

FINDING OF NO SIGNIFICANT IMPACT
TENNESSEE VALLEY AUTHORITY
INSTALLATION OF FLUE GAS DESULFURIZATION SYSTEM ON
KINGSTON FOSSIL PLANT
ROANE COUNTY, TENNESSEE

Proposed Action and Need

The purpose of the proposed project is to reduce sulfur dioxide (SO₂) emissions from Kingston Fossil Plant (KIF) by installing flue gas desulfurization (FGD) or scrubber equipment that employs the wet limestone forced oxidation technology. Installation of the scrubber at KIF would assist the Tennessee Valley Authority (TVA) in reducing systemwide SO₂ emissions to meet requirements under the 1990 Clean Air Act amendments, as well as maintaining compliance with the U.S. Environmental Protection Agency's Title IV regulations for the Acid Rain Program. The Title IV regulations require reductions and caps for utility industry SO₂ emissions. Compliance with the regulations is based on emission allowances. TVA's current SO₂ allocation allowance per year is approximately 430,000 tons. In 2004, TVA's emissions were 492,603 tons, and compliance was maintained by utilizing banked SO₂ emission allowances.

Alternatives

TVA considered a Proposed Action and a No Action alternative. Commercially available technologies were initially considered for application at KIF. Compatibility with existing operating and maintenance systems at the plant were the major considerations resulting in selection of wet limestone scrubbing as the proposed technology for application at KIF.

Under a No Action Alternative, no FGD or other system for SO₂ reduction from KIF would be installed. A No Action Alternative would not meet TVA's goal to reduce SO₂ emissions from KIF. The No Action Alternative for KIF would likely result in the need to reduce SO₂ emissions from other TVA fossil plants or require purchase of additional pollution credit allowances.

Impacts Assessment

The FGD system for KIF would be an addition to an expansive, heavy industrial facility having a significant property buffer, located in an area that has been heavily disturbed by previous plant developmental activities. No new facilities would be required to unload equipment transported to the site. Therefore, the potential would be small for on-site construction impacts to terrestrial ecology, aquatic ecology, noise, land use, air quality, and visual aesthetics. This system would produce gypsum (a new byproduct for KIF) and also result in the construction of a new byproduct disposal facility. Operational impacts are primarily dependent upon the engineering features and safeguards included in the design of the FGD system and the environmental commitments. These features and safeguards noted in Table 1 would minimize the probability and extent of release of pollutants to the environment.

Table 1. Summary and Comparison of Alternatives by Resource Area		
Issue Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Air Quality	<ul style="list-style-type: none"> • None; however, TVA would still be required to make reductions in SO₂ emissions 	<ul style="list-style-type: none"> • Impacts to local and regional air quality would be beneficial with the addition of the scrubber; overall, the air quality impact of construction-related activities for the project would not be significant
Solid Waste	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant impacts from the construction and operation of a new landfill as described below
Groundwater Quality	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant with the addition of a geologic buffer and leachate collection for the new landfill
Transportation	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant with the addition of a turning lane on US 70 and a deceleration lane on Swan Pond Road
Managed Areas and Ecologically Significant Sites	<ul style="list-style-type: none"> • Reduction in SO₂ emission would not occur and there would be a loss of any indirect or cumulative impacts as a result of the continued current SO₂ emissions 	<ul style="list-style-type: none"> • Indirect effects anticipated to natural areas would be improved air quality due to particulate matter reduction. Cumulative effects anticipated over time to all natural areas would include improved regional air quality with respect to visibility and reduced ecosystem acidification, improving wildlife habitat and visitor experience as a result of the Action Alternative. Direct effects anticipated as a result of the Action Alternative would be permanent loss of some wildlife management opportunities on the site. However, direct impacts from this proposal are expected to be localized and, therefore, insignificant.
Visual Resources	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • A water vapor plume would be visible, and views of the new equipment and facilities would be permanent but insignificant

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Issue Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Surface Water	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Construction impacts would be insignificant with the implementation of Best Management Practices
Wastewater	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant changes in water quality emanating from the ash pond and condenser cooling water
Noise	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Insignificant impacts from construction and operation
Wetlands	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Permanent loss of 5.85 acres of wetlands. Loss would be minimized to insignificance through mitigation required under Section 404 and ARAP permits.
Floodplains	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Loss of approximately 48 acre-feet of the 100-year flood storage with the complete build out of the gypsum disposal facility. Loss minimized under TVA Flood Control Storage Loss Guidelines
Aquatic Ecology	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Terrestrial Ecology	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Local and regional impacts to plants and animals are expected to be beneficial from an SO₂ perspective; an insignificant loss of plant and animal communities is expected from the construction of the gypsum disposal facility
Protected and Sensitive Species	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Cultural Resources	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Socioeconomics	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Small positive impact to the local economy
Environmental Justice	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • None
Prime Farmland	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • Soil characteristics for 11.6 acres meet the criteria for prime farmland; however, the total score for the land is less than 160 points, so this location does not warrant the consideration of alternative locations

Summary of Commitments and Mitigation Measures for the Proposed Action Alternative

Routine and compliance measures include the following: The project would comply with Tennessee regulations applicable to fugitive emissions. Wastewaters generated during construction of the proposed KIF FGD scrubber system may include construction storm water runoff, domestic sewage, dewatering of work areas, nondetergent equipment washings, and hydrostatic test discharges. These wastewaters would be handled through existing plant processes and procedures.

Special commitments identified for the proposed action are that:

- Portable toilets and existing facilities would be provided for the additional scrubber construction workforce. All portable toilets would be regularly pumped out and the sewage transported by tanker truck to a publicly owned treatment works accepting pump out.
- Addition of a left-turning lane off US 70 and a new deceleration lane on Swan Pond Road would help maintain the level of service on the local roadways.
- One potentially eligible archaeological site was encountered within the survey area for the gypsum disposal facility. This site would be avoided by construction activities, or the location would be subject to a Phase 2 site evaluation prior to any ground disturbance.
- If necessary, emissions from open construction areas and unpaved roads can be mitigated by spraying water on the roadways as needed to reduce fugitive dust emissions.
- TVA would confirm the discharge quality of the ash pond and gypsum settling pond by performing column tests or other appropriate technique for determining adequate treatment design basis. If determined to be necessary, then appropriate mitigative measures, such as increasing retention time in the ponds would be implemented as needed to ensure that the total suspended solids monthly average limitation on the ash pond (Discharge Serial Number 001) and expected gypsum monthly average discharge limitation are not exceeded. The appropriate additional environmental review would be conducted if added treatment producing substantive environmental concerns were determined to be needed.

Public and Intergovernmental Review

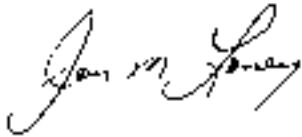
The Draft Environmental Assessment (EA) was sent to the agencies listed below for comments:

- National Park Service
- Roane County Mayor's Office
- Tennessee Department of Environment and Conservation

- Tennessee Wildlife Resources Agency
- U.S. Army Corps of Engineers
- U.S. Department of Energy
- U.S. Fish and Wildlife Service

Conclusion and Findings

Based on the attached EA, Environmental Stewardship and Policy has determined that the potential environmental consequences of TVA's proposed action to construct and operate the FGD system have been adequately assessed and that the proposed action is not a major federal action significantly affecting the quality of the environment. Accordingly, an Environmental Impact Statement is not required. There is no practicable alternative to avoiding impacts to wetlands or to the 100-year floodplain; however, these impacts would be mitigated consistent with EO 11990 and EO 11988. The U.S. Fish and Wildlife Service concurs that this project is "not likely to adversely affect" the endangered gray bat. Further, the Tennessee State Historic Preservation Officer concurs that the proposed scrubber will not affect historic properties and that TVA's obligations under Section 106 of the National Historic Preservation Act have been met.



April 10, 2006

Jon M. Loney, Manager
NEPA Policy
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Date Signed