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U. S. Nuclear Regulatory Commission
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ATTN: Mr. Eric J. Leeds

TENNESSEE VALLEY AUTHORITY (TVA) - BELLEFONTE NUCLEAR PLANT UNITS 1
AND 2 - REQUEST TO REINSTATE CONSTRUCTION PERMITS CPPR-122 (UNIT 1)
AND CPPR-123 (UNIT 2)

TVA requests that Construction Permits CPPR-122 and CPPR-123 for Bellefonte Nuclear Plant, Units 1 and 2, respectively, be reinstated.¹ On September 14, 2006, the U.S. Nuclear Regulatory Commission (NRC) granted TVA's request to withdraw the Construction Permits and considered them terminated.

As explained below, good cause exists to support TVA's request. TVA's Bellefonte plant was substantially complete and, prior to withdrawal of the Construction Permits, was being maintained in a deferred construction status, consistent with NRC's definition for deferred nuclear plant units as described in Generic Letter 87-15, "Policy Statement on Deferred Plants." Reinstatement of the permits would allow TVA to (1) return the units to deferred status and resume preservation and maintenance activities as appropriate under the Deferred Plant Policy and (2) determine, with a relative degree of certainty, whether completion of construction and operation of the units is a viable option. In accomplishing the latter, TVA would, among other things, seek to establish the regulatory framework and licensing basis upon which the units could be completed should TVA later determine to do so.

¹ CPPR-122 was amended to include a latest date for completion of construction of October 1, 2011, and CPPR-123 to include a latest date for completion of construction of October 1, 2014.

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Historical Overview of the Bellefonte Construction Permits

TVA submitted an application to construct and operate two Babcock and Wilcox pressurized water reactors at its Bellefonte site near Scottsboro, Alabama, on May 14, 1973.² TVA's application was docketed on June 21, 1973, and docket numbers 50-438 and 50-439 were assigned.

Pursuant to a Notice of Hearing on Application for Construction Permits published in the *Federal Register* on August 3, 1973 (38 Fed. Reg. 20932), separate evidentiary hearings before an Atomic Safety and Licensing Board were held on environmental matters, as well as health and safety issues, in Scottsboro, Alabama, in July and October 1974, respectively. Pursuant to the National Environmental Policy Act (NEPA), TVA issued a Final Environmental Statement addressing the construction and operation of the Bellefonte units in May 1974 and the U. S. Atomic Energy Commission issued its Final Environmental Statement in June 1974. On December 24, 1974, the day after the Atomic Safety and Licensing Board issued its Initial Decision on site suitability and environmental matters,³ the NRC issued CPPR-122 and CPPR-123.

On February 1, 1978, TVA filed an application for operating licenses for Bellefonte Units 1 and 2, which included an Operating License Final Safety Analysis Report (FSAR) and an Operating License Environmental Report. NRC docketed TVA's Operating License Application on June 6, 1978, and published a Notice of Hearing Opportunity on TVA's Operating License Application on July 17, 1978 (43 Fed. Reg. 30628). There were no requests for hearing or petitions to intervene filed in response.

Construction of Units 1 and 2 continued until the mid-1980s when forecasted load growth began to decrease. Given the additional generating capabilities from other generating facilities that were completed, this diminished demand was cited, along with financial reasons and the goal of holding electric rates constant, as bases for TVA's decision to defer completion of the Bellefonte units. By letter dated July 29, 1988, TVA formally notified NRC of its deferral of construction activities and the layup program it would implement during the deferral period. NRC agreed with TVA's layup approach on October 31, 1988, stating that it was consistent with the Commission's Deferred Plant Policy. By this time, Unit 1 was approximately 90 percent complete and Unit 2 was approximately 58 percent complete with the FSAR progressing through Amendment 29.

In the early 1990s, TVA instituted a series of detailed engineering, construction, and licensing studies and strategies which concluded that Bellefonte's completion as a nuclear

² While the Bellefonte design is similar to earlier Babcock and Wilcox designs, the Bellefonte reactors are 205FA models, which are larger and include improvements over earlier designs.

³ Tennessee Valley Authority (Bellefonte Nuclear Plant, Units 1 and 2), LPB-74-66, 8 AEC 472 (Sept. 6, 1974) (Partial Initial Decision on Environmental Matters and Site Suitability); Tennessee Valley Authority (Bellefonte Nuclear Plant, Units 1 and 2), LPB-74-91, 8 AEC 1124 (Dec. 23, 1974) (Initial Decision).

plant was viable. This effort included the submittal of 14 position papers to the NRC describing licensing positions on key issues important to the completion of the plant. The NRC subsequently released regulatory positions on these issues in a series of ten letters dated from August 23, 1991, to October 31, 1991.⁴ On March 23, 1993, TVA notified NRC of its plans to resume construction of both units within 120 days, noting that NRC had conducted 18 inspections at the facility since deferral, with 10 specifically pertaining to layup and maintenance.

In a letter dated April 19, 1994, TVA requested that the Construction Permits for Bellefonte Units 1 and 2 be extended to October 1, 2001, and October 1, 2004, respectively. The NRC approved these extensions on June 27, 1994. In December 1994, TVA decided that Bellefonte Units 1 and 2 would not be completed without additional financial support. Further construction activities were suspended pending completion of a comprehensive evaluation of TVA's power needs.

On July 11, 2001, TVA requested that the completion dates for Unit 1 and Unit 2 be extended to October 1, 2011, and October 1, 2014, respectively. TVA cited the need to maintain a robust and flexible range of generating options for future base load power supplies and competitive energy production choices as providing good cause for extending the construction permits. The permit extensions were approved by the NRC on March 4, 2003.

Given the deferred status of Bellefonte Units 1 and 2, and recognizing that equipment age would be an important factor in determining suitability for any eventual use, TVA decided that it would be best to terminate layup preventative maintenance on certain equipment at the site. The decision was made with the realization that should TVA later decide to complete the plant, in many cases it would be beneficial to upgrade certain obsolete pieces of equipment, and in other cases it would be more economical to replace or possibly restore equipment rather than to continue resource-intensive preventative maintenance activities. TVA submitted Appendix F to Revision 13 to TVA's Nuclear Quality Assurance Plan on August 28, 2003, reflecting this decision (ADAMS Accession Number ML032460719). NRC approved the plan on May 28, 2004 (ADAMS Accession Number ML041550303). For those structures, systems, and components that were determined to remain viable if and when a decision to restart construction was made, an active layup program was continued through the end of fiscal year 2005.

Throughout the years that Bellefonte Units 1 and 2 were maintained in deferred status, NRC performed regular reviews of the Bellefonte layup program. From 1995 through 2005 and over the course of 15 inspections documented in corresponding inspection reports,

⁴ NRC's responses addressed the following licensing issues: Integrated Control System; Cable Pullby/Sidewall Bearing Pressure/Jamming/Bend Radius; Fire Protection; Environmental Qualification of Electrical Equipment; FSAR Accident Analysis; Safe Shutdown Condition; Seismic Ground Motion Design; Seismic Design of Category I Structures; Seismic Qualification of Equipment; Structural Analysis Methods and Criteria for (1) Piping Tubing and Supports and (2) Distributive Systems and Supports; and Seismic Spatial Interactions Review.

NRC found that TVA had adequately maintained Bellefonte's layup and preservation program and that such program had been effective.⁵ In many instances, NRC stated that, "Site personnel have made a dedicated effort toward supporting the PM [Preventative Maintenance] Program," and that, "The knowledge and pride of ownership exhibited by plant personnel continued to remain a strength." Over the course of those 11 years of NRC inspections, only one non-cited Severity Level IV violation was documented in connection with Bellefonte Units 1 and 2.

From the above overview of Construction Permit-related activities, it is clear that Bellefonte Units 1 and 2 share a history of regulatory oversight and compliance which reflects the hard work and dedication of both NRC and TVA staffs.

TVA's Decision to Withdraw the Bellefonte Construction Permits

In 2005, TVA determined that the Bellefonte site could serve as a location for an advanced technology nuclear plant to be licensed utilizing the improved combined licensing process described in 10 CFR Part 52.⁶ It was recognized that some of the existing Unit 1 and Unit 2 equipment and structures could be used to support a new facility (e.g., cooling towers, intake structure, transmission switch yards), and that their use could reduce new construction costs.

One of the major factors taken into account in examining the future use of the Bellefonte site was the estimated cost per kilowatt of installed capacity associated with the various advanced reactor designs when compared to the estimated cost of completing Units 1 and 2. Based on the 2005 studies and projections, and even taking into account the uncertainties associated with the advanced reactor construction projections, completing construction of Units 1 and 2 was not seen as cost-effective a generating option. In light of circumstances at that time, and the fact that funds and staffing resources remained dedicated to maintaining the site and the Construction Permits, TVA decided that the Bellefonte Unit 1 and 2 Project could no longer be economically justified.

TVA discontinued Bellefonte Unit 1 and 2 project completion activities as of October 1, 2005, and TVA's Board of Directors (TVA Board) approved the cancellation of Units 1 and 2 on November 23, 2005. By letter dated April 6, 2006, TVA requested that the NRC

⁵ NRC Inspection Report Nos. 50-438/95-01 and 50-439/95-01; Nos. 50-438/96-01 and 50-439/96-01; Nos. 50-438/96-02 and 50-439/96-02; Nos. 50-438/96-03 and 50-439/96-03; Nos. 50-438/97-01 and 50-439/97-01; Nos. 50-438/98-01 and 50-439/98-01; Nos. 50-438/98-02 and 50-439/98-02; Nos. 50-438/99-01 and 50-439/99-01; Nos. 50-438/99-02 and 50-439/99-02; Nos. 50-438/00-01 and 50-439/00-01; Nos. 50-438/01-01 and 50-439/01-01; Nos. 50-438/02-01 and 50-439/02-01; Nos. 50-438/03-01 and 50-439/03-01; Nos. 50-438/04-01 and 50-439/04-01; Nos. 50-438/05-01 and 50-439/05-01.

⁶ TVA joined NuStart Energy Development, LLC, a consortium consisting of nine member utility companies and two reactor vendors to demonstrate the Part 52 combined license process and complete the design engineering for two selected reactor technologies, including the Westinghouse AP 1000 advanced reactor design to be located at TVA's Bellefonte site should TVA elect to construct the plant.

withdraw CPPR-122 and CPPR-123, and submitted a Site Redress Plan to the NRC along with the withdrawal request. The permits were withdrawn by the NRC on September 14, 2006.

Deciding Whether Bellefonte Units 1 and 2 Should be a Potential Generating Option

TVA is taking preliminary steps to consider whether Bellefonte Units 1 and 2 should again be regarded as a potential base load generating option. A major factor driving this effort is the change in power generation economics since 2005 and the possible effects of constraints on the availability of the worldwide supply of components necessary for new generation development since TVA submitted its request to withdraw the Unit 1 and 2 Construction Permits.

As explained above, at the time the Construction Permits were withdrawn, maintaining them was not viewed to be as beneficial as the generation alternatives then under consideration. Since that decision was made in 2005, however, the cost per kilowatt of installed capacity among generation alternatives has continued to increase. In addition, the worldwide decrease in the number of suppliers available for providing necessary reactor components and the significant expression of interest in developing new nuclear generation capacity in the past two years creates potential additional cost and schedule impacts on new construction. These considerations alone provide good cause to grant this request for reinstatement.

However, there are additional sound bases for TVA's request. Many major Unit 1 and 2 structures, systems, and components are near completion, including the containment buildings, cooling towers, circulation water buildings, most major and minor Unit 1 systems, and some Unit 2 systems. In terms of commodities alone, these structures, systems, and components represent considerable amounts of installed concrete, steel, piping and cable, all of which have significantly increased in cost over the past few years. As a result, the existing plant may now offer the potential of a significantly lower cost per installed kilowatt as well as a shorter schedule to start major safety-related construction and avoid procurement bottlenecks for heavy forging and other large components.

In view of the above, TVA has determined that it is prudent and worthwhile to examine the possibility of adding Bellefonte Units 1 and 2 to its mix of base load generating options. However, this determination will, in part, depend upon the results of a licensing assessment that would be performed if and when the Construction Permits are reinstated and TVA returns the units to deferred status. Having the Construction Permits in place once again 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 units. TVA anticipates using the same approach in establishing this regulatory framework and licensing basis as that used in connection with its Watts Bar Unit 2 project. Thus, TVA will communicate with the NRC Staff in establishing the key regulatory assumptions underlying the potential completion of the units as well as the regulatory framework for completing any subsequent construction and licensing activities. It has been TVA's experience that the absence of such certainty can ultimately serve as a basis for

deciding not to proceed with a license-related project. And while the licensing assessment is critically important in determining the viability of Unit 1 and 2, it is also important to understand that other engineering, design, and equipment reviews will need to be conducted in order to fully determine the potential viability of completing the units.

Current Status of Activities at the Bellefonte Site

At present, TVA is performing site clean-up and preservation activities designed to maintain the site and protect the integrity of site structures and equipment. For example, TVA is performing repairs to site structures to eliminate water intrusion, and is instituting temperature and humidity controls in the records vault to protect site documents. TVA is also continuing to maintain the intake and discharge facilities, cooling towers, wastewater system, and transmission switch yards.

TVA has maintained the site's National Pollutant Discharge Elimination System (NPDES) permit, the Air Permit for Synthetic Minor Source Operation for two 7,000 kW diesel generators, and the applicable Resource Conservation and Recovery Act permit.

In the time since the Construction Permits were withdrawn, some investment recovery activities have taken place at the site; including, for instance, the removal of the tubing from the steam generators for both units and sections of the reactor coolant piping attached to the steam generators. In the plant yard, various storage tanks and a number of the original construction storage buildings have also been removed. In November 2007, directions were given to halt investment recovery activities at the Bellefonte site and all further dismantlement activities have ceased. Work is currently underway to inspect, clean, cap off, and stabilize those systems and components affected by previous investment recovery activities.

TVA's Plans Should NRC Reinstate Bellefonte Units 1 and 2 Construction Permits

Should NRC reinstate CPPR-122 and CPPR-123, TVA would resume preservation and maintenance activities as appropriate under NRC regulations and the Deferred Plant Policy. TVA would maintain the units in the same deferred status as when TVA elected to withdraw the Construction Permits. Upon reinstatement of the permits, a deferred plant equipment plan, as described in Appendix F of Revisions 13 through 16 of TVA's Nuclear Quality Assurance Plan,⁷ would be reinstated for Bellefonte Units 1 and 2. Equipment not subject to preventative maintenance under a layup program would be entered into TVA's Corrective Action Program and prohibited from being placed in service without further evaluation and having been fully restored or replaced. Systems and components (equipment) that may have been affected in the course of investment recovery activities would likewise be entered into TVA's Corrective Action Program and prohibited from being placed in service without a full evaluation, or having been restored or replaced as well.

⁷ ADAMS Accession Numbers ML032460719 (Rev. 13), ML042470056 (Rev. 14), ML052450178 (Rev. 15), and ML062480198 (Rev. 16).

It is important to understand that in making the subject request for reinstatement of the Construction Permits, TVA is in no way indicating any preference or prejudgment in favor of completing the existing Bellefonte units. Should NRC reinstate the Construction Permits, any future decision to resume Unit 1 and 2 construction and completion activities would require approval by the TVA Board. TVA's Board would take into account the full range of engineering, construction, environmental, and regulatory/licensing considerations associated with such a project, including the associated cost and need for power considerations. Insofar as the decision making process is concerned, the approach would be similar to that recently employed by TVA and its Board in connection with the Browns Ferry Unit 1 and Watts Bar Unit 2 projects. In addition, should the TVA Board later decide to move forward with the completion of Bellefonte Units 1 and 2, TVA would follow the notice of resumption of construction directions included in NRC's Deferred Plant Policy.

TVA's Combined License Application (COLA) for Bellefonte Units 3 and 4

Neither TVA's request nor NRC's approval of TVA's request to reinstate the Construction Permits for Bellefonte Units 1 and 2 affects, in any way, TVA's ability or current plans to pursue a Combined License for Bellefonte Units 3 and 4 under 10 CFR Part 52. Because reinstatement would not represent a decision to actually proceed with the continued construction of Units 1 and 2, the licensing information previously submitted to the NRC for the purpose of supporting the COLA for Bellefonte Units 3 and 4 would remain valid. Nor should TVA's request for or NRC's reinstatement of the Construction Permits be construed as a determination that Bellefonte Units 1 and 2 represent a viable generating alternative. The entire purpose for reinstating the Construction Permits for Units 1 and 2 would be to assist TVA in determining whether these units should once again constitute a viable, or in terms of NEPA requirements, whether they should represent a "reasonable" power generating alternative.⁸ Nonetheless, TVA will provide additional information about Units 1 and 2 as a potential power generating alternative in Revision 1 to the COLA Environmental Report which is scheduled to be submitted to NRC in October 2008.

Legal Bases for Reinstatement of the Bellefonte Construction Permits

The Commission is authorized to reinstate the withdrawn Bellefonte Units 1 and 2 Construction Permits as such action is consistent with the Atomic Energy Act of 1954, as amended, and 10 CFR Part 50 of the Commission's regulations. An issue similar to the one presented here was that associated with the extension of the construction permit for Comanche Peak Unit 1 following its expiration. There, the Commission determined that issuance of a new Construction Permit was not required. *Texas Utils. Elec. Co.*, CLI-86-4, 23 NRC 113 (1986), *aff'd* 821 F.2d 725 (DC Cir. 1987). Relying on the DC Circuit's decision in *Mass Communicators, Inc. v. FCC*, 266 F.2d 681 (DC Cir. 1959), *cert. denied*, 361 U.S. 828 (1959), a decision on a provision of the Communications Act of 1934 analogous to section 185 of the Atomic Energy Act, the NRC determined that,

⁸ Both 10 CFR Part 51, Subpart A, Appendix A, Section 5 of NRC's NEPA implementing regulations and 40 CFR § 1502.14(a) of the Council on Environmental Quality's NEPA regulations require the evaluation of only "reasonable alternatives."

notwithstanding that the latest date for completion of construction had passed and the applicant had failed to seek timely renewal of its construction permit, the permit was not automatically forfeited. Significantly, the Commission concluded that a full-scale *de novo* construction permit hearing was not needed, and that the renewal could be accomplished as it was in situations in which timely application for renewal was sought, through issuance of a license amendment.

Unlike the applicant in *Comanche Peak*, TVA, after many years of retaining its Construction Permits for Bellefonte Units 1 and 2 in accordance with the NRC's Deferred Plant Policy, affirmatively asked the Commission to withdraw said permits, and the Commission did so. But the ultimate legal consequence of TVA's request that the NRC withdraw the Bellefonte Construction Permits, and the Commission's action to grant TVA's request, is not materially different from action taken in *Comanche Peak*. The immediate effect of the Commission's withdrawal of the Bellefonte Construction Permits was that TVA was no longer lawfully permitted to continue activities for which construction permits were needed. TVA complied and is maintaining the site in a stable condition. In many respects, the actions, in substance, parallel those in *Comanche Peak*.

The environmental impacts associated with the construction and operation of Bellefonte Units 1 and 2 have been previously discussed and evaluated by TVA in accordance with its NEPA obligations as a federal agency, as well as by the NRC consistent with its domestic licensing and related regulatory authority. As mentioned above, TVA published a Final Environmental Statement in May 1974 and NRC's Final Environmental Statement was published in June 1974. On August 26, 2002, TVA responded to a request for additional updated information to address the impact of resumption of construction activities in connection with TVA's request for Construction Permit extension dates (to October 2011 for CPPR-122 and October 2014 for CPPR-123). The NRC found that the conclusions regarding environmental impacts reached in its 1974 FES remained valid and its environmental assessment concluded that there was no significant effect on the quality of the human environment associated with continued construction activities up to those extended dates (16 Fed. Reg. 3571 (Jan. 24, 2003)).⁹

TVA also recently conducted an Environmental Assessment in connection with the subject request for NRC to reinstate the Bellefonte Construction Permits and TVA returning the plant to deferred status. The assessment considered the environmental effects of returning the plant to deferred status, performing basic maintenance of key equipment, and refurbishing certain buildings to provide space support for the above-mentioned licensing, engineering, design, and equipment reviews that will be conducted in order to determine the potential viability of completing the units. The assessment concluded that, in light of the limited consequences of the proposed action and the fact that the proposed activities would occur on the Bellefonte site which has been permanently altered and the

⁹ TVA and the NRC also conducted separate Environmental Assessments under NEPA in connection with TVA's request for withdrawal of CPPR-122 and CPPR-123, and Site Stabilization Plan. The NRC found TVA's Site Stabilization Plan to be acceptable, and TVA has maintained the Bellefonte site in accordance with that plan.

construction impacts addressed by previous environmental reviews, the granting of such request will not have a significant effect on the quality of the human environment.

Conclusion

TVA requests that Construction Permits CPPR-122 and CPPR-123 for Bellefonte Nuclear Plant, Units 1 and 2, respectively, be reinstated. Such reinstatement of the Construction Permits is essential to TVA's ability to adequately evaluate and determine whether these units may be considered as a cost-effective base load generating option. Granting the request and reinstating the Construction Permits would allow TVA to restore the units to the same deferred status as they were when TVA elected to withdraw the permits, within the same Construction Permit expiration dates (2011 and 2014) previously approved by the NRC. Reinstatement of Bellefonte Units 1 and 2 Construction Permits is legally permissible, consistent with the Atomic Energy Act and the Commission's regulations. Should the Construction Permits be reinstated, TVA will once again comply with all of the terms and conditions of the permits as required by NRC's regulations, including NRC's Deferred Plant Policy. TVA's history of past actions in conformance with the terms and conditions of these permits also provides the NRC with a high level of assurance that public health and safety will continue to be protected.

For all of the reasons discussed above, TVA submits that good cause exists for NRC to reinstate CPPR-122 and CPPR-123.

If you have any questions, or need any further information, please call Jack Bailey at 423-751-3922.

I declare under penalty of perjury that the foregoing is true and correct. Executed on this 26th day of August, 2008.



Ashok S. Bhatnagar