PLANT DESIGN OF A METHOD FOR CHEMICAL DESULFURIZATION OF COAL. L. Lorenzi, Jr., Environmental Protection Agency, Research Triangle Park, North Carolina 21711, L. J. Van Nice, M. J. Santy and R. A. Meyers, TRW Inc., One Space Park, Redondo Beach, California 90278.

The Meyers' Process is a new and potentially low-cost approach for removing pyritic sulfur from coal which utilizes a simple ferric sulfate leaching technique. The pyritic sulfur content of coal is converted to elemental sulfur and iron sulfates which become process products. Ferric sulfate is regenerated by reaction with oxygen or air. Bench-scale data and process design studies indicate that the process may be designed utilizing a number of alternative processing methods. Some of the parameters which have been tested and considered include the following: air vs oxygen for regeneration, coal top sizes from 1/4-inch to 100 mesh, leaching and regeneration temperatures of 50°C up to 130°C, concurrent leaching and regeneration in the same vessel and recovery of elemental sulfur by either solvent extraction or vaporization. Coal treatment plants, based on the process, may be constructed utilizing standard equipment such as leaching vessels, thickeners, vacuum filters, etc., and standard materials of construction such as stainless steel, rubber-lined equipment and the like. The simplicity of the process and the mild conditions utilized indicate that desulfurization costs may well be favorable when compared with alternative sulfur oxide control methods.