

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
POTENTIAL BULL RUN FOSSIL PLANT RETIREMENT
ANDERSON COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) is proposing to retire its Bull Run Fossil Plant (BRF) in Anderson County, Tennessee. It is the only single-generator coal-fired power plant in the TVA system. BRF was built between 1962 and 1966, and commercial operation began in June 1967. BRF generates over 6 billion kilowatt-hours of electric power in a typical year, which is enough electrical energy to meet the needs of approximately 430,000 homes.

In August 2015, TVA published the 2015 Integrated Resource Plan (IRP), which was developed with input from stakeholder groups and the general public. The 2015 IRP evaluated five scenarios (plausible futures) and five strategies (potential TVA responses to those futures) and identified a range of potential resource additions and retirements throughout the TVA power service area, which encompasses approximately 80,000 square miles for the majority of Tennessee and parts of Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia. The target supply mix adopted by the TVA Board through the 2015 IRP recommended the potential retirement of up to 2,600 megawatts of coal-fired generation by 2033.

TVA has experienced flat to declining load, most similar to the Distributed Marketplace scenario in the 2015 IRP, and natural gas prices have remained relatively low. These conditions have prompted TVA to conduct economic analyses of all its generating assets considering load outlook, economic benefits and costs, performance, and environmental and social impacts. Assets that have relatively high projected future maintenance costs and environmental compliance expenditures, a high forced outage rate, and poor generation portfolio fit have been the focus of more detailed study for potential retirement. BRF falls into this category of assets.

As a large, inflexible coal unit with medium operating costs and a high forced outage rate, BRF does not fit current and likely future portfolio needs. While BRF was designed to provide baseload generation, increases in nuclear generation which produces power at a lower cost per MWh has displaced BRF for baseload generation. The potential retirement of an inflexible unit with high maintenance costs in 2023 would facilitate TVA's statutory mission to provide reliable power at the lowest system cost.

TVA system planners performed an economic evaluation of the BRF retirement which takes into account fuel price volatility. Impacts of fuel price volatility were evaluated against high and low gas price sensitivities. The evaluation indicated that other TVA coal units can partly replace the generation currently provided by BRF, muting impacts during periods of higher natural gas prices. Additionally, TVA commissioned a fuel resiliency study conducted by a third party that evaluated TVA's fuel resiliency with and without the BRF retirement. The study criteria included fuel supply, fuel delivery, inventory, and backup contingencies for all of TVA's generating assets. It indicated that TVA's overall fuel supply position is among the most resilient in the U.S. due to a well-diversified generation portfolio, advantageous location with respect to major gas pipelines, access to multiple coal supply and transport options, and a strong and resilient program to secure nuclear

fuel. An analysis of study findings indicates that reducing the coal fleet would not materially impact TVA's fuel resiliency.

TVA prepared an environmental assessment (EA) to analyze the potential natural and socioeconomic impacts associated with the potential retirement of BRF. The EA is incorporated herein by reference.

ALTERNATIVES

TVA evaluated two alternatives in the EA. Under either alternative, TVA would implement several projects related to Coal Combustion Residuals (CCR) management, including:

- Environmental Investigation Plan
- Bottom Ash Complex Closure
- Gypsum Impoundment Closure
- Partial Fly Ash Impoundment Closure
- Process Water Basins
- Lateral Expansion of South Slope Drainage

Alternative A – The No Action Alternative

Under the No Action Alternative, the BRF unit would not be retired and would continue to be part of TVA's generation portfolio. In order to continue operating BRF, TVA would construct a new CCR landfill over the next 6 years. This 120-acre landfill would be located about 0.4 miles east of BRF and would provide approximately 15 years of CCR disposal capacity. Associated actions include the construction of a haul road, perimeter roads, and sediment ponds.

TVA would also implement projects associated with the waste water treatment facility, bottom ash overflow optimization and underflow piping, sulfite analyzers, and outage wash collection system. Details regarding these projects, including analyses of their potential environmental impacts, have not been finalized.

Alternative B – Potential Retirement of Bull Run Fossil Plant

Under Alternative B, TVA would retire BRF in 2023. At that time, TVA would cease most plant operations and reduce plant staff. In order to minimize environmental and safety risks and comply with applicable laws and regulations, TVA would implement the actions described below.

Decommissioning, Deactivation, and Decontamination Activities

Decommissioning is the performance of activities required to ready a facility for deactivation. Work performed includes removal of equipment, components, and parts that can be used at other sites, draining of oil/fluids from equipment, removal of coal and ash from boilers and other equipment, removal of hazardous materials and potential waste like materials, removal of polychlorinated biphenyls (PCBs) equipment, removal of furniture/furnishings, removal of information technology assets, and removal of plant records. Key activities include:

- Tagging out all unit or plant equipment except service water, lighting, etc.
- Emptying and cleaning hoppers, bins, bunkers, etc.

- Opening all equipment electrical breakers not in use
- Draining oil and fluids
- Salvaging and storing all useable equipment, components, materials, spare parts, office products etc. and relocating them, as practical
- Salvaging and storing all key plant records.

Deactivation is shutting down of power and energized systems as appropriate as well as isolating and/or severing power, water and piping to the plant to provide a cold, dark and dry structure. Work includes removing power and services, installing bulkheads, and sealing tunnels. Activities may also include rerouting of power and services as required for any facilities that would remain operational. Key activities include:

- Performing electrical and mechanical isolation of systems, components and areas
- Installing bulkheads and/or filling tunnels
- Providing alternate power and services (sump pumps, Federal Aviation Administration (FAA) stack lighting, etc.)

Limited decontamination involves removing select regulated materials in a safe and practical manner in such a way that the plant is left in a status that does not present a hazard or risk to the environment or personnel. Limited decontamination activities at BRF includes abatement and disposal of regulated materials, which include but are not limited to PCB equipment, asbestos, hazardous waste, solid waste, products, etc. Key activities include:

- Removal and proper disposal of regulated materials as practical
- Periodic materials condition monitoring.
- Periodic waste removal as materials deteriorate over time.

CCR Activities

Under Alternative B, the new CCR landfill and associated actions would not be constructed unless implementation of the Tennessee Department of Environment and Conservation (TDEC) Consent Order results in the need for TVA to close its existing impoundments at BRF by removal.

Preferred Alternative

Even with recent improvements to increase flexibility, BRF does not provide the level of flexibility needed to balance hourly, daily and seasonal changes in energy consumption. In addition, cycling off and on results in more wear and tear and higher operation and maintenance costs. TVA has considered load outlook, economic benefits and costs, performance, and environmental and social impacts and determined that there is no immediate need to replace the generating capacity currently provided by BRF. TVA's action is consistent with TVA's 2015 IRP and supports a low cost, reliable, risk-informed, diverse, environmentally responsible, and flexible power system. Therefore, the TVA-preferred alternative that fulfills the agency's purpose and need for this proposal is Alternative B – Potential Retirement of Bull Run Fossil Plant.

IMPACTS ASSESSMENT

The potential impacts of the Proposed Action Alternative are described in detail in the EA and are summarized in Table 2-2 of that EA.

Short-term, adverse impacts are anticipated for surface water (negligible), transportation (minor), and noise (minor). Long-term adverse impacts are anticipated for aquatic ecology (negligible on communities downstream of BRF; minor on Melton Hill Reservoir fishery), recreation (minor), and socioeconomics (minor). Minor cumulative impacts are also anticipated. Additionally, no adverse impacts are anticipated for threatened and endangered species or environmental justice.

Long-term beneficial impacts are anticipated for air quality (minor), surface water (direct/indirect/cumulative), groundwater (minor), aquatic ecology (negligible on the Clinch River), solid and hazardous waste (negligible), visual resources, transportation (minor), and noise (minor).

PUBLIC AND INTERGOVERNMENTAL REVIEW

TVA's public and agency involvement included publication of a notice of availability and a 30-day public review of the draft EA. The availability of the draft EA was announced in newspapers that serve the Anderson County area: *Clinton Courier* and the *Oak Ridger*. The draft EA was also posted on TVA's website. TVA's interagency review involved circulation of the draft EA to local, state, and federal agencies. Comments were accepted from November 19, 2018 through December 19, 2018 via TVA's website, mail, and e-mail. Appendix A of the EA contains the compiled comments on the draft EA and TVA's responses to those comments. Appendix B of the EA contains the text of the comments received.

CONCLUSIONS AND FINDINGS

Based on the findings in the EA, TVA concludes that implementing the Proposed Action Alternative of potential retirement of the BRF would not be a major federal action significantly affecting the human environment. Accordingly, an EIS is not required.



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