



December 23, 2020

TP-REG-LET-0003
Project Number 99902087

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

Subject: Revision to TerraPower®, LLC – Quality Assurance Topical Report

References: 1. TerraPower, LLC Quality Assurance Topical Report, TP-LIC-LET-0003, August 5, 2020 (ML20218A590)
2. TerraPower - Acceptance of Topical Report, TP-QA-PD-0001, Rev. 9a "Quality Assurance Program Description," October 21, 2020 (ML20280A970)

TerraPower, LLC (TerraPower) submitted their Quality Assurance Topical Report (QATR), TP-QA-PD-0001, Rev. 9A, *TerraPower QA Program Description* (Agencywide Documents Access and Management System (ADAMS) Accession No. ML20218A590) [Reference 1] for U.S. Nuclear Regulatory Commission (NRC) staff review and approval. By letter dated October 21, 2020 (ADAMS Accession No. ML20280A970) [Reference 2], the NRC staff found that the material presented provides sufficient information to enable the staff to complete a detailed technical review.

The NRC staff completed an initial review of the QATR and developed a set of preliminary questions to improve its understanding of the information. A Public Meeting was held December 8, 2020 to discuss NRC's preliminary questions. NRC's questions and TerraPower's responses are provided in Attachment One.

As a result of the Public Meeting discussion and TerraPower's review of the preliminary questions, TerraPower will revise and resubmit the QAPD to the NRC by February 28, 2021. The revised QAPD will provide additional information and clarity.

If you have any questions, please contact me at 423-208-2188 or at pgaillard@terrapower.com. This letter makes no regulatory commitments and no revisions to any existing regulatory commitments.

Sincerely,

A handwritten signature in black ink that reads "Peter C. Gaillard".

Peter C. Gaillard, PE
Director, Regulatory Affairs
TerraPower, LLC

Attachment One: TerraPower Responses to NRC Comments on Quality Assurance Topical Report, TP-QA-PD-0001, Rev. 9A, *TerraPower QA Program Description*

Distribution: Mr. Ben Beasley, NRR/DANU/UARL, NRC
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TerraPower Responses to NRC Comments on Quality Assurance Topical Report, TP-QA-PD-0001, Rev. 9A, TerraPower QA Program Description

On August 5, 2020, TerraPower submitted Quality Assurance Topical Report, TP-QA-PD-0001, Rev. 9A, *TerraPower QA Program Description* for NRC staff review and approval. By letter dated October 21, 2020, the NRC staff found the material provided sufficient information to enable the staff to complete a detailed technical review. The NRC staff completed their initial review and developed a set of preliminary questions to improve its understanding of the information presented in the Topical Report.

A public meeting was held December 8, 2020 to discuss the preliminary questions. As a result of the discussion at the public meeting and TerraPower's review of the preliminary questions, TerraPower is planning to revise their QAPD and resubmit it to the NRC. NRC's questions and TerraPower's responses, including planned revisions, are presented below. These revisions will provide additional information and clarity to the QAPD.

1. **NRC QUESTION 1:** For each of the 18 criteria of Appendix B to 10 CFR Part 50, clarify whether TerraPower commits to complying with NQA-1-2015 for the implementation of TerraPower's QA program without further clarifications or exceptions. If clarifications or exceptions are needed for compliance with NQA-1-2015, specify the clarifications or exceptions as applicable.

RESPONSE: TerraPower will review each of the 18 criteria of Appendix B to 10 CFR Part 50 and specify clarifications or exceptions as applicable if needed for compliance with NQA-1-2015.

2. **NRC QUESTION 2:** Clarify how TerraPower's QAPD addressed the establishment of provisions for the resolutions of disputes involving quality arising from a difference of opinion between QA personnel and other department personnel.

RESPONSE: TerraPower will update QAPD, Section 1.3 to address resolution of disputes involving quality, arising from a difference of opinion between QA personnel and other department (engineering, procurement, manufacturing, etc.) personnel.

3. **NRC QUESTION 3:** Clarify TerraPower's plans to establish and maintain a list that identifies the structures, systems, and components (SSCs) to be covered by the QA program.

RESPONSE: TerraPower will revise the QAPD to state that TerraPower will establish and maintain a list that identifies the structures, systems, and components (SSCs) to be covered by the QA program.

TerraPower Responses to NRC Comments on Quality Assurance Topical Report, TP-QA-PD-0001, Rev. 9A, TerraPower QA Program Description (Continued)

4. **NRC QUESTION 4:** Clarify if TerraPower's proposed QAPD commits to following Subpart 2.7, "Quality Assurance Requirements for Computer Software for Nuclear Facility Applications," for computer program testing.

RESPONSE: TerraPower's proposed QAPD Section 3.4 states, "Each computer program used for design analysis shall be accepted for use and controlled as described in the TP Software Management Plan which complies with the requirements of NQA-1-2015, Part II, Subpart 2.7, prior to use, or the computer program's results shall be independently verified with the design analysis for each application." TerraPower will revise the QAPD Section 11 to include the Subpart 2.7 commitment.

5. **NRC QUESTION 5:** Clarify if TerraPower is committed to implementing regulatory positions C.3.a and C.3.b as described in Revision 5 of RG 1.28 for the implementation of TerraPower's QA program.

RESPONSE: TerraPower will revise the QAPD to commit to implementing regulatory positions C.3.a and C.3.b as described in Revision 5 of RG 1.28 for the implementation of TerraPower's QA program.

6. **NRC QUESTION 6:** Since the NRC revised RG 1.189 (Revision 3) in February 2018, clarify why the TerraPower QAPD does not commit to meeting the latest revision of RG 1.189 (Revision 3).

RESPONSE: TerraPower will revise the QAPD to commit to meeting the latest revision of RG 1.189 (Revision 3).

7. **QUESTION 7:** TerraPower's QAPD did not provide a list of commitments for the implementation of its QA program. The NRC staff acknowledges that because of the substantial differences between TerraPower's plant design and a LWR design, direct commitment to these RGs may not be appropriate. However, the QAPD should document those RGs, GLs, and other QA standards that are applicable and provide a justification for guidance that may not be applicable due to unique design considerations.

RESPONSE: TerraPower will evaluate Regulatory Guides, Generic Letters, and QA Standards and develop a list of commitments for the implementation of its QA program review. Justification for inclusion or not will be provided in the QAPD.

RESPONSE: TerraPower will evaluate Regulatory Guides, Generic Letters, and QA Standards and identify the extent of conformance in the revised QAPD or applicable license application documents, as appropriate.