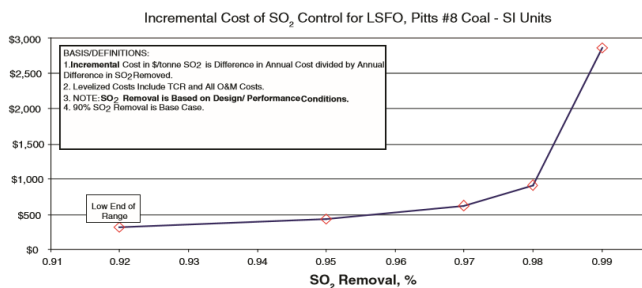
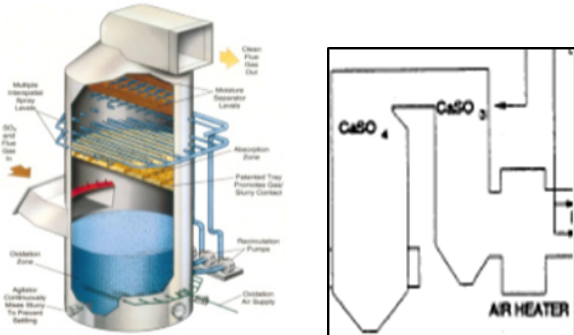


Site-Specific Assessment of SO₂ Control Options



Key Research Question

Over the course of several decades, EPRI has supported the research, development and demonstration of a variety of cost-effective options to control SO₂, as well as methods of improving the performance of existing SO₂ controls. This project will utilize these findings to first determine the most appropriate technology or combination of technologies consistent with the most cost-effective, lowest risk approach to SO₂ emissions compliance. Once determined, the selected technology will be further optimized and demonstrated. Accordingly, a key research question is the extent to which SO₂ control technologies can be optimized for maximum SO₂ removal on a full scale, long term basis.

Objective

This project is organized into three phases. The objective of Phase 1 is an assessment to a utility in need of SO₂ removal capabilities due to impending regulations, changes in fuel quality, flexible operations, or other reasons; and selection of the most appropriate technology for a given site application.

The objective of Phase 2 is to optimize the selected SO₂ control technology for the specific application with respect to cost, operability, and long-term performance. The objective of Phase 3 is to demonstrate the technology and validate findings.

- Objective assessment of all available SO₂ control options
- Determine most cost-effective SO₂ control for a specific site
- Utilization of extensive databases of all SO₂ control technologies
- Assessment considers both current as well as future SO₂ control needs

Approach

Once a specific site is selected, EPRI will work with plant personnel to define the project basis which will encompass current vs. required SO₂ levels, fuel quality variations, operational challenges (such as flexible operations), plant design, pre-existing controls, etc. EPRI will then conduct an assessment whereby the performance, cost factors, and risks associated with various SO₂ control strategies will be considered. Technologies may include wet as well as dry scrubber systems and various sorbents. If pre-existing SO₂ controls are installed, upgrade possibilities may be considered. In some cases, a combination of technologies (for example, tighter fuel specifications combined with lower cost approaches) may be assessed.

During the second phase of the project, the selected technology will be further defined. For example, if sorbents are shown to be viable, various chemical formulations, different methods of dispersion and injection locations, etc., and associated balance of plant impacts may be considered.

If warranted, a third phase will be conducted to demonstrate the previously selected technology. The demonstration will validate predicted performance and identify any reliability and performance issues.

Research Value

Costs associated with SO₂ controls represent a significant component of the overall cost of power generation. By performing a detailed assessment of all the various technologies, a host utility may be able to determine the most reliable, cost-effective means of SO₂ control for a specific power plant. By extension, the project will provide value to other plants and the power industry at large by providing more options for cost-effective means of controlling SO₂ emissions.

Deliverables

For the first phase of the project, a final report will be issued detailing the analysis of all SO₂ control options considered, including the cost and performance benefits and associated issues. The second phase of the project will include a final report detailing recommendations for optimization of the SO₂ control technology selected in Phase 1. If a third demonstration phase is conducted, the final report will include findings and recommendations for long term operation.

Price of Project

As this project is site specific, costs will be customized according to scope. For estimating purposes, Phase 1, which focuses on the assessment of technology options for a specific application, would cost on the order of \$100K to \$150K. The Phase 2 cost, which will focus on optimization and implementation of the technology defined in Phase 1, and specific site factors and scope is anticipated to be in the \$100K to \$150K range. If a full-scale demonstration is undertaken (Phase 3), the cost will be a function of the technologies demonstrated.

Project Schedule

Once a host site is selected and scope is defined, Phase 1 is estimated to be completed within 6 months. Phase 2 anticipated to be completed within 6 months following the completion of Phase 1. The Phase 3 schedule will be a function of the technology demonstrated.

Who Should Join

Any utility in need of installing or upgrading SO₂ emissions controls at their coal fired electric generating facilities.

Contact Information

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