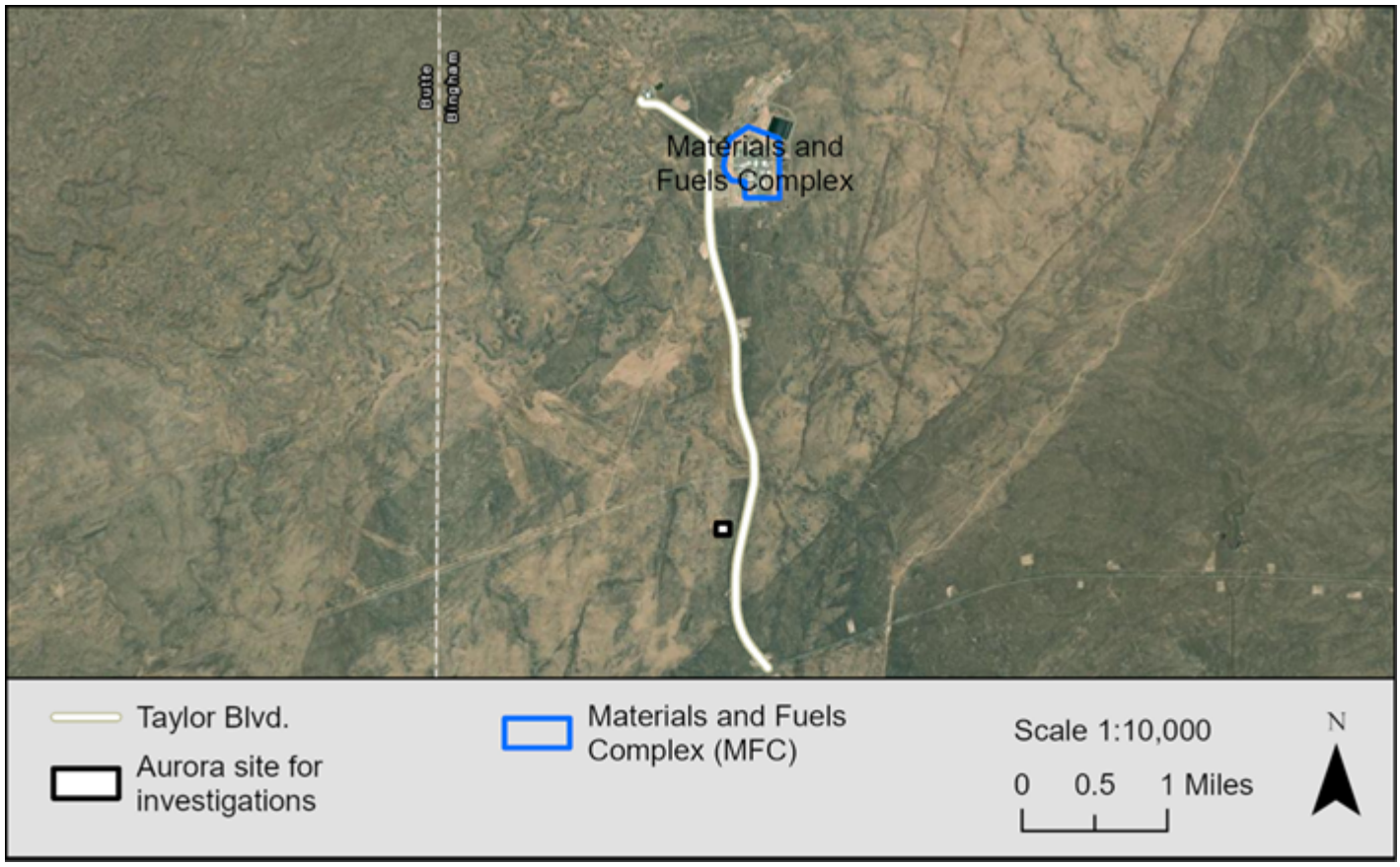
SECTION A. Project Title: Oklo Power Plant Site Characterization

SECTION B. Project Description and Purpose:

Oklo is developing next-generation fission power plants to produce abundant, affordable, clean energy. In 2019, Oklo obtained a site use permit from the U.S. Department of Energy to construct and operate their first Aurora Powerhouse at the Idaho National Laboratory (INL). The mission of DOE is to, "ensure America's security and prosperity by addressing energy, environmental and nuclear challenges through transformative science and technology solutions." Similarly, INL's mission describes the laboratory's commitment to energy research, development, demonstration, and deployment to support, "the nation's energy security with safe, competitive and sustainable energy systems and unique national and homeland security capabilities." Siting of the Aurora to support Oklo's commitment to rapid commercialization is in direct support of mission statements for both the DOE and INL. The proposed Aurora Powerhouse is a compact fast reactor capable of producing up to 40 MWth and 15 MWe. Oklo is currently proceeding with Nuclear Regulatory Commission application for the Aurora Powerhouse.

Oklo, working with INL and DOE-ID, identified a preferred location to site the proposed Aurora Powerhouse. Through the site selection process, it was determined that Site 31 is the preferred site. Site 31 is a 40-acre site located south of the Materials and Fuels Complex (MFC) and north of Highway 20 (Figure 1). Site 31 is the preferred location because of the ability to avoid transporting fuel on Highway 20, minimize disturbance to sagebrush and Greater sage-grouse habitat, and minimize the need for access roads. The proposed reactor would only occupy an approximately 2-acre portion of the 40-acre provisionally accepted site.

Figure 1. Site 31 in relation to MFC.

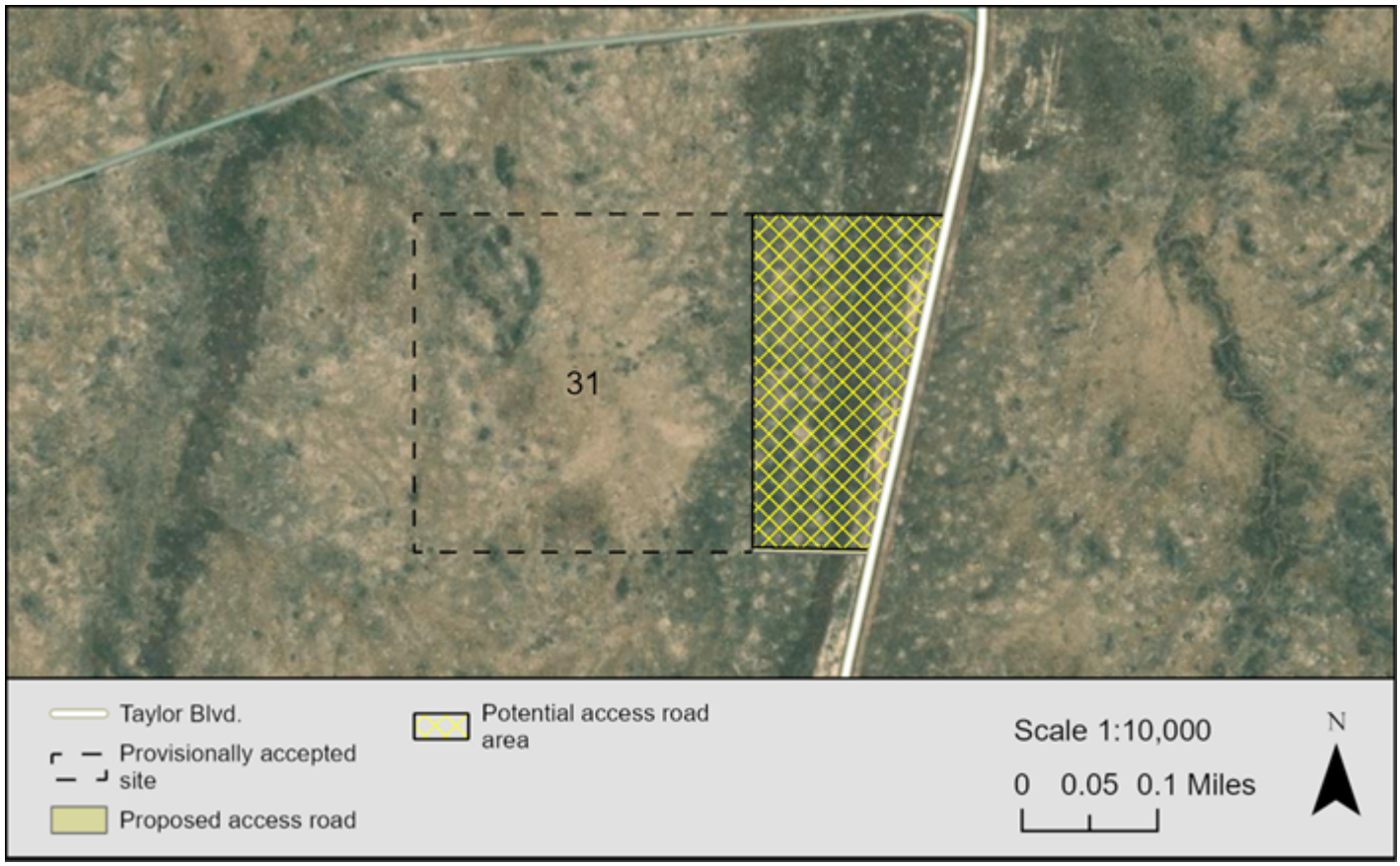


Oklo is proposing to perform site characterization activities within and surrounding Site 31 in preparation for construction and operation of the Aurora powerhouse and support the NRC licensing application process. All activities are intended to conform with all applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. The following activities are proposed to support site characterization:

- Cultural Resource Survey – In anticipation that cultural resources may be present within Site 31 a pedestrian survey is proposed. The initial cultural resource survey is intended to identify:
- a 5-acre portion of Site 31 to perform greater site investigations to arrive at the ultimate 2 acres needed for operation, and
- a short (0.1 mile) access road from Taylor Blvd. to the site where proposed activities would have the least potential impact to those resources.

The cultural resource survey would occur within the entirety of the provisionally accepted Site 31 and area between Site 31 and Taylor Blvd (Figure 2). It is anticipated that the cultural surveys would be conducted by the BEA Cultural Resource Management Office. Additionally, survey activities would not require significant ground disturbance and or the use of vehicles. The cultural resource survey is intended to be a pedestrian survey. There are no anticipated emissions, discharges, waste generation, waste disposal, or chemical use associated with this activity.

Figure 2. Survey area is the provisionally accepted Site 31 and potential access road area.



Biological Resource Survey – In anticipation that significant biological resources (i.e. Greater Sage-grouse habitat) may be present within Site 31 and the area between Site 31 and Taylor Blvd, a pedestrian survey is proposed. The initial biological resource survey is intended to identify:

- a 5-acre portion of Site 31 for performing further site investigations to identify the 2 acres needed for operation, and
- the 0.1 mile access road from Taylor Blvd. to the site where proposed activities would have the least potential impact to those resources.

The biological resource survey would occur within the entirety of the provisionally accepted Site 31 and area between Site 31 and Taylor Blvd (Figure 2). It is anticipated that the biological surveys would be conducted by the BEA Natural Resource Program. Additionally, survey activities would not require significant ground disturbance or the use of vehicles. There are no anticipated emissions, discharges, waste generation, waste disposal, or chemical use associated with this activity.

In addition to biological and cultural resources surveys, the following characterizations will also be completed:

- Ground Penetrating Radar – Based on the results of the cultural and biological surveys, a preferred 5-acre site within Site 31 will be chosen for additional investigation to identify the ultimate 2 acres required for operation. Ground penetrating radar (GPR) will be used to characterize soil conditions. Depending on the soil conditions, GPR can characterize soil down to approximately 100 feet below the preferred 5-acre site. GPR is a non-invasive approach to identifying potential geologic challenges presented by the site. The GPR will also inform the location for soil samples. This activity will be performed by a qualified Oklo subcontractor and be completed in 3 – 10 days. Temporary restrooms may be needed during GPR activities. Additionally, it is anticipated that minimal ground disturbances would occur during this activity. The selected 5-acre site for further site investigations to identify the ultimate 2 acres for operation may need to be mowed to ensure that the GPR can function appropriately.
- Deep Boreholes – Based on the results of the GPR, deep boreholes will be used to identify potential subsurface geologic considerations, such as lava tubes and fault locations. The borehole samples may be used for additional laboratory tests for soil characterization. The number and location of any boreholes at this time is unknown, but it is assumed, based on the size of the site, that six boreholes would be

needed. It is anticipated that the drilling for the boreholes would be performed by a qualified Oklo subcontractor. Temporary restrooms may be needed during drilling activities. These activities would require the creation of temporary two-track access roads and the clearing of vegetation at the borehole location in order for truck mounted boring equipment to reach the desired location. Any temporary ground disturbance would be restored, to the best ability, to pre-activity conditions.

- Soil Samples – Based on the results of the GPR, soil samples will be collected as part of the geotechnical investigation of the site. The number and location of soil samples is not yet known, but it is assumed, based on the size of the site, that 20 boreholes averaging 10 feet deep using auger drilling would be used to collect soil samples. It is anticipated that the soil sampling would be performed by a qualified Oklo subcontractor and be completed in 2 – 20 days. Temporary restrooms may be needed during drilling activities. These activities would require the creation of temporary two-track access roads and the clearing of vegetation at the borehole location in order for truck mounted boring equipment to reach the desired location. Any temporary ground disturbance would be restored, to the best ability, to pre-activity conditions.
- Soil Testing – Based on the results of the GPR, physical soil testing will be done to inform the overall geotechnical investigation. The number and location of soil testing is not yet known, but it is assumed, based on the size of the site, that 40 testing locations would be needed. It is anticipated that the soil testing would be performed by a qualified Oklo subcontractor and be completed in 2 – 10 days. Temporary restrooms may be needed during drilling activities. These activities would require the creation of temporary two-track access roads and the clearing of vegetation at the borehole location in order for truck mounted boring equipment to reach the desired location. Any temporary ground disturbance would be restored, to the best ability, to pre-activity conditions.

The soil samples, soil tests, and deep boreholes would be performed in parallel. Dust suppression will be implemented as needed. Emissions from operation of heavy equipment are not regulated as stationary sources, and thus, it is anticipated that no emission reporting is required. Any waste generated during activities would be disposed of by the contractor as required by Waste Generator Services using established plans and procedures. Additionally, any chemical use (i.e., bentonite) would be used per the manufacturer instructions and reported as required by INL Chemical Services. There are no anticipated long-term emissions, discharges, waste generation, waste disposal, or chemical use associated with these activities. The use of testing equipment with any radiological source will need to be cleared through the appropriate BEA representative.

SECTION C. Environmental Aspects or Potential Sources of Impact:

Air Emissions

Project activities have the potential to create dust. Suppression will occur as needed.

Discharging to Surface-, Storm-, or Ground Water

NA

Disturbing Cultural or Biological Resources

There is the potential for this work to impact vegetation and for project personnel to interact with various wildlife species. A Biological Resource Review will be arranged within two weeks prior to the initiation of any activities that might disturb soil or vegetation and again following completion of project activities. A nesting bird survey is included with the Biological Resource Review for actions occurring between April 1 - October 1 per compliance with the Migratory Bird Treaty Act. Bat surveys are also included with the Biological Resource Review in accordance with the INL Bat Protection Plan.

Generating and Managing Waste

When wastes are generated, how they are disposed can adversely affect the environment. Managing wastes appropriately and responsibly and implementing recycling or reuse practices, where feasible, during project activities can reduce the potential impact on the environment.

Releasing Contaminants

When chemicals are used during the project there is the potential for spills that could impact the environment (air, water, soil).

Using, Reusing, and Conserving Natural Resources

NA

Environmental Justice

According to the CEQ Climate and Economic Justice Screening Tool, the INL site as well as the Research and Education Campus in Idaho Falls, ID are located in U.S. Census tracts that are identified as disadvantaged communities. Census tracts identified as disadvantaged meet or exceed socioeconomic, environmental, health, or demographic thresholds identified by CEQ. Given that activities analyzed in this document will happen within the boundaries of existing DOE/INL land and/or facilities where there are no permanent residents, any impacts to Environmental Justice in surrounding communities are anticipated to be negligible.

SECTION D. Determine Recommended Level of Environmental Review, Identify Reference(s), and State Justification: Identify the applicable categorical exclusion from 10 Code of Federal Regulation (CFR) 1021, Appendix B, give the appropriate justification, and the approval date.

For Categorical Exclusions (CXs), the proposed action must not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health, or similar requirements of Department of Energy (DOE) or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment or facilities; (3) disturb hazardous substances, pollutants, contaminants, or Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)-excluded petroleum and natural gas products that pre-exist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources (see 10 CFR 1021). In addition, no extraordinary circumstances related to the proposal exist that would affect the significance of the action. In addition, the action is not "connected" to other action actions (40 CFR 1508.25(a)(1) and is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1608.27(b)(7)).

References: B3.1 "Site characterization and environmental monitoring"

Justification: B3.1 Site characterization and environmental monitoring. Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools);Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; Aquifer and underground reservoir response testing; Installation and operation of ambient air monitoring equipment; Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes);Sampling and characterization of water effluents, air emissions, or solid waste streams; Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources);Sampling of flora or fauna; and Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.

Is the project funded by the American Recovery and Reinvestment Act of 2009 (Recovery Act) ☐ Yes ☒ No

Approved by Jason L Anderson, DOE-ID NEPA Compliance Officer on: 2/6/2024