

Document Type: EA-Administrative Record
Index Field: Finding of No Significant Impact (FONSI)
Project Name: John Sevier Fossil Plant (JSF) NO_x Reduction
Project Number: 2004-100

FINDING OF NO SIGNIFICANT IMPACT

TENNESSEE VALLEY AUTHORITY

JOHN SEVIER FOSSIL PLANT UNITS 1 THROUGH 4 CONTROL SYSTEMS FOR REDUCTION OF NITROGEN OXIDES

TVA has evaluated four alternative technologies either alone or in combination (six total alternatives) for achieving substantial additional reduction of NO_x emissions from John Sevier Fossil Plant (JSF). In 1995, TVA installed low-NO_x burners at JSF, which have reduced NO_x emissions. Further reductions of NO_x emissions at JSF would assist in TVA's efforts to reduce NO_x emissions system-wide. In addition to no action, alternatives considered in the Environmental Assessment (EA) include boiler optimization; selective noncatalytic reduction (SNCR); low-dust selective catalytic reduction (SCR); and high-dust SCR. All NO_x reduction systems under consideration would be primarily installed within the existing plant structure. An ammonia storage facility located within the plant site would be included for either of the two SCR options. The SNCR process could include either ammonia storage facilities or urea storage and handling facilities.

As documented in the EA, an interdisciplinary TVA team reviewed the potential direct and indirect effects of the six alternative approaches for NO_x control at JSF on seventeen environmental resources. Impacts of the alternatives on these resources are documented in the EA. Implementation of any of the action alternatives would have no effect on federally-listed threatened and endangered species because none are known or expected to occur within the area of work. Similarly, by adherence to standard operating procedures or routine commitments, no impacts or insignificant impacts would be expected on Floodplains and Flood Risk, Terrestrial Ecology, Aquatic Ecology, Managed Areas, Wetlands, Transportation, Socioeconomics and Environmental Justice, Visual Resources, Recreation, and Cultural Resources Seismological Risk, and Tornado Risk.

The deposition of ammonium compounds on fly ash or in the air preheaters has the potential to impact surface waters. The estimates of the impacts of the action alternatives on surface waters vary widely, making selection from among a suite of identified mitigation measures inappropriate until actual operational information is obtained in the test phase. The wide variation in potential impacts to surface water stems from uncertainties in numerical computer models, and lack of knowledge of potential degradation and attenuation mechanisms for ammonium compounds which may enter the wastewater, storm water, or groundwater leachate collection and treatment systems at JSF. For this reason, an adaptive approach to mitigation has been chosen that allows bounding of the potential effects, identification of action levels and triggers based upon a robust monitoring approach for key "leading edge" parameters and timely feedback into decision making that allows for adequate time to response and adjust with mitigation if any is indicated as needed by monitoring.

Two types of commitments are identified as needed to ensure that impacts resulting from selection of any of the action alternatives on environmental resources are insignificant. As described in section 2.5.2 of the EA with the same title as above, TVA would implement the routine and compliance commitments 1 through 12 as appropriate for the action alternatives. Also as described in section 2.5.2, of the EA (Commitments 13 through 20) and in the Flue Gas, Wastewater, Storm Water, and Fly Ash Monitoring, Sampling, and Reporting Plan in Appendix B, an adaptive management approach will be taken to quantify the accuracy of engineering approximations used to estimate potential impacts of the Action Alternatives that generate ammonia-contaminated ash. Data collected and evaluated as per the monitoring plan would be used to select from the suite of identified mitigation measures, and to design and implement those mitigation measures.

TVA prefers to maintain the flexibility to select among the alternative technologies as greater information is obtained during the test phase installation and operation described in the EA. The installation and operation of any of the NO_x reduction systems considered under the action proposals will have beneficial impacts to regional air quality by reducing the NO_x available in the atmosphere for use in ozone production, and thus locally and regionally reducing ground level ozone.

By adhering to the commitments in the subject EA, the environmental impacts of implementation of any of the action alternatives would be insignificant, and would have no measurable adverse impact on the human environment. There would be no impacts to terrestrial threatened and endangered species or wetlands because none are known or expected to occur within the area of work. TVA also has determined there would be no effect to historic properties. Under Executive Order 11988, the installation of a stormwater discharge diffuser would be considered a repetitive action in the floodplain that should not result in adverse impacts. Based on the analysis in the attached EA and the identified mitigation measures, TVA's Environmental Stewardship and Policy staff has concluded that implementation of any of the proposed action alternatives to reduce air emissions of oxides of nitrogen would not be a major federal action significantly affecting the environment. Accordingly, an Environmental Impact Statement is not required.

Original signed by

March 17, 2006

Jon M. Loney, Manager
NEPA Policy
Environmental Stewardship and Policy
Tennessee Valley Authority

Date Signed