

INTERIM FINAL TECHNICAL REPORT
September 1, 2002, through August 31, 2003

Project Title: **COMMERCIALIZATION OF FIRED BRICKS WITH FLY ASH
FROM ILLINOIS COALS**

ICCI Project Number: 02-1/3.1A-3
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ABSTRACT

The overall goal of this project is to develop processes for making fired bricks commercially using Illinois coal fly ash as one of the raw materials. This fly ash is currently being ponded or landfilled. The development and marketing of commercial bricks made with fly ash should benefit the Illinois coal industry, utilities, and brick manufacturers by reducing the amount of fly ash being discarded and by providing an economical ingredient for brick making in Illinois. Participating brick manufacturers have included Colonial Brick Company, Richards Brick Company, and Streator Brick Company. Participating electrical utilities have included Ameren CIPS and Dynegy Midwest Generation, Inc. Laboratory tests and preliminary in-plant firing tests have been completed. The majority of the commercial-scale tests have been completed with a few still in progress.

Using a beehive kiln at Colonial Brick Co., a total of about 15,000 full-size three-hole building bricks and 2,000 no-hole paving bricks have been produced for evaluation. The building bricks produced contained 20, 30, or 40 volume percent fly ash from two different sources in Illinois and the paving bricks produced contained 20 % by volume of fly ash from one of the two same sources. Both the building bricks and the paving bricks met the ASTM standard specifications. Using a tunnel kiln at Streator Brick Company, we successfully extruded and fired about 2,800 ten-hole building bricks containing 10 or 20 weight percent of fly ash. Further test at Streator Brick Company with higher levels of fly ash substitution is in progress. Another commercial-scale production test, using a tunnel kiln at the Richards Brick Co. is planned. However, due to the equipment problem and busy schedule of our industry partners, these tests were not completed on time, and a no-cost project extension through December 31, 2003, was approved.

The project extension will provide time for the completion of the scale-up tests, plus at least one month of time needed for examining and reducing characterization data and preparing a final report for the ICCI. This extension will also provide time for the ISGS to conduct an additional task requested by the ICCI to evaluate the quantity and quality of the ponded fly ash of an additional source in Illinois for brick making.