

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
YEAR-ROUND OPERATIONS OF SELECTIVE CATALYTIC REDUCTION SYSTEMS
FOR NITROGEN OXIDE CONTROL AT CURRENT SLIP RATES
PARADISE FOSSIL PLANT UNITS 1, 2, AND 3
MUHLENBERG COUNTY, KENTUCKY

Proposed Action and Need

In 1999, Tennessee Valley Authority (TVA) prepared a Finding of No Significant Impact (FONSI) and Environmental Assessment (EA) for *Paradise Fossil Plant Units 1, 2, and 3, Selective Catalytic Reduction Systems For Nitrogen Oxide Control* (TVA, 1999), which stated that the selective catalytic reduction (SCR) systems would be operated seasonally (May through September). TVA, now, proposes to move toward year-round operation of the SCR systems for the control of emissions of nitrogen oxide (NO_x) from Units 1, 2, and 3 of Paradise Fossil Plant (PAF). Year-round operation of these SCRs would allow for the opportunity to earn NO_x allowances by reducing NO_x emissions prior to the required 2009 compliance date, which facilitates TVA's ability to maintain a flexible approach in complying with air quality requirements. The purpose of the Supplemental EA (SEA) is to analyze the potential impacts from year-round operation of these SCRs.

Alternatives

Two alternatives were considered in the EA. Under the No Action Alternative, TVA would continue to restrict operation of the three PAF SCRs to the ozone season at the current slip rate of 2 parts per million volume (ppmv). Under the Action Alternative, TVA would have the option to increase the operation of the three PAF SCRs beyond the ozone season up to full 12-month operations at the 2-ppmv slip rate, as needed to meet air quality standards or achieve the voluntary NO_x reduction targets.

Impacts Assessment and Comparison

This Supplemental EA analyzes the potential impacts from year-round operation of the SCRs at PAF. It incorporates by reference the findings and commitments of the original PAF SCR EA (TVA, 1999) and the EA for *Replacement or Rejuvenation of Catalyst for Selective Catalytic Reduction of NO_x at Seven TVA Fossil Plants in the Tennessee Valley* (TVA, 2005). An interdisciplinary team reviewed the potential for direct, indirect, and cumulative effects to occur as a result of the proposal to extend the number of months the three PAF SCRs would be operated. The team identified and analyzed six potential areas of impact, including surface water, groundwater, air quality, transportation, waste and coal combustion byproducts, and ammonia storage and handling safety.

Under the No Action Alternative, no adverse effect is anticipated. TVA would remain in compliance with all air regulatory requirements without implementation of the proposed action. However, neither the air quality benefit of reducing emissions from PAF earlier than required nor the benefit to TVA of accruing NO_x allowances to be utilized as part of

TVA's overall air quality compliance strategy would be realized. In order to realize equivalent gains in NO_x reduction, TVA would either have to purchase NO_x emission credits or make up the difference by increasing controls at other plants, both of which would likely be more expensive than implementing the Action Alternative.

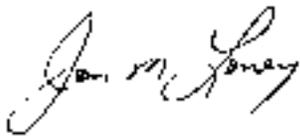
Under the Action Alternative, the assessment showed that year-round operation of SCRs on Units 1, 2, and 3 of PAF at the current slip rate of 2 ppmv would have minimal additional adverse impacts as compared to impacts from the current operation schedule, which is limited to the ozone season. Increased beneficial impacts to air quality would be realized from further reduction of NO_x emissions.

Mitigation

No additional mitigation would be required beyond those commitments provided for in the 1999 FONSI for the PAF NO_x Reduction EA.

Conclusion and Findings

TVA has selected the Action Alternative, since it is an important component of the overall strategy for meeting the regulatory requirements of the 2005 Clean Air Interstate Rule (CAIR) and would result in beneficial effects from reduced NO_x emissions. The proposed action is not a major federal action significantly affecting the quality of the environment. Accordingly, an Environmental Impact Statement is not required.



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Date Signed

References

Tennessee Valley Authority. 1999. Environmental Assessment and Finding of No Significant Impact – Paradise Fossil Plant Units 1, 2, and 3, Selective Catalytic Reduction Systems for Nitrogen Oxide Control. TVA, Knoxville, Tennessee, Index Number 434.

Tennessee Valley Authority. 2005. Final Environmental Assessment and Finding of No Significant Impact – Replacement or Rejuvenation of Catalyst for Selective Catalytic Reduction of NO_x at Seven TVA Fossil Plants in the Tennessee Valley. TVA, Knoxville, Tennessee, Index Number 2004-115.