

- fossil energy
- environmental
- energy efficiency
- other

States Impacted:

Indiana

Benefit Areas:

Environment, Energy Security,
Technology Leadership,
Lower Cost of Electricity

Participants:

Dynegy PSI Energy, Inc.

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GASIFICATION POWER PLANTS-DRAWING BOARD CONCEPTS BECOME COMMERCIAL-SCALE REALITIES: WABASH RIVER COAL GASIFICATION REPOWERING PROJECT

Description

The Wabash River facility, featuring the Destec gasification process, is the first commercial application of several advances in gasification technology and gas cleanup. The participant is Wabash River Coal Gasification Repowering Project Joint Venture, formed in 1990 by Destec Energy Inc. (Destec), of Houston, Texas, and PSI Energy, Inc. (PSI), of Plainfield, Indiana. They formed this joint venture to demonstrate coal gasification repowering of an existing PSI generating station. The Wabash River Coal Gasification Repowering Project was selected in September 1991 by DOE as a CCT Program round IV demonstration. The Project is located at PSI's Wabash River Generating Station near West Terre Haute, Indiana. The Cooperative Agreement was signed in July 1992, and the demonstration of this advanced Integrated Gasification Combined-Cycle (IGCC) power plant was initiated in December 1995. Local high-sulfur coal is processed to produce 262 MWe (net) of clean, low cost, energy with an efficient baseload capacity. In June 1998 Natural Gas Clearinghouse, NGC, changed the name from Destec to Dynegy.

In its third year of commercial operation, the plant continues to demonstrate IGCC's ability to operate as part of an electric utility power grid. The Wabash River Coal Gasification Repowering Project has demonstrated very impressive operating statistics for the facility's "1998 Commercial Operating Year." In 1998 the syngas facility 1) processed over 560,000 tons of coal and 2) produced 8.8 trillion Btu's of Syngas, which were significant accomplishments.

Goals

The goal of the Wabash River Coal Gasification Repowering Project is to demonstrate the repowering of an existing pulverized coal fired plant with IGCC technology. The project has also successfully demonstrated the goal of gasification of high sulfur Illinois basin coal.

Tangible Benefits

National: The plant is one of the cleanest coal-fired plants in the world. Emissions of SO₂ are more than ten times lower than the year 2000 Clean Air Act requirements and emit no particulates while operating with high-sulfur Illinois Basin coals. The technology is nearly ready to move into commercial operation.

Regional: High sulfur bituminous coal is plentiful in the region and the gasification process is able to utilize the coal.