



May 2, 2024

TP-LIC-LET-0133
Project Number 99902100

U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
Attn: Document Control Desk

Subject: Fitness-for-Duty and Security Clarifying Information

- References:**
1. TerraPower, LLC, "Submittal of the Construction Permit Application for the Natrium Reactor Plant, Kemmerer Power Station Unit 1," March 28, 2024 (ML24088A059).
 2. Nuclear Energy Institute, "Fitness-for-Duty Program Guidance for New Nuclear Power Plant Construction Sites," NEI 06-06, Revision 6, April 2013.
 3. Nuclear Energy Institute, "Security Measures During New Reactor Construction," NEI 09-01, Revision 0, September 2009.

Pursuant to Title 10 of the *Code of Federal Regulations*, Part 50 (10 CFR 50), "Domestic Licensing of Production and Utilization Facilities," TerraPower, LLC (TerraPower) submitted, on behalf of US SFR Owner, LLC (USO), a construction permit application (CPA) to construct a Natrium™ Reactor Plant¹, Kemmerer Power Station Unit 1, in Lincoln County, Wyoming as part of participation in the U.S. Department of Energy's Advanced Reactor Demonstration Program (Reference 1). Section 11.6 of the Preliminary Safety Analysis Report (PSAR), which is Enclosure 2 of the CPA, provides a description of how fitness-for-duty (FFD) and security requirements are met. This letter provides clarifying information pertaining to this description.

An FFD program consistent with NEI 06-06, (Reference 2), as endorsed by Regulatory Guide 5.84, "Fitness-for-Duty Programs at New Reactor Construction Sites," Revision 0, and an access

¹ Natrium is a TerraPower and GE-Hitachi technology.



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screening and control program consistent with NEI 09-01 (Reference 3) will be implemented prior to the commencement of construction of safety-related and security-related structures, systems, and components. Individuals identified in 10 CFR 26.4(e) and 10 CFR 26.4(g) will be subject to an FFD program that meets the requirements of 10 CFR Part 26, Subparts A through H, N, and O.

In accordance with 10 CFR 100.21(f), the Kemmerer Unit 1 site characteristics are such that adequate security plans and measures can be developed pursuant to 10 CFR 73. The Kemmerer Power Station Unit 1 site and layout have been assessed and are sufficiently large to implement the requirements of 10 CFR 73.55, including adequate distances between safety-related structures and the required security boundaries and consideration of land-based vehicle bombs. There are no bodies of water or waterways that would require protection from waterborne vehicle bombs.

Natural topography of the site and planned structures for the site do not limit spatial separation, and no highways, railroads, or waterways traverse the exclusion area, owner-controlled area, or protected area. The location of the site would not impact the availability of material, equipment, or services in support of maintaining security systems and operations.

Because the detailed site layout design has not been finalized, all possible planned culverts or unattended openings that could extend from the outside to the inside of the designated protected area have not been identified. The site-specific security assessment for operations will identify and describe the specific security design features to be implemented to address planned culverts or unattended openings.

The effects of severe weather and resulting environmental conditions are not expected to challenge operations of the facility. Engineered and administrative controls are not challenged in the event of flooding or low water at the site, and security standoff distances are not impacted by flooding or low water.

No additional security hazards have been identified in the Kemmerer Power Station Unit 1 site vicinity.

A physical security plan, training and qualification plan, and cyber security plan that meets the requirements of 10 CFR 73.54 will be provided at the operating license stage as required by 10 CFR 50.34(c)(1), (2), (3). A safeguards contingency plan will be provided at the operating license stage as required by 10 CFR 50.34(d). The development of the security plan will consider the site characteristics described in PSAR Chapter 2 and potential vulnerabilities will be mitigated. The resulting plans will describe the measures taken to ensure assessment, observation, detection, and surveillance requirements are met, and appropriate barriers are installed to prevent potential exploitation of any planned culverts or unattended openings.



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Security measures consistent with NEI 09-01 will be implemented prior to the commencement of construction of safety-related and security-related structures, systems, and components.

This letter makes no new or revised regulatory commitments.

If you have any questions regarding this submittal, please contact George Wilson at gwilson@terrapower.com or (425) 324-2888.

I declare under penalty of perjury that the foregoing is true and accurate.

Executed on May 2, 2024.

George Wilson

George Wilson
Vice President, Regulatory Affairs
TerraPower, LLC

cc: Mallecia Sutton, NRC
Josh Borromeo, NRC
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NRC, Region II
NRC, Region IV