

FINDING OF NO SIGNIFICANT IMPACT FOR THE FINAL ENVIRONMENTAL ASSESSMENT FOR THE TERRAPOWER TEST AND FACILITY, KEMMERER, WYOMING (DOE/EA-2217)

U.S. Department of Energy (DOE), Office of Clean Energy Demonstrations (OCED)

ACTION: Finding of No Significant Impact (FONSI)

SUMMARY: The U.S. Department of Energy (DOE) Office of Clean Energy Demonstrations (OCED) has prepared the *Environmental Assessment for the TerraPower Test and Fill Facility, Kemmerer, Wyoming* (DOE/EA-2217) (referred to as the Final EA and is incorporated by reference into this FONSI), which analyzed the potential impacts of the Proposed Action. DOE's Proposed Action is to authorize the expenditure of federal funds by TerraPower, LLC (TerraPower) to construct and operate the Test and Fill Facility (TFF). The TFF would receive, sample, process, store, and deliver liquid sodium to locations where component tests are performed, including the planned Kemmerer Unit 1. The research from the TFF would serve the sodium reactor community at large as the technology continues to grow and be adopted around the world.

The Final EA evaluated two alternatives to address TerraPower's request for financial assistance to construct and operate the TFF and associated infrastructure. The two alternatives are: a No Action Alternative as required by DOE's National Environmental Policy Act (NEPA) regulations (Title 10 *Code of Federal Regulations* Section 1021 [10 CFR 1021], "National Environmental Policy Act Implementing Procedures") and in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14[c]); and the Proposed Action to provide federal funding in support of the construction and operation of the TFF. The Proposed Action is the Preferred Alternative; it would meet the purpose and need for the Proposed Action and would also be protective of human health and the environment.

Based on the analysis in the Final EA, DOE determined that the Preferred Alternative would not constitute a major Federal action significantly affecting the quality of human health and the environment within the meaning of NEPA. Therefore, the preparation of an Environmental Impact Statement (EIS) is not required, and DOE is selecting the Proposed Action and issuing this Finding of No Significant Impact (FONSI).

PROPOSED ACTION: The Proposed Action involves providing federal funds in support of the construction and operation of the TFF (the Proposed Project). The Proposed Project would be located in Kemmerer, Wyoming. The TFF would be built on a parcel of land owned by TerraPower (denoted as the TFF site area in Figure 2.1-1 as a dashed line) located on approximately 35 acres in a portion of Sections 19 and 20, Township 20 North, Range 116 West, P.M, Lincoln County, Wyoming in the vicinity of Kemmerer. The TFF would serve three main missions: (1) to support prototype-scale sodium testing/qualification for the Natrium Demonstration Plant (Kemmerer Unit 1); (2) to advance technologies for future Natrium style reactors; and (3) to provide the initial sodium fill for Kemmerer Unit 1. The TFF would be a

non-nuclear industrial facility. The TFF would include a parking lot, office and control trailer, sodium test building, outside sodium storage area, and outside equipment area.

ALTERNATIVES EVALUATED: DOE evaluated two alternatives in the Final EA. Under the No-Action Alternative, DOE would not authorize the expenditure of federal funds by TerraPower in support of the Proposed Project. For purposes of analysis, DOE assumed the Proposed Project would not proceed if DOE does not authorize the expenditure of federal funds. The No Action Alternative was evaluated to provide a baseline for comparison with the Proposed Action Alternative, which is the Preferred Alternative. The Proposed Action (the Preferred Alternative) consists of authorizing the expenditure of federal funding by TerraPower to support the construction and operation of the TFF.

In addition to the two alternatives evaluated in detail in the Final EA, DOE also considered other alternatives that were eliminated from further analysis in Section 2.3 and 2.4 of the EA. Several alternative locations were considered by TerraPower as part of a competitive bid process for the TFF. The evaluation process considered financial costs to DOE, the availability of existing utilities, and the technical expertise of the design partner and available local labor pool. The selected location provided the lowest-cost option while minimizing potential environmental impacts because of the availability of existing utility connections.

ENVIRONMENTAL CONSEQUENCES: The affected environment for the following resources at the project site were evaluated for potential impacts from the No Action Alternative and the Proposed Action (the Preferred Alternative):

- Ecological resources
- Cultural resources
- Hydrology
- Socioeconomics
- Geological resources
- Environmental justice
- Infrastructure, traffic, and transportation
- Accidents and hazards

Under the No-Action Alternative, the TFF would not be constructed, and all resources areas except for socioeconomics would remain unchanged when compared to existing conditions.

The Proposed Action (the Preferred Alternative) would have short and long-term, negligible to moderate impacts to resources from construction and operation activities (Table 1).

Table 1. Summary of Impacts

Resource Area	Level of Expected Impact
Ecological Resources	Minor, Short-term and Long-term impacts
Cultural Resources	Negligible to Minor, Long-term impacts
Socioeconomics	Moderate to Negligible, Long-term impacts
Geological Resources	Minor, Short-term and Long-term impacts
Hydrology	Minor, Short-term impacts

Resource Area	Level of Expected Impact
Environmental Justice	Negligible to Moderate, Long-term impacts
Infrastructure, Traffic and Transportation	Minor to Moderate, Short-term and Long-term impacts
Accidents and Hazards	Minor to Moderate, Long-term impacts

Applicant committed measures are listed in Section 2.7 of the EA and include items to reduce potential impacts from construction, operations, and maintenance of the Proposed Project. Measures cover the following resource areas: cultural and historic resource; spill prevention, control, and countermeasure plan; infrastructure, traffic and transportation; biological resources; and health and safety.

The cumulative impacts from the Proposed Project (the Preferred Alternative) are expected to be negligible to moderate with the greatest impacts under infrastructure, traffic, and transportation and accidents and hazards from the potential impacts associated with development of Kemmerer Unit 1.

FLOODPLAIN STATEMENT OF FINDINGS: This Floodplain Assessment and Statement of Findings has been prepared in accordance with 10 Code of Federal Regulations (CFR) 1022, “Compliance with Floodplain and Wetland Environmental Review Requirements” which were promulgated to implement the requirements of the DOE’s responsibilities under Executive Order 11988, *Floodplain Management*, and Executive Order 11990, *Wetlands Protection*. According to 10 CFR 1022, a floodplain is defined as the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands, including, at a minimum, that area inundated by a 1% or greater chance flood in any given year (the “100-year floodplain”).

DOE is proposing to provide federal funding to TerraPower for the construction and operation of the TFF. The access road required for the TFF would cross a 100-year floodplain and the proposed water basin would discharge into the 100-year floodplain. The 100-year floodplain as defined by the Federal Emergency Management Agency (FEMA) for North Fork Little Muddy Creek as well as its tributaries near the site is presented in Figure 3.3.5-3, Floodplain Map, in the EA. The proposed project is not located within a wetland.

DOE included the analysis of potential impacts of the proposed action to the floodplain in the draft EA which was released for a 30-day public comment period. No comments were received on floodplains or wetlands.

As described in Section 2.1, *Proposed Action*, of the EA, the proposed action would include an access road that would cross the 100-year floodplain and an ephemeral stream, North Fork Little Muddy Creek. The final access road scope includes culverts centered where it crosses the ephemeral stream. The stream crossing consists of five reinforced concrete pipe culverts that are each approximately 99 ft in length and run parallel to the centerline of the stream, following the stream bed contours. The permanent roadway culverts are designed to comply with the floodplain permit conditions from Lincoln County and designed for a 100-year, 24-hour storm event. A rip rap apron is placed on the inlet and outlet of the culvert serving as a permanent

erosion control measure. The stormwater drainage system on the TFF site collects all stormwater runoff in a single stormwater collection pond which discharges the stormwater to a ditch located on the west side of the entrance road ending at the 100-year floodplain to the ephemeral stream north of the plant road.

Potential impacts to the floodplain are described in Section 3.3.3.2 of the EA and state that the proposed road would cross the 100-year floodplain and an ephemeral stream that is directly connected to North Fork Little Muddy Creek. The construction of the entrance road across the floodplain could potentially alter the natural flow of water. It may lead to changes in the floodplain's hydrology, such as increased water velocities, changes in water course, or redirection of floodwaters. The proper design of the drainage system (including culverts, bridges, and stormwater management measures) will ensure that water can flow freely without causing any excessive damage to the road and only minor short-term impacts to the floodplain.

There is also a planned basin which for the construction phase of the Project will be designed and installed as a sediment basin and will subsequently be altered to function as a water detention basin during operations and maintenance of the TFF. Drainage from the pond will be directed south along the entrance road and discharge to the floodplain. Construction of the road across the floodplain and stream could potentially obstruct sediment transport leading to increased erosion upstream and decreased sediment deposition downstream. Measures would be taken to maintain the natural deposition areas and protect against any erosion issues. All surface water would be managed in accordance with the Wyoming Department of Environmental Quality and Lincoln County Public Health as well as a floodplain development permit from Lincoln County.

No long-term negative direct or indirect impacts to the beneficial values of the 100-year floodplain would be expected under the proposed action. No effects to lives and property associated with floodplain disturbance are anticipated.

The alternatives available to DOE are to provide federal funding to support the project proposed by TerraPower or to not provide funding. There are no project design or site alternatives available to DOE.

In accordance with 10 CFR 1022, DOE sent notice of the proposed floodplain action through the release of the Draft EA to appropriate government agencies and other interested parties for review and comments. This was accomplished electronically via email and by mail correspondence dated November 2, 2023. DOE also published the notice in the week of November 6, 2023, edition of the local newspaper, Kemmerer Gazette. Additionally, the notice was posted on the DOE public reading room webpage at: <https://www.energy.gov/nepa/articles/doeea-2217-draft-environmental-assessment-0>. The public and agency comment period ran from November 2, 2023, to December 1, 2023, thus meeting the 15-day requirement of 10 CFR 1022. DOE did not receive any comments from government agencies, persons or groups of interest, or the general public on floodplain impacts.

It is anticipated that this project would not result in adverse impacts to the 100-year floodplain. Temporary disturbance within the floodplain would cease following completion of construction activities associated with this proposed action and long-term impacts would occur during

construction and operation from use of the water basin. Proper erosion and sediment control measures would be utilized during construction. This proposed project would not significantly modify existing elevations and flow paths of the area within the floodplain from pre-project conditions to post-project conditions or result in other long-term impacts to the floodplain and its functionality.

In accordance with 10 CFR Part 1022 and based upon the information presented in this Statement of Findings, DOE concludes that this action conforms to applicable floodplain protection standards and the appropriate steps have been taken to minimize potential harm within the floodplain.

PUBLIC REVIEW AND COMMENTS: DOE held a public scoping period from May 25, 2023, to June 14, 2023. DOE received eight comments from local governments, state government, non-profit organizations, Tribes, and public citizens. DOE incorporated comments into the draft EA as appropriate. DOE released the draft EA on November 2, 2023, for a 30-day comment period closing on December 1, 2023. DOE received six public comments from local governments, state government, non-profit organizations, and public citizens. DOE responded to substantive public comments in Appendix B of the EA. DOE is not required to provide the FONSI to the public for a 30-day review period prior to a decision because the Proposed Action is not an activity that normally requires an Environmental Impact Statement (10 CFR 1021 Subpt. D, App. D) and the Proposed Action is not precedent setting (40 CFR § 1501.6).

CONSULTATIONS: DOE made a determination of *no effect* for threatened and endangered species under Section 7 of the Endangered Species Act. On April 4, 2024. DOE received concurrence from Wyoming State Historic Preservation Office (WY SHPO) with a *no historic properties adversely affected* finding on the TFF following a 30-day review period under Section 106 of the National Historic Preservation Act (NHPA). WY SHPO stated that, “If any cultural materials are discovered during construction, work in the area shall halt immediately, the federal agency and SHPO staff be contacted, and the materials be evaluated by an archaeologist or historian meeting the Secretary of the Interior’s Professional Qualification Standards (48 FR 22716, Sept. 1983).” DOE received no comments from consulting parties under Section 106 of the NHPA.

COOPERATING AGENCIES: OCED did not invite any federal agencies or Tribes to be cooperating agencies for this project.

PUBLIC AVAILABILITY AND CONTACT INFORMATION: This FONSI and Final EA are available at the following website: <https://www.energy.gov/nepa/articles/doeea-2217-draft-environmental-assessment-0>.

For more information about this FONSI or Final EA:

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DETERMINATION: Based on the information and analysis in the Final EA, DOE has determined that the Proposed Action would not constitute a major Federal action significantly affecting the quality of human health or the environment in accordance with DOE's NEPA implementing procedures (10 CFR 1021), and the regulations issued by the CEQ for implementing NEPA (40 CFR 1508.27). Therefore, the preparation of an EIS is not required.

DOE selects the Proposed Action from the *Environmental Assessment for the TerraPower Test and Fill Facility, Kemmerer, Wyoming* (DOE/EA-2217) and is issuing this FONSI.

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