



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
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MEMORANDUM TO: Benjamin Beasley, Chief  
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Office of Nuclear Reactor Regulation

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SUBJECT: SUMMARY OF AUDIT FOR THE OKLO POWER LLC AURORA  
COMBINED LICENSE APPLICATION ACCEPTANCE REVIEW  
(EPID NO. L-2020-NEW-0002)

On March 11, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20075A000), Oklo Power LLC (Oklo), submitted a combined license (COL) application for the Aurora reactor to the U.S. Nuclear Regulatory Commission (NRC). On April 1, 2020 (ADAMS Accession No. ML20079L202), the NRC issued the Audit Plan for the Oklo Aurora Reactor Combined License Application Acceptance Review. On April 8, 2020, NRC staff held an audit entrance meeting with representatives from Oklo Power, LLC. An audit exit meeting was held on May 27, 2020. The observations from the audit provided input for the acceptance and docketing decision for the Oklo Aurora COL application.

The NRC staff conducted this audit as part of the acceptance review. The purpose of the audit was to verify the existence of detailed calculations, analyses and/or bases underlying the application and to confirm the staff's understanding of the application. The audit was also used to support the staff's insights on the level of effort and resources that will be needed to conduct the review, provide input to the application review schedule, and identify any areas of information insufficiency that may impact the application review. The audit was coordinated with the Environmental Review New Reactor Branch in the Office of Nuclear Material Safety and Safeguards to support the acceptance review of the environmental report submitted with the application.

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-2-

Staff from the Office of Nuclear Security and Incident Response and the Office of Nuclear Regulatory Research also participated in the audit. The audit was conducted from April 8, 2020, through May 27, 2020. The Audit Summary Report is enclosed.

Docket No.: 52-0049

Enclosure:  
Audit Summary Report

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U.S. NUCLEAR REGULATORY COMMISSION

AUDIT SUMMARY REPORT OF

OKLO POWER LLC AURORA REACTOR

COMBINED LICENSE APPLICATION ACCEPTANCE REVIEW

1.0 BACKGROUND

Oklo Power, LLC (Oklo) submitted a custom combined license (COL) application (“application”) for the Aurora reactor in March 2020. The U.S. Nuclear Regulatory Commission (NRC) staff conducted an audit of the supporting information for the COL application for the Aurora reactor. This audit was conducted specifically to support the acceptance review, not to make safety findings on the Aurora design and nothing in this report should be construed as the staff’s assessment of the adequacy of the design. The staff will document its safety determination in a final safety evaluation report at the conclusion of its detailed technical review.

The audit’s purpose was to verify the existence of calculations, analyses and/or bases underlying the application and to confirm the staff’s understanding of the application. The audit was also used to support the staff’s insights on the level of effort and resources that will be needed to conduct the review, provide input to the application review schedule, and identify any potential areas where submission of additional information may be needed to complete the application review. An audit plan (Agencywide Documents Access and Management System (ADAMS) Package Accession No. ML20079L202) was developed for the audit and provided to Oklo. An entrance meeting was held via Skype on April 8, 2020. The documents loaded into Box (an electric reading room) and reviewed by the NRC staff during the audit are identified in Section 3.0 of this summary. Several audit meetings were scheduled throughout the audit to review information that Oklo made available to the staff. These meetings were held on April 15, 16, 27, 28, and 29 and May 6, 7, 11, 12, and 14, 2020. In addition, several status meetings were held to discuss progress in the audit. The exit meeting was held on May 27, 2020, during which time the observations made during the audit were discussed with Oklo personnel. Those observations are also documented in this report.

2.0 AUDIT RESULTS

General

The audit was conducted using an electronic reading room where Oklo could make documents available for the staff to review. Box was used as the electronic repository by Oklo. After the entrance meeting, Oklo provided a document, with subsequent updates, indicating a path forward to address the NRC staff’s request for information in several areas of the audit (See Documents 13, 26, 32, and 73 in Section 3.0).

Design control was examined by NRC staff to provide clarity in several review areas. In support of this audit item, Oklo presented on their design control process during a meeting on April 28, 2020, using the presentation titled “Design Control, and Analysis Demo.” The presentation file “oklo\_nrc\_acceptance\_review\_audit\_meeting\_4\_28\_20.pdf” (Document 18 in Section 3.0) was later added to Box. During this presentation and discussion, NRC staff noted some key features of Oklo’s design control process for the Aurora design as presented by Oklo.

In particular, the NRC staff noted that (1) the design control process uses the Git version control system, (2) changes are tracked to identify the responsible individuals implementing and reviewing the changes, and (3) changes are officially implemented by the Git repository owner during a merge process.

Oklo indicated that draft procedures have been developed from the Quality Assurance Program Description, Oklo-2019-14-NP, Revision 1, "Oklo Inc. Quality Assurance Program Description (QAPD): Design and Construction," (ADAMS Accession No. ML20054M761). The finalization of the procedures is pending issuance of the NRC staff safety evaluation report on the QAPD. The NRC staff will review application of the QAPD in the electronic system as part of its Step 1 review, including how documents are created, reviewed and approved and how supporting information is identified.

Below are observations from specific technical areas which were audited during the acceptance review.

#### A. DOSE/SOURCE TERM/ACCIDENTS

##### *Audit Items A.1, A.3 and A.4, Fission Product Inventory, Source Term, and Shielding Analyses*

The NRC staff requested, in Audit Items A.1 and A.3 of the audit plan, access to calculations used to determine the fission product inventory in the core and to calculations supporting the radiological source terms in the COL application, Part II, Chapter 3. The NRC staff observed through documents placed in Box (Documents 20, 25, 28, and 32 of Section 3.0 of this audit summary) and clarifying discussions with the applicant that an end-of-life spent fuel core inventory and calculations supporting the tables in Part II, Chapter 3 regarding radiological source terms have been performed using the Serpent multi-purpose three-dimensional continuous-energy Monte Carlo particle transport code (<http://montecarlo.vtt.fi/>). The applicant also stated that necessary calculation input, output, post-processing, and results would be made available for NRC staff audit during the technical review of the COL application, if requested.

In Audit Item A.4 of the audit plan, NRC staff requested access to shielding design analyses done to support the Aurora COL application. The NRC staff observed through discussions with the applicant that calculations of direct dose and activation in areas within and around the Aurora to support shielding design and evaluate radiation protection for workers and the public were also performed using Serpent. The applicant stated that necessary related calculation input, output, post-processing, and results would be made available for NRC staff audit during the technical review of the COL application, if requested.

##### *Audit Item A.2, Fission Product Release Assumptions*

The NRC staff requested, in Audit Item A.2 of the audit plan, access to analyses that provide the assumptions for the fission product release from the fuel considering retention by each fission product barrier credited. The applicant provided three documents in Box that address this topic (Documents 4, 6, and 25 in Section 3.0). The NRC staff observed that Document 4, "Oklo DG-1353 Pilot – Enclosure 2 – Report Markings with justification.pdf," a pilot of the DG-1353 process, and Document 6, "PROJ 0823 – Oklo – Risk Analysis and Source Term Technical Report – Enclosure 2 – Report.pdf," a technical report on source term and probabilistic risk assessment (PRA), are documents previously provided to NRC staff during pre-application

activities. The NRC staff noted that Documents 4 and 6 have similar discussions of assumptions on fission product release through the barriers to release, with different assumptions on the amount of core damage for the bounding accident. In discussions during the audit, the applicant confirmed that the documents are outside the scope of the maximum credible accident (MCA) analysis as submitted in the COL application, which assumes no core damage and no release from the fuel.

The NRC staff observed that Document 25 in Section 3.0, "Oklo Inc. – Brief summary of source term estimate using RADTRAD, Rev. 0.pdf," is a high-level description of a collaboration between Oklo and Pittsburgh Technical, LLC to conduct an accident source term release and calculation of offsite dose in the near field around the Aurora powerhouse. The calculation referenced in the document was not reviewed by the NRC staff. In discussions during the audit, the applicant confirmed that the referenced analysis does not directly support the MCA analysis as submitted in the COL application, Part II, "Final Safety Analysis Report," (FSAR). In discussions with the applicant related to Audit Items A.3 and A.5, the NRC staff noted that the applicant is relying on the low burnup of the fuel to retain fission products within the fuel matrix, as well as the integrity of the cell can under all conditions up to and including the MCA to preclude fission product release from the fuel. In the audit, NRC staff determined that additional information and review focus will be needed to assess the bases for the fission product release assumptions supporting the FSAR analyses.

*Audit Item A.5, Maximum Credible Accident Event Evaluation Process.*

The NRC staff requested, in Audit Item A.5 of the audit plan, documents related to the event evaluation process for determining the MCA. Oklo presented to NRC staff (document 15 in section 3.0) how the MCA considered insights from the PRA, unprotected events, and source term evaluation. During this presentation, NRC staff noted:

- Oklo screened out unprotected events as not-credible – In a presentation, staff observed Oklo defined "credible" for the purpose of their evaluation process as events being mechanistically possible involving up to a single failure.
- Oklo provided additional detail on their evaluation process. Oklo grouped events based on type, then evaluated these groupings for credibility and severity. The NRC staff noted that this evaluation and screening process appeared to rely on qualitative metrics and judgement in certain areas, though Oklo noted they had conducted a number of sensitivity studies to arrive at the MCA documented in the FSAR.
- Oklo presented the results of a sample PRA that showed a shutdown failure frequency (SFF) for a loss of heat sink that is consistent with the value presented in FSAR Table 24-1.
- Oklo performed an evaluation of the unprotected loss-of-heat-sink event using a lumped mass, point kinetics approach that is similar to the approach described in the Oklo DG-1353 Pilot<sup>1</sup>. Oklo presented results that were largely consistent with the results presented in the Oklo DG-1353 Pilot.

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<sup>1</sup> DG-1353 was a draft Regulatory Guide (now issued as Regulatory Guide 1.233) that provided a technology-inclusive methodology to selecting licensing basis events, classifying SSCs, and assessing defense in depth, a process referred to as the Licensing Modernization Project (LMP). Oklo developed a pilot document using the LMP process and submitted it to the NRC for pre-application review. Oklo ultimately decided not to utilize the LMP process.

- Oklo performed an evaluation of an unprotected single heat pipe failure. This evaluation determined that the reactor cell with the failed heat pipe likely results in breach of the reactor cell and subsequent release of fission products from the cell can.
- As summarized in Document 25 and described by the applicant in an audit clarification meeting, Oklo collaborated with Pittsburgh Technical, LLC to conduct a source term and dose calculation of the Aurora near field.

The staff will review the selection of the MCA and justification for the SFF as part of its Step 1 review.

*Audit Item A.6, Analyses Related to Thermal Conductivity Degradation and Heat Pipe Cascade Failure*

The NRC staff requested, in Audit Item A.6 of the audit plan, analyses to support statements made in the COL application regarding (a) thermal-conductivity degradation of the fuel and (b) the credibility of heat pipe cascade failures. In support of these Audit Items, Oklo made two reports available for audit. Oklo made "Aurora fuel thermal conductivity basis" (Document 22 in Section 3.0) available to address Audit Items A.6.a and B.2 from the audit plan. The NRC staff's examination of this report is discussed under Audit Item B.2 of this audit summary. Oklo made "Heat pipe failure in the Aurora," (Document 21 in Section 3.0) available to address Audit Items A.6.b and B.3 from the audit plan. The NRC staff's examination of this report is discussed under Audit Item B.3 of this summary.

*Audit Item A.7, Probabilistic Risk Assessment*

In order to better understand the scope, rigor, and level of detail of the Oklo PRA, the NRC staff requested a discussion and overview of any available PRA information (such as PRA Notebooks), which address items such as scope, key assumptions, data, screening criteria, and quantification, to support the PRA information in the COL application. In support of these items, Oklo provided two documents for audit (1) "PROJ 0823 - Oklo - Risk Analysis and Source Term Technical Report - Enclosure 2 - Report.pdf" (Document 6 in Section 3.0) and (2) "Oklo DG-1353 Pilot - Enclosure 2 - Report markings with justification.pdf" (Document 4 in Section 3.0). In addition, during an April 27, 2020, call, Oklo presented to NRC staff on the role of PRA and programmatic controls in determining the MCA, and subsequently made the presentation material, 'MCA and the role of PRA and programmatic controls handout.pdf' (Document 15 in Section 3.0) available in Box. In addition, Oklo briefly discussed PRA and its role in the determination of the MCA as described in Audit Item A.5 of this summary. Based on the audit activity, NRC staff noted:

- The two documents uploaded in Box are the ones that were made available to the staff during the preapplication stage in 2017 and 2018. Oklo stated that static and dynamic PRAs and source term analysis were used during design iteration based on safety and operational goals. The NRC staff observed that the PRA information in the COL application is substantially different from the preapplication documents; therefore, additional information will be needed to provide insights into the details of the PRA supporting the information in the COL application.

- During the audit interactions, Oklo briefly presented PRA-related topics, such as a logic and associated fault tree for the failure of the shutdown rod system. Detailed information will be needed regarding the PRA.

## B. CORE/FUEL DESIGN

### *Audit Item B.1, Calculations for Reactor Design and Kinetics Behavior*

The NRC staff requested, in Audit Item B.1 of the audit plan, access to “Calculations that establish the reactor core design and kinetics behavior (e.g., reactivity balance, power distribution, reactivity coefficients, shutdown margin).” In support of Audit Item B.1 from the audit plan, Oklo presented on the process used to perform a Serpent calculation. The NRC staff did not have the opportunity to examine specific calculation notes, input decks, or output files that would support the core design and kinetics parameters provided in the COL application. However, based on the detailed presentation of the core design calculation process and ability of the Oklo team to address NRC staff’s technical questions, NRC staff determined that such calculations could be made available for audit during a detailed technical review.

### *Audit Item B.2, Calculations on Fuel Performance Characteristics*

The NRC staff requested, in Audit Item B.2 of the audit plan, access to “Calculations that provide fuel performance characteristics as a function of burnup (e.g., thermal-conductivity, swelling, peak fuel temperature, eutectic formation).” In support of this item, Oklo provided documents for the NRC staff audit and provided subject matter experts for discussion and clarification. Based on this audit activity, the NRC staff noted:

1. A report exists to support the thermal conductivity used in the transient analysis. Specifically, this report is Document 22 in Section 3.0, “Aurora fuel thermal conductivity basis.”
2. Fuel thermal performance is evaluated by placing thermal-physical properties of the fuel into ANSYS for steady-state and transient analysis based on publicly available references.
3. Several of the documents provided for audit (Documents 5, 7, and 8 in Section 3.0) were previously submitted to and examined by the NRC. The NRC staff re-examined these documents but found that they did not contain the calculations requested under Audit Item B.2. More information will be needed to support this part of the review.

### *Audit Item B.3, Calculations on Passive Heat Removal*

The NRC staff requested, in Audit Item B.3 of the audit plan, access to “Calculations used to determine parasitic heat losses during normal operation and heat removal from the reactor to the environment during plant transients and accidents, including any analysis related to contact conductance and resistances used.” In support of this item, Oklo provided the following documents in Box:

- “Passive heat removal from the Aurora reactor module,” Rev. 0 (Document 23 in Section 3.0)

- “Passive heat removal from the Aurora reactor module,” Rev. 1 (Document 33 in Section 3.0)
- “Aurora contact conductance methodology” (Document 24 in Section 3.0)
- “Heat pipe failure in the Aurora” (Document 21 in Section 3.0)

Based on the NRC staff’s discussion with Oklo staff and examination of these documents and “Concrete temperature assessments in the Aurora” (Document 71 in Section 3.0) provided for Audit Item C.1, NRC staff noted:

- The calculations for heat removal from the module used heat transfer coefficients developed for immersed external flow geometries.
- Inputs to the module heat removal analysis are based upon significant geometry and environmental assumptions. The basis for these assumptions was not available for audit.
- Design options associated with the reactor vessel cavity are still under consideration, based on discussions with the Oklo staff.
- The NRC staff sought additional clarification on the passive heat removal from the Aurora module analysis (Document 23 in Section 3.0). Specifically, NRC staff requested clarification on the following (1) the basis for the inputs to the analysis because design documents were not referenced in the report, and (2) how the calculated heat transfer coefficients supported the value used in the COL application because the values calculated in the report were less than the values used in the COL application. In response, Oklo revised the report (Document 33 in Section 3.0) to provide additional details on the basis for the geometric parameters and to reference a sensitivity analysis to support the heat transfer coefficient used in the COL application.
- The NRC staff sought additional information that supported the statement in the FSAR regarding cascade failures of heat pipes. Oklo provided an analysis, (Document 21 in section 3.0), to support this request. The analysis for a single heat pipe failure relies on the successful actuation of the reactor trip system. This analysis showed a relatively rapid fuel heat-up until the point of reactor trip. The fuel temperature decreased monotonically post reactor trip.

*Audit Item B.4, Fuel Fabrication Specifications*

The NRC staff requested, in Audit Item B.4 of the audit plan, access to “Fuel fabrication specifications.” In response, Oklo stated that they are relying on the experience of Idaho National Laboratory (INL) to fabricate the fuel consistent with the fuel used in the Experimental Breeder Reactor II (EBR-II). Additionally, during a presentation in support of Audit Items C.2 through C.4, Oklo clarified that the fuel casting size has not been finalized. Specifically, Oklo stated that the total fuel height [[

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*Audit Item B.5, Point Kinetics Equation Solver*

The NRC staff requested, in Audit Item B.5 of the audit plan, access to “Documentation on the point kinetics equation solver that was developed by Oklo (e.g., methodology, verification, validation, sensitivity studies, and uncertainty evaluations).” In support of this item, Oklo provided “Point kinetics in the Aurora” (Document 19 in Section 3.0) for audit. The NRC staff

examined this document and noted that the kinetics solver used by Oklo is a straight-forward differential equation solver that conservatively does not include models for capturing inherent reactivity feedback mechanisms.

### C. STRUCTURES, SYSTEMS, AND COMPONENTS

#### *Audit Item C.1, Seismic Analyses/Reactor Cavity Concrete Temperature*

The NRC staff requested, in Audit Item C.1 of the audit plan, access to “Analyses which demonstrate the safety functions of structures, systems, and components will be accomplished during and after a seismic event. This should include seismic evaluation of shutdown rods, module shell support to reactor module emplacement, and concrete temperature assessments.” To support a description of concrete temperatures in the reactor cavity for the Aurora design, Oklo provided a document titled “Concrete temperature assessment in the Aurora” (Document 71 in Section 3.0). The NRC staff examined this report and noted that the design work in this area is still progressing and Oklo is considering various options.

#### Mounting Structures for Reactor Module

Oklo provided a paper titled “Mounting Structure FEA Modeling – README.pdf,” (Document 70 of Section 3.0), dated May 2020, summarizing the current structural integrity evaluation during an earthquake using ANSYS FEA modeling of mounting structures of the Aurora reactor module. Oklo provided several ANSYS plots of the sections of reactor module showing the displacements and stresses (Documents 35-67 in Section 3.0). Oklo determined the stress levels are below the yield strength of SS-304 material in the components of the mounting structures. Oklo also described that the areas with stress concentrations will be designed further. The staff observed that the information will support a technical review after the report is finalized.

Oklo considered the site soil type as “hard-rock,” in Sections 1.2.1.5, “Seismic evaluation,” and 7-A.1.2, “Seismic data from American Society of Civil Engineers,” in the FSAR. As discussed in Audit Item D.1, the staff would need to review additional information from Oklo about site geological parameters to determine that the seismic capacity of the structures, systems and components envelopes the site hazard. While the staff cannot confirm that the soil type is “hard-rock,” if the shear-wave velocity of soil at the site is determined to be above 5,000 feet/second (“hard-rock,” per Table 20.3-1, “Site Classifications,” in ASCE 7), then the Soil-Structure Interaction (SSI) evaluation may not be required.

#### *Audit Items C.2, C.3, and C.5, Design Specifications, Drawings, and Failure Modes and Effects Analysis*

The NRC staff requested in Audit Items C.2, C.3, and C.5 of the audit plan:

- Design specifications for major components including fuel cans, heat pipes, capsule, and module
- Design drawings for major components of the reactor. Details of specific areas of interest including: interfaces between reactor internal components, the bill of materials,

and tolerances of components that are (a) stricter than stock material tolerances and (b) important factors in design calculations.

- Failure mode and effects analysis or evaluations on failure mechanisms. Topics of interest include evaluations on creep, irradiation embrittlement and void generation, fabrication issues such as cold cracking, etc.

Oklo met with the staff on May 14, 2020, to demonstrate how Oklo describes requirements for structures, systems, and components (SSCs) which are typically documented in design specifications to demonstrate how Oklo generates design drawings, to present an example design drawing, and to describe how Oklo evaluated failures for major components in the Aurora design.

In the meeting, Oklo indicated that the design specifications were contained in the Aurora application II.02 (FSAR) (Documents 13 and 26 in Section 3.0). The staff was seeking specifications or reports which document all requirements for SSCs that are needed to support the MCA. Oklo also stated that requirements for SSCs are contained within Oklo's design library files and analyses. Based upon this discussion, NRC staff understands that Oklo does not utilize design specifications and that Oklo's Git repository describes some requirements for SSCs. The staff did not confirm whether the Git repository contained sufficient information to support the MCA. For the request of fuel specifications, Oklo uploaded Document 8 in Section 3.0 for audit. This white paper, prepared by the Fast Reactor Working Group, was already available to and examined by the NRC staff (ADAMS Accession No. ML18165A249). This document notes that defective welds were the cause of breach in 16 of the 22 fuel elements in EBR-II, and that this issue was eradicated early in the program. The white paper does not identify the actions taken to correct the issue. The staff would need information on the corrective actions, if any, that would be incorporated into the fabrication of the Oklo fuel assemblies.

Oklo presented preliminary design drawings for the cell can. Oklo indicated these drawings were not finalized and still needed to be discussed with fabricators to incorporate final fabrication details. The design drawings described the assembly of the cell can and requirements on individual components/subassemblies. The assembly drawings indicated the fuel will be cast in several sections and stacked within the cell can. The design drawings needed for further review would need to describe key dimensions for the cell cans and heat pipes as well as the welding geometries for the assembly of the cell can. Oklo indicated they have similar drawings for the reactor module (including closure plate) and heat pipes.

Oklo presented the results of fluence and temperature calculations for materials in the core, capsule, and module shell. The fluence and temperature maps resembled the figures provided in the FSAR. Documentation or discussions on creep were not available for audit. The NRC staff asked if there was an assessment of the life expectancy for a heat pipe. Oklo personnel indicated that they expect the heat pipes to last for the 20-year life of the reactor and that more information on this is in the heat pipe failure report (Document 21 in Section 3.0). Oklo staff discussed some ways in which weld quality can be improved but did not indicate how this would be implemented. In a similar manner, Oklo discussed some ways in which non-destructive examination requirements could be specified but did not indicate the requirements that would be imposed on the Aurora design. This information will be needed during the technical review phase to assess the leak tight integrity of the cell cans (which are credited as leak tight in the

MCA analysis). A Failure Modes Effects Analysis or similar evaluation on how individual components or systems may fail was not available for audit.

*Audit Item C.4, SSC Compatibility with Environment*

The NRC staff requested information related to compatibility of SSCs (key instrumentation and controls (I&C) and electrical equipment) with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents. In response, the applicant uploaded a document titled "Oklo Inc. - Electric equipment environmental qualification non-applicability, Rev. 0.pdf" (Document 31 in Section 3.0) in Box for audit. Based on the audit activity, the NRC staff noted:

- The uploaded report provided additional details unavailable in the COL application for the electrical/I&C equipment. The staff will need to review further information on testing and maintenance conditions or, consistent with General Design Criterion 4, the environmental compatibility of SSCs beyond electric/I&C equipment.
- This report states that the Oklo QAPD is followed for important shutdown equipment. The staff was unaware of this because, while the QAPD specifies that Section III applies to nonsafety-related SSCs that are significant contributors to plant safety, the COL application does not specify which SSCs are significant contributors to safety. The staff will review implementation of the QAPD as part of its Step 1 review.

D. SITING

*Audit Item D.1, Site Seismic Hazard vs. Seismic Design*

In Audit Item D.1, the staff requested that the applicant provide a report that details the analysis performed to determine the site-specific seismic hazard and associated safe shutdown earthquake (SSE). The NRC staff observed that the information in Part II, FSAR, Chapter 1, utilized a non-nuclear (civil engineering) standard to establish the seismic demand for the site, which differs from the guidance identified as acceptable in RG 1.60, "Design Response Spectra for Seismic Design of Nuclear Power Plants" or RG 1.208, "A Performance-Based Approach to Define the Site-Specific Earthquake Ground Motion." This standard is not intended for use to determine SSE at nuclear facilities. The FSAR needs to include site-specific ground motion response spectrum that establishes the site-specific SSE as required by the regulations in Title 10 of the *Code of Federal Regulations* (10 CFR) 100.23 and 10 CFR Part 50, Appendix S. The application needs to provide a summary of the local hazard from significant seismic sources, ground motion attenuation relationships, and site-specific amplification functions necessary to establish the site-specific SSE ground motion response spectrum. This information is necessary to satisfy 10 CFR 100.23 and 10 CFR Part 50, Appendix S requirements.

This item was discussed with Oklo, and additional information was posted to Box in the document titled "Oklo Inc. - INL proposed site seismic considerations and evaluations." This document provides background information on the site-specific seismic hazard. The document also provides additional information regarding Oklo's approach to determining the site-specific SSE and classification of the Oklo facility as a Seismic Design Classification 2 (SDC-2). The staff will need further information on the basis for selecting only a single value (Peak Ground Acceleration) for the site-specific SSE and the detailed, site-specific information required by 10 CFR Part 100.23 and 10 CFR Part 50, Appendix S, when developing the site-specific SSE.

While the above referenced document provides additional information about Oklo's approach to site seismic hazard and satisfies the audit request, further information would be necessary for the staff to perform its detailed review. However, the staff believes that the information to establish the basis for the INL site is available in the public domain.

*Audit Item D.2, Site Geotechnical Parameters*

The NRC staff observed that Part II, FSAR, Chapter 1, needed to contain information about the site geotechnical parameters such as bearing capacity, settlement estimates, seismic velocity profiles, or foundation stability evaluations relative to design requirements. The NRC staff requested that Oklo provide information about the bearing demand, allowable settlements, and the site-specific geotechnical parameters that demonstrate site suitability as Audit Item D.2.

Audit Item D.2 was discussed with Oklo, and additional information was provided by Oklo. Document 34 of Section 3.0 titled "INL proposed site geotechnical parameters" provides background information on the approach to determining the need for detailed geotechnical investigations and SSI analysis. Oklo stated that geotechnical data will be collected and evaluated during the construction phase to ensure that the site is suitable for the facility and that SSI is generally not considered necessary due to the size/weight of the facility. While the evaluation of geotechnical data collected during construction will not be available for the combined license review, based on the availability of public information as stated in Audit Item D.1, the NRC staff finds that the information provided is adequate to permit the technical review to proceed in this area.

E. OPERATIONAL PROGRAMS

*Audit Item E.1, Fire Protection*

The NRC staff requested in Audit Item E.1 of the audit plan Aurora fire protection program documents. The NRC staff reviewed the fire protection documents that were posted to BOX (Documents 2 and 3 in Section 3.0). Document 2, the fire hazards analysis, provided an outline of the fire protection program that will be used for the Aurora reactor. It contains details about the fire protection program and the standards that are met by the program. It outlines the fire areas, the fire protection features, and the fire hazards. Document 3, the Aurora Safe State Analysis Report, provides additional information related to how 10 CFR 50.48, "Fire Protection," is met. The report is noted as being preliminary and is to be updated when the Aurora design is final. It identified the methodology that was used in the analysis, the goals for the safe state, and the equipment necessary to achieve the safe state. The staff observed that this information is adequate to permit the technical review to proceed.

*Audit item E.2, Radiation Monitor Locations*

In Audit Item E.2 of the audit plan, NRC staff requested drawings identifying locations for radiation monitors. This item was satisfied by a document (Document 27 in Section 3.0) posted to Box that shows the specific locations of radiation monitors and indications.

*Audit Item E.3, Human Factors Program*

The NRC staff requested in Audit Item E.3 of the audit plan human factors program documents including style guide/guidelines. The staff will need additional information to review the Human Factors Engineering (HFE) program for the Aurora design and how the state of the art in HFE will be applied in the relevant portions of the facility design under 10 CFR 50.34(f)(2)(iii). The NRC staff requested Human Factors Program documentation (including a style guide/guideline if available) to confirm its availability to support a safety determination as part of the technical review.

The staff also noted that related HFE programmatic information would be necessary in order to evaluate Oklo's requested licensed operator staffing exemptions under the process outlined by NUREG-1791, "Guidance for Assessing Exemption Requests from the Nuclear Power Plant Licensed Operator Staffing Requirements Specified in 10 CFR 50.54(m)." Based on this, the NRC staff informed Oklo of the need for this additional information in support of the exemption evaluations. In response to this request, Oklo made a document titled "Review of NUREG 1791 and application contents" (Document 74 in Section 3.0) available for audit. This document referenced information that was available in the FSAR, as well as other documents submitted in support of Audit Items E.4 and E.6. The staff may have additional information requests in this area during the technical review.

*Audit Item E.4, Concept of Operations*

The NRC staff requested in Audit Item E.4 of the audit plan concept of operations descriptions for the facility. The COL application contains information related to how the proposed facility will be operated. For example, FSAR Chapter 13 describes the organizational structure for operations and Chapter 14 describes preoperational testing and initial operations. Due to the licensed operator-related exemptions requested by Oklo, the staff was interested in further information on how personnel are expected to interact with systems at the proposed facility. Based upon this, NRC staff requested concept of operations descriptions for the facility. In response to this request, Oklo made the following documents available for the audit:

- "Training Program" (Document 75 in Section 3.0)
- "Reactor startup overview" (Document 72 in Section 3.0)

Training Program

The review of this audit area and documentation is discussed below in *Audit Item E.6, Training and Qualification Requirements*.

Reactor Startup

To provide a description of the reactor startup procedure, Oklo made a document titled "Reactor startup overview" (Document 72 from Section 3.0) available for audit. The NRC staff examined this report and noted its purpose, important inputs into the analysis, and the main results. This document contained the key sequences for starting up the Aurora. The process for initial criticality of the first Aurora reactor during the Initial Test Program, as described in Chapter 14 of the FSAR, is different than the process described in this report. The process described in this

document reflects a normal startup of the Aurora reactor, once construction and startup testing described in Chapter 14 of the FSAR has been completed. The staff found that this description provided operational details that were unavailable in FSAR. This information can be used in support of exemptions requested by the applicant. However, additional information may be needed to fully evaluate the exemption from licensing operators.

*Audit Item E.5, Functional Requirements Analysis*

The NRC staff requested in Audit Item E.5 of the audit plan functional requirements analysis for the assignment of responsibilities to personnel, automation, or other design attributes. The Functional Requirements Analysis information that is provided in the FSAR is limited to Figure 4-2, "Top-level fundamental safety functions and the identified supporting safety functions for the Aurora." Due to the licensed operator-related exemptions requested by Oklo, NRC staff will need further information related to these analyses and requested the Functional Requirements Analysis associated with the assignment of responsibilities to personnel, automation, or other design attributes. The staff will seek additional information during the technical review to assess the basis for the requested exemption.

*Audit Item E.6, Training & Qualification Requirements*

The NRC staff requested in Audit Item E.6 of the audit plan descriptions of training and qualification requirements for the Startup Operator position. The application contains information related to how training will be conducted for personnel at the proposed facility. Specifically, FSAR Chapter 17 describes the facility's training program. FSAR Chapter 17 refers to 10 CFR 50.120 and indicates that Oklo's training program is informed by American National Standards Institute/American Nuclear Society (ANSI/ANS)-15.4-2016, "Selection and Training of Personnel for Research Reactors." However, the staff will need additional information regarding the required categories of personnel for whom the training program will provide training and qualification, as required by 10 CFR 50.120(b)(2). Due to the licensed operator-related exemptions requested by Oklo, NRC staff will need further information on the training and qualification requirements for the proposed, non-licensed Startup Operator position and requested descriptions of training and qualification requirements for the Startup Operator position. In response to this request, Oklo made the "Training Program" (Document 75 from Section 3.0) document available for the audit. The NRC staff noted that this description provided additional information regarding training details. The NRC staff noted that this document addressed the majority of the categories of personnel who should be covered by the Oklo training program under 10 CFR 50.120(b)(2). However, NRC staff noted that Engineering Support personnel were not addressed by this Training Program as required by 10 CFR 50.120(b)(2)(ix).

*Audit Item E.7, Access Control Measures*

The NRC staff requested in Audit Item E.7 of the audit plan clarification regarding any access control measures that may preclude personnel actions such as inserting a manual trip. In response, Oklo stated that there are no logic controls that would preclude onsite personnel from initiating a manual trip. This clarification, in conjunction with the information in the FSAR, adequately resolved this question by NRC staff.

## F. ENVIRONMENTAL

### *Audit Items F.1, Environmental Report*

In this area, NRC staff was seeking information about the applicant's assessment of potential radiological releases and doses resulting from Aurora operations and accidents, potential radiological impacts from transportation of fuel and wastes, and potential radiological environmental impacts to Aurora construction and operating staff resulting from U.S. Department of Energy (DOE) nuclear facilities adjacent to the proposed candidate sites. The NRC staff was also seeking information about potential impacts to any environmental resource areas arising from the Aurora nuclear fuel cycle.

The applicant provided access to its environmental basis document, which provided a methodology for screening environmental topics requiring detailed review for siting an Aurora micro-reactor. During the audit, the applicant described its process for screening environmental topics. The applicant explained that the environmental basis document considered all environmental resource topics addressed in Regulatory Guide 4.2, "Preparation of Environmental Reports for Nuclear Power Stations," Revision 3. The environmental basis document identified those topics considered generically not applicable to the Aurora design, and topics that were considered applicable. For applicable topics, the basis document further evaluated whether these topics were dependent on any site characteristics or would be generally applicable for any site. Environmental topics that screened out were not addressed in the Aurora environmental report (ER). Environmental topics considered to be dependent on-site characteristics were treated as environmental commitments and were discussed in Appendix A of the ER. Generally applicable topics were discussed in the body of the ER.

Regarding impacts to some of the resource areas of interest to NRC staff described above (e.g., radiological releases and doses, and radiological wastes), the applicant described the screening process that led to its conclusions that there would be no impacts to these resource areas. Regarding impacts to Aurora staff from adjacent DOE nuclear facilities in the Materials and Fuels Complex, the applicant stated its expectation that workers would be subject to existing DOE programs.

Regarding assessment of environmental impacts of the fuel cycle, the applicant considers that the size of the reactor and the related quantity of nuclear material in the core is of such a small size relative to currently operating large reactors that there is essentially no need to address impacts from the fuel cycle. Therefore, the applicant requested an exemption from 10 CFR 51.50(c). However, NRC staff will still need to assess fuel cycle impacts, which will require information on the manufacture and fabrication of the reactor fuel and reactor cell cans. Based on publicly available information (e.g., a February 19, 2020, press release from INL and a 2-day industry-sponsored HALEU (high-assay low-enriched uranium) webinar on April 28 and 29, 2020), the nuclear fuel for the proposed Aurora micro-reactor is expected to be manufactured at the INL site and transported within the INL site boundaries to the Aurora site. The staff will need further information from Oklo that confirms the applicant's plans for fuel fabrication and transportation.

The information provided demonstrated that the applicant appeared to have implemented a reasonably comprehensive and systematic process for assessment of environmental impacts;

however, the staff will need further details for issues that screened out from further review, or the reasons for screening out these issues. While additional information is needed, the staff determined that it could conduct its environmental technical evaluation based on having sufficient access to the environmental basis document and other applicant documents for audit, and DOE radiation protection and environmental analyses performed for the INL site and for DOE or INL advanced fuel cycle activities.

## G. SECURITY

### *Audit Items G.1-6, Part 73, Physical Protection System, Access-Authorization, Exemptions, Fitness for Duty Program, Part 70 Material License*

In this area, the staff was seeking to understand how the site would protect against the design basis threat (DBT) of radiological sabotage in accordance with 10 CFR 73.1. The applicant is required to protect against the DBT in order to prevent radiological sabotage and offsite consequences adverse to public health and safety or demonstrate through a detailed consequence-based analysis that a range of credible malicious acts could not cause offsite consequences. This analysis would then justify applying alternative security measures and exemptions from the requirements to protect against the DBT.

The staff reviewed the security related documents that were posted to Box (Documents 16 and 25 of Section 3.0). Document 16, "Oklo Aurora Security Approach," described a safety basis approach that helped the staff to better understand at a high level the consequence-based analysis in which the security design was developed. The applicant stated that a bounding conservative analysis was conducted to analyze the offsite consequences associated with a portion of the core experiencing damage. Document 25, "Oklo Inc. – Brief summary of source term estimate using RADTRAD, Rev. 0.pdf," provided a summary of a report that included source term dose estimates directly outside the Aurora powerhouse based on reactor conditions and parameters. The summary indicated that the report contains many different cases analyzed that include different core damage functions. The summary did not indicate the range of credible malicious acts within the DBT that were considered as part of the analysis. This information will be needed during the staff's technical review of the application. During the audit, the staff discussed with the applicant the need to submit exemptions and/or alternatives (10 CFR 73.55(r)) to requirements of 10 CFR 73.1 based on any consequence and radiological sabotage analysis performed. Additionally, the staff discussed the applicant's need to consider exemptions and/or alternatives to areas related to security that were considered "not applicable" and are not technology based.

Security systems testing protocol and high-level design summaries of the security system were discussed with the applicant. These design basis documents were stated as currently not developed. The staff indicated that these design summaries will be needed during the technical review to properly evaluate the security design of the Aurora. The staff referred the applicant to publicly available reports from other applicants as examples.

The staff reviewed the fitness for duty (FFD), training, and site use permit documents that were posted to Box (Documents 1, 17, and 14 of Section 3.0). These documents were provided to address audit questions regarding the access-authorization program and FFD requirements. Document 1, "Oklo Power – FFD [Fitness for Duty], rev. 0.pdf," described the scaled approach

to the FFD program based on Aurora operations being highly automated, which do not rely on human action to achieve and maintain a safe shutdown. This document describes the program policy and procedures, roles and responsibilities, employee categories subject to the program, drug and alcohol testing, behavioral observations, and the review of the program. Document 17, "Oklo Power – 2020 – Training Program, Rev. 0.pdf," states that its purpose is to ensure onsite personnel are qualified, trained, and certified in order to operate and maintain the facility in a safe manner in all modes of operation. Specifically, NRC staff's review in this section consisted of training program items related to security, FFD, and access authorization. Document 14, "Site Use Permit DE – NE700105\_DOE-oklo.pdf," discussed agreed upon access authorization to the INL site. The permit describes the potential need for site service agreements that the applicant expects or desires DOE or its contractors to supply. NRC staff notes that site service agreements do not exist at this time.

As stated in the exemption, the applicant intends to implement a corporate cyber security plan instead of a cyber security plan in accordance with 10 CFR 73.54. The corporate plan was stated to be similar to NEI 08-09, "Cyber Security Plan for Nuclear Power Reactors," template. The staff discussed with the applicant how the corporate plan would be needed to properly evaluate the cyber security plan exemption during the technical review.

The NRC staff did not request information related to 10 CFR Part 70 as part of the Acceptance Review Audit. Staff noted that Oklo proposed a license condition to address 10 CFR Part 70 Special Nuclear Material License. This will be considered during the review of the Oklo COL application.

#### H. EMERGENCY PREPAREDNESS

*Audit Items H.1-5, Emergency Operating Procedures, Signal System for Responders, Emergency Planning Features, Training Program, Emergency Plan Certifications*

In this area, the staff was seeking to understand what emergency actions would be taken in accordance with the emergency operating procedures; information pertaining to the signal system to notify responders, both onsite and offsite, in the event of an emergency; maps that identify site features related to emergency planning; how the onsite monitor training program addresses determining emergency actions; and if emergency plan certifications had been obtained or if memorandums of understanding for emergency plan responsibilities are in place.

The staff understands that emergency operating procedures were not yet developed. The staff will need additional information related to the signaling system to be used to notify emergency responders in the event of an emergency and maps indicating site features, such as an emergency operations facility. The onsite monitor training program, "Oklo Power – 2020 – Training Program, Rev. 0.pdf," (Document 17 in Section 3.0) was made available to the staff via Box. This document described the training program for the onsite personnel at the Aurora reactor, including the onsite monitors. The training program specifies general training which includes emergency planning under this heading. Under the specific training section, training on emergency preparedness as per the Emergency Plan, emergency operating procedures, and specific emergency response to fire, natural phenomenon, radiation release, and security threats is to be provided to the onsite monitors. Additional training for the onsite monitors is to include onsite dose assessment, offsite communications, first aid and CPR, onsite fire

emergency, onsite medical emergency, onsite security, emergency, and medical support of personnel with suspected contamination.

The application included the Idaho Emergency Operations Plan, Part VII, Enclosure 1, and the Idaho National Laboratory Base Plan, Part VII, Enclosure 2. These documents do not currently reference the Aurora reactor. Letters of certification from the governmental agencies with emergency planning responsibilities stating that the applicant's plans are practicable, the agencies are committed to further develop plans, and the agencies are committed to executing their responsibilities under the plans will be needed. (See 10 CFR 52.79(a)(22)(i).)

The applicant provided a site use permit (Document 14 in Section 3.0) which states, under Section X.B, that the holder, Oklo "may arrange with the Department of Energy through its contractors at the INL site for use of site facilities and support services... These services may include fire protection and response, emergency and medical response, and security" and that the site use permit will be amended to set forth the site support services that Oklo has arranged to have provided by DOE through its contractors. Section XI.A of the site use permit indicates that additional agreements will be needed to implement and establish procedures for compliance with many of the provisions of the permit and that Oklo and DOE agree to negotiate in good faith regarding the agreements. The site use permit acknowledges the potential need for a site services agreement which will describe which, if any, services Oklo expects or desires the DOE or its contractors to provide or supply to the Project under Section X.B. Examples include, but are not limited to, security, emergency response, etc. As indicated by Oklo, these agreements will need to be developed.

The NRC will need additional information regarding a location for the Emergency Operations Facility (EOF), or the Headquarters where the Headquarters Emergency Coordinator will be located. Additionally, the NRC may need further discussion with Oklo regarding provisions for locating NRC and offsite responders close to the site to allow face-to-face interaction with emergency response personnel entering and leaving the nuclear power reactor site. (See Appendix E.IV.E.8, of 10 CFR Part 50.)

#### I. OTHER

##### *Audit Item I.1, Financial Information*

After review of the application and applicable guidance related to acceptance reviews for license applications, the staff believes that the information contained in the application related to the financial qualifications of the applicant is sufficient to accept the document and commence the technical review. Questions during the application technical review phase related to financial qualifications, decommissioning funding assurance, foreign ownership, control, or domination, and insurance and indemnity, may arise, but are related to details that are more appropriate for the technical review.

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### 3.0 DOCUMENTS REVIEWED

The following files were loaded into Box by Oklo for NRC staff to view during the audit.

1. Oklo Power – FFD [Fitness for Duty], rev. 0.pdf
2. Fire Hazards Analysis Rev.1.pdf
3. Aurora Fire Safe State Analysis Rev. 0.pdf
4. Oklo DG-1353 Pilot – Enclosure 2 – Report Markings with justification.pdf
5. PROJ99902046 – Oklo – Metal Fuel Database Technical Report – Enclosure 1 – Report.pdf
6. PROJ 0823 – Oklo – Risk Analysis and Source Term Technical Report – Enclosure 2 – Report.pdf
7. PROJ 0823 – Oklo – Core Design Technical Report – Enclosure 2 – Report.pdf
8. FRWG [Fast Reactor Working Group] – Nuclear Metal Fuel – Characteristics, Design, Manufacturing, Testing, and operating history (ML18165A249).pdf
9. COLA\_structure\_PSP\_example\_public\_handout.pdf
10. COLA\_structure\_PSP\_example\_handout.pdf
11. COLA\_structure\_shutdown\_rod\_example\_handout.pdf
12. COLA\_structure\_EP\_example\_handout.pdf
13. NRC acceptance review audit plan disposition – audit next steps 04202020.pdf
14. Site Use Permit DE – NE700105\_DOE-oklo.pdf
15. MCA and the role of PRA and programmatic controls handout.pdf
16. Oklo Inc. – Aurora security approach Rev. 0.pdf
17. Oklo Power – 2020 – Training Program, Rev. 0.pdf
18. oklo\_nrc\_acceptance\_review\_audit\_meeting\_4\_28\_20.pdf
19. Oklo Inc – Point kinetics in the Aurora, Rev. 0.pdf
20. 20\_year\_spent\_fuel\_vector.pdf
21. Oklo Inc. – Heat pipe failure in the Aurora, Rev. 0.pdf
22. Oklo Inc. – Aurora fuel thermal conductivity basis, Rev. 0.pdf
23. Oklo Inc. – Passive heat removal from Aurora reactor module, Rev. 0.pdf
24. Oklo Inc. – Aurora contact conductance methodology, Rev. 0.pdf
25. Oklo Inc. – Brief summary of source term estimate using RADTRAD, Rev. 0.pdf
26. NRC acceptance review audit plan disposition 4.30.20.pdf
27. Oklo Inc. – Stationary radiation monitors, Rev. 0.pdf
28. Read\_me\_source\_term\_calcs.rtf
29. Oklo Inc. – Aurora environmental basis, selected excerpts, Rev. 0.pdf
30. Oklo Inc. – CGD of software codes used in the Aurora transient analysis, Rev. 0.pdf
31. Oklo Inc. – Electric equipment environmental qualification non-applicability, Rev. 0.pdf
32. NRC acceptance review audit plan disposition 5.6.20.pdf
33. Oklo Inc. – Passive heat removal from Aurora reactor module, Rev. 1.pdf
34. Oklo Inc. – INL proposed site geotechnical parameters, Rev. 0.pdf
35. 1.5G-Lateral-deformation-scaled-lugs.PNG
36. 1.5G-Lateral-Equivalent Stress-Lugs.PNG
37. 1.5G-Lateral-deformation-scaled.PNG
38. 1.5G-Lateral-Equivalent Stress.PNG
39. 1.5G-Lateral-Equivalent Stress-Bolts.PNG
40. 1.5G-Lateral-deformation.PNG
41. 2.625G-Lateral-Equivalent stress-lugs.PNG

42. 2.625G-Lateral-Equivalent stress.PNG
43. 2.625G-Lateral-deformation.PNG
44. 2.625G-Lateral-deformation-lugs.PNG
45. 2.625G-Lateral-deformation-scaled-lugs.PNG
46. 2.625G-Lateral-deformation-scaled.PNG
47. 2.625G-Lateral-Equivalent stress-bolts.PNG
48. 2.625G-Lateral-equivalent stress-scaled-lugs.PNG
49. 2.625G-vertical-deformation-scaled-lugs.PNG
50. 2.625G-vertical-Equivalent Stress-bolts-2.PNG
51. 2.625G-vertical-Equivalent Stress-bolts.PNG
52. 2.625G-vertical-deformation.PNG
53. 2.625G-vertical-deformation-2.PNG
54. 2.625G-vertical-Equivalent Stress-bolts-3.PNG
55. 2.625G-vertical-Equivalent Stress-2.PNG
56. 2.625G-vertical-deformation-scaled.PNG
57. 2.625G-vertical-Equivalent Stress-lugs.PNG
58. 2.625G-vertical-Equivalent Stress.PNG
59. 2.625G-vertical-deformation-scaled-2.PNG
60. 1.5G-vertical-equivalent stress-scaled.PNG
61. 1.5G-vertical-equivalent stress.PNG
62. 1.5G-vertical-deformation-scaled-lugs.PNG
63. 1.5G-vertical-equivalent stress-scaled-lugs.PNG
64. 1.5G-vertical-equivalent stress-bolts.PNG
65. 1.5G-vertical-deformation-scaled.PNG
66. 1.5G-vertical-equivalent stress-lugs.PNG
67. 1.5G-vertical-deformation.PNG
68. Details tree.PNG
69. Mesh.PNG
70. Mounting structure seismic FEA model – README.pdf
71. Oklo Inc. – Concrete temperature assessments in the Aurora, Rev. 0.pdf
72. Oklo Inc. – Startup overview, Rev. 0.pdf
73. NRC acceptance review audit plan disposition 5.13.20.pdf
74. Oklo Inc. – Review of NUREG 1791 and application contents.pdf
75. Oklo Inc. - Training Program, Rev. 0.pdf

#### 4.0 REFERENCES

1. Oklo Inc. Letter dated March 11, 2020, Oklo Inc Project 99902046; Oklo Power Combined Operating License Application for the Aurora at INL, Public Version (ADAMS Accession Package No. ML20075A000).
2. Oklo Inc. Letter dated March 11, 2020, Oklo Inc Project 99902046; Oklo Power Combined Operating License Application for the Aurora at INL, Non-Public Version (ADAMS Accession Package No. ML20071Q381).
3. Audit Plan for the Oklo Power LLC. Aurora Reactor Combined License Application Acceptance Review (ADAMS Accession Package No. ML20079L202).
4. T. L. Bergman, A.S. Lavine, F. P. Incropera and D.P DeWitt, *Fundamentals of Heat and Mass Transfer, 7<sup>th</sup> Edition*, Wiley, 2011.
5. Tristan S. Hunnewell, Kyle L. Walton, Sangita Sharma, Tushar K. Ghosh, Robert V. Tompson, Dabir S. Viswanath & Sudarshan K. Loyalka (2017) Total Hemispherical Emissivity of SS 316L with Simulated Very High Temperature Reactor Surface Conditions, *NuclearTechnology*, 198:3, 293-305.

SUBJECT: SUMMARY OF AUDIT FOR THE OKLO POWER LLC. AURORA REACTOR  
 COMBINED LICENSE APPLICATION ACCEPTANCE REVIEW  
 (EPID NO. L-2020-NEW-0002) :DATED: August 19, 2020

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