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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
ALLEN FOSSIL PLANT EMISSION CONTROL PROJECT
SHELBY COUNTY, TENNESSEE

The Tennessee Valley Authority (TVA) is proposing to reduce sulfur dioxide emissions at its Allen Fossil Plant (ALF) in Shelby County, Tennessee by retiring the coal units and constructing a natural gas-fired power plant. The purpose and need for the proposed action is:

- Consistent with TVA's mission to provide reliable and affordable power, reducing sulfur dioxide (SO_2) emissions at ALF to comply with the 2011 Federal Facilities Compliance Agreement with the U.S. Environmental Protection Agency (EPA) and similar consent decree with the States of Alabama, Kentucky, Tennessee, and North Carolina and three environmental advocacy groups, the Sierra Club, the National Parks Conservation Association, and Our Children's Earth Foundation ("EPA Agreements"), and
- Achieving and maintaining a balanced portfolio of generation resources, a goal established by TVA's 2011 Integrated Resource Plan (IRP).

ALF was built in the 1950s by Memphis Light, Gas, and Water (MLGW). TVA purchased the plant in 1984. ALF has three coal-fired units that provide both real and reactive power for the Memphis area. To continue to reliably serve the area, generation resources must be located at or near ALF.

In the 2011 EPA Agreements, the parties agreed that TVA could either reduce SO_2 emissions at ALF by either installing flue gas desulfurization equipment (scrubbers) or retiring the coal units by December 2018. TVA has prepared an environmental assessment (EA) for this proposed action, which is incorporated by reference. This EA tiers from TVA's 2011 IRP EIS.

Alternatives

TVA evaluated two primary alternatives in the EA: Alternative A - No Action; and Alternative B - Retire ALF, Construct a Natural Gas-Fired Facility. TVA also considered six other alternatives, including: installing scrubbers at ALF; retiring ALF and relying on a new renewable power source, energy efficiency, transmission upgrades, or purchased power; and converting ALF to natural gas or biomass fuels. These alternatives did not achieve TVA's identified needs or were otherwise unreasonable, and therefore were not addressed in detail in the EA. TVA considered alternative locations for the proposed new facility, but determined that sites other than the proposed location adjacent to ALF would pose substantive disadvantages in providing the real and reactive power needed in the Memphis area.

Under the No Action Alternative, TVA would not construct a new natural gas-fired plant. TVA would continue to operate the three coal-fired generating units at ALF to generate power needed in the Memphis Area. Emissions of regulated air pollutants from ALF would be controlled via the existing selective catalytic reduction technology, electrostatic precipitators, and burning low-sulfur coal. However, continuing to operate ALF in this configuration would violate the EPA Clean Air Agreements. Therefore, taking no action at ALF is not considered reasonable, but this alternative provides an appropriate baseline for describing the anticipated

environmental effects of the proposed action, as required in regulations issued by the Council on Environmental Quality for implementing the National Environmental Policy Act.

Under Alternative B, TVA would construct and operate a new facility consisting of either four combustion turbines (CT) or two or three combined cycle (CC) units. The new CT/CC plant would generate 600 to1,400 MW of power, depending on the size selected. MLGW would construct a new gas pipeline lateral along about 13 miles of its existing maintained right-of-way to connect the new CT/CC plant to an existing interstate gas pipeline. The three coal-fired units at ALF would be retired, and virtually all coal unit operations measures, except basic maintenance, would be discontinued. Employment at the plant would be reduced.

TVA's preferred alternative is Alternative B (Retire ALF and Construct a Natural Gas-Fired Facility) because it meets the requirements of the EPA Agreements and provides the needed real and reactive power to the Memphis area with a comparatively small environmental and physical footprint. Compared to generation resources that TVA historically has constructed--coal and nuclear plants--the proposed natural gas plant has much smaller environmental impacts. Construction would take place almost entirely on previously disturbed land, and would take advantage of existing infrastructure (e.g. ALF switchyard). No new coal combustion byproducts landfills would be associated with the gas-fired plant. Products of the nearby waste water treatment plant (gray water and biogas) will be re-used, thereby eliminating use of surface water for cooling, reducing emissions of greenhouse gases, and reducing the amount of natural gas burned to generate power at this site.

Impacts Assessment

Based on the analyses in the EA, TVA concludes that the implementation of Alternative B would not affect geology, natural areas, parks, recreation, or wild and scenic rivers. There would be no effect on endangered or threatened species. There would be minor and mostly temporary impacts to common wildlife, vegetation, local transportation networks, noise, and the visual landscape. The proposed location is zoned for industrial use and changes in land use and effects to prime farmland would be insignificant on a regional scale. The new CT/CC plant would be constructed outside the Mississippi River 100- and 500-year floodplains behind the Ensley Levee and construction of the plant and associated pipeline lateral is consistent with Executive Order 11988, Floodplain Management.

Implementing Alternative B would beneficially affect local and regional air quality due to a net decrease in emissions of all regulated air pollutants except carbon monoxide. Emissions of SO_2 would be reduced by more than 11,300 tons per year, compared to Alternative A. Reductions in emission of NO_x and volatile organic compounds would contribute to Shelby County attaining and maintaining the 2008 National Ambient Air Quality Standard for ozone. While not measureable on a global scale, implementation of Alternative B would reduce emissions of CO_2, methane, and other greenhouse gasses that contribute to global climate change. Construction would result in temporary fugitive air pollutant emissions that would be controlled by wet suppression and other dust management practices.

Upon completion of the proposed CT/CC plant Under Alternative B, the existing once-through cooling water system would cease to operate and TVA would no longer withdraw approximately 300,000 gallons per minute from McKellar Lake. Elimination of fish impingement and entrainment at the cooling water intake would have a small beneficial effect on the aquatic animals in McKellar Lake. Discontinuing permitted discharge of heated water from the cooling system would result in a small incremental benefit to the quality of Mississippi River water. Construction impacts on surface water and aquatic communities would be avoided by using

directional boring techniques to install the natural gas pipeline beneath permanent streams and lakes, or minimized using best practices designed to reduce erosion and transport of sediment.

Compared to Alternative A, operation of the proposed CT/CC plant would result in substantial reduction in solid waste generated, primarily related to the absence of coal combustion residual products. Under Alternative B, construction and operation of the proposed CT/CC plant would generate typical types of nonhazardous waste, which would be managed as required by applicable State regulations following TVA's environmental procedures and best management practices, and therefore would not result in significant adverse environmental impacts.

No cultural resources would be affected by construction or operation of the proposed CT/CC plant. Pipeline construction will be routed to avoid effects to two archaeological sites. About 5.6 acres of emergent wetlands would be temporarily affected by pipeline construction, but no wetlands would be permanently lost because wetland functions of disturbed areas will resume when construction is complete. The proposed development of the proposed CT/CC site and use of the laydown areas would be consistent with Executive Order 11990.

During construction, there would be notable short-term increases in employment, payroll, and tax payments, resulting in beneficial direct and indirect economic impacts. The eventual reduction in employees operating the proposed CT/CC plant would affect less than 0.1 percent of the local civilian labor force, and would not result in significant regional impact. Implementing Alternative B would not cause low-income or minority populations to be disproportionately affected by adverse environmental impacts.

Public and Intergovernmental Review

A draft of the EA was released for public review and a 38-day comment period on July 2, 2014. The draft FONSI was made available for public review and comment between July 18 and August 8. A public open house was held on July 8, 2014, in Memphis to provide information and record public comments about the draft EA. Approximately 1,500 people or entities commented on the Draft EA. Of these, approximately 1,300 were form letters created and submitted by the Sierra Club. TVA has considered all of the substantive comments it received on the draft EA and has responded to them in the final EA as appropriate. Pursuant to Section 106 of the National Historic Preservation Act, TVA consulted with the Tennessee SHPO, who concurred that the proposed action will not adversely affect any property that is eligible for listing to the NRHP. Appropriate recognized Native American tribes were consulted concerning the proposed undertaking and TVA received no objection from any of the tribes.

Mitigation

TVA would implement operating permit requirements and routine best management practices listed in the EA for avoiding or reducing minor adverse environmental effects from the construction, operation, and maintenance of the proposed new natural gas-fired plant. Construction of pipelines will include directional boring under streams and lakes to avoid impacts to surface water bodies. Rare plants and sensitive species identified along the pipeline will be avoided. Two archaeological sites (40SY752 and 40SY753) that occur along the proposed pipeline and may be eligible for the National Register of Historic Places will be avoided by installing the pipeline around or beneath the sites using the directional bore method.

Conclusion and Findings

Based on the findings in the EA, TVA concludes that implementing Alternative B - Retire ALF , Construct a Natural Gas-Fired Facility, would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

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8/19/14
Date Signed