applicant is planning on implementing to meet this criterion. Staff would like to better understand the method that Oklo will use to identify relationships among tasks or why this was excluded from the TA IP.	Oklo stated that section D.5 of the TR describes the task analysis components. Task decomposition and the creation of operational sequence diagrams inherently define the elements and steps necessary to complete a task and accomplish the associated objectives. Included in this decomposition and OSD development is identification of individual task components and overall action sequences which consider coordination requirements between operators located onsite and offsite as necessary. Oklo stated that it would update Section D.5.4 of the TR to clarify that task analysis considers relationships among tasks performed by both onsite and offsite personnel.
24	Criteria 4.4 (1) of NUREG 0711, Rev 3 states that "The applicant should use a structured, documented methodology reflecting HFE principles to perform functional requirements analysis (FRA) and function allocation (FA)." Section 3.1-3.3 of the TR describes that analyses will be conducted and mentions that the HFE team and system designer/owners will be involved in the process. However, Oklo does not specify the method that will be used for these analyses nor how it will be documented. In section C.5 Oklo commits to providing the following in the RSR:	Oklo noted that section C.3.2 of the TR provides discussion of the methodology for defining safety functions, and section C.3.4 provides discussion of the methodology for function allocation. Oklo further stated that, consistent with NUREG-0711 guidance, they plan to provide summaries of the methodologies used and reference the approved functional requirements allocation and function allocation IP in the RSR, focusing discussion in the RSR on any deviations from the IP methodology and results of the analysis. Oklo will update section C.3 of the TR to include discussion of the tools used for documentation purposes ([[ ]]).

Number	Question	Resolution of Question
	• An explanation of the methodology used to define safety functions • An explanation of the methodology used to allocate functions and the final set of allocations Please provide, in detail, the methodology and method of documentation for the FRA and FA analyses in the IP or explain why it was excluded from the IP.	
25	Criteria 4.4 (3) of NUREG 0711 Rev 3 states that the applicant should describe the plant's functional hierarchy and outlines in 5 bullet points what should be included in the description. The staff find that each bullet is addressed with the exception of bullet 4 which specifies that the description should include, "defining, for each safety function and other plant function (e.g., electrical power generation), the set of system configurations or success paths that are responsible for, or able to carry out the function." Please clarify why the fourth bullet of criteria 4.4 (3) is not addressed in the TR.	Oklo stated that it had intended for the 3rd paragraph of section C.3.3 of the TR to capture the fourth bullet of NUREG-0711 Criteria 4.4.(3). Oklo stated it would update this paragraph to clearly identify that success paths for accomplishing all or part of each function are included in the function decomposition.
26	Criterion 4.4 (4) of NUREG 0711 Rev 3 states "For each high-level function, the applicant should identify requirements related to: • purpose of the high-level function • conditions indicating that the high-level function is needed • parameters indicating that the high-level function is available • parameters indicating that the high-level function is operating (e.g., flow indication)	Oklo stated that it would update the fifth paragraph of section C.3.2 to include additional information on what the HFE team will document as part of the functional requirements allocation and functional decomposition analysis. This additional information includes the criterion in NUREG-0711 Section 4.4, criterion 4.

Number	Question	Resolution of Question
	• parameters indicating that the high-level function is achieving its purpose (e.g., reactor vessel level returning to normal) • parameters indicating that the operation of the high-level function can or should be terminated." With the exception of the first bullet in this criterion, the staff were unable to find anything in the TR that addressed the remainder of the criterion. The staff request clarification or justification for the items not included from NUREG-0711 Section 4.4, criterion 4.	
27	Criteria 4.4 (7) of NUREG 0711 Rev 3 states the applicant should describe the overall role of personnel by considering all functions allocated to them. The staff were unable to locate information in the TR that addresses this criterion. The staff request clarification or justification for the items not included from NUREG-0711 Section 4.4, criterion 7.	Oklo stated that the expected role of operators is discussed in the Aurora Fleet Operator Licensing Framework TR. That TR discusses how, due to increased levels of automation within the Aurora powerhouse design, the role of operators is largely to monitor important plant parameters and automated system responses during normal operations. Oklo stated that it will consider all functions allocated to personnel upon completion of the FA analysis and include a description of the overall role of personnel when developing the FRA/FA results summary report. Oklo stated that it would update the Staffing TR to clarify this intent.

5.0 REQUESTS FOR ADDITIONAL INFORMATION RESULTING FROM AUDIT

As a result of the audit, the NRC staff did not identify any requests for additional information related to this TR. Oklo revised the subject TR to address questions discussed during the audit.

6.0 OPEN ITEMS AND PROPOSED CLOSURE PATHS

There are no open items resulting from this audit.