Oklo COL Phase I Application Readiness Assessment Observations Report

The following definitions are used to categorize each observation:

Category A: Gap
Information that the U.S. Nuclear Regulatory Commission (NRC) staff perceives to be necessary to meet the information requirements in Title 10 of the *Code of Federal Regulations* 10 CFR 52.77, 52.79(a)(1), and 52.80(b), and was not provided in the draft preliminary combined operating license (COL) application (COLA).

Category B: Items Requiring Additional Information
Items that the NRC staff perceive as needing justification or additional information to support a regulatory finding.

Category C: Other
Observations that should be addressed or considered by Oklo to support the development of a quality application. If unaddressed, they could negatively impact the NRC staff's review of the application, including resources and schedule.

ID	Part	Section	Observation	Category
I-1	I	4.5	[redacted]	B
I-2	I	App. C C.1.3	[redacted]	B
I-3	I		There was no discussion of 10 CFR Part 50 and 52 insurance and indemnity requirements in the draft phase I COLA. In discussions, Oklo stated that they will include this as a license condition in phase II of the COLA. It would improve review efficiency to add a note in the phase I submittal on where this will be covered in phase II.	C

ID	Part	Section	Observation	Category
II-1	II	1.6.5.2	The draft COLA does not address the effects of onsite local intense precipitation (LIP) flooding or the proposed mitigation measures to protect safety-related plant facilities from LIP flooding. This information would be used to meet the requirements of 10 CFR Part 100.20(c). During discussions, Oklo explained that some relevant site information, such as site grade and onsite drainage features, is not currently available. This information will be developed during the detailed design of the plant facilities. Oklo committed to providing additional information related to onsite LIP flooding, along with structural designs in their phase II COLA. The staff noted that, if information will be developed during the detailed design of the plant facilities and submitted in phase II of the COLA, it would improve review efficiency to include a pointer to information in the phase I submittal. Section 1.6.5.2 and Table 1-5 of the revised draft COLA shared on April 15 shows inconsistent use of two flood types: the 500-year flood and the probable maximum flood (PMF), which are based on different data. The 500-year flood is derived from 500-year rainfall events, while the PMF is based on probable maximum precipitation (PMP). In addition, Table 1-5 defines the PMP site parameter (and the same for site characteristics) as “at least 1 foot above the PMF water level.” However, the proposed site parameter does not adequately address protection against LIP flooding as actual LIP flood level may sometimes exceed the PMF water level plus 1 foot. Defining a clear design basis flood level and the associated site parameter would provide the staff with information to efficiently determine whether there is adequate protection for the plant from foreseeable flood hazards.	C
II-2	II	1.4	With respect to the definition of the exclusion area boundary (EAB) and low population zone (LPZ) and development of atmospheric dispersion characteristics as required by 10 CFR 100.21(a) and (c), respectively, more detailed information on the potential release locations and distance to the site boundary would improve clarity of the COLA and enhance the efficiency of the staff’s review. Such information could be a figure based on Figure 1-1 that also marks the potential accident release locations as well as the EAB/LPZ outer boundary in relationship to the site layout. During discussions, Oklo shared a figure that helped the staff to understand the layout and the assumptions that Oklo is making.	C

ID	Part	Section	Observation	Category
II-3	II	1.4.2.4	The maximum hypothetical accident (MHA) including the assumed fission product release is described and summarized in the preliminary phase 1 COLA FSAR. To enable a more efficient NRC review, additional information should be included on the calculation of the fuel radionuclide inventory using the [[ ]], as applicable) such as (but not all inclusive) the transport fractions [ ]] If the information in the FSAR is a summary description, the NRC staff would require access to the actual calculation documents to support the review. During discussions, Oklo provided information on the analysis methods and the methodology used for selecting analysis inputs. Staff noted that it would need access to details during its review of the COLA.	C
II-4	II	1.6.6	Title 10 CFR 100.20, "Factors to be considered when evaluating sites," requires, in part, that applicants evaluate the nature and proximity of man-related hazards to establish site characteristics. Oklo's draft FSAR section 1.6.6 identifies facilities and activities within [[ ]] of the site and considers them in the evaluation of potential hazards. The FSAR states that facilities at a greater distance were not analyzed in detail due to their insignificance with respect to accident impact on the facility. An explanation of the criteria used to screen out facilities beyond [[ ]] of the proposed site will be used to support regulatory findings that these facilities do not pose a hazard. During discussions Oklo stated that it would include information in the FSAR to explain this.	B

ID	Part	Section	Observation	Category
II-5	II	1.6.6.2.1	Title 10 CFR Part 100.20, “Factors to be considered when evaluating sites,” requires that the nature and proximity of man-related hazards (e.g., airports, dams, transportation routes, military and chemical facilities) must be evaluated to establish site characteristics for use in determining whether a plant design can accommodate commonly occurring hazards, and whether the risk of other hazards is very low. 10 CFR Part 100.21, “Non-seismic siting criteria,” requires that potential hazards associated with nearby transportation routes, industrial and military facilities must be evaluated and site characteristics established such that potential hazards from such routes and facilities will pose no undue risk to the type of facility proposed to be located at the site. Oklo’s preliminary FSAR section 1.6.6.2.1 states "An aircraft accident is considered highly unlikely for the Aurora Idaho National Laboratory (INL) site." Information should be provided that explains how Oklo came to this conclusion. During discussions, Oklo stated that it will include information in the FSAR that shows that the consequence is low, or the frequency is low. Oklo should provide the estimated annual crash frequency and how it was determined or demonstrate that the consequence of an aircraft crash is low. The staff notes that Department of Energy (DOE) standard DOE-STD-3014 could be helpful for calculating the annual frequency of crashes.	B
II-6	II	1.6.6.2.1	Title 10 CFR 100.20(b) and 10 CFR 100.21(e) require Oklo to evaluate potential hazards associated with nearby transportation routes, industrial and military facilities, and civilian and military airports. The Division of Advanced Reactors and Non-power Production and Utilization Facilities (DANU) interim staff guidance (ISG) document 2022-02 states that the application should provide sufficient data to establish the basis for assessing each potential hazard to the facility associated with nearby transportation route. FSAR section 1.6.6.2.1 states that a National Guard training site is located greater than 150 miles from the proposed site, and the closest federal airway is more than 2 miles away, but there is no discussion of other airways near the site. A description of all airways near the site that include distances, frequency of use, etc. will be used to support regulatory findings related to potential hazards associated with civilian and military airports. During discussions with the staff, Oklo acknowledged that it needed to add this information.	B

ID	Part	Section	Observation	Category
II-7	II	1.6.6.2.1	Title 10 CFR Part 100.21, “Non-seismic siting criteria,” requires that potential hazards associated with nearby transportation routes, industrial and military facilities must be evaluated and site characteristics established such that potential hazards from such routes and facilities will pose no undue risk to the type of facility proposed to be located at the site. Oklo’s draft FSAR section 1.6.6.2.5 states that the Aurora INL site is accessed via Taylor Boulevard which is a DOE controlled road. During discussions, Oklo stated it included a discussion of a different road (Hall road) in the FSAR because this is the road that all hazardous materials are carried on. The staff stated that the FSAR should include this clarification. A statement clarifying whether any vehicles carrying DOE radioactive materials on nearby roads would present a risk to the facility will be used to support regulatory findings related to potential hazards associated with this transportation route.	B

II-8	II	1.6.4	Regardless of the source of the seismic hazard model used to develop the ground motion response spectra (GMRS) for the INL site, and regardless of the seismic design category (SDC), Oklo must provide sufficient detail and justification for why the model being credited for site ground motion and the underlying data are applicable to the site to meet the requirements of 10 CFR 100.23. Chapter 1 of the preliminary FSAR does not currently provide sufficient detail or justification for the [redacted] Provide the following site-specific information within the draft FSAR: a. Information on seismic sources, including seismic sources zones and faults sources b. A discussion of the ground motion model used for the Aurora site c. A discussion of site response d. A comprehensive summary of the seismic hazard results The NRC staff recently published a Research Information Letter (RIL) RIL-2025-10 that contains a representative level of data to support NRC decision-making for reactor applications of a size and output similar to the Aurora design. Table 5-1 in section 5.2 of the Recommendations Report RIL 2025-11 references the USGS model specifics (e.g., faults in model, slip rates) that should be described in the COLA. Chapter 4 of the RIL provides an example of the appropriate level of detail necessary for seismic sources: a. 4.1 geologic and seismotectonic setting b. 4.2 source zones c. 4.3 fault sources Chapter 5 of the RIL provides an example of the level of detail necessary to document that ground motion model. Chapter 6 of the RIL provides an example of the level of detail necessary for the staff to review the site response analysis for the Aurora site. Chapter 7 of the RIL provides an example of the information necessary to support the NRC staff review of the overall seismic hazard determination for the Aurora site.	B

ID	Part	Section	Observation	Category
			During discussions, Oklo stated that it will update the FSAR to address the staff's observation. The staff stated that the demonstration project report (RIL 2025-10) clarifies the amount of detail that should be included in the COLA. The staff shared its expectations for the information that should be in the FSAR. Oklo stated that it understands the staff's expectation and that this information exists in supporting documentation.	
II-9	II	1.6.1.1	Title 10 CFR 52.79(a)(1)(iii) and 10 CFR 100.21(d) require a discussion of meteorological characteristics of the site. The discussion of regional climatology in the FSAR does not include discussion of types of air masses, synoptic features, and the connection to local micrometeorological circulations, nor influences of regional topography. Including this information would improve NRC staff's understanding of the site climatology.	C
II-10	II	1.6.1.1	Figure 1-5 shows an approximately 40 by 40 mile map with respect to the Aurora INL site. This map includes topographical information of nearby peaks that vary from 5,562 feet to 7,539 feet. During discussions, the NRC staff communicated that a detailed map of the topography around the site will provide an understanding of physical characteristics that can influence local meteorology, improving the efficiency of the review. Oklo stated that, because the emergency planning zone is at the site boundary, it is not necessary to describe the topography of the site out to a distance of 50 miles from the plant. [redacted] A discussion in the FSAR regarding the effects of the complex terrain in atmospheric dispersion or justification why it is not needed (i.e., demonstrate that there is no offsite dose) would enable the NRC staff to make a regulatory finding related to 10 CFR 100.21(c) and 100.21(d).	B

ID	Part	Section	Observation	Category
II-11	II	1.6.1.5	Section 1.6.1.5 references [redacted]]], which is not endorsed by the NRC. Please justify the use of [[redacted]]] in the discussion of regional meteorological conditions for design and operating bases. RG 1.76 (ML070360253) provides pertinent information related to tornado analysis. Additionally, 10 CFR 100.20(c)(2) requires that meteorological characteristics of the site that are necessary for safety analysis or that may have an impact upon plant design must be identified and characterized, and 10 CFR 100.21(d) requires that site characteristics must be established such that threats from meteorological characteristics will pose to undue risk to the type of facility proposed to be located at the site. A discussion of hail, freezing rain, and dust and sandstorms will be required to support regulatory findings related to meteorology.	B
II-12	II	1.6.1.4	In the initial version of the preliminary phase I FSAR, temperature and wind data were only based on a [[redacted]]], and it was not explicitly clear for which time interval the probability of temperatures exceeding extreme values would recur. The revised draft phase I FSAR included the 30-year observed 0% exceedance temperatures but did not describe the 100-year probabilistic range of extreme temperatures. 10 CFR 52.79(a)(1)(iii) requires the FSAR to include meteorological characteristics of the proposed site with appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area and with sufficient margin for the limited accuracy, quantity, and time in which the historical data have been accumulated. DANU-ISG-2022-02 states that data used to represent the site conditions during the expected period of reactor operation should be substantiated.	B

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II-13	II	1.6.1.4	Typically, ambient temperature and humidity statistics used in establishing heat loads for the design of normal plant heat sink systems, post-accident containment heat removal systems, and plant HVAC are provided in the FSAR to satisfy 10 CFR 52.79(a)(1)(iii). This information typically includes (based on a minimum of 30-years of meteorological observations) the 2% and 1% annual exceedance and 100-year maximum dry bulb temperature and coincident wet bulb temperature; 2% and 1% annual exceedance and 100-year maximum wet bulb temperature (non-coincident); 98% and 99% annual exceedance and 100-year minimum dry bulb temperature). During discussions, Oklo stated that temperature is not an issue for this design. In the revised preliminary FSAR provided on April 15, 2025, Oklo added a note that the temperatures considered in the design are those associated with the 0% exceedance temperatures and included a list of these values (with a placeholder for information that will be developed in phase II of the COLA). The staff noted that its ability to make a safety finding based on a smaller set of information is dependent on the information provided in phase II of the COLA.	C
II-14	II	1.6.1	The FSAR should include a discussion on atmospheric stability used in the atmospheric dispersion estimates. This discussion should include the use of the local offsite meteorological tower which collected observations at 6, 33, 50, 150, and 250 meters (Table 1-9). Alternatively, Oklo should demonstrate that such information is not needed (e.g., justification that there is no offsite dose). Additionally, Oklo should discuss any joint frequency distributions of wind speed and wind direction for atmospheric stability at all measurement levels that were used in the chapter 1 dispersion analysis. This information will enable the staff to make a regulatory finding related to 10 CFR 100.20(c)(2). During discussions, Oklo stated that additional information will be available during the application review.	B
II-15	II	1.6.1	To support the NRC staff's review of sections 1.6.1.2.1 and 1.6.1.2.2 of the FSAR regarding atmospheric dispersion estimates and make a finding related to 10 CFR 100.21(c), the NRC staff may engage with Oklo to obtain access to input and output files used to generate the X/Q and D/Q estimates in ASCII text format. Additional information is described in RG 1.23 (ML070350028).	C

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II-16	II	1.6.1	While Oklo has not provided its principal design criteria (PDC), the NRC staff note that Oklo included a reference to 10 CFR Part 50, Appendix A, General Design Criterion 19 (GDC 19), "Control Room," which requires evaluation of personnel exposures inside the control room during radiological and airborne hazardous material accident conditions. RG 1.232 (ML17325A611) contains an analogous advanced reactor and sodium-cooled fast reactor PDC 19. The NRC staff discussed the requirements for postulated accident radioactive releases in the control room and Oklo indicated that it does not plan to have operators on site during power operations. A statement in section 1.6.1.2 regarding on-site operators would improve clarity of the FSAR.	C
II-17	II	1.4.2	While X/Q estimates [[ ]] from the reactor are provided in Table 1-5, the discussion of the dispersion model, effects of topography, and offsite dispersion estimates are absent. An explanation and supporting documentation for how the dispersion estimates were calculated will be required to make a regulatory finding related to 10 CFR 100.21(c)(2).	B
II-18	II	1.6.1	A description of the instrumentation at the local meteorological tower (INL Materials and Fuels Complex (MFC)) is required to support a regulatory finding related to 10 CFR 100.21(c). Additionally, Oklo should provide discussion on use of offsite meteorological data. Section 2.1.2, "Alternative Meteorological Data," of RG 1.249 (ML22159A226) provides a partial list of the technical details that should be provided when using an offsite meteorological data source. RG 1.23 also discusses criteria that would be acceptable to the staff. During discussions, Oklo stated that they understand the staff's concern and have the technical details.	B
II-19	II	Table 1-5	Additional meteorological site characteristics discussed in the FSAR are not reflected in Table 1-5. Oklo should update Table 1-5 to include additional meteorological site characteristics discussed in FSAR chapter 1 along with corresponding site parameters and confirm that Table 1-5 includes the appropriate hazards consistent with the design and operating basis of safety-related structures, systems, and components (SSCs).	C

II-20	II	Table 1-5	FSAR Table 1-5 provides a summary of the results of the bounding site parameters evaluation for the Aurora INL site. In accordance with 10 CFR 100.23, an evaluation of the geotechnical engineering aspects should be presented along with the information supporting all conclusions for the NRC staff to make its regulatory findings. The bounding site parameters and the selected site-specific characteristics should include justification for their selection. Note that academic and technical publications may support regional subsurface data but should not substitute site-specific investigations. The availability and use of historical data from previous site investigations may be useful to gain additional review efficiencies. The staff identified the following information gaps needed for the NRC staff to make its safety finding under 10 CFR 100.23, but do not constitute an exhaustive list for defining bounding and site characteristics. RG 1.132 (ML21298A054) provides guidance on ways to perform the detailed site-specific subsurface investigations to determine site suitability. [[.]] For Aurora INL site-specific characteristics: a. Include site characteristic value for the minimum bearing capacity static and dynamic in Table 1-5 and justify the selection. Explain how the bearing capacity selected would be adequate to take the load of the reactor building and other structures considering the imposed load (both static and seismic). Clarify whether	B

ID	Part	Section	Observation	Category
			the presence of joints, discontinuities and other geologic features have been included in the estimation of the bearing capacity of the foundation. b. Explain how a settlement of less than [[ ]] would take place from the imposed load and the differential settlement within the footprint of the safety-related structures. c. Include liquefaction as a site characteristic in Table 1-5. d. FSAR Table 1-5 indicates in the Aurora INL site characteristics that the ["]] however, consideration of lateral load is needed if engineered backfill is considered to replace the excavated site soil, because the backfill will exert lateral earth pressures (at rest, active, passive) on the walls of the powerhouse. e. FSAR section 1.6.3.1.1.1 indicates that the [ ]] results were used to find the average shear wave velocity. Consistent with 10 CFR 100.23, [ ]] as part of the determination of site suitability with respect to geology and seismology. The staff noted that, in Table 1-16 of the revised preliminary FSAR provided on April 15, 2025, the P-S logging was removed. The P-S suspension logging is a downhole geophysical method and provides direct measurement of compression and shear wave velocities. Justification on the selection of the [ ]] of the Aurora INL site is needed because these measurements are also used to get the average shear wave velocities for the top 30 meters (Vs30), which is used for characterizing site response and determining the Safe Shutdown Earthquake (SSE) and potential for surface deformations, as required by 10 CFR 100.23.	

II-21	II	1.6.3	Title 10 CFR 100.23 provides the required geologic and seismic siting criteria for the evaluation of the suitability of a proposed site. During the discussions with the staff, Oklo shared a map of the location of the boreholes and noted that this map and additional information obtained from the boreholes related to the composition of the subsurface units will be included in the FSAR. The staff identified the following information gaps needed for the NRC staff to make the finding under 10 CFR 100.23. a. Provide the following information in the FSAR as applicable to the site pertaining to plot plans and profiles: i. a plot plan or plans showing the locations of all site explorations, such as borings, trenches, seismic lines, piezometers, geologic profiles, and excavations with the locations of the safety-related facilities superimposed thereon. ii. profiles illustrating the detailed relationship of the foundations of all Seismic Category I and other safety-related facilities to the subsurface materials; iii. logs of core borings and test pits; iv. logs and maps of exploratory trenches; and v. stratigraphic cross section. b. FSAR section 1.6.3.4 indicates that [[.]] c. FSAR section 1.6.3.1.3 states that static (compressive strength and elastic moduli) and dynamic properties were measured in rock samples. The FSAR should include a summary of all laboratory test results and the test procedures to document the soil [[and rock properties used in the analysis. d. FSAR section 1.6.3.4.3 states a bearing capacity of [[ ]], based on [[ ]] for sedimentary and foliated rock. FSAR section 1.6.3.1.4 indicates that rock at the INL site is basalt	B

			(neither sedimentary nor foliated). Section 1.6.3.4.3 should be enhanced with the results from a bearing capacity calculation using an appropriate method for rock mass (intact rock with fractures, such as joints, bedding planes, etc.) and demonstrating that the subsurface will be able to sustain the structural load including seismic load and remain operational with adequate safety margin. e. FSAR section 1.6.3.1 Table 1-16 provides field activities for geotechnical investigations. As part of the evaluation of the suitability of the proposed site, the FSAR should include a summary of the results of the field activities conducted and description on how the extent of these geotechnical investigations performed is sufficient to characterize the site for bounding parameters and site-specific characteristics, such as the lateral extent of geologic features encountered in the subsurface. For example, include drawings with location of the boreholes and all field activities showing the area covered by the bounding parameters and the Aurora INL site-specific location. RG 1.132 provides guidance on geologic and geotechnical site characterization (e.g., spacing of borings, geophysical investigations, sampling of rocks and in situ testing methods). To support technical review of the application and enhance the efficiency of the review, the information obtained from all laboratory and site investigations and calculations should be available for audit. f. FSAR section 1.6.3.1 indicates that the site-specific investigation program included rock coring. As part of the evaluation of the suitability of the proposed site, the FSAR should include information on engineering characteristics of the rock observed in the borehole logs (e.g., rock type, bedding, jointing, fracturing, and weathering including rock quality designation (RQD) observed in rock cores). g. FSAR Figure 1-14 in the April 15, 2025, revised preliminary FSAR, shows that the [[ ]]. Natural fractures (e.g., bedding planes, joints) should be mapped during excavation, especially the large ones in lateral extent that could potentially slide and add lateral loads to the reactor building. In addition, the support system(s) that would be installed to prevent the sides of the excavation to become unstable should be described and a calculation should be conducted to demonstrate that the planned support system will have adequate capacity with acceptable safety factor(s).	

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II-22	II	1.6.7	Title 10 CFR 100.23(c) requires an applicant to "investigate all geologic and seismic factors (e.g., volcanic activity) that may affect the design and operation of the proposed nuclear power plant." As part of the evaluation of the suitability of the proposed site the FSAR refers to the INL Probabilistic Volcanic Hazards Assessment (PVHA) report for the characterization of volcanic hazards at the South of Materials and Fuels Complex (SMFC) location located slightly northwest of the proposed site. The FSAR scopes out volcanic hazards from all but Eastern Snake River Plain (ESRP) tephra [[ ]]. However, [[ ]], the findings for SMFC in the INL PVHA report indicated that other volcanic hazards or sources of tephra may need to be considered to determine the effect of these volcanic hazards on the design and operation of the proposed facility. The FSAR has limited information regarding the [[ ]] determination. Please include additional justification in the FSAR regarding the selection of [[ ]].	B

ID	Part	Section	Regulatory Basis	Observation	Category
III - General	III	Throughout	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	Observation: The staff notes the lack of cited references throughout the environmental report (ER). In many places, a statement is provided with no basis for the statement, or a survey is mentioned by date with no citation for that survey. Throughout the ER, several assumptions and summaries depend on incorporation by reference, so the lack of references is problematic. NRC will need these references cited in the ER and some references may need to be docketed for review and analysis or available through an audit portal. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo informed the staff that they reviewed Regulatory Guide 4.2 but kept things brief to avoid repetition throughout ER. Oklo understands that references and cited documents are requested for NRC review of the application.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-1	III	Chapter 2, Chapter 3, Site Layout, Section 3.1	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	Observation: The draft ER does not contain detailed topographic maps to show the proposed site and vicinity, exclusion areas, plant boundaries, meteorological tower locations, disposal areas, and offsite transmission. Oklo could provide GIS layers to allow the NRC staff to generate these maps. The ER contains an inconsistent vicinity radius in different sections [redacted]. These comments also apply for Land Use, Meteorology, Terrestrial Ecology, Cultural Resources, Socioeconomics. Quality maps will be needed to develop a National Environmental Policy Act (NEPA) document. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated they limited information throughout the draft ER to avoid repetition. They pointed to section 2.1 for the existing information. They identified the [[redacted]] vicinity based on the radius that includes all of the INL MFC facility, traffic impacts, and visual resources. They looked at the impact of the project instead of adopting the [[redacted]] vicinity which is the suggested radius in NRC guidance. Oklo noted concerns regarding what map layers are available for Oklo to share with NRC as other entities would need to provide that information, such as DOE-INL.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-2	III	Chapter 1, Status of Compliance, Table 1-4	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45(d), 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52	Observation: Please include a complete list of activities, permits/authorizations in Table 1-4. DOE preconstruction NEPA analysis was missing and transmission permitting involving the Bureau of Land Management (BLM) and others were not listed. The table should include all Federal, state, and local permits or authorizations needed for the project. To improve clarity, the ER should separate preconstruction and construction activities covered by DOE versus those to be reviewed by NRC. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated they limited information throughout the draft ER to avoid repetition. Oklo indicated that DOE has done a NEPA review for site characterization. Chapter 3 of the draft ER has details on preconstruction and construction activities. NRC staff discussed separating preconstruction and construction activities covered by DOE versus those covered by NRC in the ER for NRC's review. Oklo stated that they can restructure the ER in the application for clarity and details.	B
III-3	III	Chapter 4, Construction and Operation Impacts, Throughout resource subsections	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10	Observation: The ER contains no description of site preparation activities, and no mention of construction, pre-operation, or operation monitoring commitments. Monitoring programs are referenced for some resources, but no details are provided, or monitoring needs are dismissed without providing specific details regarding why they are not needed. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo tried not to repeat themselves in sections and referenced Chapter 3 for details on some of the construction activities. Oklo shared that they can restructure the ER in the application for clarity and details.	B

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III-4	III	Chapter 3, Site Layout, Sections 3.1.2 and 3.2.3.1, Figure 3-2	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	Observation: Please revise Figure 3-2 to provide more details of the interior of the facility. Please provide additional description of the water tank capacity. The provided water need of 10 gpm translates into 14,000 gallons per day. Please provide information on the delivery frequency of water in order to keep the reactor and facility operational. Summary of Discussions: This observation was discussed with Oklo during a readiness assessment meeting on April 14, 2025. Oklo presented a new figure on the interior of the facility in the meeting and will include in ER along with figures on the water systems.	B
III-5	III	Chapter 3 Site Layout, Transmission lines, Section 3.3.3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	Observation: Please provide more details on the [[ ]] new transmission line. The length and 100 ft wide right of way equates to [[ ]] acres that are not characterized in the ER. The ER should include a description of construction activities for the towers, the number and location of towers/footings, construction laydown areas for tensioning and pulling, and any operation impacts from the transmission lines. The transmission line is a connected action that must be characterized in the ER. Summary of Discussions: This observation was discussed with Oklo on April 24, 2025. Oklo debated on including those details based on their plant parameter envelope (PPE) approach for transmission considerations and it being sited on DOE land. Oklo is mindful that the transmission line is a connected action that needs to be characterized. Oklo relied on 2019 environmental assessment (EA) for information on the transmission lines and noted they would need to follow-up with DOE, BLM, and potentially the state on this issue.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-6	III	Chapter 6 Cumulative	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	Observation: Please provide a summary of current and reasonably foreseeable projects, facilities, and activities in the region that may contribute to resource impacts. The draft ER only described Aurora INL plant impacts on the environment, which is already covered in Chapter 4. This information is provided in a table as seen in other ERs for similar projects. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated they intentionally focused on cumulative in Part 51 considering preconstruction activities, cumulative impact vs. cumulative effect. Oklo considers little cumulative impact because of the way the Aurora is designed. Oklo requested further discussion on the topic, and it was clarified that providing a summary of projects or actions in the area was sufficient to resolve this observation.	C
III-7	III	Chapter 8 Alternatives, Section 8.2	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 100.10	The ER should include a comparison of alternative sites with the preferred site including an assessment of cultural resources or ecological resources for the alternatives. The alternatives analysis was incorporated by a 2020 reference, which did not include the preferred site. It is not clear to the staff how the preferred site was selected. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated that the site was selected in partnership with DOE. Oklo stated they understood that this information needs to go in the ER for NRC's review.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-8	III	Chapter 7 Project Need, Throughout	Atomic Energy Act Section 103(b)(1), 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52	Observation: Additional information is needed to support the statement that there is a need for the project. In the ER, moderate details are provided to explain the need for the project, but because this is a first of a kind (FOAK) demonstration project (i.e., special case), a traditional NFP assessment has not been done. However, the project is intended to sell up to 75 MWe of capacity over a 40-year operational period of the operating license. Therefore, there should be some assessment of NFP in the ER to account for the need for any potential selling of power on and off the DOE site. More details from Oklo about power purchase agreements for the plant's capacity will be needed. If the state of Idaho has already provided a Certificate of Public Convenience and Necessity (CPCN) to support NRC's review. Summary of Discussions: Discussed topic with Oklo 4/15/25. NRC needs information to support the statement that there is a clear need for the project. Oklo stated that they consider the Aurora as a demonstration project although there was some confusion on the commercial power production aspect. Oklo confirmed that they intend on selling power. If that is true, Oklo could submit a CPCN if required by the state of Idaho in order to address need for power for NRC staff's review.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-9	III	Chapter 9 Purpose, Section 9.6	Atomic Energy Act Section 103(b)(1), 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52	Observation: The draft ER does not include the quantifiable commercial power benefits and economic costs of construction and operations over the 40-year operating license period. The NRC staff will need a more quantitative discussion of cost and benefit and, if available, a CPCN from the state of Idaho for its assessment since Oklo is intending on putting power on the grid. Summary of Discussions: This observation was discussed with Oklo on April 15, 2025. The NRC needs a more quantitative discussion of cost and benefit. Oklo responded that they see the purpose more beneficial for the country and environment, focusing on demonstrating the benefits to energy and the environment, not sale of commercial power. This topic was largely discussed under observation III-8. Oklo could provide a copy of a CPCN from the state of Idaho for its need for power assessment since Oklo is intending on putting power on the grid. A CPCN is one way to address the need for power aspect of the project and is one way discussed in the NRC's guidance to address the need for power. The staff notes there are other options presented in the guidance. Since the project will be selling power, the need for the power should be addressed in the ER.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-10	III	Chapter 2 Meteorology, Section 2.6.1	10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.70, 10 CFR 51.71, 10 CFR 52, 10 CFR 100.10	The following information should be provided: • Temperature averages, extremes, diurnal ranges, precipitation rates and distribution. • A discussion of fogging or mixing heights or atmospheric stability. • Locations that the monthly temperatures were measured from in Table 1-12. • X/Q and D/Q at specific points. • A description of meteorological measurements, monitoring, and analysis procedures. The NRC staff noted that draft FSAR text in section 1.6.1.1.3 appeared to have a lack of understanding of wind direction convention, which can affect how other data may be interpreted, and for how X/Q factors are calculated. Summary of Discussions: The observation was discussed with Oklo on April 14, 2025. The content of the section seemed to lean on the MFC site but not explicitly. Oklo asked if they could incorporate by reference here, which was confirmed as long as access to documentation is provided. The information in FSAR section 1.6.1.1.3 was subsequently corrected. Oklo confirmed that reports containing requested data will be made available for both the NRC safety and environmental reviews.	C
III-11	III	Appendix A, Meteorology, Section A.7	10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.70, 10 CFR 51.71, 10 CFR 52, 10 CFR 100.10	Observation: The release points for air emissions should be described in detail and receptor information should be provided in the ER. Summary of Discussions: The observation was discussed with Oklo on April 14, 2025. Oklo confirmed that reports containing requested data will be made available for both the NRC safety and environmental reviews. The NRC notes that this information would be needed for the NEPA document and therefore would be needed on the docket.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-12	III	Chapter 2 and 4, Cultural Resources, Sections 2.5.1 and 4.8	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 36 CFR 800.4 36 CFR 800.4(b) 36 CFR 800.3(f)(2)	Observation: The following information related to the Area of Potential Effect (APE) should be provided: • Distinguish between the direct and indirect APE. • Metrics on construction activities with regard to depths and widths of excavations, in addition to the locations. • Precontact cultural chronology, information on previously registered sites or past surveys within the direct and indirect APE, survey methods or results, and citations (section 2.5.1). • Information to support the finding of No Historic Properties Affected (section 4.8). Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo understood the needs for providing where the [[ ]] APE is in relation to 45-acre BEA survey. Oklo does not have qualified professional archaeologists to access survey reports but will provide the reports during an audit for NRC's review.	B
III-13	III	Chapter 2, Cultural Resources	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 36 CFR 800.4 36 CFR 800.4(b) 36 CFR 800.3(f)(2)	Observation: Provide information on the five archaeological sites within/near the proposed transmission corridor that may be impacted and any surveys that were performed for the transmission line corridor. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated that the area was well surveyed and referred to a 2019 EA for information. If that is the survey they are referencing, Oklo should cite that in their ER for NRC's review.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-14	III	Chapter 4, Cultural Resources, Section 4.8	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 36 CFR 800.4 36 CFR 800.4(b) 36 CFR 800.3(f)(2)	Observation: Provide information on contacts with the Idaho State Historic Preservation Office (SHPO), correspondence with the SHPO, and Tribes. Figure 4-1 should provide context to the project for the APE. Describe where the current [redacted] APE is in relation to the 45 acres previously surveyed by Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo has had conversations with the Shoshone Bannock, but not SHPO since DOE has taken the lead in relaying that information. Oklo has not been part of those conversations. Oklo asked for clarification on what information should be put in the ER regarding Tribal outreach and the NRC suggested a timeline and description of interactions, meetings, and communications (emails and letters).	B
III-15	III	Appendix A, Section A.6	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10	Observation: Section A.6.2 of the draft ER provides limited information on local housing. The draft ER states that Oklo commits to working with local communities to mitigate housing impacts, but no information is provided on this plan. Likewise, information is missing regarding tax payment estimation, local educational systems, local community services, traffic studies, transportation issues – public transit, road/highway systems. **Resolution:** This observation was discussed with Oklo on April 14, 2025. Information is requested to understand bigger picture to have the basis for impacts to the local community. Oklo stated that the PPE approach is vague but intentional, and they did not consider a large demographic analysis as a way to address the topic.	C

ID	Part	Section	Regulatory Basis	Observation	Category
III-16	III	Chapter 4, Socioeconomics, Sections 4.7 and A.6	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10	Observation: Please provide the assumptions behind the construction and operation workforce determinations and residential distribution in the Region of Interest (ROI), including in-migrating workers bringing their families. Summary of Discussions: The NRC discussed this observation with Oklo on April 15, 2025. Oklo did do an analysis but didn't include the information because there aren't a lot of communities around the project area and did not think there will be impacts because the design is small. Oklo assumes that the workforce would be more local, assuming workers would be hired from Pocatello. Oklo will put [[ ]] assumption and analysis in the SPE.	C
III-17	III	Chapter 2, Land Use, Section 2.1.1	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Please provide land use cover for the site, vicinity and transmission corridor with acreages. Explain why the draft ER uses a vicinity radius of [[ ]], rather than a [[ ]]. It would be helpful to provide the associated GIS files used to make maps (similar to Observation No.1) that include boundaries, vegetation types, survey areas, etc., for NRC staff to generate maps for the NEPA document. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo asked if numbers were something that could be discussed in the PPE/SPE. Some numbers already were there but more could be provided for NRC's review, which is satisfactory.	C

ID	Part	Section	Regulatory Basis	Observation	Category
III-18	III	Chapter 2, Land Use, Section 2.1.1.1	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Please provide a discussion of mineral resources or agricultural products at the site and vicinity. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo indicated this information is in INL's documents and could be provided with the ER, for NRC's review.	B
III-19	III	Chapters 2 and 4, Terrestrial Ecology, Sections 2.1.1, 2.1.2, 2.2, and 4.14.3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Please provide information on wetlands for the [[ ]] long by 100 ft wide) transmission line corridor, and the riverine wetlands depicted in Figure 4-2. The NRC's concern is with the lack of information on affected resources within the proposed transmission line corridor, not the numbers associated in PPE/SPE. Summary of Discussions: The NRC discussed this observation with Oklo on April 14, 2025. Oklo asked if numbers were something that could be discussed in the PPE/SPE. Some numbers are already in the PPE/SPE but there was no information specifically on the transmission corridor for NRC's review, which is satisfactory.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-20	III	Chapters 1 and 2 Terrestrial Ecology, Appendix C and Section 2.3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: ER section 1.6.2 lists noxious weed management and revegetation specific to the INL site. ER Table 2-1 lists introduced grasses on the site. The ER does not specifically mention invasive species in the affected environment. The effects analyses in the draft ER do not address habitat disturbance facilitating invasives establishment and success. Appendix C contains measures and controls to limit adverse impacts, which includes some practices that would limit the establishment and spread of invasive species. Appendix C best management practices for terrestrial resources may not cover all those required for INL. Summary of Discussions: Discussed with Oklo on April 14, 2025. Oklo will look into this topic further. Oklo did not include more on ecology although they have a biological survey. Oklo relied on INL's 2019 EA. If that is the most recent information, the EA would need to be cited in the ER.	B
III-21	III	Chapter 2, Terrestrial Ecology, Section 2.3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Please provide the following information on important species and habitats for the site and the transmission corridor 1) all important terrestrial species by status and important terrestrial habitats listed in a single table and known/possible presence within the site and corridor, 2) documentation on how information on important species and habitats was compiled, 3) maps of sage-grouse conservation area for the vicinity and region, and 4) Description of necessary monitoring and mitigation to meet no-net loss of sagebrush habitat on INL. Summary of Discussions: Oklo stated that it didn't include more on ecology although they have a biological survey. Oklo relied on INL's 2019 EA. If that is the most recent information, the EA should be cited in the ER.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-22	III	Chapter 2, Terrestrial Ecology, Section 2.3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Information about field surveys needs more detail to assess sufficiency. Please provide information on the methods, surveyor qualifications, timing, purpose (species observation by group, stream/wetland delineations, etc.). The transmission line corridor may have been surveyed in 2019 for another project, but it is not clear if the survey adequately documents the new proposed [[ ]] corridor area. Summary of Discussions: The NRC discussed this observation with Oklo on April 14, 2025. Oklo stated the ER was intentionally on not including details so it can be done for every site. Oklo didn't include more on the ecology of the site although they have a biological survey of the site. Oklo relied on INL's 2019 EA. If that is the most recent information, the EA should be cited in the ER.	B
III-23	III	Chapter 4, Terrestrial Ecology, Section 4.6	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 40 CFR 6, 16 USC 1531, 16 USC 661	Observation: Provide details on the potential for bird collisions from construction activities and operations, including transmissions lines and towers. Summary of Discussions: NRC discussed this observation with Oklo on April 14, 2025. Oklo referred NRC to SPE No. 10 in the ER for transmission lines, which states no structures would be above 100ft in height. The final design of the transmission lines is being developed with Idaho Power Company, and that information is pending.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-24	III	Appendix A, Non-Rad Health, Section A.7.2	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 29 CFR 1910	Observation: Information is provided in the draft ER in Table A-5 for construction, Table A-6 for operations, and Table A-7 for decommissioning. The maximum CO_2e emitted by the Aurora is found to be approximately [[redacted]]. Please provide the specific emission sources (i.e., equipment name and run times), what the gaseous effluents actually are, location and elevation of release points, and frequency of their release. Summary of Discussions: NRC discussed this observation with Oklo on April 14, 2025. Oklo indicated that there is documentation that could be reviewed in an audit and understood that the information needs to be provided in the ER.	B
III-25	III	Chapter 4, Non-Rad Health, Section 4.10	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 29 CFR 1910	Observation: Please provide decibel levels from construction equipment listed in the ER. The NRC noted that there is a sentence on page 99 of the draft ER stating that some noises are above 85 dba 50 ft from the source and above 65 dba at the site boundary for construction. Also provide information on protection for workers due to construction noise. Summary of Discussions: This observation was discussed with Oklo on 4/14/25. Oklo put noise levels in the SPE, [[redacted]]. Oklo has documents with this information and understand that they need to be referenced throughout and provided with the ER to support NRC's confirmatory review.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-26	III	Chapter 4, Non-Rad Health, Section 4.10	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 29 CFR 1910	Observation: On page 105 of the draft ER, it mentions [[[redacted] Summary of Discussions: The NRC staff discussed this observation with Oklo on April 14, 2025. Oklo indicated that there are documents with this information outside of the ER and understand that they need to be referenced throughout the ER and provided with the ER to support NRC's confirmatory review.	B
III-27	III	Chapter 4, Non-rad Waste, Section 4.12	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 29 CFR 1910	Observation: In the draft ER, the disposal location and amounts for hazardous waste are described as "Clean Harbors" and "Very Small Quantity Generator". It is not clear in the draft ER where the nonradioactive sodium is used that is discussed in ER sections 3.6.2 and 4.12 (i.e., which system or process). For nonradiological solid waste, Circular Butte Municipal Landfill or Bonneville County Transfer Station are the disposal sites, but no information for the expected amounts of waste to be disposed of at these locations is provided. Additionally, no information for expected amounts for the onsite sanitary waste is provided, other than to say it will be permitted. Please provide the mentioned information on waste and disposal in the ER. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo communicated that they have documents with this information outside of the ER and understand that they need to put this information into the ER and provide the reference to the documentation.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-28	III 2 – FSAR	ER Chapter 4, Postulated Accidents, Section 4.13; ER Appendix A, Postulated Accidents, Section A.10; FSAR, Section Postulated fission product release, Sections 1.4.2.4 and 1.6	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 52.79, 10 CFR 100.10	Observation: Provide information in the draft ER (and its referenced locations in the draft FSAR) on the data and assumptions used to develop the consequences of the MHA. Specifically, while the software used in the MHA analysis are identified, the significant data and assumptions used as input to the software are incomplete. The significant data and assumptions used in the determination of the source term, atmospheric dispersion factors (X/Qs), release fractions, and site-specific meteorology should be in the ER. Safety had similar observations on the draft FSAR. Summary of Discussion: The NRC discussed this observation with Oklo on April 15, 2025. Oklo had previously shared several documents with the NRC staff reviewing FSAR chapter 1 regarding information that described the analysis, calculation, modeling assumptions, release and migration, fission gas plenum, etc. The NRC staff communicated that this information describing the analysis assumptions and inputs, including the source term, should be added to the FSAR chapter 1 description of the MHA See also Observations II-2 and II-3.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-29	III 2 – FSAR	ER Chapter 4, Postulated Accidents, Section 4.13; ER Appendix A, Postulated Accidents, Section A.10. FSAR, Section Postulated fission product release, Sections 1.4.2.4 and 1.6	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 52, 10 CFR 52.79, 10 CFR 100.10	Observation: In the draft ER, the only accident for which consequences are provided is the MHA. There was no justification (i.e., an MHA result from the draft FSAR) provided in the ER to support the environmental determination that the MHA is bounding of all potential severe accidents. The NRC staff needs additional discussion of risk insights that support the MHA discussion in the ER to support environmental findings. Summary of Discussions: NRC discussed this observation with Oklo on April 15, 2025. NRC communicated that actual information to support MHA should be provided or provide a justification for why it is bounding. Oklo needs to define the MHA process and non-PRA process with safety, then environmental will leverage information. Oklo planned on adding info in FSAR, adding pointers in section 2.1 that would discuss info planned to be incorporated by reference. For the consequence discussion, Oklo referred NRC staff to ER section A.10.3.	B
III-30	III	Radiological Health	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: The description of gaseous effluents appears to be sufficient, but the draft ER does not describe [[.]] The ER does not include liquid effluent description. Please provide details on this missing information. Summary of Discussions: This observation was discussed with Oklo on April 15, 2025. Oklo communicated it has a few options for a gaseous release control system. The ER should include information to support how Oklo will comply with 10 CFR Part 51. For liquid effluent, Oklo referred NRC staff to the description of evaporator system in Chapter 3, mentioned that based on PPE No. 27, they don't need to put the technical analysis into the ER, just the conclusions. Oklo stated that it has technical information but has not decided how much of it should be made available. The staff stated that a brief description with the assumptions of the system would be needed for NRC's review.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-31 NEW	III	Radiological Health	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: The ER contained little information on solid, liquid, and gaseous radiological effluent releases. Chapter 3, section 5 of the ER does not sufficiently describe details expected for effluent concentrations or contents. Information on effluents is needed to support the Radiological Health discussion on impacts in Chapter 4 of the ER. Summary of Discussions: This observation was discussed with Oklo on April 15, 2025. The feedback from this observation was noted by Oklo and can be included.	B
III-32	III	Chapter 4, Radiological Health, Section 4.16.6.1	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: Direct dose to construction workers was provided in section 4.16.6.1 of the draft ER. However, it did not discuss airborne activity. The ER states that the maximum number of construction workers is [[ ]], individual max dose is [[ ]] from INL direct sources from the MFC facilities. No collective dose is described in the ER. Summary of Discussions: The NRC discussed with Oklo on April 15, 2025. Oko referred NRC staff to Chapter 3 for doses. Oklo has technical information but would need to figure out how much of it should be made available in the ER and refer to the FSAR, as appropriate. Some information won't be submitted until phase II. Oklo is aiming to have a flexible PPE for common flexibility, plant deviation. NRC staff stated that the ER should include site-specific data to support site-specific statements.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-33	III	ER Chapter 4, PSAR, Radiological Health	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: Maximal extent of monitoring was stated as being at the fence line. No info provided on distances to nearest receptors, locations of all agricultural activities, livestock, drinking water sources, and residences. Exposure rates are not provided but the ER states that the rates will be compliant with 10 CFR 20. Minimal information is included in Part 1 of the FSAR but there were no references to the FSAR in the ER. Individual and collective doses were not provided other than the MHA dose of [[ ]]. Also, no liquid dose is provided. Maximally Exposed Individual (MEI) dose from gaseous effluents, MEI dose from direct radiation, and population doses are not defined. The ER should reference the sections of the FSAR where this information will be located. Summary of Discussions: The NRC discussed with Oklo on April 15, 2025. Oklo understood that there needs to be more discussion on details between Phase I and phase II but do not want to create duplicative information. Oklo will add more detail in Chapter 3 of the FSAR.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-34	III	Appendix A, Transportation, Sections A.9 and A.11	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: There was no comparison to the reference reactor for transportation in accordance with the guidance in RG 4.2 other than transportation distance. Also, fuel fabrication is compared to standard light water reactor (LWR) fuel. NRC environmental staff needs more information (e.g., number of shipments per day, dose to transportation workers, onlookers, or the public along the route) to make an environmental impact determination related to the transportation of fuel. Justification for the described one-way distance for shipment of fresh and spent nuclear fuel also needs to be provided or a further description of how these values were selected. Summary of Discussions: This observation was discussed with Oklo on April 15, 2025. It was unclear where numbers provided in the draft ER originated from since Oklo did not cite the source of the information (e.g., the draft NR GEIS). Oklo stated the values mentioned in the ER are from the staff findings from the draft NR GEIS (NUREG-2249) as the source, and previous conversations with NRC from October 2024. Oklo understands that the specific information to be provided would help confirm that the transportation numbers for this project would be within the bounding conditions.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-35	III	Appendix A, Transportation	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: No burn-up levels were identified in the draft ER. Please provide levels to confirm the levels would be within the bounding conditions. Summary of Discussions: The NRC discussed with Oklo April 15, 2025. The NRC noted that the general burnup characteristics would be needed for NRC's review to support the potential application of Table S-4 and the analysis in NUREG-2266 to a non-LWR. Oklo discussed NUREG-2266, but NRC noted that the Aurora would not be specifically bounded by that analysis since 10 CFR 51.52 is cited for LWRs.	B
III-36	III	Fuel Cycle	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: [[.]] Resolution: NRC discussed this observation with Oklo on April 15, 2025. [[ ]].	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-37	III	Radiological Waste	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: [[.]] Summary of Discussions: The NRC discussed this observation with Oklo on April 15, 2025. [[ ]]	B
III-38	III	Chapter 4, Appendix A, Radiological Waste	10 CFR 50.34a, 10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 52.79 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 10 CFR 50 Appendix I 10 CFR 20.1301(d)	Observation: There was no information on actual concentration of chemicals/radiological effluents in emissions. The ER just stated the effluents are under regulatory limits. While LLRW disposal sites are mentioned in the transportation text of ER section 5.3, there was no identification or description of mixed low-level generation of waste, nor its disposal. Summary of Discussions: This observation was discussed with Oklo on April 15, 2025. Oklo referred NRC to quantitative information in Chapter 3 of the ER on effluents but added that the level of detail needed to address this would not be ready for a readiness assessment as they don't have those details yet, and the availability of this information is expected at a later date.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-39	III	Chapter 2, Section 2.2; and Chapter 3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 33 CFR 322, 40 CFR 122, 40 CFR 149, 40 CFR 6 Appendix A	Observation: There was no discussion of water use volume or source during construction or for the concrete batch plant. ER section 2.2 cites Idaho Department of Water Resources database for groundwater wells. NRC will need additional information sources for INL water use. Lastly there was no distinction between preconstruction and construction activities for water use. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo shared a new water systems figure in a presentation shared during the meeting. Information on that slide may be applicable here, and Oklo agreed to provide this clarity in the ER application submittal.	B
III-40	III	Chapter 2	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 33 CFR 322, 40 CFR 122, 40 CFR 149, 40 CFR 6 Appendix A	Observation: The draft ER did not characterize water features in the transmission corridor. Please provide information of any water features in the transmission line corridor. Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo stated that the information could be made clearer in the ER application submittal.	B

ID	Part	Section	Regulatory Basis	Observation	Category
III-41	III	Chapter 3, Figure 3-4	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 33 CFR 322, 40 CFR 122, 40 CFR 149, 40 CFR 6 Appendix A	Observation: The draft ER Figure 3-4 shows a water flow diagram, but it does not contain information on flow rates. “Radiological water system” was mentioned in ER section 3.2.4 but no information on this system is provided in the ER. Summary of Discussions: Discussed with Oklo 4/14/25. Oklo shared a new water systems figure in a presentation during the meeting. Information on that slide may be applicable here and would be added to the ER.	B
III-42	III	Chapter 3	10 CFR 51.40, 10 CFR 51.41, 10 CFR 51.45, 10 CFR 51.50, 10 CFR 52, 10 CFR 51.71, 10 CFR 51.75, 10 CFR 100.10, 33 CFR 322, 40 CFR 122, 40 CFR 149, 40 CFR 6 Appendix A	Observation: Please provide the following in the ER: information regarding operational modes and any differences in water use for those possible modes; needed sanitary system effluent permitting; clarification on whether industrial water system concentrated waste is disposed of as solid or liquid waste; and information on groundwater monitoring during construction and operation. Please also provide information on groundwater monitoring (what type of monitoring, type of data collected, what wells would be used for monitoring and the locations of the wells). Summary of Discussions: This observation was discussed with Oklo on April 14, 2025. Oklo indicated that the information would be said more clearly in the ER.	B