

Document Type: EA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: Byrdstown, Tennessee, 161-kV Transmission Line and Switching Station
Project Number: 2008-65

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
KELSEY ROAD-BYRDSTOWN 161-KILOVOLT
TRANSMISSION LINE AND SWITCHING STATION
CLINTON AND WAYNE COUNTIES, KENTUCKY, AND PICKETT COUNTY, TENNESSEE

Proposed Action and Need

Tennessee Valley Authority (TVA) proposes to improve the existing power supply system in portions of Clinton and Wayne counties, Kentucky, and Pickett County, Tennessee, by constructing and operating approximately 15 miles of new 161-kilovolt (kV) transmission line and a new switching station. TVA plans its transmission system according to industrywide standards provided by the North American Electric Reliability Corporation (NERC) and the National Electrical Safety Code. The standards state that the power supply system must be able to serve customer loads with adequate voltage and no equipment damage while maintaining adequate line clearances.

Volunteer Electric Cooperative (VEC), a local distributor, is planning to upgrade its existing Byrdstown 69-kV Substation to a new 161-kV substation to improve power reliability in the Byrdstown area. The Byrdstown 69-kV Substation, owned by VEC, is currently supplied power by a single 17.8-mile 69-kV transmission line. This line, constructed in 1959, is experiencing structural problems. Because of the age of the infrastructure and the single power line serving it, voltage at the Byrdstown Substation falls below acceptable criteria during periods of high power demand. The proposed action would allow TVA to meet the increasing need for power by relieving the overloading of existing equipment and improving reliability in the Byrdstown area and thereby allowing TVA to meet NERC Transmission Planning Reliability Standards. Additionally, the proposed action would allow TVA to ensure the area continues to be provided with an affordable source of power for continued economic health and residential and commercial growth in the area.

TVA has assessed the impact of the proposed action in an environmental assessment (EA) prepared in accordance with its procedures for implementing the National Environmental Policy Act. This EA is incorporated by reference.

Alternatives

Two primary alternatives, i.e., the No Action Alternative and an Action Alternative, were analyzed in the EA. Under the No Action Alternative, VEC would continue to use the existing, deteriorating infrastructure, and reliability would continue to be a problem. TVA would continue to make necessary repairs to the 17.8-mile transmission line serving the area.

Under the Action Alternative, TVA would build, operate, and maintain an approximately 15-mile-long 161-kV transmission line to connect VEC's planned Byrdstown 161-kV Substation in Tennessee to TVA's proposed Kelsey Road Switching Station in Kentucky. This 161-kV transmission line would require the acquisition of about 15 miles of 100-foot-wide right-of-way

(ROW) (approximately 182 acres) and the construction of a new 161-kV switching station (5.5 acres). The switching station would connect to the TVA Wolf Creek Hydroelectric Plant (HP)-Huntsville 161-kV Transmission Line. Permanent and temporary access roads would be required for construction of the transmission line and for maintenance of the ROW. TVA would also provide two manual switches and metering equipment at VEC's planned substation. TVA would retire its equipment in VEC's Byrdstown 69-kV Substation and one structure within the Wolf Creek HP-Huntsville 161-kV Transmission Line. The TVA system's mapboard at the System Operations Center and Regional Operations Center in Chattanooga would be modified to include the names and numbers of the new transmission lines and switching station. Adoption of this alternative would improve the reliability in the Byrdstown area and would accommodate future power demands. The Action Alternative is TVA's Preferred Alternative.

TVA considered various means of meeting the increasing need for power by serving VEC's substation while planning this project. In addition to the Preferred Alternative and the No Action Alternative, TVA considered other potential alternatives including:

1. VEC repairing or replacing equipment at the existing Byrdstown 69-kV Substation and TVA installing 69-kV capacitor banks and refurbishing or rebuilding the old 69-kV transmission line that serves Byrdstown.
2. TVA constructing a new 12-mile 161-kV transmission line to the TVA Monroe 161-kV Substation and rebuilding a 2-mile segment of the Livingston-Huntsville 161-kV line between the Monroe Tap Point and the Livingston Substation. To meet future needs, this alternative would require several more miles of new transmission line.
3. TVA installing transmission lines underground instead of overhead.

However, these alternatives were eliminated from further consideration in the EA because they would provide ineffective solutions, were not feasible, or would be too expensive or impractical to implement. TVA also examined a number of different transmission line routing alternatives.

Impacts Assessment

Under the No Action Alternative, TVA would not undertake actions to improve the power supply to the Byrdstown area. Thus, there would be no direct environmental effects resulting from TVA's actions. If no remedial measures were taken by VEC, reliability of electric power in the Byrdstown area would become worse over time. This would likely lead to some negative socioeconomic effects over the long term. In the event that VEC upgrades or replaces the Byrdstown Substation to 161-kV capacity and constructs a 161-kV transmission line to provide power, some environmental effects could occur. The nature and extent of these effects are speculative and would depend on the construction and operation methods used by VEC.

Based on the analyses in the EA, TVA has concluded that implementation of the Action Alternative would have no impact or minor and insignificant impacts on aquatic life, surface water, groundwater, and aesthetics including visual, noise, and odor. Effects to floodplain functions are anticipated to be insignificant and consistent with Executive Order (EO) 11988. Approximately 120 acres of forestland would be cleared for the proposed transmission line ROW, resulting in a slight increase in the amount of forest fragmentation and a minor increase in the amount of edge habitats in the proposed ROW. Plant and wildlife communities, including Neotropical migratory birds and other wildlife that depend on forest-interior habitats, would be

affected. Cumulatively, project-related effects to forest resources would be negligible when considered in the context of the total forestland occurring in the region, and forest conversion would be regionally insignificant due to the high amount of habitat fragmentation that already exists along the proposed route. Most species that would be affected by these changes are locally and regionally common. With the exception of Indiana bat habitat (discussed below), no unique terrestrial habitats would be affected. Overall, effects to wildlife and vegetation would be minor and insignificant. Invasive terrestrial plants occur in the project area. The use of TVA standard operating procedures for revegetating with noninvasive species would help prevent the further introduction and spread of invasive species within the affected project area.

A total of 124 watercourses (14 perennial streams, 13 intermittent streams, one seep, five springs, 89 wet-weather conveyances, and two ponds) occur along the proposed transmission line route and access roads. Some turbidity from increased sedimentation during construction is anticipated, but with implementation of standard best management practices (BMPs), impacts to the affected watercourses are expected to be minor and insignificant.

The proposed project would not result in direct, indirect, or cumulative effects to any federally or state-listed plant species or aquatic animal species or their habitats. Two Kentucky state-listed species (eastern small-footed bat and Rafinesque's big-eared bat) and two federally listed species (gray bat and Indiana bat) occur in the project area. The project is not expected to adversely affect the state-listed eastern small-footed bat or Rafinesque's big-eared bat. Pursuant to Section 7 of the Endangered Species Act (ESA), TVA prepared a biological assessment (BA) as part of the formal consultation process with the United States Fish and Wildlife Service (USFWS). In the BA, TVA determined that the proposed project is not likely to adversely affect the gray bat, with implementation of BMPs at all watercourse crossings, and the USFWS concurred with this determination in a letter dated November 17, 2010.

Implementation of the Action Alternative would result in the incidental take of Indiana bats in the form of habitat loss totaling 5.7 acres of known maternity habitat, 62.3 acres of known maternity habitat that overlaps Indiana bat Priority 1 and 2 swarming habitat, and 52 acres of Indiana bat Priority 1 and 2 swarming habitat. Other elements that could directly impact Indiana bats include noise associated with construction and maintenance of the TL, timing of forest clearing, and smoke from burning woody debris. In the BA, TVA determined that the proposed project would adversely affect Indiana bats and would potentially have both direct and indirect effects on the species. TVA proposes to minimize the adverse construction and maintenance-related effects to Indiana bat through implementing Measures 1 through 4 in the Mitigation section and by entering into a conservation memorandum of agreement (MOA) with the USFWS to fund recovery-based conservation activities for the Indiana bat. The USFWS has concurred that the proposed project would likely adversely affect the Indiana bat. Furthermore, the USFWS has agreed with TVA's approach to minimizing adverse effects to Indiana bats and indicated that entering into the MOA would ensure TVA's full compliance with Section 7 of the ESA.

TVA would implement measures (see Measure 5 in the Mitigation section) to avoid adversely affecting three archaeological sites potentially eligible for listing in the National Register of Historic Places (NRHP). With these measures in place, TVA determined that no archaeological resources eligible for the NRHP would be adversely affected. TVA also determined that no architectural resources potentially eligible for the NRHP would be affected and that no further investigations are necessary. The State Historic Preservation Officers (SHPOs) in Tennessee and Kentucky concurred with these determinations.

The proposed transmission line would span 0.28 acre of emergent wetlands located within the ROW, and no structures would be placed in wetlands. Wetlands would be allowed to continue functioning in the same capacity as current conditions. Because BMPs would be implemented during transmission line construction and ROW maintenance, potential effects to wetlands would be minor and insignificant, and no cumulative wetland impacts are anticipated. Use of BMPs and vegetation management would minimize impacts to wetlands consistent with the requirements under EO 11990. The proposed transmission line would cross a portion of the Wolf River, a water body listed in the Nationwide Rivers Inventory. Due to existing development in the affected segment of the river and because of intervening forest vegetation, TVA determined that the proposed transmission line would not have a significant impact on the recreational character or use of the river. In accordance with provisions of the Wild and Scenic Rivers Act, TVA notified the National Park Service (NPS) regarding the proposed project.

Public and Intergovernmental Review

TVA consulted with the USFWS, Kentucky and Tennessee SHPOs, and 11 federally recognized Native American tribes concerning the proposed project. Additionally, TVA contacted the NPS, Kentucky State Nature Preserves Commission, Tennessee Department of Archives and History, and Tennessee Natural Heritage Program. Information about the project was posted on a TVA Web site. Potentially affected landowners, local officials, and other interested parties were invited to an open house (attended by 172 people) held on July 16, 2009, in Albany, Kentucky.

Mitigation

TVA would undertake the following nonroutine measures to reduce the potential for adverse environmental effects to Indiana bats and archaeological resources:

1. As described in the memorandum of agreement, TVA would contribute \$776,055 to the Indiana Bat Conservation Fund to compensate for impacts to 5.7 acres of known Indiana bat maternity habitat, 62.3 acres of known maternity habitat that overlaps Indiana bat swarming habitat, and 52 acres of Indiana bat swarming habitat.
2. No vegetation clearing would occur between June 1 and July 31 to minimize potential impacts to maternity colonies of the Indiana bat.
3. No blasting would occur between November 15 and March 31 to prevent potential impacts to hibernating bats.
4. Danger trees identified as potentially suitable habitat for Indiana bats would not be removed between June 1 and July 31.
5. TVA would not place any transmission structures within boundaries of Sites 40PT142, 15CT144, or the eligible portion of Site 15CT146. All work within the boundaries of these sites would be conducted in dry conditions or with low-ground pressure-tired equipment. If these options are not possible, mats would be used.

Conclusion and Findings

Based on the findings in the EA and the implementation of the stated mitigation measures, TVA concludes that the construction of the proposed 161-kV transmission line and switching station

as described under the Action Alternative would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



1/31/11

Susan J. Kelly, Senior Manager
Federal Determinations
Environmental Permits and Compliance
Tennessee Valley Authority

Date Signed