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FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY

Normandy Reservoir Optimization of Reservoir Releases
Bedford, Coffee, Marshall, and Maury Counties, Tennessee
EAXX-455-00-000-1728491308

The Tennessee Valley Authority (TVA) is proposing to modify its operating procedures of Normandy Reservoir to provide TVA with greater flexibility in its management of water releases from the reservoir into the Duck River while continuing to meet key operational goals related to water supply, water quality, and sensitive aquatic habitat. The proposal would also address regional development within the Duck River watershed as well as protect water resources. The proposal also has the potential to assist TVA and its partners in addressing drought conditions in the watershed that may affect water supply in the region. The need for the proposal derives from TVA's obligations to operate its reservoirs while considering multiple social, economic, and environmental objectives, consistent with its Reservoir Operations Study. The action would also be consistent with previously established TVA flow targets on the Duck River.

Normandy Reservoir, constructed by TVA in 1976, provides recreation, water supply, water quality benefits and flood control to the upper Duck River watershed. TVA also manages Normandy Reservoir and its associated dam to meet State designated beneficial uses of the downstream Duck River, including water supplies (industrial and domestic), supporting aquatic biota and wildlife, irrigation and livestock watering, and recreation.

Normandy Reservoir and the Duck River, which lies downstream of Normandy Dam, serve as critical sources of water for communities within southern Middle Tennessee. This reservoir is the primary source of water for the Duck River Utility Commission and for five additional water districts located downstream of Normandy Reservoir (Shelbyville Power, Water, and Sewerage System; Bedford County Utility District; Lewisburg Water and Wastewater; Spring Hill Water System; Columbia Power and Water Systems). Because the Duck River watershed is widely considered one of the most biologically rich watersheds in North America, TVA must consider the various values sustained by the waters impounded by Normandy Reservoir when proposing any changes in the reservoir's operational procedures.

According to the US Drought Monitor, the region experienced an exceptional drought in 2007 and 2008, necessitating altered management of flows released by TVA from Normandy Reservoir to maintain water capacity and limit detrimental effects of prolonged drought conditions in both Normandy Reservoir and the Duck River. As a direct result of the 2007 and 2008 droughts, the Tennessee Duck River Development Agency (TDRDA), which represents seven water utilities that serve approximately 250,000 people and industries in the region, developed a report focused on the optimization of releases from Normandy Dam entitled

Optimization of Normandy Reservoir Releases report (ONRR, OBG 2013a). This report identified the potential for improvement in the operational procedures of Normandy Dam to satisfy downstream flow targets more precisely at a river gage in Shelbyville, Tennessee, thereby preserving water in storage in Normandy Reservoir. In response to the ONRR, TVA prepared an environmental assessment (EA), incorporated herein by reference, to consider the potential environmental impacts associated with modifying its water releases from Normandy Dam.

Alternatives

TVA analyzed two alternatives in the EA. Under Alternative A (the No Action Alternative), TVA would continue to operate Normandy Reservoir/Dam according to the current operating rule curve and procedures. TVA currently releases water from the dam in order to meet the following instantaneous flow targets:

- 155 cubic feet per second (cfs) from June through November at Shelbyville;
- 120 cfs from December through May at Shelbyville; and
- The minimum flow from Normandy Dam would continue to be 40 cfs.

During low water conditions, TVA accounts for the 18-hour lag between the time water is released from the dam to the flow measurement at the Shelbyville U.S. Geological Survey gage by releasing more than the required amount of water to ensure that the Shelbyville target is achieved. Under Alternative A, TVA would continue to provide this additional flow for water supply between the dam and Shelbyville to ensure that seasonal minimum instantaneous flow targets are met at the Shelbyville gage.

Under Alternative B, the Proposed Action, TVA would modify its operation of Normandy Reservoir by changing the typical flow releases of water from Normandy Dam. The current flow target at the Shelbyville gage would be revised from an instantaneous flow target to a weekly average flow target, coupled with a minimum instantaneous flow threshold. In other words, rather than operating to maintain its Shelbyville flow target instantaneously (i.e., measured during one instant in time), TVA proposes to operate flows to meet a target that is based on the average flows at Shelbyville over the course of a week (through 2400 hours on Sunday). Alternative B would also include a minimum instantaneous flow requirement to augment the weekly average flow target. TVA would be required to meet this minimum instantaneous flow requirement even if the average flow for any day or combination of days of the week was considerably higher than the weekly target.

The proposal would not alter TVA's flood guide elevations for Normandy Reservoir or affect how TVA operates during flood operations. In addition, this alternative would be in effect regardless of drought triggers or hydrologic conditions. Under this alternative, TVA would not change the minimum flow from Normandy Dam. The revised flow target at Shelbyville would consist of the following:

- During June 1 through November 30 - Weekly average flow of 155 cfs, average to be calculated at the end of the week (2400 hours on Sunday). The minimum instantaneous flow at the Shelbyville gage would be 135 cfs during this period;
- During December 1 through May 31 - Weekly average flow of 120 cfs, average to be calculated at the end of the week (2400 hours on Sunday). The minimum instantaneous flow at the Shelbyville gage would be 100 cfs during this period;
- Any partial weeks resulting from the change in target average flows at 2400 (midnight) on June 1 and at midnight on December 1 shall be treated as full weeks with respect to compliance with the required weekly average flow targets; and
- A minimal flow of 40 cfs from Normandy Dam would continue to be maintained.

Implementing this alternative would allow TVA to satisfy the Shelbyville flow targets more accurately during times of drought and would eliminate the current practice of releasing "excess water" to account for the 18-hour water travel time between Normandy Dam and the Shelbyville U.S. Geological Survey gage. The elimination of this practice would result in more water conserved in Normandy Reservoir, therefore increased reservoir elevations in Normandy Reservoir during periods of low water (e.g., reservoir elevation below the winter/summer flood guide target). Increased reservoir elevations during times of drought provide TVA with greater flexibility to meet operational goals related to adequate domestic water supply, sustaining adequate reservoir releases during exceptional drought periods, and protecting water quality. TVA uses forecast informed reservoir operations, such that forecasters are monitoring around the clock and have the ability to operate more conservatively or aggressively with strategies based on current conditions and predicted rain.

Impacts Assessment

The potential effects of TVA's proposed modification of procedures at Normandy Reservoir are detailed in Chapter 3 of the Final EA and summarized in Chapter 2, Table 1. TVA did not identify any significant adverse environmental effects associated with the proposal. Generally, potential effects discussed in the EA are associated with the availability of water during drought conditions and flows in the Duck River.

The optimization of releases from Normandy Reservoir would have slightly beneficial effects on water supply, water quantity, and wetlands during drought conditions, given that more water would be stored in the reservoir. Increased reservoir water levels would improve raw water quality and wetlands. TVA analysis found that a small impact to dissolved oxygen in one location of the Duck River may occur. During drought conditions, the additional water stored in the reservoir would be available to augment water quality of the Duck River, resulting in beneficial effects.

During drought conditions, TVA found that there would be a slightly beneficial effect to the aquatic habitat and species of the reservoir and river from the proposed action, as stored water in the reservoir would improve habitat. TVA found that the proposed implementation of Alternative B would fall within the historical fluctuations of the river under current operations. Thus, the potential effects to freshwater mussel habitat during normal conditions as a result of implementing Alternative B would be negligible. Furthermore, by implementing weekly average

flow targets under Alternative B, more water would be held in Normandy Reservoir, which would allow TVA to meet seasonal flow targets for longer durations during periods of prolonged drought. Based on its analysis, the US Fish and Wildlife Service (USFWS) concurred with TVA's finding of "may affect, not likely to adversely affect" for federally listed aquatic species and designated critical habitats in the Duck River.
TVA also found that the optimization proposal would not result in effects to cultural resources or climate change. More reservoir water would be available under the proposal to ameliorate droughts, which are predicted to increase in frequency and duration as climate change progresses.

Slightly beneficial effects to socioeconomics, recreation, and visual resources are also anticipated. TVA found that more water stored in the reservoir could slightly increase revenue and employment associated with recreation and improve recreational opportunities in the reservoir and in the Duck River during low flow conditions. Visual resources may be improved slightly due to higher reservoir levels.

Based on the lack of appreciable adverse impacts to the examined environmental resource categories in the EA, no mitigation measures are proposed.

Public and Agency Involvement

The scope of the EA was developed with input from TVA, TDRDA, and state and federal agencies. In 2017, TVA and agencies developed a scoping document that addressed the drought management plan and the optimization recommendations in the 2013 Optimization of Normandy Reservoir Releases report. In July 2018, TVA and TDRDA initiated an environmental review process by holding a public scoping period to solicit input from the public on the proposed optimization of water releases and the drought management plan. During the public comment period, TVA received comments from four individuals and two organizations (Tennessee Wildlife Federation and The Nature Conservancy). After the public scoping period, interagency discussions on the drought management plan have continued and are ongoing. While those discussions continue, TVA and TDRDA have modified the initial scope of the environmental review to address only the proposed optimization of water releases from Normandy Reservoir. The EA excluded consideration of the drought management plan.

On May 29, 2024, TVA released a draft of this EA for public review and comment. During the review period, TVA received 18 comments, including comments from eight individuals, five officials from local utility agencies, three organizations (Harpeth Conservancy, Tennessee Wildlife Federation, and the Southern Environmental Law Center), the State of Tennessee Department of Environment and Conservation, and the U.S. Environmental Protection Agency. On June 13, 2024, TVA hosted a public webinar with 30 attendees to provide information about the proposal and the environmental review and to answer questions. TVA carefully reviewed the public and interagency comments and provides responses in the Final EA.

TVA consulted with the USFWS on this proposal, consistent with requirements of Section 7 of the Endangered Species Act. Consultation with the USFWS concluded on November 7, 2024, with their concurrence that TVA's finding of "may affect, not likely to adversely affect" for

federally listed aquatic species and designated critical habitats in the Duck River. TVA has also consulted with the Tennessee Historical Commission and federally recognized Indian tribes, consistent with Section 106 of the National Historic Preservation Act. On June 13, 2024, the Tennessee Historical Commission notified TVA that it concurred with TVA's determination that the proposal would not adversely affect historic properties. Two Indian tribes expressed no concerns or comments on the proposal; one tribe expressed support for TVA's proposal.

In November 2024, the Governor of Tennessee issued Executive Order 108 (An Order to Conserve the Duck River Watershed), which outlined a set of conservation objectives and actions for the Duck River and its tributaries, including drought and habitat conservation planning. TVA will participate as part of the planning partnership with the State of Tennessee and other governmental and public partners to address the objectives of the Executive Order for sustainable management of the watershed.

There are no permits or licenses that TVA must obtain prior to modifying its operations at Normandy.

Conclusion and Findings

Based on the findings of the EA, TVA concludes that implementing Alternative B would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.

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Major Projects

Date