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FINAL ENVIRONMENTAL ASSESSMENT

ACTIVITIES AT BELLEFONTE NUCLEAR PLANT RELATED TO FUTURE SITE USE

Jackson County, Alabama

PREPARED BY:
TENNESSEE VALLEY AUTHORITY

JULY 2008

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TENNESSEE VALLEY AUTHORITY

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Background

At Tennessee Valley Authority's (TVA) request, the construction permits for Bellefonte Nuclear Plant (BLN) Units 1 and 2 were terminated by the Nuclear Regulatory Commission (NRC) in September 2006. At the time the construction permits were canceled, construction activities had ceased on the site, and BLN was in deferred status in accordance with NRC's Policy Statement on Deferred Plants, Generic Letter 87-15 (52 *Federal Register* 38077 [14 October 1987]). TVA had terminated equipment preventive maintenance for selected equipment in September 2005 and entered into the Corrective Action Program rather than continue to maintain outdated or obsolete equipment. In October 2007, TVA, in conjunction with the NuStart Consortium, submitted an application for a Combined Operating License (COL) for two Westinghouse AP1000 nuclear generation units to be located at the Bellefonte site, utilizing some of the structures and facilities built previously as part of the BLN Units 1 and 2 construction project. The purpose of that action was to assess the adequacy and feasibility of NRC's new COL process. TVA has not proposed to construct the two AP 1000 units. Prior to any decision to do so, TVA would conduct an appropriate environmental review.

TVA is now considering various options for realizing the value of its existing assets at the Bellefonte site, including requesting that NRC reinstate the construction permits for BLN Units 1 and 2. Exploring these options could entail resuming site maintenance activities, refurbishing an office building, and other minor activities. Undertaking some or all of these actions could help TVA to establish, with a relative degree of certainty, the regulatory framework and licensing basis to be used in studying the feasibility of possibly completing Units 1 and 2. Should NRC reinstate the construction permits, TVA would place the units in construction-deferred status once again until a decision is made about how to develop the site for future power generation. Any future decision to resume Units 1 and 2 construction and completion activities would require approval by TVA's Board of Directors, who would consider, among other things, the results of any necessary environmental reviews.

The Proposed Decision and Need

A number of activities are now being proposed at the Bellefonte site that would allow TVA flexibility as it considers the future use of the site. These activities include requesting that NRC reinstate the construction permits, reinstating the protective measures that were in place before the permits were terminated, and protecting and refurbishing certain structures such as the Construction Administration Building (CAB) for use as office space. TVA would decide whether to undertake some or all of the proposed activities commensurate with its needs to protect existing site assets.

Other Environmental Reviews and Documentation

In the past, TVA has prepared a number of environmental reviews for projects on the Bellefonte site. This environmental assessment (EA) incorporates by reference the information contained in the following environmental documents about the Bellefonte site, the construction of Units 1 and 2, and site redress following termination of the construction permit.

Final Environmental Impact Statement, Bellefonte Nuclear Plant, Units 1 and 2, Volumes 1 and 2, May 24, 1974 (TVA 1974)

Review of Final Environmental Impact Statement, Bellefonte Nuclear Plant Units 1 and 2, March 1993 (TVA 1993)

Energy Vision 2020, Integrated Resource Plan Environmental Impact Statement, Volumes 1-3, December 21, 1995 (TVA 1995)

Final Environmental Impact Statement, Bellefonte Nuclear Plant Conversion Project, October 1997 (TVA 1997)

Final Environmental Assessment, Bellefonte Nuclear Plant Redress, January 2006 (TVA 2006)

Bellefonte Nuclear Plant Units 3 and 4 Combined Operating License Application Part 3, Environmental Report, October 2007 (TVA 2007)

Alternatives and Comparison

Two alternatives have been identified, the No Action and the Action Alternative. Under the **No Action Alternative**, TVA would not seek reinstatement of the BLN Units 1 and 2 construction permits, and BLN Units 1 and 2 would remain in “canceled” status. Certain asset protection activities may continue.

Under the **Action Alternative**, TVA would undertake one or more actions related to maintaining the existing Bellefonte site structures and facilities and in consideration of the future use of the site, including but not limited to the following:

- Request that NRC reinstate the BLN Units 1 and 2 construction permits under the same terms and conditions that existed just prior to termination. TVA would place both units in the same construction-deferred status as they were at the time the construction permits were terminated. In its deferred status, construction activities had ceased; TVA had terminated equipment preventive maintenance for selected equipment. This equipment was entered into the Corrective Action Program in lieu of continuing to maintain outdated or obsolete equipment. Reinstating the construction permits would allow TVA to reinstitute, as appropriate, the protective measures that were in place before the permits were terminated.
- Refurbish the existing CAB to provide office space for personnel who would consider the feasibility of completing Units 1 and 2. In the first year, total office space could be needed for approximately 20 people. Depending upon the level of effort associated with the feasibility effort, up to several hundred employees could be brought in to work on site in subsequent years. General cleanup would be

required to make the building habitable, and existing utilities (water, sewer, electricity, heating/cooling) would be reinstated.

- Perform basic maintenance of key equipment at BLN such as:
 - Testing and upkeep of fire protection equipment (hoses, valves, smoke detectors, etc.).
 - Testing and upkeep of compressors, dehumidifiers, and heaters to maintain dry air in plant piping (manual measurements of humidity, manual inspections of valves and pipes). TVA may install temporary electric air compressors. The air compressors would provide airflow through plant piping to keep the interior of the pipes dry. Other minor equipment such as smoke detectors could be replaced, and other minor activities such as refilling the lube sumps with oil might be necessary.
 - Manual rotation of equipment to prevent freezing up and corrosion of bearings.

In addition to the above-listed equipment checks, BLN would continue to perform monitoring and maintenance of equipment used to assure compliance with National Pollutant Discharge Elimination System (NPDES), Spill Prevention Control and Countermeasures, and other environmental plans and programs.

The environmental effects of adopting the No Action Alternative were discussed in the *Bellefonte Nuclear Plant Redress Final Environmental Assessment* (TVA 2006). TVA concluded that the actions related to redress would be minor, insignificant, and routine in nature and would entail at most the use of routine mitigation measures such as best management practices.

Under the Action Alternative, the environmental impacts of the proposed site activities would be well within the scope of impacts considered under previous environmental reviews. These impacts would be minor, insignificant, and routine and have already been addressed in the above-listed environmental documents.

Affected Environment and Evaluation of Impacts

Site Description

The Bellefonte site is an approximately 1,600-acre tract adjacent to the Tennessee River near Hollywood, Alabama. See Attachment 1 for a location map and site photograph. By 1988 when TVA deferred completion of BLN, Unit 1 was approximately 90 percent complete, and Unit 2 was about 58 percent complete. As the plant did not become operational, no nuclear fuel or waste is on site. The only radioactive material on site would have been related to smoke detectors and exit signs from various buildings.

TVA has maintained BLN in regulatory compliance following the cancellation of the construction permit, as proposed in TVA 2006. Compliance activities include NPDES permits, division monitoring reports, demolition permits, and air permits applicable to the entire site. TVA canceled one of two Air Permits for Synthetic Minor Source Operation in June 2007 after the Auxiliary Boiler Building was sold and dismantled. The NPDES permit, a second Air Permit for Synthetic Minor Source Operation related to diesel generators, and a Resource Conservation and Recovery Act permit remain active.

Impacts Evaluated

The environment of the Bellefonte site was permanently altered by the construction of the main plant facilities in the 1970s. The environmental impacts of constructing and operating BLN Units 1 and 2 were addressed in the previously listed environmental reviews. The actions proposed in this EA would occur in the same location as identical and/or similar activities that were suspended upon the cancellation of the BLN construction permits in 2006. All the activities described in this EA would occur on the Bellefonte site under existing conditions.

Many of the proposed activities would occur inside of, or in the immediate vicinity of, existing buildings. Refurbishment and maintenance of the CAB and other facilities could generate minor amounts of solid waste and possibly very small amounts of hazardous waste. Drinking water would continue to be purchased from the City of Hollywood, Alabama, a community public water system regulated by the state. Wastewater would continue to be routed to the Hollywood Sewer System. Should TVA decide to install temporary air compressors, they would be located adjacent to an existing building. The only earthwork involved would be to create a level spot on the ground on which to set the air compressors. Small amounts of lubricating oil may be reintroduced for some of the maintenance activities. Because no new ground disturbance is proposed, there would be no effect on threatened and/or endangered species, historic and archaeological resources, wetlands, terrestrial plant and animal communities including exotic or invasive species, and migratory bird populations. Therefore, the proposed actions would have only minimal effect on the environment.

Cumulative Impacts

Because the proposed activities at the BLN site would constitute minor, insignificant, routine activities, there would be no cumulative effects.

Mitigation Measures

No nonroutine mitigation measures would be needed.

Preferred Alternative

TVA's preferred alternative is the Action Alternative.

TVA Preparers and Reviewer

Prepared by Ruth M. Horton and Carrie C. Mays; reviewed by Bruce L. Yeager

References

"Commission Policy Statement on Deferred Plants," 52 *Federal Register* 38077 (14 October 1987) [codified 10 CFR Part 50].

Tennessee Valley Authority. 1974. *Final Environmental Impact Statement, Bellefonte Nuclear Plant, Units 1 and 2*, Volumes 1 and 2. Project Number 8.

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- . 1995. *Energy Vision 2020, Integrated Resource Plan Environmental Impact Statement*, Volumes 1-3. Project Number 226.
- . 1997. *Final Environmental Impact Statement, Bellefonte Nuclear Plant Conversion Project*. Project Number 354.
- . 2006. *Bellefonte Nuclear Plant Redress Final Environmental Assessment, Jackson County, Alabama*. Chattanooga: Tennessee Valley Authority. Project Number 2006-20.
- . 2007. *Bellefonte Nuclear Plant Units 3 and 4 Combined Operating License Application Part 3*, Environmental Report.

Attachment

Location map and aerial photograph of site

Attachment 1 – Location Map and Aerial Photograph of Site

