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10 CFR Part 50

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

In the Matter of) Docket Nos. 50-438 and 50-439
Tennessee Valley Authority)

TENNESSEE VALLEY AUTHORITY (TVA) - BELLEFONTE NUCLEAR PLANT (BLN) UNITS 1 (CPPR-122) AND 2 (CPPR-123) - KEY REGULATORY ASSUMPTIONS FOR THE POSSIBLE COMPLETION OF CONSTRUCTION ACTIVITIES

References:

1. Letter from TVA to NRC, "Bellefonte Nuclear Plant Units 1 and 2 – Request to Reinstate Construction Permits CPPR-122 (Unit 1) and CPPR-123 (Unit 2)," dated August 26, 2008.
2. Letter from NRC to TVA, "Bellefonte Nuclear Plant, Units 1 and 2 – Order Granting Reinstatement of Construction Permits Nos. CPPR-122 and CPPR-123," dated March 9, 2009.
3. Letter from TVA to NRC, "Bellefonte Nuclear Plant (BLN) Units 1 (CPPR-122) and 2 (CPPR-123) – Transition to Deferred Status," dated August 10, 2009.
4. Letter from NRC to TVA, "Bellefonte Nuclear Plant, Units 1 and 2 – Request Transition to Deferred Plant Status," dated January 14, 2010.
5. Letter from TVA to U. S. Atomic Energy Commission, "License Application – Bellefonte Nuclear Plant Units 1 and 2," dated June 19, 1973 (docketed June 21, 1973).
6. Safety Evaluation Report by the Directorate of Licensing, U.S. Atomic Energy Commission in the Matter of Tennessee Valley Authority Bellefonte Nuclear Plant Units 1 and 2 Docket Nos. 50-438 and 50-439, dated May 24, 1974 [ML091280571].

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7. Letter from TVA to NRC, Amendment No. 15 to Class 103 Permit Request and Request to Operate BLN Units 1&2, dated February 1, 1978.

8. Letter from NRC to TVA, "Bellefonte Nuclear Plant Units 1 (CPPR-122) and 2 (CPPR-123) - Transition to Deferred Status - NRC Inspection Report 05000438/2009601 and 05000439/2009601," dated December 2, 2009.

9. NRC NUREG-1232, Volume 4, "Safety Evaluation Report on Tennessee Valley Authority: Watts Bar Nuclear Performance Program," dated September 8, 2009.

10. Letter from U.S. Atomic Energy Commission to TVA, Issuance of Construction Permits Nos. CPPR-122 and CPPR-123, dated December 24, 1974.

Background

On August 26, 2008, TVA requested reinstatement of the subject BLN Construction Permits (Reference 1). Part of the justification for such request was that having the Construction Permits in place would allow TVA to establish, with a relative degree of certainty, the regulatory framework and licensing basis that would be used in considering the viability of completing the BLN project. TVA also noted that it would communicate with the NRC Staff in order to establish, among other things, the key regulatory assumptions underlying the potential completion of the project.

By Order dated March 9, 2009, NRC granted TVA's request reinstating the Construction Permits for both units (CPPR-122 and CPPR-123) and returning BLN to terminated plant status, as described in the "Commission Policy on Deferred Plants" (Generic Letter 87-15) (Reference 2). On August 10, 2009, TVA requested (Reference 3), and on January 14, 2010, the NRC authorized transition of BLN to deferred plant status in accordance with the Deferred Plant Policy (Reference 4). TVA's August 10, 2009, letter reiterated TVA's intention to submit a BLN Units 1 & 2 Key Assumptions letter during the deferral period consistent with the licensing process used in connection with the construction completion activities associated with Watts Bar Unit 2. This letter fulfills that purpose.

Key Regulatory Assumptions

TVA is currently studying the possible reactivation and completion of construction of a single BLN Babcock & Wilcox (B&W) unit. The purpose of this letter is to set forth the key regulatory assumptions underlying the NRC license process that would be applied to BLN Units 1 & 2. TVA requests that the NRC provide feedback regarding these key regulatory assumptions. Such feedback would significantly inform our assessment of the BLN project's feasibility. It will also help provide an important measure of regulatory certainty and allow for the efficient expenditure of TVA and NRC Staff resources should TVA decide to move forward with construction reactivation.

As a threshold matter, it is important to recognize that the engineering and construction of major structures for BLN Units 1 & 2 began in 1973 under 10 CFR Part 50 , and that these structures were substantially complete when TVA placed the units in deferred construction status in 1988. In particular,

- TVA docketed the BLN Units 1 & 2 Construction Permit application and Preliminary Safety Analysis Report on June 21, 1973 (Reference 5).
- Approximately one year later, the Atomic Energy Commission completed initial review and published a 267-page safety evaluation report documenting its evaluation (Reference 6).
- In 1978, TVA submitted, and the NRC accepted for review, the BLN Units 1 & 2 Final Safety Analysis Report (FSAR) as part of TVA's application for an operating license (Reference 7).
- During the course of the BLN Units 1 & 2 operating license application review process, TVA submitted and the NRC Staff reviewed numerous FSAR amendments and other documents supporting the application.

These documents remain a part of the current BLN docket for Units 1 & 2, (Docket Nos. 50-438/50-439-CP). Should TVA's Board of Directors authorize reactivating construction of a single B&W unit, TVA would update and submit a revised operating license application for both BLN units, and NRC would review that application pursuant to 10 CFR Part 50. **This is the first key regulatory assumption.**

From an overall licensing standpoint, the process would be similar to that used for TVA's Watts Bar Nuclear Plant (WBN). There, TVA also submitted a dual unit operating license application that included a Final Safety Analysis Report (FSAR) for both Units 1 & 2. Subsequent amendments to the dual unit FSAR were submitted by TVA, and the NRC reviewed the design for both units as TVA actively pursued the construction of Unit 1, while Unit 2 was in deferred construction status. We believe this same approach for BLN would allow for the most effective and efficient use of TVA's and NRC's licensing resources.

This leads to a discussion of our second key regulatory assumption.

The regulatory history of BLN has been one of exemplary performance. During active construction and through the period of construction deferral, BLN successfully maintained a high rating under the NRC's Systematic Assessment of Licensee Performance (SALP) Program, and the BLN construction project was specifically excluded in the September 1985 letter issued to TVA under 10 CFR 50.54(f). Throughout the deferral period, NRC continued to conduct regular reviews and over the course of 15 inspections, documented that TVA had adequately maintained BLN's layup and preservation. However, during the period when some removal of plant equipment took place under TVA's commercially controlled investment recovery program, TVA suspended the Nuclear Quality Assurance Plan (NQAP) until March 2009 when TVA submitted Revision 20 of the TVA NQAP which reinstituted quality assurance requirements. During this period, no construction activities advancing the completion of the plant occurred.

In order to address the potential effects of the temporary cessation of the NQAP, TVA plans to implement a Recovery Program at BLN that would be similar in nature to those previously employed during the initial licensing of Watts Bar Unit 1, the recovery and restart of Browns Ferry Unit 1, and the program TVA is currently implementing for the Watts Bar Unit 2 construction completion project. The Recovery Program would be developed and implemented under the current TVA NQAP and include basic elements which would utilize the requisite quality records, verify plant fidelity with the design basis, reestablish configuration control, evaluate the potential degradation of plant structures, systems, and components (SSCs), and identify required remediation efforts. The Recovery Program would consist of three basic elements, as follows:

1. QA Records Verification

   Reviews by TVA and outside consultants have determined that BLN Quality Assurance Records are being properly stored, maintained, and controlled. NRC verified these findings in the most recent BLN inspection performed in October 2009 and documented in NRC's Inspection Report 05000438/2009601 and 05000439/2009601 dated December 2, 2009 (Reference 8). In order to ensure that site QA records are complete, retrievable in a timely manner, and do not have quality problems (are not technically or administratively deficient), TVA would implement a Quality Assurance (QA) Records Corrective Action Program (CAP) similar to that approved for Watts Bar in NRC NUREG-1232, Volume 4 and NRC's letter to TVA dated September 8, 2009 (Reference 9).

   The QA Records CAP would identify and correct significant QA record deficiencies and would ensure that the requisite QA records are complete, retrievable, and meet regulatory requirements.

2. Design Baseline Verification (DBV)

TVA would verify the plant's design baseline in a manner similar to that approved for Watts Bar in NRC NUREG-1232, Volume 4 and NRC's letter to TVA dated September 9, 2009 (Reference 9). The DBV would identify and correct inconsistencies between BLN licensing basis documentation and either design basis documentation or the as-found plant configuration. It also would address inconsistencies that may exist between the BLN FSAR, including associated regulatory correspondence, and the design documentation of record.

In particular, the DBV would encompass equipment removed as part of investment recovery activities during the period that the Construction Permits were terminated or potential concomitant damage to adjacent structures, systems, or components. The DBV would have three major components:

- Physical Condition/Configuration Assessment, to assess, at a minimum, age-related degradation, the effects of adverse environmental conditions, and the potential for concomitant damage to adjacent structures, systems, or components (SSCs), including any which may have occurred during the period the Construction Permits were terminated. This would establish the current, as-found configuration of the plant. TVA would also establish requirements for controlled lay-up and preventative maintenance of SSCs following the assessment.

- Licensing Verification, to ensure that regulatory requirements and commitments to NRC are captured in the appropriate highest level controlling documents and to establish procedures to maintain compatibility between commitments and controlling documents.

- Design Basis Verification, to establish system and topical design basis documents that contain or reference appropriate engineering requirements including design basis commitments and to ensure the existence and retrievability of calculations that are technically adequate and consistent with the "safety-related" plant design.

3. Replacement Items Verification (RIV)

TVA would verify plant replacement items, using as a starting point the process approved for Watts Bar in NRC NUREG-1232, Volume 4 and NRC's letter to TVA dated September 9, 2009 (Reference 9). The RIV would identify and correct deficiencies in documentation traceability for current warehouse inventory, replacement items installed during previous maintenance or construction activities performed in accordance with the NQAP, or maintenance activities conducted during the period when the Construction Permits were terminated. In doing so, RIV would utilize walk-downs, inspections, and testing to ensure that replacement items meet design and performance standards.

The Recovery Program would be accomplished through a structured and rigorous series of walk-downs, inspections, and testing which would verify and document consistency between engineering documentation and field installation, ensure conformance of installed components with applicable codes and standards, and ensure that the material condition of the plant meets design standards. Consistent with current program requirements implemented under the TVA NQAP at the BLN site, deviations or non-compliances identified during walk-downs, inspections, and testing would be entered in the corrective action program and evaluated for reportability in accordance with 10 CFR 50.55(e) and 10 CFR 21. Deficiencies would be remediated through a program for refurbishment/replacement similar to that currently being implemented at the Watts Bar Unit 2 completion project.

Based upon achievements to date, TVA has demonstrated its ability to develop and implement successful programs to address such recovery issues. TVA would submit the Recovery Program for NRC's review and approval prior to reactivation of construction activities. Finalization of the BLN design would follow Recovery Program approval with full implementation of the program occurring prior to the completion of construction. Recovery Program activities undertaken during the period of deferral would be controlled to ensure compliance with the Deferred Plant Policy and the current TVA NQAP. Successful implementation of the approved Recovery Program would adequately bridge adverse impacts from the temporary cessation of the NQAP at BLN. **This is the second key regulatory assumption**.

As further explained below, the substantial completion of major SSCs would require a case-by-case review of new regulations and policies consistent with Section III(A)(5) of the Deferred Plant Policy. As part of this review, TVA would continue to look for opportunities to improve plant systems and design. The NRC would apply licensing standards in the same manner as a plant under construction, taking into account the date of the original Construction Permits' issuance (Reference 10) and existing operating license application (Reference 7), as addressed under the Deferred Plant Policy. **This is the third key regulatory assumption**.

Consistent with this third key regulatory assumption, TVA has initiated a review of new NRC regulations and policies dating back to the time when BLN construction was deferred through the present. Through this review, TVA will address the elements of NUREG-0800 "Standard Review Plan for Review of Safety Analysis Reports for Nuclear Power Plants: LWR Edition" and NUREG-1555, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants: Environmental Standard Review Plan" as they apply to the licensing and design of BLN Units 1 & 2.

Finally, TVA is conducting activities necessary to maintain and preserve site assets during the deferral period. As mentioned above in connection with the second key regulatory assumption, TVA also plans to conduct certain activities necessary to further develop the licensing and engineering baseline for the project as well as those necessary to reestablish plant configuration control, address the pre-service condition of SSCs, and prepare for any construction reactivation as described in the Deferred Plant Policy. Activities in this area may include the development and submittal of programs necessary to establish the regulatory framework and topical reports related to the plant design. Additional activities may include continuation of plant design development, review and closure of historical open items, walk downs of plant SSCs to reestablish plant configuration control and address the pre-service condition, and development and implementation of programs and procedures in preparation for the possible reactivation of construction for a single B&W unit. In each of the areas described above and while the plant remains in deferred status, activities will be controlled to avoid construction as that term is described in 10 CFR 50.10. TVA would carry out these activities under the applicable provisions of TVA's NQAP. TVA anticipates that these activities would necessitate the assignment of dedicated NRC review and inspection resources. **This is the fourth key regulatory assumption**.

TVA believes that the four key regulatory assumptions described above are important to our continued consideration of the viability of licensing BLN Units 1 & 2 and the possible reactivation and completion of construction of a single BLN B&W unit. These key assumptions will also serve as a basis for the development of a detailed regulatory framework for the BLN project which was referred to in TVA's August 2008 Construction Permit reinstatement request (Reference 1) and further described in TVA's August 2009 request to transition the BLN site to deferred status (Reference 3). This process will be similar to the multi-phase process that TVA is successfully implementing for the Watts Bar Unit 2 construction completion project.

TVA will keep the NRC Staff well informed of ongoing BLN activities. Should TVA make a decision to reactivate construction, we propose to implement a public participation and communication approach similar to that used during the recovery and restart of Browns Ferry Unit 1 and the completion of Watts Bar Unit 2. TVA would conduct periodic public meetings to discuss the status of project completion, the schedule for addressing remaining issues, and any other management or regulatory issues that may arise during the course of the BLN project. In this regard, we would propose that these public meetings be held approximately every six months in the early stages of the project, and more frequently in the latter stages.

We look forward to your feedback.

Sincerely,

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