

Secure Energy, Inc.

Process Modeling for a Gasification System

On the merits of SSOE's broad experience with chemical / energy projects and front-end process design, Secure Energy enlisted SSOE to help it develop a coal gasification system at its Decatur, Illinois plant.

SSOE served as the lead process engineering firm and integrated the various technologies required for the process into the plant. The firm was responsible for the modeling and design of process areas as well as scheduling and cost estimating for the overall engineering effort. With a minimal number of coal gasification units working in the U.S., SSOE developed a mathematical model of the chemical processes involved in transforming coal into synthetic natural gas and utilized the first gasifiers brought into the country by the client's technology provider.

Running at full operational capacity, the gasification units convert 1.4 million tons of coal annually to 21 billion cubic feet of pipeline quality synthetic natural gas. The gas is supplied to the interstate natural gas pipeline network.

The client's coal gasification transition was sparked by loan guarantees from the U.S. Department of Energy's Energy Policy Act of 2005, designed to spur the deployment of alternative energy technology projects.

size 67,000 MMBTU/day

location Decatur, Illinois

highlights

Conversion of 1.4 million tons of coal to 21 billion cubic feet of pipeline-quality synthetic natural gas

Integration of first gasifiers brought to the U.S. by technology supplier

Qualifies for funding under the Energy Policy Act of 2005

Front-end process design / chemical and energy