UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

May 30, 2025

Mr. Delson C. Erb
Vice President, OPS Support
Tennessee Valley Authority
1101 Market Street, LP 4A-C
Chattanooga, TN 37402-2801

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2 AND 3; CLINCH RIVER EARLY SITE PERMIT; SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2; WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – REVIEW OF QUALITY ASSURANCE PLAN CONVERSION (EPID L-2024-LLQ-0000)

Dear Mr. Erb:

By letter dated April 1, 2024, as supplemented by letters dated September 24, 2024, February 26, April 14, and May 6, 2025, Tennessee Valley Authority (TVA) submitted TVA-NQA-PLN89-A, "TVA Nuclear Quality Assurance Plan" (NQAP), Revision 44, to the U.S. Nuclear Regulatory Commission (NRC) for review and approval of changes that are reductions in commitments in accordance with paragraph 50.54(a)(4) of Title 10 of the *Code of Federal Regulations* (10 CFR). Revision 44 converts the TVA NQAP for the current operating fleet from American National Standards Institute (ANSI) N45.2-1971, "Quality Assurance Program Requirements for Nuclear Power Plants," and ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," to American Society of Mechanical Engineering (ASME) NQA-1-2015, "Quality Assurance Requirements for Nuclear Facility Applications."

The NRC staff reviewed TVA's requested changes to its NQAP, as documented in the enclosed safety evaluation, and finds that TVA will continue to comply with the criteria of Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," and, therefore, is acceptable.

If you have any questions, please contact Kimberly Green at 301-415-1627 or via email at Kimberly.Green@nrc.gov.

Sincerely,

DAVID WRONA

Digitally signed by DAVID WRONA
Date: 2025.05.30 16:02:31 -04'00'

David Wrona, Chief
Plant Licensing Branch II-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos.: 50-259, 50-260, 50-296, 72-052, 52-047, 50-327, 50-328, 72-034, 50-390, 50-391, and 72-1048

Enclosure:
As Stated

cc: Listserv

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

REQUEST TO REVISE THE NUCLEAR QUALITY ASSURANCE PLAN

TENNESSEE VALLEY AUTHORITY

BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2, AND 3

CLINCH RIVER NUCLEAR SITE

SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2

WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2

DOCKET NOS. 50-259, 50-260, 50-296, 72-052, 52-047, 50-327, 50-328, 72-034, 50-390, 50-391, AND 72-1048

1.0 INTRODUCTION

By letter dated April 1, 2024 (Reference 1), the Tennessee Valley Authority (TVA) submitted Topical Report (TR) NQA-PLN89-A, Revision 43, "Quality Assurance Program Description for TVA Nuclear Quality Assurance Plan," (hereafter referred to as TVA Fleet QAPD) to the U.S. Nuclear Regulatory Commission (NRC). In this letter TVA requested the NRC staff's review and approval of the TVA Fleet QAPD included in Enclosure 1 of the letter pursuant to the requirements in Title 10 of the *Code of Federal Regulations* (10 CFR) Section 50.54(a), "Conditions of the License." By letter dated September 24, 2024 (Reference 2), TVA submitted a supplement to the TVA Fleet QAPD to incorporate discussions with NRC staff during the July 10, 2024, public meeting (Reference 3). The proposed TVA Fleet QAPD converts the current operating fleet from American National Standards Institute (ANSI) N45.2-1971, "Quality Assurance Program Requirements for Nuclear Power Plants," and ANSI N18.7-1976, "Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants," to American Society of Mechanical Engineers (ASME) NQA-1-2015, "Quality Assurance Requirements for Nuclear Facility Applications" (Reference 4). The program described in the TVA Fleet QAPD will be applied to TVA 10 CFR Part 50 licensed activities and 10 CFR Part 72 activities pursuant to 10 CFR 72.140(d), "Previously approved programs."

The NRC staff requested additional information by letter dated December 10, 2024 (Reference 5). TVA submitted its response by letter, dated February 26, 2025 (Reference 6), in which TVA included Revision 44 of the TVA Fleet QAPD in Enclosure 2.

The TVA Fleet QAPD and its associated implementing procedures provide control of TVA nuclear activities that affect the quality of safety-related structures, systems, and components (SSCs). As stated in the Executive Summary of the TVA Fleet QAPD:

> This Quality Assurance Program Description (NQAP, QAPD or Fleet QAPD) document provides a description of the TVA nuclear quality assurance program (QAP) for the operation of licensed nuclear plants at Browns Ferry Nuclear (BFN), Sequoyah Nuclear (SQN), and Watts Bar Nuclear (WBN).
>
> This Fleet QAPD applies to the Clinch River Nuclear (CRN) Small Modular Reactor (SMR) Project while under an approved early site permit (ESP) as well as the TVA New Nuclear Program Organization which addresses infrastructure and programmatic matters with siting, licensing, and planning for new nuclear projects, until such time as the [QAPD] for New Nuclear (NNQAP, Reference NNP-TR-001-NP-A) is implemented and the Construction Permit Application (CPA) for CRN Project is approved by the NRC. After this milestone, New Nuclear Projects and Program work for siting, site-selection, design, licensing, planning, construction, and operation of new TVA nuclear plants (including the CRN SMR Project after issuance of the Construction Permit) are addressed under the TVA NNQAP [New Nuclear QAPD].

In request for additional information (RAI) 1, the NRC staff requested that TVA clarify which TVA QAPD (TVA Fleet QAPD or TVA New Nuclear QAPD) will govern the TVA New Nuclear Program and the CRN SMR project if the CRN CPA is not pursued. In response to RAI 1, TVA stated that the TVA Fleet QAPD governs the New Nuclear Program and the CRN SMR Project while under an approved ESP. TVA also stated that the TVA Fleet QAPD will continue to govern the New Nuclear Program if the CRN CPA is not pursued. The NRC staff evaluated this response and found that this clarification is acceptable. However, based on the applicability of TVA Nuclear's regulatory commitments in Part IV of the TVA Fleet QAPD for the current operating fleet and the CRN ESP, the NRC staff determined that the TVA Fleet QAPD, Revision 44, may not be used for and referenced in new applications for an ESP, construction permit (CP), combined license (COL), operating license (OL), design certification (DC), standard design approval (SDA), manufacturing license (ML), or limited work authorization (LWA).

Subsequent to TVA's submittal of responses to RAIs issued in the December 10, 2024, letter, the NRC staff issued a second round of RAIs by letter dated April 1, 2025 (Reference 7). In its response, dated April 14, 2025 (Reference 8), and revised response, dated May 6, 2025 (Reference 9), TVA submitted revised versions of the TVA Fleet QAPD, Revision 44.

2.0 REGULATORY EVALUATION

The regulatory requirements for nuclear power plant quality assurance (QA) programs are set forth in Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to 10 CFR Part 50, 10 CFR 50.34(b)(6)(ii), and 10 CFR 50.54(a).

Appendix B to 10 CFR Part 50 establishes the QA requirements for the design, fabrication, construction, and testing of SSCs. Criterion I, "Organization," of Appendix B describes the requirements for the QA organization including the authority and duties of persons and organizations performing activities affecting the safety-related functions SSCs.

Subpart G, “Quality Assurance,” to 10 CFR Part 72, “Licensing Requirements for the Independent Storage of Spent Nuclear Fuel, High-Level Radioactive Waste, and Reactor-Related Greater Than Class C Waste,” establishes QA requirements for Independent Spent Fuel Storage Installations. An NRC-approved QAPD that complies with Appendix B to 10 CFR Part 50, is acceptable for meeting the requirements in Subpart G of 10 CFR Part 72.

The regulations in 10 CFR 50.34(b)(6)(ii) require the final safety analysis report for a nuclear power facility to include information on the managerial and administrative controls that would ensure safe operation. The information on the controls shall also include a discussion on how the applicable requirements of Appendix B to 10 CFR Part 50 will be satisfied.

The regulations in 10 CFR 50.54 require each power plant subject to the requirements of Appendix B to implement a QA program, and 10 CFR 50.54(a)(4) sets forth the NRC’s regulatory requirements regarding changes to a QA program description. Changes to a QA program description that reduce the licensee’s commitments must be submitted and receive NRC approval prior to implementation. This includes changes made to the QA program description as presented in the safety analysis report or in a topical report that must be submitted as specified in 10 CFR 50.4.

The submittal of a change to the QA program description must include all pages affected by that change and must be accompanied by a forwarding letter identifying the change, the reason for the change, and the basis for concluding that the revised program incorporating the change continues to satisfy the criteria of Appendix B to 10 CFR Part 50, and the QA program description commitments previously accepted by the NRC.

The regulation at 10 CFR 50.55(f)(4)(i) requires a holder of an ESP submit changes to the accepted QA program description and receive NRC approval prior to implementation of changes that reduce commitments.

NUREG-0800, “Standard Review Plan for the Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition,” Section 17.5, “Quality Assurance Program Description – Design Certification, Early Site Permit and New License Applicants,” Revision 1 (Reference 10), contains guidance and acceptance criteria for NRC staff performing reviews of QA program descriptions.

3.0 TECHNICAL EVALUATION

The proposed TVA Fleet QAPD is based on the requirements of (1) ASME standard NQA-1-2015 Edition, which is endorsed with certain exceptions and clarifications by the NRC in Regulatory Guide (RG) 1.28, “Quality Assurance Program Criteria (Design and Construction),” Revision 5 and (2) ANSI/American Nuclear Society (ANS) 3.2-2012, “Managerial, Administrative, and Quality Assurance controls for Operational Phase of Nuclear Power Plants, which is endorsed with conditions in RG 1.33, “Quality Assurance Program Requirements (Operations),” Revision 3.

3.1 Quality Assurance Program Overview

TVA states that the TVA Fleet QAPD, Revision 44, and associated implementing documents control TVA Nuclear activities that affect the quality of safety-related nuclear SSCs and include all planned systematic activities necessary to provide adequate confidence that such SSCs will perform satisfactorily in service. The TVA Fleet QAPD, Revision 44 may also be applied to

certain equipment and activities that are not safety-related, but support safe plant operations, or where other NRC guidance establishes program requirements.

3.1.1 Organization

Part II, Section 1, “Organization,” of the Fleet QAPD, Revision 44, describes the TVA Nuclear organizational structure, functional responsibilities, levels of authority and interfaces for establishing, executing, and verifying QAPD implementation.

Figure 2.1 of the TVA Fleet QAPD depicts reporting relationships, functional responsibilities, and authorities for organizations implementing and supporting the QAP. Part II, Subsection 1.2 of the TVA Fleet QAPD describes the roles and responsibilities of the President/Chief Executive Officer (CEO). This position is responsible for all aspects of design, construction, and operation of TVA’s nuclear plants, including new nuclear projects developed under TVA New Nuclear. The President/CEO is also responsible for all technical and administrative support activities provided by TVA and contractors. The President/CEO directs the TVA enterprise executive leadership in the fulfillment of their responsibilities.

Part II, Subsection 1.2, Item A of the TVA Fleet QAPD states that the Senior Vice President, New Nuclear Projects reports to the CEO and is responsible for TVA New Nuclear Program and Projects for site projects and program technical administrative activities. The Senior Vice President, New Nuclear Projects is also responsible to ensure quality requirements are met for activities performed by the site project and program and their contractors. The management position responsible for the New Nuclear Program reports to the Senior Vice President, New Nuclear Projects. The Senior Vice President, New Nuclear Projects will interface with the Chief Nuclear Officer (CNO) regarding QA decisions affecting TVA New Nuclear Program and Projects. The Senior Vice President, New Nuclear Projects does not have the authority to disposition QA issues affecting the TVA New Nuclear Program and Projects group which are within the scope of the TVA Fleet QAPD.

Part II, Subsection 1.3 of the TVA Fleet QAPD states that the Executive Vice President/Chief Administrative Officer (CAO) is responsible for TVA’s supply chain, information technology, facilities, and share services. The CAO supports TVA Nuclear through the Vice President, Supply chain. The management position responsible for procurement reports through the Vice President, Supply chain and is responsible for ensuring that the QA requirements established by the TVA Fleet QAPD are either included or referenced (as appropriate) in related procurement sponsored areas. Supply chain management is also responsible for inspection of items and materials used in nuclear plants.

Part II, Subsection 1.4 of the TVA Fleet QAPD states that the Executive Vice President/CNO is responsible for the safe, reliable, and efficient operation of the TVA nuclear plants. The CNO has overall responsibility for the establishment, implementation, and administration of the TVA Fleet QAPD and the evaluation of its effectiveness. This responsibility is implemented through the General Manager, QA.

Part II, Subsection 1.4, Item A of the of the TVA Fleet QAPD states that the Senior Vice President, Nuclear Operations reports directly to the CNO and has responsibility for organizations that coordinate and integrate efforts and initiative into day-to-day TVA Nuclear business. The Senior Vice President, Nuclear Operations is also responsible for ensuring that the QA requirements established by the TVA Fleet QAPD are either included or referenced (as appropriate) in related nuclear operations-sponsored program areas identified in the TVA Fleet

QAPD. The management positions responsible for each operating nuclear site report that report to the Vice President, Nuclear Operations include the Site Vice President for each nuclear site.

Part II, Subsection 1.4, Item B of the of the TVA Fleet QAPD states that the Senior Vice President, Engineering and Operations Support, reports directly to the CNO and has responsibility for organizations that coordinate and integrate efforts and initiatives into day-to-day TVA Nuclear business. The following positions report to the Senior Vice President, Engineering and Operations Support:

- Vice President, Nuclear Engineering
- Vice President Operations Support
- Vice President Nuclear Projects and Subsequent License Renewal
- Vice President Outage Services

Part II, Subsection 1.4, Item C, of the TVA Fleet QAPD states that the General Manager, QA is responsible for the performance of the QA oversight organization for the nuclear operating fleet, vendor support, and the TVA New Nuclear Program and Projects. The General Manager, QA administers QA responsibilities through the management positions responsible for Corporate QA, Site QA, and QA Services. Item C within this subsection states that General Manager, QA has an independent reporting relationship with the CNO on quality issues. The General Manager, QA is responsible to size the TVA Nuclear QA staff commensurate with the duties and responsibilities assigned. The size of the QA organization, including the size of respective site QA staffs, is determined by assessing the resources required to adequately perform functions and workloads assigned to each QA organizational unit. The General Manager, QA is responsible for planning and performing activities to verify the development and effective implementation of the TVA Fleet QAPD.

Part II, Subsection 1.6 of the TVA Fleet QAPD, Revision 44, states, that the Senior Vice President, Engineering and Operations Support is responsible for establishing and managing oversight and execution activities of the Nuclear Steam Supply System (NSSS) Supplier. A NSSS supplier provides engineering services for plant design and licensing of specific plant types on TVA Nuclear sites. These engineering services for nuclear generation include site-specific engineering and design necessary to support design, construction, ongoing plant maintenance, and modifications.

Part II, Subsection 1.7 of the TVA Fleet QAPD, Revision 44, states that the Senior Vice President, Engineering and Operations Support is responsible for establishing and managing oversight and execution activities of the Architect/Engineering (AE) suppliers. The AE suppliers provide engineering services to support design, construction, ongoing plant maintenance and modifications. These engineering services include engineering and design activities, including planning and support for maintenance and modification of nuclear generation facilities.

Part II, Subsection 2.8, Item A of the TVA Fleet QAPD states that independence is maintained between the organization(s) performing the checking (QA and quality control (QC)) functions and the organizations performing the functions. This provision is not applicable to design review/verification. Design review/verification is described and evaluated in Section 3.1.3 of this safety evaluation. In addition, Subsection 2.8, Item B states that those performing the QA function have sufficient independence from other TVA Nuclear priorities to bring forward issues affecting safety and quality and makes judgements regarding quality in all areas regarding TVA Nuclear activities as appropriate. QA may make recommendations to management regarding

improving the quality of work processes. If QA disagrees with any actions taken by the organization and is unable to obtain resolution. QA informs QA management and bring the matter to the attention of the CNO, who will determine the final disposition.

Part II, Subsection 2.9 of the TVA Fleet QAPD establishes the authority and responsibility for QA and QC personnel to stop work in progress which is not being done in accordance with approved procedures or where safety or SSC integrity may be jeopardized. This authority extends to off-site work performed by a supplier that furnishes safety-related materials and services to TVA Nuclear.

In establishing its organizational structure, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 1.

The NRC staff reviewed the descriptions of the roles and responsibilities of the various positions described in Part II, Section 1 of the TVA Fleet QAPD, as described above, and concludes that the QAPD adequately describes (1) the QA functions performed by these roles, (2) the positions that are responsible for the establishment and effective implementation of the TVA Nuclear QA program, and (3) the authority, including the ability to stop work, and responsibilities of positions that perform verification of activities affecting safety-related functions have been correctly performed. The NRC staff also evaluated the authority and organizational independence of persons and organizations performing QA functions and concludes that these persons and organizations have access and report to an appropriate level of management and have the requisite authority and independence.

Based on the NRC staff's review of the above information and the commitment to NQA-1-2015, Part I, Requirement 1, the NRC staff determined that the TVA Fleet QAPD conforms to the guidance of SRP Section 17.5, Subsection II, Item A, "Organization." The NRC staff finds that the TVA Nuclear organization's controls as described in the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion I, "Organization," of Appendix B to 10 CFR Part 50.

3.1.2 Quality Assurance Program

Part II, Section 2, "Quality Assurance Program," of the TVA Fleet QAPD, Subsection 2.1 states that TVA Nuclear has established the necessary measures and governing procedures to implement the QA Program as described in the QAPD. The TVA Nuclear QA Program ensures that activities affecting quality are accomplished under suitably controlled conditions. This subsection states that the QA Program applies to those quality-related activities that involve the functions of safety-related SSCs associated with the design, fabrication, construction, and testing of SSCs of the facility and to the managerial and administrative controls to be used to assure safe operations. A list or system that identifies SSCs and activities to which the QAP applies is maintained at the appropriate facility and design documents are used as the basis for this list.

Part II, Subsection 2.1, Item K, of the TVA Fleet QAPD states that TVA Nuclear ensures through a systematic process described in the TVA Fleet QAPD that its suppliers of safety-related equipment or services will meet the applicable requirements of Appendix B to 10 CFR Part 50. Subsection 2.1, Item L states that the delegated responsibilities may be performed under a supplier's or principal contractor's QA Program, provided that the supplier or principal contractor has been approved as a supplier in accordance with the TVA Fleet QAPD or is on TVA's Acceptable Suppliers List.

Part II, Subsection 2.1, Item I of the TVA Fleet QAPD states that senior management is regularly apprised of the adequacy of implementation of the QAP through the audit functions described in the TVA Fleet QAPD, Part II, Section 18. In addition, Subsection 2.2, Item B of the TVA Fleet QAPD states that the TVA Nuclear QA organization is responsible for establishing upper-tier QA Program requirements and implementation of QA functions at corporate and nuclear plant sites. This organization is also responsible for independently planning and performing activities to verify the development and effective implementation of the TVA Fleet QAPD. Subsection 2.4, Items A states that the General Manager, QA assesses the adequacy and effective implementation of QA Program requirements and provides periodic reports to the CNO on the health of the program. Subsection 2.4, Items B of the TVA Fleet QAPD states that management of organizations (other than TVA Nuclear) implementing the QAP, or portions thereof assesses the adequacy of that part of the program for which they are responsible to assure its effective implementation. Further, Part II, Subsection 2.10, states that for operating units, requirements for the review of activities affecting safe plant operation required by ANS 3.2-2012, Section 3.2 (including onsite review committees and independent review functions) are contained in the TVA Fleet QAPD, Part V, Section 2.

Part II, Subsection 2.5, Item A of the TVA Fleet QAPD states that administrative control of the QAPD will be in accordance with 10 CFR 50.54(a) and 10 CFR 50.55(f)(4)(i). Changes to the QAPD are evaluated by TVA Nuclear QA to ensure that such changes do not degrade safety for previously approved QA controls specified in the QAPD. Revisions to the TVA Fleet QAPD will be reviewed and approved, at a minimum, by the General Manager, QA. Subsection 2.5, Item B states that regulations require that the Updated Final Safety Analysis Report (UFSAR) includes among other things, the managerial and administrative controls to be used to assure safe operation, including a discussion of how the applicable requirements of Appendix B to 10 CFR Part 50 are satisfied. This requirement is satisfied by the UFSAR references to the TVA Fleet QAPD and by the applicability of 10 CFR 50.54(a) to the TVA Fleet QAPD.

Part II, Subsection 2.6, “Personnel Training and Qualifications,” of the TVA Fleet QAPD states that TVA Nuclear establishes and maintains formal indoctrination, training, and qualification as necessary for personnel performing, verifying, or managing activities within the scope of the QAPD to achieve initial proficiency, maintain proficiency, and adapt to technology changes, method, or job responsibilities. This subsection of the TVA Fleet QAPD also identifies the minimum qualifications for the (1) General Manager, QA, (2) individuals responsible for supervising QA or QC personnel, and (3) individuals that are responsible for planning, implementing, and maintaining the programs for the TVA Fleet QAPD.

Part II, Subsection 2.11 of the TVA Fleet QAPD states that in establishing the general QA program responsibilities, TVA Nuclear commits to compliance with NQA-1-2015, Part I Requirement 2. In establishing the education and experience requirements for positions in the plant operating organization, TVA Nuclear commits to compliance with ANSI/ANS 3.1-2014 and the applicable regulatory position stated in RG 1.8, “Qualification and Training of Personnel for Nuclear Power Plants,” Revision 4.

In establishing the qualification and training programs, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 2 and the applicable regulatory position stated in RG 1.28, Revision 5, specifically Section C.1.a for lead auditors with the following proposed clarifications and exceptions:

- Section 303.3 states that prospective lead auditors, with comparable industry experience, may satisfy the lead auditor qualification requirement of participating in a

minimum of five QA audits within a period of 3 years prior to the date of qualification by alternatively demonstrating the ability to properly implement the audit process, effectively organize and report results, and participate in at least one nuclear audit within the year preceding the date of qualification, subject to review and acceptance by the responsible QA organization.

- Section 401(g) requires the date of certification expiration be included on the qualification record. TVA Nuclear considers the certification expiration date to be the date from the certification or recertification date plus the certification interval time; therefore, the inclusion of a specific certification expiration date on the qualification record is optional.

The NRC staff reviewed the descriptions of the measures and controls that are established for TVA Nuclear QA Program in Section 2 of the TVA Fleet QAPD and concludes that the QAPD adequately describes measures and controls for (1) ensuring that activities affecting quality are accomplished under suitably controlled conditions, (2) maintaining a list of SSCs under the control of the TVA Nuclear QA Program at the appropriate facility, (3) identifying the scope of activities the QAPD is applicable to, (4) verifying the effective implementation of the QA Program, and (5) establishing a training and qualification program for those personnel implementing elements of the TVA Fleet QAPD. Based on this review, the NRC staff determined the TVA Fleet QAPD conforms to the guidance of SRP Section 17.5, Subsection II, Item B, “Quality Assurance Program,” and Item S, “Training and Qualification Criteria,” and Item T, “Training and Qualification – Inspection and Test.”

The NRC staff evaluated the exception taken to compliance with NQA-1-2015, Part I, Requirement 2, with respect to lead auditors and determined this exception is acceptable because this exception conforms to the guidance in Section C.1.a of RG 1.28, Revision 5. The NRC staff evaluated the exception taken to compliance with NQA-1-2015, Part I, Requirement 2, with respect to date of expiration on the qualification record because the date of certification establishes the expiration date, when combined with the certification interval. The certification interval is normally a function of a code or standard and is identified in the organization’s procedure; therefore, because having both dates on the form is redundant, the NRC staff determined the exception to be acceptable. Therefore, the NRC staff finds that the TVA Fleet QAPD, Revision 44, as described above, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion II, “Quality Assurance Program,” of Appendix B to 10 CFR Part 50.

3.1.3 Design Control

Part II, Section 3, “Design Control,” of the TVA Fleet QAPD, Subsection 3.1, Item A states that TVA Nuclear has established and implements a process to control the design, design changes, and temporary modifications of items that are subject to the provisions of the TVA Fleet QAPD. Item B, states that changes to design inputs, final designs, and field changes, and temporary modifications are justified and subject to design control measures commensurate with those applied to the original design. Item C states that the design control program includes interface controls necessary to control development, verification, approval, release, status, distribution, and revision of design inputs and outputs. Part II, Subsection 3.2, Item A states that applicable design inputs are identified and documented, and their selection reviewed and approved.

Part II, Subsection 3.3, Item A of the TVA Fleet QAPD states that design change processes and the division of responsibilities for design related activities are detailed in TVA Nuclear and

supplier procedures. Part II, Subsection 3.3, Item B states that TVA Nuclear shall prescribe and document the design activities to the level of detail necessary to permit the design process to be carried out in a correct manner, and to permit verification that the design meets requirements. Part II, Subsection 3.3, Item C states that design documents shall support the facility design, construction, and operation. Subsection 3.3, Item D states that appropriate quality standards shall be identified and documented, and their selection reviewed and approved. Subsection 3.3, Item E states that the design process includes provisions to control design inputs, outputs, changes, interfaces, records, and organizational interfaces within TVA Nuclear and with suppliers.

Part II, Subsection 3.4, Item A of the TVA Fleet QAPD states that use of existing data will be performed in accordance with NQA-1-2015, Part IV, Subpart 4.2.3, “Guidance on Qualification of Existing Data.” Part II, Subsection 3.4, Item B states that design changes and disposition of nonconforming items as “use as is” or “repair” are reviewed and approved by the TVA Nuclear design organization(s) or by other organizations authorized by TVA Nuclear.

Part II, Subsection 3.5, Item A of the TVA Fleet QAPD states that TVA Nuclear design processes provide for design verification to ensure that items, computer programs, and activities subject to the provisions of the QAPD are suitable for their intended application, consistent with their effect on safety. Subsection 3.5, Item B states that design verifications are performed by competent individuals or groups other than those who performed the original design but who may be from the same organization. Subsection 3.5, Item C states that the extent of the design verification required is a function of the importance to safety of the item or computer program under consideration, the complexity of the design, the degree of standardization, state-of-the-art, and the similarity with previously proven designs. Subsection 3.5, Item E states that verification methods may include, but are not limited to, design reviews, alternative calculations, and qualification testing. Testing used to verify the acceptability of a specific design feature demonstrates acceptable performance under conditions that simulate the most adverse design conditions expected for the item’s intended use. In cases that TVA Nuclear cannot complete design verification activities before the design outputs are used by another organization for design work or to support other activities, such as procurement or construction, TVA Nuclear will complete the requisite design verification activities before relying on the item to perform its intended design or safety function. Part II, Subsection 3.6 of the TVA Fleet QAPD states that TVA Nuclear maintains records sufficient to provide evidence that the design was properly accomplished.

Part II, Subsection 3.7 of TVA Fleet QAPD states that the QAPD governs the development, procurement, testing, maintenance, control, and use of computer applications and digital equipment software when used in safety-related applications and designated non-safety related applications. Computer program acceptability is pre-verified, or the results verified with the design analysis for each application. Pre-verified computer programs are controlled using software configuration management process.

In establishing its program for design control and verification, TVA commits to the following parts of NQA-1-2015:

- NQA-1-2015, Part I, Requirement 3, “Design Control”
- Part II, Subpart 2.7, “Quality Assurance Requirements for Computer Software for Nuclear Facilities Applications,”
- Part II, Subpart 2.14, “Quality Assurance Requirements for Commercial Grade Items and Services,” and

- Part II, Subpart 2.20[1], "Quality Assurance Requirements for Subsurface Investigations for Nuclear Facilities."

The NRC staff evaluated the description of design control measures that TVA Nuclear established and determined that the TVA Fleet QAPD conforms to the guidance within SRP Section 17.5, Subsection II, Item C, "Design Control." Based on this evaluation and TVA Nuclear's commitment to comply with the NQA-1-2015, Part I, Requirement 3, Part II, Subparts 2.7, 2.14, and 2.20, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion III, "Design Control," of Appendix B to 10 CFR Part 50.

3.1.4 Procurement Document Control

Part II, Section 4, "Procurement Document Control," of the TVA Fleet QAPD, Subsection 4.1, Item A states that TVA Nuclear has established the necessary measures and governing procedures to assure that purchased items, computer programs, and service are subject to appropriate quality and technical requirements. Applicable technical, regulatory, administrative, quality, and reporting requirements (such as specifications, codes, standards, tests, inspections, special processes, and 10 CFR Part 21) are invoked in procurement documents for procurement of items and services. Subsection 4.1, Item B states that where original technical or quality assurance requirements cannot be determined, an engineering evaluation is conducted and documented by qualitied staff to establish appropriate requirements and controls to assure that interfaces and interchangeability, safety, fit, and function, as applicable, are not adversely affected or contrary to applicable regulatory requirements. Subsection 4.1, Item C states that procurement document changes shall be subject to the same degree of control as utilized in the preparation of original documents.

Part II, Subsection 4.1, Item E of the TVA Fleet QAPD states that to the extent necessary, procurement documents require suppliers to have a documented QA program that meets Appendix B to 10 CFR Part 50 or Subpart G of 10 CFR Part 72, as appropriate, or the supplier may work under TVA Nuclear's approved QAP.

In establishing controls for procurement, TVA commits to compliance with NQA-1-2015, Part I, Requirement 4, with the following proposed clarifications and exceptions:

- In lieu of requiring suppliers to work under their own QA program in accordance with Section 100 of NQA-1-2015, Part I, Requirement 4, the procurement documents may allow suppliers to work under the TVA Nuclear QAP.

- In lieu of having technical and quality requirements be specified in procurement documents in accordance with Sections 202 and 203 of NQA-1-2015, Part I, Requirement 4, for procurement of commercial grade items for use as safety-related items, the procurement document shall contain technical and quality requirements such that the item can be appropriately dedicated in accordance with the TVA Fleet QAPD, Part II, Section 7.

- Sections 300 and 400 of NQA-1-2015, Part I, Requirement 4, require the review of technical and QA Program requirements of procurement documents prior to award of a procurement contract and for procurement document changes. TVA Nuclear may satisfy

[1] Subpart 2.20 does not apply to Operations activities.

this requirement through the review of the procurement specification when the specification contains the technical and QA requirements of the procurement contract.

The NRC staff reviewed the descriptions of the measures and controls that are established to assure that applicable regulatory requirements, design bases, and other requirements are included in procurement documents or referenced in the documents for procurement of material, equipment, and services in Part II, Section 4 of the TVA Fleet QAPD, including a review of proposed exceptions and clarifications taken to compliance with NQA-1-2015, Part I, Requirement 4. The NRC staff determined that:

- The proposed exception to Section 100 of NQA-1-2015, Part I, Requirement 4 is acceptable because the procurement document will require that a supplier work under the TVA Nuclear QAP, which based on the conclusions of this SE, meets the requirements of Appendix B to 10 CFR Part 50.

- The proposed exception to Sections 202 and 203 of NQA-1-2015, Part I, Requirement 4 is acceptable because TVA Nuclear will include technical and quality requirements in procurement documents for the purchase of commercial grade items that will undergo the dedication process per Part II, Section 7 of the TVA Fleet QAPD for TVA to use the commercial grade items as a safety-related item.

- The proposed clarification to Sections 300 and 400 of NQA-1-2015, Part I, Requirement 4 is acceptable because TVA Nuclear may satisfy these sections of Requirement 4 through a review of the procurement specification when the specification contains the technical and QA requirements of the procurement.

- The descriptions of the procurement document control measures conform to the guidance of SRP Section 17.5, Subsection II, Item D, “Procurement Document Control.”

Therefore, the NRC staff finds that the procurement document control measures in the TVA Fleet QAPD, Revision 44, as described above, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion IV, “Procurement Document Control,” of Appendix B to 10 CFR Part 50.

3.1.5 Instructions, Procedures, and Drawings

Part II, Section 5, “Instructions, Procedures, and Drawings,” Subsection 5.1, Item A, of the TVA Fleet QAPD states that TVA Nuclear has established the necessary measures and governing procedures to ensure that activities affecting quality are prescribed by and performed in accordance with instructions, procedures, or drawings, including, where applicable, qualitative or qualitative acceptance criteria to implement the TVA Nuclear QAP. Part II, Subsection 5.2, Item A states that it is TVA Nuclear’s policy that procedures are followed, and the requirements for use of the procedures have been established in administrative procedures. Subsection 5.2, Item B states where procedures cannot be followed as written, provisions are established for making changes in accordance with Part II, Section 6 of the TVA Fleet QAPD. Subsection 5.2, Item E states that in case of emergency, personnel are authorized to depart from approved procedures in cases of emergency, when necessary to prevent injury to personnel or damage to the plant. Part II, Subsection 5.3 of the TVA Fleet QAPD states that TVA has established measures to address the applicable content of procedures as described in ANSI/ANS 3.2-2012.

Other applicable requirements for procedure content described in the “Introduction,” to Part II of NQA-1-2015 may be met through administrative procedures.

In establishing procedural controls, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 5.

The NRC staff evaluated the description of measures established for ensuring that activities affecting quality are prescribed by and performed in accordance with written procedures in Part II, Section 5 of the TVA Fleet QAPD, and determined that these measures conform to the guidance of SRP Section 17.5, Subsection II, Item E, “Instructions, Procedures, and Drawings.” Based on this evaluation and TVA Nuclear’s commitment to compliance with NQA-1-2015, Part I, Requirement 5, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion V, “Instructions, Procedures, and Drawings,” of Appendix B to 10 CFR Part 50.

3.1.6 Document Control

Part II, Section 6, “Document Control,” of the TVA Fleet QAPD, Subsection 6.1, Item A states that TVA Nuclear has established the necessary measures and governing procedures to control the preparation, issuance, and revision of documents that specify quality requirements or prescribe activities affecting quality to ensure that correct documents are employed. Subsection 6.1, Item B specifies the controls that are applied to documents and the types of documents to which these controls apply. Part II, Subsection 6.2 of the TVA Fleet QAPD specifies criteria for document review and approval. Part II, Subsection 6.3 of the TVA Fleet QAPD specifies criteria for revisions to documents, including the approval authority for changes.

In establishing provisions for document control, TVA Nuclear commits to compliance with compliance with NQA-1-2015, Part I, Requirement 6, with the following alternative:

- Instead of a biennial review process, TVA programmatic controls ensure procedures are periodically reviewed and maintained current when pertinent source material is revised; the plant design changes; and/or any deficiencies occur.

The NRC staff evaluated the descriptions of measures and controls that are applied to the issuance and revisions to documents and determined that these measures and controls conform to the guidance within SRP Section 17.5, Subsection II, Item F, “Document Control.” The NRC staff reviewed the alternative regarding biennial review process and found it acceptable given that NQA-1-2015, Part I, Requirement 6 does not specify a periodicity for procedural reviews. In addition, this alternative was included in Revision 42 of the TVA Fleet QAPD, and therefore, there is no reduction in commitment with respect to this alternative. Based on this evaluation and TVA Nuclear’s commitment to compliance with NQA-1-2015, Part I, Requirement 6, with alternatives, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion VI, “Document Control,” of Appendix B to 10 CFR Part 50.

3.1.7 Control of Purchased Material, Equipment, and Services

Part II, Section 7, “Control of Purchased of Material, Equipment, and Services,” of the TVA Fleet QAPD states that TVA Nuclear has established the necessary measures and governing procedures to control purchased items and services to assure conformance with specified

requirements. Such control provides for the following as appropriate: source evaluation and selection, evaluation of objective evidence of quality furnished by the supplier, source inspection, audit, and examination of items or services. Part II, Subsection 7.2 of the TVA Fleet QAPD describes measures that are used to accept purchased items or services, including:

- verification of testing during design, fabrication, construction, and operation activities,
- inspection of items, including receipt inspections,
- evaluation of prospective safety-related items and service suppliers to assure only qualified suppliers are used,
- performance of triennial audits of qualified suppliers,
- use of audits conducted by outside organizations (e.g., Nuclear Procurement Issues Corporation or ASME),
- review of documentation (including Certified Material Test Report/Certificate),
- performance of source verification, pre- and post-installation test, and acceptance inspections, and
- testing of the item prior to relying upon it to perform its intended safety function.

Controls are imposed for the selection, determination of suitability for intended use, evaluation, receipt, and acceptance of commercial grade services or items to assure they will perform satisfactorily in-service in safety-related applications.

Part II, Subsection 18.3 of the TVA Fleet QAPD states that audits of suppliers of safety-related components and/or services are conducted in accordance with Part II, Subsection 7.1. A grace period of 90 days may be applied to scheduled supplier audits and annual evaluations of supplier performance. TVA Nuclear may apply an extension, not to exceed 25 percent of the audit interval, to contractor/supplier audits that are normally of triennial frequency under extenuating circumstances (such as declaration of a national emergency; severe localized or national weather conditions or damage to TVA Nuclear or TVA Nuclear's supplier's infrastructure; or localized outbreak of a severe health concern to the public and TVA Nuclear).

In establishing controls for purchased items and services, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 7, and the applicable regulatory positions stated in RG 1.28, Revision 5 with the following proposed clarifications and exceptions:

- TVA Nuclear considers that other 10 CFR Part 50 and 52 licensees, Authorized Nuclear Inspection (ANI) Agencies, National Institute of Standards and Technology (NIST), or other State and Federal agencies which may provide items or services to the TVA nuclear plants are not required to be evaluated or audited.

  The International Laboratory Accreditation Cooperation (ILAC) accreditation process cannot be used for commercial grade dedication of nondestructive examination (NDE) services in lieu of performing a Commercial Grade Survey (CGS).

- For Section 200 of NQA-1-2015, Part I, Requirement 7, during periods of exigent conditions, TVA Nuclear may conduct remote audits/survey of suppliers in accordance with the guidance in the Electric Power Research Institute (EPRI) TR-3002020796, "Remote Assessment Techniques: Planning and Conducting Audits and Surveys Using Remote Techniques During Exigent Conditions." The application of the guidance will be limited by the application of the EPRI technical report's (TR) screening questions.

- For Section 501 of NQA-1-2015, Part I, Requirement 7, TVA Nuclear considers documents that may be stored in approved electronic media under TVA Nuclear or vendor control, not physically located on the plant site, but accessible from the perspective nuclear facility site as meeting the requirement in NQA-1-2015 for documents being available at the site.

- In establishing commercial grade item requirements, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 7, Section 700, and Part II, Subpart 2.14 with the clarification that (1) quality verification requirements are established and described in TVA Nuclear documents, which also addresses determination of critical characteristics; and (2) TVA Nuclear will assume 10 CFR Part 21 reporting responsibility for all items that TVA Nuclear dedicates as safety-related.

Part II, Subsection 18.5 of TVA Fleet QAPD, states that in establishing the independent audit program, TVA Nuclear commits to compliance complying with NQA-1-2015, Part I, Requirement 18 and the applicable regulatory positions stated in RG 1.28, Revision 5, with an exception to Section 202 of Requirement 18. Specifically, Item C, “External Audits” of this subsection states that TVA Nuclear may apply an extension, not to exceed 25 percent of the audit interval, to contractor/supplier or surveys that are normally of a triennial frequency where performance of the audit or survey is not feasible. The end of the audit or survey will determine the date of the next triennial audit or survey. Application of the 25 percent extension is limited to extenuating circumstances, which include, but are not limited to, declaration of a national emergency; severe localized or national weather conditions or damage to TVA Nuclear or TVA Nuclear supplier’s infrastructure; or localized outbreak of a severe health concern to the public and TVA Nuclear. Continued use of TVA Nuclear suppliers that have exceeded the maximum allowed audit or survey time due to extenuating circumstances is allowed under the conditions specified in Part II, Subsection 18.5, Item C.2 of the TVA Fleet QAPD.

For TVA Nuclear’s exception to its commitment to compliance with NQA-1-2015, Requirement 7, regarding consideration that other 10 CFR Part 50 and 52 licensees, ANI Agencies, National Institute of Standards and Technology, or other State and Federal agencies which may provide items or services to the TVA nuclear plants are not required to be evaluated or audited, the NRC staff’s current regulatory position regarding this exception is documented in section 3.1.7.1 of the safety evaluation, dated December 12, 2023 (Reference 11) for the TVA New Nuclear QAPD. The NRC staff verified that the TVA New Nuclear QAPD commitments associated with supplier oversight activities are the same as those provided by TVA in the TVA Fleet QAPD. Therefore, the NRC staff’s position associated with this exception, as documented in the TVA New Nuclear QAPD safety evaluation, would apply to the TVA Fleet QAPD. The NRC staff finds the requested exception regarding audit and evaluation in the TVA Fleet QAPD is acceptable subject to the limitations described in the TVA New Nuclear QAPD SE, and as identified in section 4.0 of this safety evaluation.

The NRC staff evaluated the proposed clarifications and exceptions to TVA Nuclear’s commitment to compliance with NQA-1-2015, Requirement 7 and determined that:

- TVA Nuclear’s implementation of guidance in Nuclear Energy Institute (NEI) 14-05A, Revision 1 for using the ILAC accreditation process in lieu of performing a commercial grade survey is acceptable because this is consistent with the NRC staff’s current regulatory position regarding the acceptability of procuring commercial grade calibration and testing services from laboratories accredited by ILAC, as documented in the NRC

staff's safety evaluation, dated November 23, 2020 (Reference 12) for NEI-14-05A, Revision 1.

- TVA Nuclear's performance of remote audits/survey of suppliers during exigent conditions in accordance with EPRI TR-3002020796 as an alternative to Section 200 of NQA-1-2015, Requirement 7, is acceptable on the basis that this alternative has been approved previously in the NRC staff's safety evaluation for Columbia Generating Station (non-public) .

- The NRC staff finds that TVA Nuclear's position that documents stored in approved electronic media under TVA Nuclear or vendor control is an acceptable alternative to Section 501 of NQA-1-2015, Requirement 7 based on the NRC staff's evaluation of TVA Nuclear's use of electronic records as documented in Section 3.1.17 of this safety evaluation.

- Establishment of quality verification requirements and processes for identification of critical characteristics of TVA Nuclear documents as part of the commercial grade dedication process is acceptable because this is consistent with the guidance in SRP Section 17.5, Subsection II, Item G.

The NRC staff evaluated the descriptions of measures that are established by TVA Nuclear to control purchased items and services to assure conformance with specified requirements, including measures for dedication of commercial grade items and services. For the reasons discussed above, the NRC staff has determined that these descriptions conform to the guidance in SRP Section 17.5, Subsection II, Item G, "Control of Purchased Material, Equipment, and Services."

The NRC also evaluated TVA Nuclear's commitment to complying with NQA-1-2015, Part I, Requirement 18 for external supplier audits, including the proposed alternative to Section 202 of Requirement 18 for extension of the external audit interval during exigent conditions and determined that the proposed alternative to Section 202 of Requirement 18 is acceptable for the following reasons: (1) this alternative has been approved previously in the NRC staff's safety evaluation for the Callaway Plant Unit 1 QA Manual, Revision 34b, for exigent conditions, dated August 6, 2020 (ML20216A681), and (2) the bases for the NRC staff's conclusion approving the alternative in the QA Manual Revision 34b for Callaway Plant Unit 1 apply to the alternative requested in the TVA Nuclear QAPD. The NRC staff notes that the COVID-19 related public health emergency expired on May 11, 2023; therefore, the provisions for audit extension and remote source verification under exigent conditions, as described above, can no longer be used unless new exigent conditions exist.

Based on the above evaluation, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion VII, "Control of Purchased Materials, Equipment, and Services" of Appendix B to 10 CFR Part 50.

3.1.8 Identification and Control of Materials, Parts, and Components

Part II, Section 8, "Identification and Control of Materials, Parts, and Components," of the TVA Fleet QAPD states that TVA Nuclear has established the necessary measures and governing procedures to identify and control items to prevent the use of incorrect or defective items. This includes controls for consumable materials and items with limited shelf-life. The identification of

items is maintained throughout fabrication, erection, installation, and use so that the item can be traced to its documentation, consistent with the item's effect on safety. Identification locations and methods are selected so as to not affect the function or quality of the item. In establishing the provision for identification and control of items, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 8.

The NRC staff evaluated the description of measures that are established to ensure identification and control of items to prevent use of incorrect or defective items and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item H, "Identification and Control of Materials, Parts, and Components." Based on this evaluation and TVA Nuclear's commitment to comply with the requirements of NQA-1-2015, Part I, Requirement 8, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion VIII, "Identification and Control of Materials, Parts, and Components" of Appendix B to 10 CFR Part 50.

3.1.9 Control of Special Processes

Part II, Section 9, "Control of Special Processes," of the TVA Fleet QAPD states that TVA Nuclear has established the necessary measures and governing procedures to assure that special processes that require interim process controls to assure quality, such as welding, heat treating, and NDE, are controlled. These provisions include assuring that special processes are accomplished by qualified personnel using qualified procedures and equipment. Instructions or procedures for special processes include or reference procedures, personnel, and equipment requirements. Records are maintained as appropriate for currently qualified personnel, process and equipment for each special process.

In establishing measures for the control of special processes, TVA Nuclear commits to compliance with NQA-2015, Part I, Requirement 9.

The NRC staff evaluated the description of measures that are established to assure special processes are controlled in accordance with procedures and instructions by qualified personnel and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item I, "Control of Special Processes." Based on this evaluation and TVA Nuclear's commitment to comply with NQA-1-2015, Part I, Requirement 9, the NRC staff finds that that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion IX, "Control of Special Processes" of Appendix B to 10 CFR Part 50.

3.1.10 Inspection

Part II, Section 10, "Inspection," of the TVA Fleet QAPD, Subsection 10.1 states that TVA Nuclear has established the necessary measures and governing procedures to implement inspections that assure items, services, and activities affecting safety meet established requirements and conform to applicable documented specifications, instructions, procedures, and design documents. Inspection may also be applied to items, services, and activities affecting plant reliability and integrity. Types of inspections may include those verifications related to procurement, such as source, in-process, final, and receipt inspection, as well as construction, installation, maintenance, modification, in-service, and operations activities. Inspections are carried out by qualified persons independent of those who performed or directly supervised the work.

Part II, Subsection 10.2 of the TVA Fleet QAPD states that the inspection program establishes inspections as necessary to verify quality at the (1) source of supplied items or services, (2) in-process during fabrication at a supplier's facility or at TVA facilities, (3) for final acceptance of fabricated and/or installed items during construction, and upon receipt of items for a facility, and (4) during maintenance, modification, in-service, and operating activities. The inspection program establishes requirements for planning inspections such as group or discipline responsible for performing the inspection, where inspection hold points are to be applied, determining the applicable acceptance criteria, the frequency of inspections, and identification of special tools needed.

Part II, Subsection 10.3 of the TVA Fleet QAPD states that inspection records identify the items inspected, date of inspection, inspector's identity, type of observation, inspection results and acceptability, and reference to information on action taken in connection with nonconformances. Inspection results are documented by the inspector and reviewed by authorized personnel qualified to evaluate the technical adequacy of the inspection results. Part II, Subsection 10.4 states that TVA Nuclear has established a qualification program for personnel performing quality inspections.

In establishing inspection requirements, TVA Nuclear commits to NQA-1-2015, Part I, Requirement 10 and Part II, Subparts 2.5 and 2.8.

The NRC staff evaluated the description of measures that are established to verify activities affecting quality conform with documented instructions, procedures, and drawings for accomplishing the activity and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item J, "Inspection." Based on this evaluation and TVA Nuclear's commitment to compliance with NQA-1-2015, Part I, Requirement 10 and Part II, Subparts 2.5 and 2.8, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion X, "Inspection" of Appendix B to 10 CFR Part 50.

3.1.11 Test Control

Part II, Section 11, "Test Control," of the TVA Fleet QAPD, Subsection 11.1 states that TVA Nuclear has established the necessary measures and governing procedures to demonstrate that items subject to the provisions of the QAPD will perform satisfactorily in-service, that the plant can be operated safely and as designed, and that the coordinated operation of the plant is satisfactory. These programs include criteria for determining when testing is required, such as proof tests before installation, pre-operational tests, post-maintenance tests, post-modification tests, in-service tests, and operational tests (such as surveillance tests required by Plant Technical Specifications (TSs)), to demonstrate that performance of plant systems is in accordance with design.

Part II, Subsection 11.2 of the TVA Fleet QAPD states that tests are performed to applicable procedures that include: instructions and prerequisites to perform the test, use of proper test equipment, acceptance criteria, and mandatory verification points as necessary to confirm satisfactory test completion. Test programs ensure appropriate retention of test data in accordance with the records requirements of the QAPD. Test records, at a minimum identify the item tested, date of test, tester or data recorder, type of observation, results and acceptability, action taken in connection with any deviation noted, and the person evaluating test results.

Except for computer program testing, tests are performed, and results documented in accordance with applicable technical and regulatory requirements, including those described in the TSs and UFSAR. Part II, Subsection 11.3 states that TVA Nuclear has established and implemented provisions to assure that computer software used in applications affection safety is prepared, documented, verified, and tested, and used such that the expected output is obtained, and configuration control maintained.

In establishing provision for testing, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 11. In addition, TVA Nuclear commits to compliance with the requirements in NQA-1-2015, Part I, Requirement 11, Section 400 and Part II, Subpart 2.7 for establishing provisions for computer program testing.

The NRC staff evaluated the description of the test program that TVA Nuclear has established to assure all testing required to demonstrate SSCs will perform satisfactorily in-service and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item K, "Test Control." Based on this evaluation and TVA Nuclear's commitment to comply with NQA-1-2015, Part I, Requirement 11, and applicable provisions of Part II, Subpart 2.7 in establishing a test control program, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XI, "Test Control" of Appendix B to 10 CFR Part 50.

3.1.12 Control of Measuring and Test Equipment

Part II, Section 12, "Control of Measuring and Test Equipment," of the TVA Fleet QAPD, Subsection 12.1 states that TVA Nuclear has established the necessary measures and governing procedures to control the calibration, maintenance, and use of measuring and test equipment (M&TE) that provides data to verify acceptance criteria are met or information important to safe plant operation. The provisions of such procedures cover equipment such as indicating and actuating instruments and gauges, tools, reference and transfer standards, and NDE equipment.

Part II, Subsection 12.2 of the TVA Fleet QAPD describes the controls for calibration and adjustment of instrument and control devices installed in the facility during the operational phase of the facility.[2] M&TE are calibrated, adjusted, and maintained at prescribed intervals or, prior to use, against certified equipment having known valid relationships to nationally recognized standards if such standards exists or to a documented basis otherwise. Provisions are established for control of M&TE found out of calibration or have suspect accuracy. Part II, Subsection 12.3 of the TVA Fleet QAPD states that TVA Nuclear has established and implements procedures for the calibration and adjust of instrument and control devices installed in the facility.[3]

In establishing the provisions for control of M&TE, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 12.

The NRC staff evaluated the description of the provisions that TVA Nuclear has established to control M&TE used in activities affecting quality, including calibration at specified intervals to maintain accuracy within necessary limits and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item L, "Control of Measuring and Test

[2] Part II, Section 12.2 of the TVA Fleet QAPD does not apply to ESP activities.
[3] Part II, Section 12.3 of the TVA Fleet QAPD does not apply to ESP activities.

Equipment." Based on this evaluation and TVA Nuclear's commitment to comply with NQA-1-2015, Part I, Requirement 12, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XII, "Control of Measuring and Test Equipment," of Appendix B to 10 CFR Part 50.

3.1.13 Handling, Storage, and Shipping

Part II, Section 13, "Handling, Storage, and Shipping," of the TVA Fleet QAPD, Subsection 13.1 states that TVA Nuclear has established the necessary measures and governing procedures to control the handling, storage, packaging, shipping, cleaning, and preservation of items to prevent inadvertent damage or loss, and to minimize deterioration. These provisions include specific procedures, when required to maintain acceptable quality of the items important to the safe operations of the plant. Items are appropriately marked and labeled during packaging, shipping, handling, and storage to identify, maintain, and preserve the item's integrity and indicate the need for special controls. Special controls are provided when required to maintain acceptable quality. This subsection also describes controls for special handling tools and equipment and specific controls for hoisting, rigging, and transport activities during the operational phase of the facility.

Part II Subsection 13.2, "Housekeeping," of the TVA Fleet QAPD describes the housekeeping practices and requirements that will be established within the plant, including controls for cleanliness of facilities and materials, fire prevention and protection, disposal of combustible material and debris, control of access to work areas, and protection of equipment, as well as radioactive contamination control, and storage of solid radioactive waste.

In establishing provisions for handling, storage, and shipping, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 13. TVA Nuclear also commits to compliance with the Requirements of NQA-1-2015, Part II, Subpart 2.1, Subpart 2.2, Subpart 2.3, and Part III, Subpart 3.2-2.1, with the following proposed clarifications and exceptions:

- In lieu of the cleanness level system of NQA-1-2015, Part II, Subpart 2.1, Sections 301 and 302, TVA Nuclear may establish cleanness requirements on a case-by-case basis, consistent with other provisions of Subpart 2.1. TVA Nuclear establishes appropriate cleanliness controls for work on safety-related equipment to minimize introduction of foreign material and maintain system/component cleanliness throughout maintenance or modification activities, including documented verification of absence of foreign material prior to system closure.

- In lieu of classifying items into protection levels during the operational phase, as specified in NQA-1-2015, Part II, Subpart 2.2, Section 201, TVA Nuclear may establish packaging, shipping, handling, and storage of such items on a case-by-case basis with due regard for the item's complexity, use, and sensitivity to damage. Prior to installation or use, the items are inspected and serviced as necessary to assure that no damage or deterioration exists which could affect their function.

- In lieu of the requirements for written records containing information on personnel access, as specified in NQA-1-2015, Part II, Subpart 2.2, Section 606, TVA Nuclear documents establish controls for storage areas that describe those authorized to access areas and requirements for recording access of personnel. These records are not

considered quality records and will be retained in accordance with the administrative controls of the applicable plant.

- In lieu of the requirements for establishing a five-zone designation for housekeeping cleanliness controls, as specified in NQA-1-2015, Part II, Subpart 2.3, Section 202, TVA Nuclear bases its control over housekeeping activities on a consideration of what is necessary and appropriate for the activity involved. The controls are implemented through procedures or instructions, which, in the case of maintenance or modification work, are developed on a case-by-case basis.

- TVA commits to only Section 300 of Part III, Subpart 3.2-2.1 in NQA-1-2015. In addition, a suitable chloride stress-cracking inhibitor should be added to the fresh water used to flush systems containing austenitic stainless steels.

The NRC staff evaluated the description of the measures TVA Nuclear has established to control the handling, storage, shipping, cleaning and preservation of material and equipment to prevent damage or deterioration and determined that this description conform to the guidance of SRP Section 17.5, Subsection II, Item M, "Handling, Storage and Shipping." The NRC staff evaluated TVA Nuclear's proposed clarifications and exceptions to its commitment to compliance with NQA-1-2015, Part II, Subparts 2.1, 2.2, 2.3, and 3.2-2.1 and determined that:

- The proposed alternative to Subpart 2.1, Section 301 and 302 is acceptable on the basis that this alternative is consistent with the NRC staff guidance provided in SRP Section 17.5 and was approved previously in the NRC staff's SE for the Nuclear Management Company (NMC) QA TR, dated March 24, 2005 (ML050700416).

- The proposed alternative to Subpart 2.2, Section 201 is acceptable on the basis that this alternative is consistent with the NRC staff guidance provided in SRP Section 17.5 and was approved previously in the NRC staff's SE for the NMC QA TR dated March 24, 2005.

- The proposed exception to Subpart 2.2, Section 606 is acceptable on the basis that these records do not meet the classification of a quality record as defined in NQA-1-2015, Requirement 17.

- The proposed alternative to Subpart 2.3, Section 202 is acceptable, on the basis that this alternative is consistent with the NRC staff guidance provided in SRP Section 17.5 and was approved previously in the NRC staff's SE for the NMC QA TR dated March 24, 2005.

- The commitment to only Section 300 of Part III, Subpart 3.2-2.1 in NQA-1-2015 is acceptable since Part III of NQA-1-2015 is implementing guidance for the requirements in Parts I and II of NQA-1-2015.

Therefore, based on the NRC staff's evaluations above, including the evaluation of TVA Nuclear's commitments to NQA-1-2015, Part I, Requirement 13, and Part II, Subparts 2.1, 2.2, and 2.3 with proposed clarifications and exceptions, the NRC staff finds that that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XIII, "Handling, Storage and Shipping," of Appendix B to 10 CFR Part 50.

3.1.14 Inspection, Test, and Operating Status

Part II, Section 14, “Inspection, Test, and Operating Status,” of the TVA Fleet QAPD, Subsection 14.1 states that TVA Nuclear has established the necessary measures and governing procedures to identify the inspection, test, and operating status of items and components subject to the provisions of the TVA Nuclear QAPD in order to maintain personnel and reactor safety and avoid inadvertent operation of equipment. Where necessary to preclude inadvertent bypassing of inspections or tests, or to preclude inadvertent operation, these measures require the inspection, test, or operating status be verified before release, fabrication, receipt, installation, test, or use. The status verification and tracking of temporary design changes or modifications are controlled. Administrative procedures describe the controls applied to altering the sequence of required tests, inspections, and other operations, and these actions are reviewed and approved in accordance with the same control as taken during the original review and approval.

In establishing measures for control of inspection, test, and operating status, TVA Nuclear commits to complying with NQA-1-2015, Part I, Requirement 14.

The NRC staff evaluated the description of the measures that TVA Nuclear has established to (1) indicate the status of inspections and tests performed of items and components, (2) control temporary changes or modifications, and (3) indicate operating status of SSCs to prevent inadvertent operation and determined that this description conform to the guidance of SRP Section 17.5, Subsection II, Item N, “Inspection, Test, and Operating Status.” Based on this evaluation, and TVA Nuclear’s commitment to comply with NQA-1-2015, Part I, Requirement 14, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XIV, “Inspection, Test, and Operating Status,” of Appendix B to 10 CFR Part 50.

3.1.15 Nonconforming Materials, Parts, or Components

Part II, Section 15, “Control of Nonconforming Items,” of the TVA Fleet QAPD, Subsection 15.1 states that TVA Nuclear has established the necessary measures and governing procedures to control items, including services, that do not conform to specified requirements to prevent inadvertent installation or use. Instructions require that the individual discovering a nonconformance identify, describe, and document the nonconformance in accordance with the requirements of Part II, Section 16, of the TVA Fleet QAPD. Controls are established to identify, document, evaluate, segregate, and dispose of nonconforming items. Controls are provided for conditional release of nonconforming items for use on an at-risk basis prior to resolution and disposition of nonconformance, with requirements for documenting basis for conditional release. Item disposition, such as use-as-is, reject, repair, or rework shall be identified and documented. The technical justification for accepting a nonconforming item or dispositioning it through repair or use-as-is, are identified and documented. Reworked, repaired, and replacement items are inspected and tested in accordance with the original inspection and test requirements or specified alternatives. Nonconformance dispositions are reviewed for adequacy and analysis of quality trends, and to verify that reports are provided to the designated management, as required. Significant trends are reported to management in accordance with TVA Nuclear procedures, regulatory requirements, and industry standards.

Part II, Subsection 15.2, “Interface with the Reporting Program,” of the TVA Fleet QAPD states that TVA Nuclear has appropriate interfaces with the reporting program for identification and

control of nonconforming materials, parts, or components to satisfy the requirements of 10 CFR Part 21 during operations and for CRN ESP activities.

In establishing the measures for control of nonconforming materials, parts, or components, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 15.

The NRC staff evaluated the description of the measures that TVA Nuclear has established to (1) control materials, parts, or components that do not conform to requirements in order to prevent their inadvertent use, and (2) disposition nonconforming items for acceptance, rejection, repair, or rework, and determined that this description conforms to the guidance of SRP Section 17.5, Subsection II, Item O, “Nonconforming Materials, Parts, or Components.” Based on this evaluation, and TVA Nuclear’s commitment to comply with NQA-1-2015, Part I, Requirement 15, the NRC staff determined that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XV, “Nonconforming Materials, Parts, or Components,” of Appendix B to 10 CFR Part 50.

3.1.16 Corrective Action

Part II, Section 16, “Corrective Action,” of the TVA Fleet QAPD, Subsection 16.1 states that TVA Nuclear has established the necessary measures and governing procedures to promptly identify, control, document, classify, and correct conditions adverse to quality. TVA Nuclear procedures assure that corrective actions are documented and initiated following the determination of conditions adverse to quality in accordance with regulatory requirements and applicable quality standards. Reports of conditions adverse to quality are analyzed to identify trends. Significant conditions adverse to quality and significant adverse trends are documented and reported to responsible management. In the case of a significant condition adverse to quality, the cause is determined and actions to preclude recurrence are taken. In the case of suppliers working on safety-related activities, or other similar situations, TVA Nuclear may delegate specific responsibilities for corrective actions, but TVA Nuclear maintains responsibility for the effectiveness of corrective action measures.

Part II, Subsection 16.2, “Interface with the Reporting Program,” of the TVA Fleet QAPD states that TVA Nuclear has appropriate interfaces with the reporting program for corrective actions to satisfy the reporting requirements of 10 CFR Part 21 during operations and for CRN ESP activities.

In establishing the provisions for corrective actions, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 16.

The NRC staff evaluated the description of the measures that TVA Nuclear has established to assure that (1) conditions adverse to quality are promptly identified and corrected, and (2) the cause of significant conditions adverse to quality is determined and corrective actions to preclude repetition are implemented. The NRC staff determined that this QAPD description conforms to the guidance of SRP Section 17.5, Subsection II, Item P, “Corrective Action.” Based on this evaluation, and TVA Nuclear’s commitment to comply with NQA-1-2015, Part I, Requirement 16, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XVI, “Corrective Action,” of Appendix B to 10 CFR Part 50.

3.1.17 Quality Assurance Records

Part II, Section 17, “Quality Assurance Records,” of the TVA Fleet QAPD, Subsection 17.1 states that TVA Nuclear has the necessary measures and governing procedures to ensure that sufficient records of items and activities affecting quality are developed, reviewed, approved, issued, used, and revised to reflect completed work. The provisions of such procedures establish the scope of the records retention program. The TVA Nuclear records programs provide provisions for the administration, receipt, preservation, retention, storage, safekeeping, retrieval, and disposition of all records. All records are retrievable, maintained in a readable format, and safeguarded against equipment malfunction or human error. Document access controls, user privileges, and other appropriate security controls are established.

Part II, Subsection 17.2, “Record Retention,” of the TVA Fleet QAPD describes the measures that are established to ensure that sufficient records of completed items and activities affecting quality are appropriately stored. Records of activities for design, engineering, procurement, construction, inspection and test, installation, pre-operation, startup, operations, maintenance, modification, and audits and their retention times are defined in appropriate procedures. The records include operating logs and the results of reviews, inspections, tests, audits, monitoring of work performance, and materials analyses. Records and retention are identifiable and retrievable. Records and retention times are based on RG 1.28, Revision 5, Regulatory Positions C.3.a.(1) for Lifetime Records and C.3.a.(2) for design, construction, and initial startup, and RG 1.33, Revision 3 for units in the operational phase.

Part II, Subsection 17.3, “Electronics Records,” of the TVA Fleet QAPD states that TVA Nuclear commits to complying with Nuclear Information and Records Management Association, Inc. (NIRMA) Technical Guidelines (TG), including TG 11-2011, “Authentication of Records and Media”; TG 15-2011, “Management of Electronic Records”; TG 16-2011, “Software Configuration Management and Quality Assurance”; and TG 21-2011, “Electronic Records Protection and Restoration.” TVA Nuclear manages the storage of historical QA Records in electronic media consistent with the regulatory commitments and guidance in place at the time the records were created.

In establishing the provisions records, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 17, and is subject to the conditions specified in RG 1.33, Revision 3 and RG 1.28, Revision 5, including Regulatory Provisions in Regulatory Position C.3.a(1) and C.3.a(2).

The NRC staff evaluated the description of the measures that TVA Nuclear has established to assure that sufficient records are maintained to furnish evidence of activities affecting quality and determined that this description conforms to the guidance of SRP Section 17.5, Subsection II, Item Q, “Quality Assurance Records.” Based on this evaluation, and TVA Nuclear’s commitment to comply with NQA-1-2015, Part I, Requirement 17 and with the conditions in Regulatory Positions C.3.a(1) and C.3.a(2) in RG 1.28, Revision 5, and RG 1.33, Revision 3, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XVII, “Quality Assurance Records,” of Appendix B to 10 CFR Part 50.

3.1.18 Audits

Part II, Section 18, “Audits,” of the TVA Fleet QAPD, Subsection 18.1 states that TVA Nuclear has established the necessary measures and governing procedures to verify that activities

covered by the QA Program are performed in conformance with the established requirements and performance criteria are met. The QA Program is reviewed for effectiveness as part of the overall audit process. Audits are scheduled on a formal preplanned audit schedule in a manner to provide coverage and coordination with ongoing activities, based on the status and importance of the activity. Trained personnel, not having responsibilities in the area being audited, conduct audits in accordance with preplanned and approved audit plans or checklist, under the direction of a qualified lead auditor. Audit findings that have conditions requiring prompt corrective action are reported immediately to the management of the audited organization. Management responds to all audit findings and initiates corrective action where indicated. Where corrective actions are indicated, documented follow-up of applicable areas through inspections, reviews, re-audits, or other appropriate means is conducted to verify implementation of assigned corrective actions.

Part II, Subsection 18.2, Item A of the TVA Fleet QAPD states that internal audits of activities, conducted prior to placing the facility in operation, is performed in such a manner to assure that an audit of applicable QA program elements is completed for each functional area at least once each year or at least once during the life of the activity, whichever is shorter. Item B within this subsection states that internal audits of operational phase unit functional areas are scheduled based on the month in which the audit starts. All applicable QA program elements for each functional area are audited with a nominal periodicity of 36 months. These functional area audits evaluate:

- The effective performance of activities required by the Nuclear QA program to meet the criteria of Appendix B to 10 CFR Part 50 and Subpart G of 10 CFR Part 72.
- The conformance to provisions contained within the technical specifications and applicable regulations and license conditions.
- The compliance with, and effective implementation of, internal rules and procedures.
- The effectiveness of training, qualification, and certification programs.
- Results of actions taken to correct deficiencies in site SSCs or method of operation that affect nuclear safety.

Part II, Subsection 18.2, Item C of the TVA Fleet QAPD states that internal audits of operational phase units are performed with a nominal periodicity of 36 months to verify, either a part of, or as an independent, functional area audit:

- The fire protection equipment and program implementation.
- The performance of activities to the criteria of RG 4.1, “Radiological Environmental Monitoring for Nuclear Power Plants,” Revision 2.
- The performance of activities to meet the criteria of RG 4.15, “Quality Assurance for Radiological Monitoring Programs (inception through Normal Operations to License Termination) – Effluent Streams and the Environment,” Revision 2.
- The performance of activities to meet the criteria of RG 1.21, “Measuring, Evaluating, and Reporting Radioactive Materials in Liquid and Gaseous Effluents and Solid Wastes,” Revision 3.
- The performance of activities to meet the criteria of the TVA Nuclear Process Control Program and implementing procedures for solidification of wet radioactive wastes.

Part II, Subsection 18.2, Item D of the TVA Fleet QAPD states that an annual evaluation is performed to determine the need for additional audits. Evaluations are performed prior within 24 months of the last audit to support the 36-month periodicity. Evaluations include a detailed

performance analysis of the functional area based upon applicable internal and external source data and due consideration of impact of any functional area changes in responsibility, resources, or management. If an adverse trend is identified in the applicable functional area, additional audit activities are performed.

Part II, Subsection 18.2, Item E of the TVA Fleet QAPD states that a maximum extension not to exceed 25 percent of the audit interval shall be allowed for internal functional area audits. When an internal audit interval extension greater than one month is used, the next audit for that particular audit area will be scheduled from the original anniversary month rather than from the month of the extended audit. Internal audit extension of 25 percent to the 36-month periodicity shall be supported by an evaluation to determine the need for additional audit activities. This evaluation shall be completed prior to exceeding 36 months.

Part II, Subsection 18.2, Item F of the TVA Fleet QAPD states that internal audits may also be used to meet the periodic regulatory review requirements for the Security, Emergency Preparedness, and Radiological Protection programs. No interval extension is allowed for scheduled audits of Emergency Preparedness and Security. Quality assurance assessments may be used to validate audit periodicity when allowable by regulations.

Part II, Subsection 18.4, Item A of the TVA Fleet QAPD states a periodic evaluation of the status and adequacy of the QA Program is performed by an independent organization to assure that audits, quality control activities and maintenance of this document (QA Program Description) are being accomplished to program requirements. This periodic evaluation will also include the independent review process as defined in Part V, Section 2, Subsection 2.2 of the TVA Fleet QAPD. This periodic evaluation will include all sites and are nominally scheduled at 36 month frequency with a 25 percent grace allowed. Part II, Subsection 18.4, Item B of the TVA Fleet QAPD states that a self-assessment will be performed once per calendar year between independent evaluations to identify program weaknesses and determine the need for corrective action or additional audit activities.

In establishing the independent audit program, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 18 with the following exception:

- For Section 201.2, Internal Audits – TVA Nuclear may apply a 36 month periodicity for internal audits of Appendix B to 10 CFR Part 50 activities. The 36 month periodicity does not apply to activities where specific regulatory guidance or restrictions regarding audit frequencies apply.

- For Section 201, Internal Audits - TVA Nuclear may apply an extension, not to exceed 25 percent, for internal audit intervals for each audit area. Schedules are based on the month in which the audit starts. This extension does not apply to scheduled audits of Emergency Preparedness, Security, Cybersecurity, or Access Authorization. When an audit interval extension is greater than one month, the next audit for that particular audit will be scheduled from the original anniversary month rather than from the month of the extended audit.

The NRC staff evaluated the description of the measures that TVA Nuclear has established to assure that a comprehensive system of planned and periodic audits are carried out to verify compliance with all aspects of the QA Program and to determine the effectiveness of the program and determined that this description conforms to the guidance in SRP Section 17.5, Subsection II, Item R, “Audits.” The NRC staff evaluated TVA Nuclear’s proposed exception to

its commitment to compliance with NQA-1-2015, Part I, Requirement 18, Section 201 and determined that:

- The alternative to Part I, Requirement 18, Section 201.2 regarding using a 36 month periodicity for the internal audit frequency is acceptable on the basis that (1) this alternative has been approved previously in the NRC staff's safety evaluation for the Exelon Generating Company, LLC's Quality Assurance Topical Report for changes to the internal audit frequency interval, dated November 5, 2020 (ML20287A130), (2) the bases for the NRC staff's conclusion approving the alternative apply to the alternative requested in the TVA Fleet QAPD, and (3) this alternative has not changed from the previously approved version of the TVA Fleet QAPD (ML25106A146).

- The alternative to Part I, Requirement 18, Section 201 regarding the 25 percent extension to the internal audit frequency is acceptable on the basis that this alternative has been approved in the NRC staff's safety evaluation for Southern Nuclear Company QA Program, dated June 17, 2005 (ML051570349).

Therefore, based on the NRC staff's evaluation above, including the evaluation of TVA Nuclear's commitments to NQA-1-2015, Part I, Requirement 18 with exception, the NRC staff finds that the TVA Fleet QAPD, Revision 44, continues to comply with the requirements of 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i), and Criterion XVIII, "Audits," of Appendix B to 10 CFR Part 50.

3.2 Quality Control for SSCs that are Not Safety-Related

SSCs that Are Not Safety-Related But With Significant Contribution to Plant Safety

Part III, Section 1, "Non-Safety-Related SSCs with Special Treatment," of the TVA Fleet QAPD describes how the TVA Fleet QAPD is applied in a graded manner to certain quality-related SSCs that are not safety-related. These SSCs are not required to meet 10 CFR Part 50, Appendix B but are controlled. The TVA Fleet QAPD is applied to the quality-related program and activities of these SSCs in a selective manner, consistent with the SSCs importance to safety. Part III, Subsection 1.4 of the TVA Fleet QAPD describes how each portion of the TVA Fleet QAPD applies to these SSCs. The programs and activities of these SSCs for which the TVA Fleet QAPD applies include:

- health physics and ALARA (As Low As Reasonably Achievable)
- the control and transport of radioactive waste
- environmental services
- aging management programs (for non-safety-related SSCs)
- emergency planning
- meteorology and radiological environmental monitoring
- physical security and cyber security
- nuclear plant repairs and alteration
- low safety-significant components with alternate treatment under 10 CFR 50.69

SSCs that Are Not Safety-Related – Credited for Regulatory Events

Part III, Section 2, "Non-Safety Related Structures, Systems, and Components Credited for Regulatory Events," of the TVA Fleet QAPD states that for those SSCs that are not safety-related but are credited to meet the regulations in:

- 10 CFR 50.48 for fire protection, TVA Nuclear implements quality requirements in accordance with Fire Protection Reports for each operating site which have been approved by the NRC and implemented for the respective site.

- 10 CFR 50.62 for anticipated transients without scram (ATWS), TVA Nuclear implements quality requirements in accordance with Part III, Section 1 of the TVA Fleet QAPD for non-safety-related, safety-significant ATWS equipment.

- 10 CFR 50.63, the station blackout (SBO) rule, TVA Nuclear implements quality requirements in accordance with Part III, Section 1 of the TVA Fleet QAPD for non-safety-related, safety-significant SBO equipment.

The NRC staff evaluated the descriptions in Part III, Sections 1 and 2 of the TVA Fleet QAPD for QCs that are applied to (1) safety-significant, but not safety-related SSCs, and (2) SSCs that are not safety-related but are credited for certain regulatory events, respectively, and determined that these descriptions conform to the guidance in SRP Section 17.5, Subsection II, Item U, "Nonsafety-Related SSC Quality Controls."

3.3 Quality Assurance and Administrative Controls for the Plant Operational Phase

Part V, "Additional Quality Assurance and Administrative Controls for the Plant Operational Phase," of the TVA Fleet QAPD describes requirements that are applicable when establishing the necessary measures and governing procedures for the operational phase of the plant. Implementation of additional controls in this section shall apply 30 days prior to initial fuel load for COL holders in accordance with 10 CFR 50.54(1)(1) and 90 days prior to initial fuel load for CP holders.

Part V, Section 2, "Review of Activities Affecting Safe Plant Operation," of the TVA Fleet QAPD, Subsection 2.1 states that the TVA Nuclear onsite organization employs reviews, both periodic and as situations demand, to evaluate plant operations and plan future activities. The important elements of the reviews are documented, and subjects of potential concern will be brought to the attention of operations management for independent review. The reviews are part of the normal duties of plant supervisory personnel in order to provide timely and continuing monitoring of operating activities in order to assist the Nuclear Plant Manager in keeping abreast of general plant conditions and to verify that day-to-day operations are conducted safely in accordance with established administrative controls. The Onsite Review Committee (ORC) is a multi-disciplined committee responsible for providing an oversight review of documents required for the safe operation of the plant. The ORC advises the Nuclear Plant Manager on matters related to nuclear safety. The ORC members meet the experience requirements of ANSI/ANS 3.1-2014 as endorsed by RG 1.8, Revision 4. ORC records are retained according to Part II, Section 17 of the TVA Fleet QAPD.

Part V, Subsection 2.2 of the TVA Fleet QAPD states the independent review function is provided through a combination of the ORC, QA organization, and the line organization executing the QA Program. Collectively, the ORC and the QA audit function perform the

independent review identified in ANS 3.2-2012, Section 3.2.2.2, for significant conditions adverse to quality.

Part V, Section 3, "Operational Phase Procedures," of the TVA Fleet QAPD describes the various types of procedures that TVA Nuclear uses to govern design, operation, and maintenance of its nuclear generating plants. This section states that the guidance of ANSI/ANS 3.2-2012 as endorsed by RG 1.33, Revision 3 is used to identify the types of activities that should have procedures or instructions to control the activity. In addition, this section identifies requirements for the format and content of operational phase procedures.

Part V, Section 4, "Plant Maintenance," of the TVA Fleet QAPD states that TVA Nuclear establishes controls for the maintenance or modification of items and equipment subject to the TVA Fleet QAPD to ensure quality at least equivalent to that specified in the original design bases and requirements, such that safety-related SSCs are maintained in a manner that assures their ability to perform their intended safety function(s). In establishing controls for plant maintenance, TVA Nuclear commits to compliance with:

- NQA-1-2015, Part II, Subpart 2.15 and Subpart 2.18, with the following proposed clarifications: Section 203 requires cleanliness during maintenance to be in accordance with NQA-1-2015, Part II, Subpart 2.1. TVA's commitment to NQA-1-2015, Part II, Subpart 2.1 with this alternative is evaluated and found acceptable in Section 3.1.13 of this safety evaluation.
- ANS 3.2-2012, Section 3.2.4, as endorsed by RG 1.33, Revision 3.

The NRC staff evaluated the description of managerial and administrative controls that will be applied to during the operational phase of the TVA nuclear plants and determined that this description conforms to the applicable guidance for operational phase activities in SRP Section 17.5, Subsection II:

- Item B, "Quality Assurance Program"
- Item E, "Instructions, Procedures, and Drawings"
- Item F, "Document Control"

Based on this evaluation and TVA Nuclear's commitment to compliance with RG 1.33, Revision 3 and ANSI/ANS 3.2-2012, as endorsed by RG 1.33 with conditions, the NRC staff determined that the managerial and operational controls described in TVA Fleet QAPD, Revision 44, continues to meet the requirements of 10 CFR 50.34(b)(6)(ii) and 10 CFR 50.54(a) for the existing TVA Fleet (i.e., the licensed plants at BFN, SQN, and WBN). The NRC staff notes the TVA Fleet QAPD, Revision 44, will not apply to the CRN site should a CP be approved at this site, and the managerial and operational controls described in Part V of the TVA Fleet QAPD are not applicable to CRN ESP or any other new nuclear project sites. This is a limitation on the applicability of the TVA Fleet QAPD as described in Section 4.0 of this safety evaluation.

3.4 Regulatory Commitments

Part IV of the TVA Fleet QAPD states that TVA Nuclear commits to the following RGs and standards as described below:

- RG 1.8, "Qualification and Training of Personnel for Nuclear Power Plants," Revision 4

TVA Nuclear will conform with RG 1.8, Revision 4 and comply with the staff's regulatory guidance for meeting the conditions described on the use of ANSI/ANS 3.1-2014.

- RG 1.26, "Quality Group Classification and Standards for Water-, Steam-, and Radioactive-Waste-Containing Components of Nuclear Power Plants"

  TVA Nuclear will maintain existing commitments to RG 1.26 as specified in each plant's UFSAR. The commitment to Regulatory Guide 1.26 is site specific, as required by the approved UFSAR/License at each site. TVA Nuclear will maintain existing commitment to Regulatory Guide 1.26, Revision 4, for CRN ESP.

- RG 1.28, "Quality Assurance Program Criteria (Design and Construction)," Revision 5

  TVA Nuclear will conform with RG 1.28, Revision 5 and comply with the staff's regulatory guidance for meeting the conditions described on the use of NQA-1-2015 with specific proposed clarifications or exceptions noted in Part II of the TVA Fleet QAPD.

- RG 1.29, "Seismic Design Classification for Nuclear Power Plants"

  TVA Nuclear will maintain existing commitments to RG 1.29 as specified in each plant's UFSAR. The commitment to Regulatory Guide 1.29 is site specific, as required by the approved UFSAR/License at each site. TVA's current seismic program procedure complies with RG 1.29 and RG 1.100, "Seismic Qualification of Electric Equipment for Nuclear Power Plants. TVA Nuclear will maintain existing commitment to Regulatory Guide 1.29, Revision 5, for CRN ESP.

- RG 1.33, "Quality Assurance Program Requirements (Operations)," Revision 3

  TVA Nuclear will conform with RG 1.33, Revision 3 and comply with the staff's regulatory guidance for meeting the conditions described on the use of ANSI/ANS 3.2-2012 with the following proposed clarification: instead of ANSI/ASME NQA1-2008 and NQA-1a-2009 Addenda, TVA Nuclear commits to compliance with NQA-1-2015.

- RG 1.36, "Nonmetallic Thermal Insulation for Austenitic Stainless Steel," Revision 1

  TVA Nuclear will conform with RG 1.36, Revision 1.

- RG 1.54, "Service Level I, II, and III, Protective Coatings Applied to Nuclear Power Plants"

  TVA Nuclear will maintain existing commitments to RG 1.54, Revision 0 for previously applied coatings in existing TVA nuclear plants. However, TVA Nuclear commits to RG 1.54, Revision 3 for application of new coatings.

- RG 1.64, “Quality Assurance Requirements for the Design of Nuclear Power Plants,” Revision 2

  TVA Nuclear will maintain commitments to RG 1.64, Revision 2 for the current design of the existing operating plants. Future design changes for the existing operating plants will be performed in accordance with RG 1.28, Revision 5 and RG 1.33, Revision 3.

- RG 1.94, “Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel During the Construction Phase,” Revision 1

  TVA Nuclear will maintain commitments to RG 1.94, Revision 1 for the current design of the existing operating plants. Future design changes for the existing operating plants will be performed in accordance with RG 1.28, Revision 5 and RG 1.33, Revision 3.

- RG 1.116, “Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems,” Revision 0-R

  TVA Nuclear will maintain commitments to RG 1.116, Revision 0-R for the current design of the existing operating plants. Future design changes for the existing operating plants will be performed in accordance with RG 1.28, Revision 5 and RG 1.33, Revision 3.

- RG 1.152, “Criteria for Programmable Digital Devices in Safety-Related Systems of Nuclear Power Plants,” Revision 4

  TVA Nuclear will conform with RG 1.152, Revision 4.

- RG 1.164, “Dedication of Commercial-Grade Items for Use in Nuclear Power Plants,” Revision 0

  TVA Nuclear will conform with RG 1.164, Revision 0.

- RG 1.231, “Acceptance of Commercial-Grade Design and Analysis Computer Programs Used in Safety-Related Applications for Nuclear Power Plants,” Revision 0

  TVA Nuclear will conform with RG 1.231, Revision 0.

- RG 1.234, “Evaluating Deviations and Reporting Defects and Noncompliance Under 10 CFR 21,” Revision 0

  TVA Nuclear will conform with RG 1.234, Revision 0.

- ASME NQA-1-2015, “Quality Assurance Requirements for Nuclear Facility Applications”

  TVA Nuclear commits to NQA-1-2015, Part I and II, as described in Parts II and V of the TVA Fleet QAPD with specific identification of proposed exceptions or clarifications in those parts of the TVA Fleet QAPD. TVA Nuclear commits to NQA-1-2015, Parts III and IV only as specifically noted in Parts II and V of the TVA Fleet QAPD.

- ANSI/ANS 3.1-2014, “Select, Qualification, and Training of Personnel for Nuclear Power Plants”

  TVA Nuclear commits to ANSI/ANS 3.1-2014, as described in the TVA Fleet QAPD, subject to guidance included in RG 1.8, Revision 4. TVA Nuclear commits to compliance with ANSI/ANS 3.1-2014 and will comply with the staff’s regulatory guidance, with specific identification of proposed exceptions or clarifications.

- ANSI/ANS 3.2-2012, “Managerial, Administrative, and Quality Assurance Controls for the Operational Phase of Nuclear Power Plants”

  TVA Nuclear commits to ANSI/ANS 3.2-2012, as described in the TVA Fleet QAPD, subject to guidance included in RG 1.33, Revision 3. TVA Nuclear commits to compliance with NASI/ANS 3.2-2012 and will comply with the staff’s regulatory guidance, with the following proposed clarification: Instead of references in ANS-3.2-2012 to ANSI/ASME NQA-1-2008 and NQA-1a-2009 Addenda, TVA commits to compliance with NQA-1-2015.

- ANSI N45.2.5-1974, “Supplementary Quality Assurance Requirements for Supplementary Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete and Structural Steel for the Construction Phase of Nuclear Power Plants”

  TVA Nuclear commits to ANSI N45.2.5-1974 for existing TVA nuclear plants, subject to the guidance in RG 1.94, Revision 1.

- ANSI N45.2.8-1975, “Quality Assurance Requirements for Installation, Inspection, and Testing of Mechanical Equipment and Systems for the Construction Phase of Nuclear Power Plants”

  TVA Nuclear commits to ANSI N45.2.8-1975 for existing TVA nuclear plants, subject to the guidance in RG 1.116, Revision 0-R.

- ANSI N45.2.11-1974, “Quality Assurance Requirements for the Design of Nuclear Power Plants”

  TVA Nuclear commits to ANSI N45.2.11-1974 for existing TVA nuclear plants, subject to the guidance in RG 1.64, Revision 2.

- ANSI N101.4-1974, “Quality Assurance for Protective Coatings Applied to Nuclear Facilities”

  TVA Nuclear commits to ANSI N101.4-1974, subject to the guidance included in RG 1.54, Revision 0. TVA Nuclear commits to compliance with ANSI N101.4-1972 and will comply with the staff’s regulatory guidance, with specific identification of proposed exceptions or clarifications for previously applied coatings in current nuclear plants. TVA Nuclear commits to RG 1.54, Revision 3, which endorses ASTM D5144-08 for application of new coatings.

- NEI 14-05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” Revision 1

  In establishing controls for purchased items and services, TVA Nuclear commits to compliance with NQA-1-2015, Part I, Requirement 7, as described in the TVA Fleet QAPD, Part II, Section 7.2.

- Nuclear Information and Records Management Association, Inc. Technical Guides

  TVA Nuclear commits to NIRMA TGs as described in the TVA Fleet QAPD, Part II, Subsection 17.3.

The NRC staff evaluated TVA Nuclear’s commitments to RGs and standards in Part IV of the TVA Fleet QAPD and determined that TVA Nuclear’s commitments to conform with:

- RG 1.8, Revision 4, and the endorsed ANSI/ANS 3.1-2014, with conditions, is acceptable and consistent with 10 CFR 50.54(a)(3)(i). Specifically, ANSI/ANS 3.1-2014 is a newer version of a QA standard approved by RG 1.8, Revision 4, and is a more recent QA standard than the one in the current TVA Fleet QAPD at the time of the change.

- RG 1.26 as specified in each plant’s UFSAR/License and RG 1.26, Revision 4 as specified in the CRN ESP is acceptable as this is not a change to the currently approved revision of the TVA Fleet QAPD.

- RG 1.28, Revision 5, and the endorsed NQA-1-2015, with conditions, is acceptable and consistent with 10 CFR 50.54(a)(3)(i). Specifically, NQA-1-2015 is a newer version of a QA standard approved by the NRC in RG 1.28, Revision 5, and is a more recent QA standard than the one in the current TVA Fleet QAPD at the time of the change. The NRC staff determined that TVA’s specific proposed clarifications or exceptions to commitment with NQA-1-2015 as endorsed by RG 1.28, Revision 5 is acceptable based on the NRC staff’s review in section 3.1 of this safety evaluation.

- RG 1.29 as specified in each plant’s UFSAR/License at each site and RG 1.29, Revision 5 as specified in the CRN ESP is acceptable as this is not a change to the currently approved revision of the TVA Fleet QAPD.

- RG 1.33, Revision 3, and the endorsed ANSI/ANS 3.2-2012 with conditions is acceptable and consistent with 10 CFR 50.54(a)(3)(i). Specifically, ANSI/ANS 3.2-2012 is a newer version of a QA standard approved by the NRC in RG 1.33, Revision 3, and is a more recent QA standard than the one in the current TVA Fleet QAPD at the time of the change.

  TVA’s proposed clarification that instead of ANSI/ASME NQA-1-2008 and NQA-1a-2009 Addenda, TVA Nuclear commits to compliance with NQA-1-2015 is acceptable on the basis that (1) NQA-1-2015 is a newer revision to NQA-1-2008 and NQA-1a-2009 Addenda, and (2) the NRC staff evaluated TVA’s commitment to NQA-1-2015, as endorsed by RG 1.28, Revision 5, including TVA’s proposed clarifications, exceptions, and alternatives to this commitment in section 3.1 of this safety evaluation.

- RG 1.36, Revision 1 is acceptable since this RG updates NRC guidance to approve for use current voluntary consensus standards related to thermal insulation in contact with austenitic stainless steel.

- RG 1.54, Revision 0, and the endorsed ANSI N101.4-1974 for previously applied coatings in existing TVA nuclear plants is acceptable because this not a change to the version of RG 1.54 identified in the currently approved version of the TVA Fleet QAPD. For TVA's conformance to RG 1.54, Revision 3 for new coatings, the NRC staff determined that this is acceptable because this RG states that conformance with the guidance in this document is voluntary to meet the underlying regulations identified in this RG.

- RG 1.64, Revision 2, and the endorsed ANS N45.2.11-1974 with conditions, for the current design of the existing operating plants is acceptable because it is not a change from the version of RG 1.64 and endorsed ANS standard identified in the currently approved version of the TVA Fleet QAPD. For TVA's conformance to RG 1.28, Revision 5 and RG 1.33, Revision 3 for design changes for the existing operating plants, the NRC staff determined that this is acceptable based on the NRC staff's evaluation of TVA's commitment to NQA-1-2015, as endorsed in RG 1.28, Revision 5 and ANSI/ANS 3.2-2012, as endorsed in RG 1.33, Revision 3, in sections 3.1 and 3.3 of this safety evaluation, respectively.

- RG 1.94, Revision 1, and the endorsed ANS N45.2.5-1974 with conditions, for the current design of the existing operating plants is acceptable because it is not a change from the version of RG 1.94 and endorsed ANS standard identified in the currently approved version of the TVA Fleet QAPD. For TVA's conformance to RG 1.28, Revision 5 and RG 1.33, Revision 3 for design changes for the existing operating plants, the NRC staff determined that this is acceptable based on the NRC staff's evaluation of TVA's commitment to NQA-1-2015, as endorsed in RG 1.28, Revision 5 and ANSI/ANS 3.2-2012, as endorsed in RG 1.33, Revision 3, in sections 3.1 and 3.3 of this safety evaluation, respectively.

- RG 1.116, Revision 0-R, and the endorsed ANS N45.2.8-1975 with conditions, for the current design of the existing operating plants is acceptable because it is not a change from the version of RG 1.116, Revision 0-R and endorsed ANS standard identified in the currently approved version of the TVA Fleet QAPD. For TVA's conformance to RG 1.28, Revision 5 and RG 1.33, Revision 3 for future design changes for the existing operating plants, the NRC staff determined that this is acceptable based on the NRC staff's evaluation of TVA's commitment to NQA-1-2015, as endorsed in RG 1.28, Revision 5 and ANSI/ANS 3.2-2012, as endorsed in RG 1.33, Revision 3, in sections 3.1 and 3.3 of this safety evaluation, respectively.

- RG 1.152, Revision 4, and the endorsed Institute of Electrical and Electrical Engineering (IEEE) 7-4.3.2-2016, "Standard Criteria for Programmable Digital Devices in Safety Systems of Nuclear Power Generating Station," with conditions, is acceptable and consistent with 10 CFR 50.54(a)(3)(i). Specifically, RG 1.152, Revision 4, and the endorsed IEEE standard is an updated revision of the RG and endorsed IEEE standard than those in the current TVA Fleet QAPD at the time of the change.

- RG 1.164, Revision 0, and the endorsed EPRI 3002002982, Revision 1 to EPRI NP-5652 and TR-102260, "Plant Engineering: Guideline for the Acceptance of Commercial-Grade Items in Nuclear Safety Related Applications," with conditions, is acceptable because RG 1.164, Revision 0 describes methods that the NRC staff considers acceptable in meeting regulatory requirements for dedication of commercial-grade items and services used in nuclear power plants.

- RG 1.231, Revision 0, and the endorsed Revision 1 of EPRI Technical Report 1025243, "Plant Engineering: Guideline for the Acceptance of Commercial-Grade Design and Analysis Computer Programs Used in Nuclear Safety Related Applications," with conditions, is acceptable because RG 1.231, Revision 0 describes methods that the NRC staff considers acceptable in meeting regulatory requirements for acceptance and dedication of commercial-grade design and analysis computer programs used in safety-related applications for nuclear power plants.

- RG 1.234, Revision 0, and the endorsed NEI 14-09, "Guidelines for Implementations of 10 CFR 21 Reporting of Defects and Noncompliance," Revision 1, with conditions is acceptable because RG 1.234, Revision 0 describes methods that the NRC staff considers acceptable for complying with the provisions of 10 CFR Part 21, "Reporting of Defects and Noncompliance."

- NEI 14-05A, Revision 1 as described in Part II, Section 7 of the TVA Fleet QAPD is acceptable based on the NRC staff's evaluation in section 3.1.7 of this safety evaluation.

- NIRMA TGs as described in Part II, Subsection 17.3 of the TVA Fleet QAPD is acceptable based on the NRC staff's evaluation in section 3.1.17 of this safety evaluation.

4.0 LIMITATIONS AND CONDITIONS

The TVA current operating fleet, including the plants licensed at BFN, SQN, and WBN, and TVA's CRN ESP, may reference the TVA Fleet QAPD, Revision 44 in applicable licensing documents (e.g., UFSAR) and implement provided that the use of the TVA Fleet QAPD, Revision 44 meets the following conditions:

- The exception to not perform audit or evaluation for procurements from other Parts 50 and 52 licensees only applies when, TVA Nuclear procures from other Parts 50 and 52 *power reactor* licensees.

- When TVA Nuclear procures from MLs where inspections during the fabrication or manufacturing process are required to assure quality, TVA Nuclear must establish measures for source verification for these procurements, as required by Criterion VII of Appendix B to 10 CFR Part 50.

- The use of the TVA Fleet QAPD, Revision 44 can only be used for TVA New Nuclear Projects and Programs for the period of time prior to the implementation of the TVA New Nuclear QAPD and until the issuance of the CRN CP should it be approved by the NRC. The TVA Fleet QAPD, Revision 44, is not approved for use and reference in new applications for an ESP, a COL, a CP, an OL, an ML, a DC, an SDA, or an LWA.

5.0 CONCLUSION

The TVA Fleet QAPD, Revision 44 delineates the policies, processes, and controls established by TVA Nuclear and associated implementing documents relative to U.S. domestic QA requirements for nuclear power plants.

The QA Program documents defined in the TVA Fleet QAPD, Revision 44 provide for control of TVA Nuclear activities that affect the quality of safety-related nuclear plant SSCs and include all planned and systematic activities necessary to provide adequate confidence that such SSCs will perform satisfactorily in-service.

The TVA Fleet QAPD, Revision 44, may also be applied to certain equipment and activities discussed above, that are not safety-related, but support safe plant operations, or where other NRC regulations and policies establish programmatic controls.

The NRC staff used the acceptance criteria in SRP Section 17.5 as the basis for evaluating the compliance of the TVA Fleet QAPD, Revision 44 with the provisions of Appendix B to 10 CFR Part 50 and concludes that the TVA Fleet QAPD, Revision 44 satisfies the acceptance criteria within SRP Section 17.5. The NRC staff concludes that the TVA Fleet QAPD, Revision 44, will continue to comply with 10 CFR 50.34(b)(6)(ii), 10 CFR 50.54(a), 10 CFR 50.55(f)(4)(i) and Appendix B to 10 CFR Part 50. As such, the NRC staff finds that TVA will also continue to comply with the QA requirements for independent spent fuel storage installations in Subpart G of 10 CFR Part 72. Therefore, the NRC staff concludes that the requested changes to the TVA Fleet QAPD are acceptable subject to the limitations and conditions in section 4.0 of this safety evaluation.

6.0 REFERENCES

1. TVA Letter to the NRC, CNL-24-020, “Request for Approval of the Tennessee Valley Authority Nuclear Quality Assurance Program Description and Application to Revise the Technical Specifications Associated with QAPD Requirements (BFN-TS-551, SQN-TS-23-05, and WBN-TS-23-21),” dated April 1, 2024 (ML24093A047).

2. TVA Letter to the NRC, CNL-24-060, “Supplement to Request for Approval of the Tennessee Valley Authority Nuclear Quality Assurance Program Description,” dated September 24, 2024 (ML24268A322).

3. NRC Public Meeting Notice, “Meeting with Tennessee Valley Authority to Discuss Proposed Changes to the Nuclear Quality Assurance Program,” dated June 24, 2024 (ML24176A153).

4. American Society of Mechanical Engineers, NQA-1-2015, “Quality Assurance Program Requirements for Nuclear Facilities,” New York, NY, dated February 20, 2015.

5. NRC Electronic Mail to TVA, “Request for Additional Information – TVA Request for Approval of Revision 43 to TVA Fleet Quality Assurance Program Description (EPID L-2024-LLQ-0000),” dated December 10, 2024 (ML24346A041).

6. TVA Letter to the NRC, “Response to Request for Additional Information – TVA Request for Approval of Revision 43 of TVA Fleet Quality Assurance Program Description (EPID L-2024-LLQ-0000),” dated February 26, 2025, (ML25057A473).

7. NRC Electronic Mail to TVA, “Second Round Request for Additional Information – TVA request for Approval of Revision 44 to TVA Fleet Quality Assurance Program Description (EPID L-2024-LLQ-0000),” dated April 1, 2025 (ML25092A055).

8. TVA Letter to the NRC, “Second Round Request for Additional Information – TVA Request for Approval of Revision 44 to TVA Fleet Quality Assurance Program Description (EPID L-2024-LLQ-0000),” dated April 14, 2025 (ML25104A171).

9. TVA Letter to the NRC, “Revision to Second Round Request for Additional Information – TVA Request for Approval of Revision 44 to TVA Fleet Quality Assurance Program Description ((EPID L-2024-LLQ-0000),” dated May 6, 2025 (ML25126A091).

10. NUREG-0800, “Standard Review Plan for Review of Safety Analysis Reports for Nuclear Power Plants,” Section 17.5, “Quality Assurance Program Description – Design Certification, Early Site Permit and New License Applicants,” Revision 1, dated August 2015 (ML15037A441).

11. NRC letter to TVA, “Final Safety Evaluation for Tennessee Valley Authority Topical Report, NNP-TR-001, ‘Quality Assurance Program Description for TVA New Nuclear, Revision 2,’” dated December 12, 2023 (package ML23254A050).

12. Final Safety Evaluation by the Office of Nuclear Reactor Regulation for the NEI Technical Report NEI 14-05A, “Guidelines for the Use of Accreditation in Lieu of Commercial Grade Surveys for Procurement of Laboratory Calibration and Test Services,” Revision 1, dated February 19, 2021 (ML20322A019).

Principal Contributor: D. Zhang, NRR

Date: May 30, 2025

SUBJECT: BROWNS FERRY NUCLEAR PLANT, UNITS 1, 2 AND 3; CLINCH RIVER EARLY SITE PERMIT; SEQUOYAH NUCLEAR PLANT, UNITS 1 AND 2; WATTS BAR NUCLEAR PLANT, UNITS 1 AND 2 – REVIEW OF QUALITY ASSURANCE PLAN CONVERSION (EPID L-2024-LLQ-0000) DATED MAY 30, 2025

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