
Fluidized Bed Power Generation

Engineering Clean and Efficient Energy Solutions



CLEAN AND EFFICIENT



A legacy of success -
a future built on innovation



Since its inception in 1932, Burns and Roe has been acknowledged for its accomplishments in the engineering, design, and construction of fossil-fueled generating stations. We have completed more than 170 units totaling over 70,000 megawatts (MW) of capacity, associated transmission and distribution facilities, and the related support services essential to the development of these projects. Since the late 1970s, Burns and Roe has been involved in the development and application of fluidized bed technology. Our support activities include site selection studies, environmental impact assessments, flue gas abatement programs, and environmental and licensing support services.

Full Service Capabilities

Burns and Roe has completed power projects utilizing many different types of designs, technologies, and fuels. Burns and Roe is established as an industry leader and

innovator in designing plants that use all types of solid fossil fuels, including bituminous coal, lignite, peat, anthracite, culm, gob, brown coal, petroleum coke, and other waste coals. The Burns and Roe coal-fired project portfolio includes 70 stations totaling more than 25,000 MW. Our experience has put us at the forefront of fluidized bed combustion. Our work has included:

- Studies
- Consulting
- Due Diligence
- Detailed design
- Engineering
- Construction
- Start-up
- Operations
- Environmental permitting
- Third party independent engineering.

Customer Focus

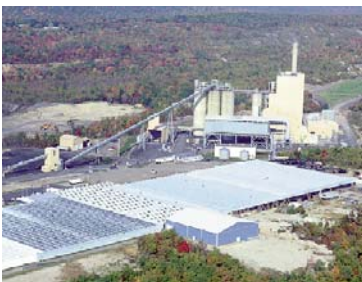
Our experience also includes numerous technology development and feasibility studies for clients such as the U.S. Department of Energy, the Electric Power Research Institute, independent power producers, and public utilities. In recent years, we have performed many independent evaluations of the design, constructibility, operability, and economics of privately owned and financed cogeneration projects for banks and financial institutions. Many of these projects are burning unconventional fuels, such as waste coal or biomass.

Representative Fluidized Bed Experience

... as design engineer, owner's engineer, and independent engineer

Plant/Owner	Capacity	Boiler Supplier	Fuel Source
Mecca Project/Colmac Energy, Inc.	2x24 MW	CE/Lurgi	Agricultural Waste and Petroleum Coke
Dominion Power	530 MW	NA	Bituminous Coal
Mecca Project/Colmac Energy, Inc.	2x24 MW	CE/Lurgi	Agricultural Waste and Petroleum Coke
American Bituminous Power Partners	80 MW	Foster Wheeler	Bituminous Gob
Northampton/U.S. Generating Co.	106 MW	Pyropower	Anthracite Culm
NEPCO/Reading Energy Co.	50 MW	CE/Lurgi	Anthracite Culm
Colver Power Project/Inter-Power/Alcon Partners	102 MW	Foster Wheeler	Bituminous Gob
St. Nicholas Project/Schuylkill Energy Resources	80 MW	CE/Lurgi	Anthracite Culm
Billings Generating Project/Yellowstone Energy, L.P.	60 MW	Kvaerner	Petroleum Coke
John B. Rich Memorial Station/Gilberton Power Co.	82 MW	Foster Wheeler	Anthracite Culm
Scrubgrass Cogeneration Facility/ U.S. Generating Co.	80 MW	Kvaerner	Bituminous Gob
Sunnyside Cogeneration Associates	58 MW	Kvaerner	Bituminous Gob
PetroPower	50 MW	Foster Wheeler	Petroleum Coke
COCO Phase III/Cogeneration Company of Thailand	470 MW	Foster Wheeler	Natural Gas and Coal Hybrid Design
Tha Toom/Advance Agro - Thailand	2x150 MW	Foster Wheeler	Coal and Wood
Panther Creek/Panther Creek Partners	80 MW	Foster Wheeler	Anthracite Culm

Meeting the challenges of difficult to handle fuel



**Northeastern Power Cogeneration Facility
McAdoo, Pennsylvania**

This anthracite culm-fired facility required an extensive upgrade to its conveying systems, crushers, feed systems, fuel barn, and screening systems. Construction took place within a confined area with minimum impact to existing plant operations. As construction manager, Burns and Roe succeeded in bringing the project to completion ahead of schedule and under budget without interfering with the operation of the plant.



**Yellowstone Energy Project
Billings, Montana**

This circulating fluidized bed plant required the addition of a 60,000 ton coke barn and a materials handling system. After start-up of the new addition by another contractor, the owner encountered difficulty in the operations of the coke barn and materials handling equipment. As the owner's consultant, Burns and Roe inspected the system and developed a list of recommended improvements. The system's operation improved considerably following implementation of our recommendations.

Did you know?



- Burns and Roe has designed and specified over 120 coal handling systems.
- Burns and Roe's coal-fired project portfolio includes 70 stations totaling more than 25,000 MW.
- Burns and Roe's experience includes bituminous coal, lignite, peat, anthracite, culm, gob, brown coal, petroleum coke, and other waste coals.
- Burns and Roe has been active in development of Fluidized Bed Boiler projects for over 20 years.
- ENR consistently ranks Burns and Roe as a top power engineering and design firm.



800 Kinderkamack Road
Oradell, New Jersey 07649
Telephone (201) 265-2000
Fax (201) 986-4335
www.roe.com

