J.K. Spruce

Power Plant Profile

Tools

Owner	Ultimate Parent	Ownership (%)
CPS Energy	CPS Energy	100.00

Operator
CPS Energy

Site Information

County, State	Bexar, TX
NERC Region/Subregion	ERCOT/TRE
RTO/ISO	ERCOT
Power Control Area	ERCOT
Interconnected Utility	CPS Energy
Water Source	San Antonio River

Plant Description

Operating Status	Operating
Current Operating Capacity (MW)	565.0
New Capacity (MW)	760.0
Technology Type	Steam Turbine: Boiler
Fuel Type	Coal
Year First Unit in Service	1992
Cogenerator?	No
Primary Purpose	Utilities
Regulatory Status	Regulated
FERC Exempt Wholesale Generator?	NA
FERC Qualifying Facility?	NA

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8/17/2010	Exclusive CPS Energy solicits offers of Powder River Basin coal
3/9/2010	Fitch rates CPS Energy revenue bonds
3/1/2010	Exclusive San Antonio utility approves settlement resolving nuke expansion dispute
2/21/2010	CPS Energy wins approval to raise rates, issue bonds
2/19/2010	Exclusive The Daily Dose: Friday, Power edition

Summary Operating Data - 2009

Operating Capacity (MW)	565.0
Net Generation (MWh)	3,523,216
Heat Rate (Btu/kWh)	9,971
Capacity Factor (%)	73.21
Total Production Costs ($/MWh)	NA

Total Plant Investment

Cost of Land & Land Rights ($)	NA
Cost of Structures & Improvements ($)	NA
Cost of Equipment ($)	NA
Gross Capital Expenditures ($)	NA
Construction Cost/ Capacity ($/kW)	NA

Unit ID	Operating Capacity (MW)	Operating Status	In-Service Month - Year
J K Spruce ST 1	565.0	Operating	Dec - 1992
J K Spruce ST 2	760.0	Under Construction	NA

Active Development Projects	Type	Event/Date	Estimated Cost ($000)	Estimated In-Service
Phase II	Generation	Construction Begun 03/2006 Announced 11/2003 Advanced Development 01/2006	1,938,000*	Jun - 2010

*Cost estimated by SNL.

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AEP awards contract to the Shaw Group for new 600-megawatt Turk Power Plant in SW Arkansas

SHREVEPORT, La., May 4, 2007 – American Electric Power's (NYSE: AEP) Southwestern Electric Power Company (SWEPCO) has awarded The Shaw Group Inc. (NYSE: SGR) of Baton Rouge, La. the engineering, procurement and construction (EPC) contract to build the John W. Turk, Jr. Power Plant, a new 600-megawatt (MW) coal-fueled power plant at Fulton, Ark., in Hempstead County near Texarkana. SWEPCO is seeking the necessary regulatory approvals to build the plant from various Arkansas, Texas and Louisiana authorities.

When regulatory approval is received, the plant will be built using ultra-supercritical pulverized coal combustion technology. Operating with higher steam pressures and temperatures, the plant will require less fuel per megawatt hour of electricity generated than traditional coal-fired plants, resulting in increased efficiency and reduced emissions. The Turk Plant, named for a former SWEPCO president, is scheduled to be completed in mid-2011 at a total cost of about approximately $1.3 billion. Shaw's EPC contract is valued at approximately $700 million.

"The EPC agreement with Shaw marks another important milestone that will ensure timely completion of the project," said Venita McCellon-Allen, SWEPCO's president and chief operating officer. "The Turk plant will bring much needed generation to the Ark-La-Tex, allow us to remain a low cost energy provider and boost regional economic development efforts in the area." The Turk Plant construction is expected to create up to 1,400 construction jobs.

SWEPCO serves over 464,000 customers in three states: 112,000 in western Arkansas, 176,000 in Northwest Louisiana, and 176,000 in East and North Texas. News releases and other information about SWEPCO can be found on the World Wide Web at http://swepco.com.

The Shaw Group Inc. is a leading global provider of technology, engineering, procurement, construction, maintenance, fabrication, manufacturing, consulting, remediation, and facilities management services for government and private sector clients in the energy, chemical, environmental, infrastructure, and emergency response markets. A Fortune 500 company with nearly $5 billion in annual revenues, Shaw is headquartered in Baton Rouge, La., and employs approximately 21,000 people at its offices and operations in North America, South America, Europe, the Middle East and the Asia-Pacific region. For further information, please visit Shaw's website at www.shawgrp.com.

American Electric Power is one of the largest electric utilities in the United States, delivering electricity to more than 5 million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 38,000 megawatts of generating capacity in the U.S. AEP also owns the nation's largest electricity transmission system, a nearly 39,000-mile network that includes more 765 kilovolt extra-high voltage transmission lines than all other U.S. transmission systems combined. AEP's transmission system directly or indirectly serves about 10 percent of the electricity demand in the Eastern Interconnection, the interconnected transmission system that covers 38 eastern states and central U.S. states and eastern Canada, and approximately 11 percent of the electricity demand in ERCOT, the transmission system that covers much of Texas. AEP's utility units operate as AEP Ohio, AEP Texas, Appalachian Power (in Virginia and West Virginia), AEP Appalachian Power (in Tennessee), Indiana Michigan Power, Kentucky Power, Public Service Company of Oklahoma, and Southwestern Electric Power Company (in Arkansas, Louisiana and east and north Texas). AEP's headquarters are in Columbus, Ohio.

This report made by AEP and its Registrant Subsidiaries contains forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934. Although AEP and each of its Registrant Subsidiaries believe that their expectations are based on reasonable assumptions, any such statements may be influenced by factors that could cause actual outcomes and results to be materially different from those projected. Among the factors that could cause actual results to differ materially from those in the forward-looking statements are: electric load and customer growth; weather conditions, including storms; available sources and costs of, and transportation for, fuels and the creditworthiness of fuel suppliers and transporters; availability of generating capacity and the performance of AEP's generating plants; AEP's ability to recover regulatory assets and stranded costs in connection with deregulation; AEP's ability to recover increases in fuel and other energy costs through regulated or competitive electric rates; AEP's ability to build or acquire generating capacity when needed at acceptable prices and terms and to recover those costs through applicable rate cases or competitive rates; new legislation, litigation and government regulation including requirements for reduced emissions of sulfur, nitrogen, mercury, carbon, soot or particulate matter and other substances; timing and resolution of pending and future rate cases, negotiations and other regulatory decisions (including rate or other recovery for new investments, transmission service and environmental compliance); resolution of litigation (including pending Clean Air Act enforcement actions and disputes arising from the bankruptcy of Enron Corp. and related matters); AEP's ability to constrain operation and maintenance costs; the economic climate and growth in AEP's service territory and changes in market demand and demographic

petterns; inflationary and interest rate trends; AEP's ability to develop and execute a strategy based on a view regarding prices of electricity, natural gas and other energy-related commodities; changes in the creditworthiness of the counterparties with whom AEP has contractual arrangements, including participants in the energy trading market; actions of rating agencies, including changes in the ratin Search electricity, natural gas and other energy-related commodities; changes in utility regulation, includin hio and membership in and integration into regional transmission organizations; accounting pronouncements periodically issued by accounting standard-setting bodies; the performance of AEP's pension and other postretirement benefit plans; prices for power that AEP generates and sell at wholesale; changes in technology, particularly with respect to new, developing or alternative sources of generation; other risks and unforeseen events, including wars, the effects of terrorism (including increased security costs), embargoes and other catastrophic events.

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B&W Awarded $250 Million Contract for John W. Turk, Jr. Power Plant.

Publication: Business Wire
Date: Tuesday, May 8 2007

HOUSTON -- McDermott International, Inc. (NYSE:MDR) announced today that its subsidiary, The Babcock & Wilcox Company ("B&W"), has received a contract valued at more than $250 million from American Electric Power (NYSE:AEP), for its Southwestern Electric Power Company ("SWEPCO") subsidiary,

to design, supply and erect a 600-megawatt ("MW") net coal-fired boiler and environmental control equipment for Unit 1 at the John W. Turk, Jr. Power Plant, a new baseload power plant in Hempstead County, Ark., about 15 miles northeast of Texarkana, Ark.

The plant will burn Power River Basin coal and will feature advanced, ultra-supercritical clean coal combustion technology. It will be one of the first plants of its kind to go into operation in the U.S. Ultra-supercritical generation is an efficient, pulverized coal technology that requires less coal per megawatt and creates fewer emissions than with a traditional, coal-fired unit. These units operate at higher temperatures and pressures which increases overall plant efficiency.

B&W's project scope includes the engineering, design, supply and installation of a 600 MW net pulverized coal-fired spiral wound universal pressure boiler, a selective catalytic reduction system, a dry flue gas desulfurization system, pulse jet fabric filter and associated auxiliary equipment.

Engineering has already begun at B&W's headquarters in Barberton, Ohio. All pressure parts will be fabricated by B&W's joint venture, Babcock & Wilcox Beijing Company, Ltd., in China. Pending regulatory approval for the plant, Babcock & Wilcox Construction Co., Inc. will begin construction activities in 2008. The unit is scheduled for commercial operation by the summer of 2011.

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- Utility's rate-rise request tapered Deal excludes coal-plant costs
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- AEP SWEPCO Receives Arkansas OK For Coal-Fueled Plant
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You are viewing page 2

"AEP is a strong proponent of clean coal technology as well as a long-term B&W customer, so we are extremely pleased to be selected for this award," said Brandon Bethards, president of B&W's Fossil Power Group. "We appreciate AEP's confidence in our technology and in our project management and construction capabilities, and we look forward to working with them to bring this new plant online."

American Electric Power is one of the largest electric utilities in the United States, delivering electricity to more than five million customers in 11 states. AEP ranks among the nation's largest generators of electricity, owning nearly 36,000 megawatts of generating capacity in the U.S. Its SWEPCO subsidiary serves 454,000 customers in three states: 112,000 in western Arkansas, 174,000 in Northwest Louisiana, and 168,000 in East Texas.

McDermott is an engineering and construction company, with specialty manufacturing and service capabilities, focused on energy infrastructure. McDermott's customers are predominantly utilities and other power generators, major and national oil companies, and the United States Government. With its global operations, McDermott operates in over 20 countries with more than 20,000 employees, and can be found on the internet at www.mcdermott.com.

In accordance with the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995, McDermott International, Inc. cautions that statements in this press release which are forward-looking and provide other than historical information involve risks and uncertainties that may impact McDermott's actual results of operations. The forward-looking statements in this press release include, among other things, the value, work scope and timing associated with the John W. Turk, Jr. Power Plant. Although McDermott's management believes that the expectations reflected in those forward-looking statements are reasonable, McDermott can give no assurance that those expectations will prove to have been correct. Those statements are made based on various underlying assumptions and are subject to numerous uncertainties and risks, including without limitation change orders and other modifications to contracts. If one or more of these risks materialize, or if underlying assumptions prove incorrect, actual results may vary materially from those expected. For a more complete discussion of these risk factors, please see McDermott's annual report on Form 10-K for the year ended December 31, 2006 filed with the Securities and Exchange Commission.

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Arkansas to decide on AEP Turk coal plant in Dec.

Wed, Nov 21 2007

NEW YORK, Nov 21 (Reuters) - Arkansas utility regulators will likely decide by Dec. 15 whether to approve of American Electric Power Co's (AEP.N: Quote, Profile, Research, Stock Buzz) proposed $1.3 billion 600-megawatt John W Turk Jr. coal-fired power plant in Fulton, Arkansas, a group said.

The Dec. 15 date came in a release issued this week by Americans for Balanced Energy Choices, a nonprofit group that supports the project. Officials at the Arkansas Public Service Commission and at AEP's Southwestern Electric Power Co subsidiary, which is seeking to build the plant, were not immediately available for comment.

AEP, which hopes to complete the project in mid 2011, has said the plant will use new coal technology that operates at higher temperatures and pressures. It says the technology is more efficient, with fewer emissions than traditional coal-fired plants.

In May, AEP said it awarded the engineering, procurement and construction contract for the plant to The Shaw Group Inc, SGR.N of Baton Rouge, Louisiana. AEP said that contract was worth about $700 million.

Construction of the plant would create up to 1,400 construction jobs, AEP said in the May release.

Fulton is located in Hempstead County about 20 miles northeast of Texarkana on the Arkansas-Texas border.

Across the United States, energy companies have about 45 coal plants permitted, near construction or under construction, representing about 23,000 MW of generating capacity, according to data from the U.S. National Energy Technology Laboratory (NETL) released in mid October. The NETL figures do not include the Turk proposal.

AEP, of Columbus, Ohio, owns and operates more than 38,000 MW of generating capacity, markets energy commodities, and transmits and distributes electricity to more than 5 million customers in 11 states. (Reporting by Scott DiSavino; Editing by David Gregorio)

Texarkana Gazette
"Serving the Four States Area"

Turk plant cost passes $2 billion, seen rising

By: Associated Press - Texarkana Gazette - Published: 02/20/2009

Overall costs to build the John W. Turk Jr. coal-fired power plant near Texarkana have now surpassed the $2 billion mark.

Yet plant opponents contend in a study, of which the Arkansas Democrat-Gazette obtained an advance copy, that additional factors will push the price tag far higher than Southwestern Electric Power Co. is letting on.

"Who are they trying to kid?" asked Ken Smith, executive director of the Audubon Society of Arkansas, who presented the study Wednesday to officials with the Arkansas Public Service Commission and state Attorney General's office. "They're on a cost trajectory that we've been saying they would be all along."

SWEPCO officials said Wednesday that they were familiar with the criticism launched by the Turk project's foes.

"This is another delay tactic in a long list of delay tactics over time aimed at derailing the Turk project, which SWEPCO has justified in testimony and continues to support as the best fuel option for its customer base," SWEPCO spokesman Scott McCloud said.

In its latest status report to state utility regulators earlier this month, SWEPCO disclosed that delays in securing an air permit from the Arkansas Department of Environmental Quality have increased the cost projection for the plant itself to $1.63 billion.

That's 25 percent more than the $1.3 billion figure that surfaced when SWEPCO announced in August 2006 that it was building the 600-megawatt facility—and up 7 percent from a more-recent estimate of $1.52 billion.

But plant costs are only part of the entire project, which SWEPCO says it needs to prevent future electricity shortages to its 113,500 customers who mostly live in Western Arkansas, Northwest Louisiana and Northeast Texas.

Power lines, substations and other upgrades needed to link Turk to the electric grid are projected to cost $89 million.

Then there is the $343 million deal that SWEPCO struck with state and federal officials last year to help secure Turk's air permit. It calls for SWEPCO to reduce emissions from a nearby Texas plant to offset "visibility impacts" from Turk in the Caney Creek Wilderness Area near Mena.

When added to the plant itself, overall costs related to the project amount to $2.06 billion. And they are not expected to stop there.

SWEPCO also noted in its filing that delays in obtaining an environmental permit for areas controlled by the U.S. Army Corps of Engineers could push Turk's start-up beyond October 2012 "as well as further increase the cost."

Enter a 61-page report commissioned by Audubon Arkansas, one of several

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February, 2009

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groups trying to halt the Turk plant's construction. It was prepared by Little Rock-based consulting group Histecon Associates Inc. at a cost of $28,000, Smith said.

The study predicts that Turk's building costs—without new lines, permit concessions or other finance-related costs—could jump an additional $400 million by 2013.

That finding was based on construction costs for non-nuclear power plants having risen 80 percent since 2000, the report indicates. Should such increases occur, they would push project costs for Turk to near $2.5 billion.

The report also outlined higher long-term costs associated with relying on coal rather than natural gas to meet power demand.

Based on coal-delivery costs that increased about 15 percent a year between 2000 and 2005—and projected carbon emissions costs of $15 to $45 a ton based on potential regulatory moves—SWEPCO ratepayers could end up paying between $2 billion to $3 billion more over 40 years than if Turk were a natural gas-fired plant, the report states.

Had SWEPCO chosen to build such a plant for base-load use, the report also projected customer savings over 40 years between $130 million and $300 million.

Smith said that such findings show how SWEPCO has misled customers by failing to account for such long-term expenses when discussing Turk's cost.

Had such costs been included, earlier projections by SWEPCO of selling Turk's power for 9 cents per kilowatt hour would increase to between 12.7 to 14.5 cents per kilowatt hour, the report finds.

"The real issue that I found amazing in this report is the real costs that this plant will have for ratepayers," Smith said. "Of course, I have a personal slant to this. I'll be the first one to admit it. But for anyone with common sense, this cannot help but show that the best way forward is by pushing energy efficiency, renewable energy and natural gas for our future energy needs."

SWEPCO reiterated its stand that coal-fired power is the best long-term option to produce costefficient electricity.

Company officials also noted natural-gas plants, like coal plants, also are subject to prospective carbon emissions regulatory costs.

"When completed in late 2012, Turk will be one of the cleanest coal plants in the country, with advanced coal-combustion technology, state-of-the-art emissions controls and the design option for future addition of carbon-capture equipment as that technology advances," McCloud said.

Projects such as Turk have become increasingly rare in recent years as global-warming concerns have made such projects unpopular with regulators and environmental groups. During 2007 and 2008, at least 76 coal-fired projects nationwide were canceled or delayed, according to media reports and anti-coal organizations.

On Tuesday, AES Corp. announced it was canceling a planned 630-megawatt expansion of its 320-megawatt Shady Point plant near Poteau, Okla., not far from Fort Smith.

AES spokesman Lundy Kiger said the decision was part of a "broader strategy" to re-evaluate the company's long-term growth plans.

Thursday, June 24, 2010 5:41 PM ET Exclusive

AEP to sell power from Turk plant outside Arkansas after court decision

By Matthew Bandyk

The Arkansas Supreme Court denied a petition from American Electric Power Co. Inc. subsidiary Southwestern Electric Power Co. on June 24, preventing the utility from selling power generated at its coal-fired John W. Turk Jr. IPC plant, now under construction, to its retail customers in Arkansas.

"This decision means we will not be able to use electricity supplied by the Turk plant to serve SWEPCO's retail customers in Arkansas, as was originally planned in this important project," AEP Chairman, President and CEO Michael Morris said in a statement. "But the Turk Plant will also serve SWEPCO's retail customers in Louisiana and Texas, where the plant has received regulatory approval. ... We will secure other markets for the 88 megawatts of Turk Plant capacity that would have served our Arkansas retail customers."

SWEPCO has about 113,500 customers in Arkansas and 180,000 each in Texas and Louisiana.

The Arkansas Supreme Court on May 13 upheld an earlier decision by the state Court of Appeals overturning the Arkansas Public Service Commission's grant of a certificate of environmental compatibility and public need for the plant, remanding the case back to the commission. The Hempstead County Hunting Club and other local landowners offered the original challenge to the certificate, arguing that the commission had failed to determine a sufficient basis for the need for the proposed plant.

Despite the court's rejection of the petition, SWEPCO had the opportunity to reapply for the certificate. However, "We have elected to not apply for the certificate because of the delay and cost that would be significant," said company spokesman Peter Main. An exemption under Arkansas state law allows the utility to operate the plant without a certificate as long as it sells power only in other markets. SWEPCO on June 24 submitted a notice to the PSC stating "the construction and operation of the Turk Plant will proceed in accordance with the exemption. ... Accordingly, SWEPCO will not seek to recover the costs of the Turk Plant in rates subject to regulation by the Commission."

"To meet the future energy needs of our Arkansas customers, we must now look to other resources for a supply of base load power that is reliable and available at the most reasonable cost possible," SWEPCO President and CEO Venita McCellon-Allen said in a statement. SWEPCO is not committed to any particular type of fuel to meet that supply, said Main.

SWEPCO had also asked the court to delay the rejection of the certificate so that the U.S. Supreme Court could be asked to hear the case. The state court denied that motion to delay, and so SWEPCO will not be making that request.

Fitch Ratings on June 2 downgraded three of SWEPCO's ratings. But the agency also revised its rating outlook for the utility from negative to stable. Fitch said this stable outlook is based on an expectation that the Turk plant will be completed on schedule without cost overruns. SWEPCO said June 24 that the project is expected to be completed in October 2012, the same projected date as before the ratings action. According to the company, construction of the plant is now 28% complete, and the overall project is about 37% complete.

SWEPCO is, at the same time, facing a legal challenge from local and national environmental groups. Audubon Arkansas and the Sierra Club have filed suit against the U.S. Army Corps of Engineers in U.S. District Court in Texarkana, Ark., seeking to overturn an air permit issued by the corps for the Turk plant. The groups are concerned about the Little River Bottoms bird area in Hempstead County, which is "one of the most biologically diverse ecologically sensitive areas in Arkansas," according to Audubon Arkansas's website. In May, the Sierra Club filed for a temporary and permanent injunction to halt construction on the plant while the suit is pending. The district judge June 15 allowed the suit to stand against SWEPCO's objections.

According to Sierra Club Arkansas spokesman Lev Guter, the group is waiting for the judge to schedule a hearing in which all parties may discuss the injunction. "All we are asking is to stop construction while we are figuring out if [the permit] is granted properly, and, if not, we want SWEPCO to go back to the drawing board and reapply for the permit," said Guter. He expects the hearing to be scheduled sometime after June 28, the deadline for the corps to submit to the judge an administrative record containing the facts of the case.

Welcome to the Longview Power Project

Longview Power is a new, 695 megawatt (net) electrical power generating facility currently under construction in Maidsville, West Virginia. At a cost of approximately $2.0 billion, Longview is the largest privately-funded project in state history. Commercial operation is expected to commence in early 2011.

Longview Power was developed on the principle that abundant domestic energy reserves can be utilized in a safe, environmentally responsible manner. Numerous technological advances and process efficiencies have been incorporated, allowing Longview to produce cost-effective power while meeting rigorous environmental standards. In addition to clean power, jobs, and revenues, Longview will provide substantial further benefits to local communities.

We invite you to explore our web site and learn more about us.

Benefits to the Community

Longview recognizes the importance of good corporate citizenship. The Longview team will strive for recognition as valued members of our host communities for many years to come.

The Company Factsheet

Longview Power is majority-owned by GenPower Holdings, L.P., which is backed by the nation's largest energy-focused private equity partner, First Reserve Corporation.

The Longview Mission

- A focus on clean, reliable, and sustainable power generation
- A dedication to community well-being and corporate social responsibility
- A steadfast culture of employee health and safety
- A commitment to long-term environmental stewardship and business integrity

Longview News

06.24.2010
ELECTRIC LIGHT & POWER features Longview Power's environmental performance

06.16.2010
Longview Power Sponsors Cabela's King Kat Catfish Tournament for Second Consecutive Year

06.01.2010
INDUSTRIAL FUELS AND POWER highlights Longview Power

05.07.2010
DOMINION POST reports Longview to begin hiring

05.05.2010
Longview Power to Add 60 New Hires by End of 2010

SIEMENS

Press Presse Press Presse

Energy Sector
Energy Service Division

Erlangen (Germany), February 10,2010

Longview Power Selects Siemens Energy to Conduct Carbon Capture Study

Longview Power, LLC, owner of the state-of-the-art power generation facility currently under construction in Maidsville, W.V., has selected Siemens Energy to conduct an innovative study analyzing the applicability of post-combustion carbon dioxide (CO_2) capture technology. The Longview Power project includes a new 695-MW rated (net) advanced supercritical pulverized coal power plant equipped with Siemens' advanced air pollution control equipment. The study will include process design activities focused on the potential application of Siemens' second generation amino acid salt post-combustion CO_2 capture (POSTCAP) process. In addition to the power generation equipment, Siemens provided the air quality control system (AQCS) and therefore is in a unique position to optimize the existing AQCS to accommodate the POSTCAP technology.

Longview is on track to become one of the cleanest, most efficient and most technically advanced coal-fired power plants in the United States. The $2-billion project includes a $500-million investment in sophisticated environmental control systems. Longview Power is owned by Longview Power, LLC, which is in turn majority-owned by GenPower Holdings, L.P.

"GenPower is excited to participate in the advancement of technologies that further our commitment to the development of clean energy resources. We see strong potential for the Siemens post-combustion carbon capture system to advance our clean energy goals," stated Bob Place, CEO of GenPower Holdings, L.P.

According to the U.S. Department of Energy's Energy Information Administration (EIA), the amount of CO_2 produced from the combustion of fossil fuels in the United States is nearly 5.7 billion metric tons with approximately 33 percent coming from the coal-fired electric power sector. Climate change legislation pending in the U.S. Congress may require a reduction in CO_2 emissions from coal-fired power plants. The successful completion of the Siemens POSTCAP feasibility study for

Siemens AG
Corporate Communications and Government Affairs
Wittelsbacherplatz 2, 80333 Munich
Germany

Reference number: ESE201002.035e fp

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Longview can help establish the necessary parameters to allow a demonstration plant to be realized.

"With the results of the study and the support of government funding, we hope to expand upon this agreement and eventually design and install a post-combustion plant demonstration unit," stated Randy Zwirn, CEO of Siemens Energy's Service Division. "The United States will need a diverse mix of environmentally compatible sources of power to meet future needs for a clean, sustainable energy supply, and post-combustion CO_2 capture can help meet our nation's ever increasing energy requirements, using the coal resources that are indigenous to the U.S."

Post-combustion CO_2 capture technology is part of Siemens' Environmental Portfolio. In fiscal 2009, revenue from the Portfolio totaled approximately EUR23 billion, making Siemens the world's largest supplier of environmentally friendly technologies. In the same period, the company's products and solutions enabled customers to reduce their CO_2 emissions by 210 million tons. This amount equals the combined annual CO_2 emissions of New York, Tokyo, London and Berlin.

The **Siemens Energy Sector** is the world's leading supplier of a complete spectrum of products, services and solutions for the generation, transmission and distribution of power and for the extraction, conversion and transport of oil and gas. In fiscal 2009 (ended September 30), the Energy Sector had revenues of approximately EUR25.8 billion and received new orders totaling approximately EUR30 billion and posted a profit of EUR3.3 billion. On September 30, 2009, the Energy Sector had a work force of more than 85,100. Further information is available at: www.siemens.com/energy.

0112

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Reference number: ESE201002.035e fp

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The World's First Supercritical FW-BENSON Vertical PC Boiler – The 750 MWe Longview Power Project

Stephen J. Goldich
Richard J. Docherty
Kenneth P. Melzer
Foster Wheeler North America Corp.
Clinton, NJ 08809

Presented at
PowerGen Europe
Cologne, Germany
May 26 – 28, 2009

TP_PC_09_02

ABSTRACT

When the 750 MW_e Longview Power Project begins commercial operation in March of 2011, it will be the world's first supercritical FW-BENSON Vertical pulverized coal (PC) boiler and will demonstrate the innovative features of its low mass flux evaporator design that utilizes optimized rifled tubing. Structural steel is in place, pressure part erection is underway, and mechanical completion is scheduled for October 2010.

The project is located on a greenfield site in a mine mouth location at Maidsville, West Virginia, 70 miles south of Pittsburgh. The project is owned by Longview Power, LLC, which is 100% owned by GenPower Holdings, LP. The Project is being constructed by a consortium of Siemens Energy, Inc. and Aker Construction, Inc., with the boiler supplied by Foster Wheeler directly to Longview.

Foster Wheeler (FW) designed and is supplying the boiler, Siemens is providing the steam turbine generator, air quality control equipment, cooling tower and stack. Aker is responsible for construction/installation of equipment and materials.

The boiler will generate supercritical steam at 1056°F (569°C), 3840 psia (265 bar) to drive a single reheat turbine to deliver 769 MW_e gross (695 MW_e net) firing an Eastern USA bituminous coal. Pollution control equipment includes a wet scrubber and baghouse for SO_2 and particulate control. A selective catalytic reduction (SCR) system is provided for NO_x control.

Other unique aspects of the project include that it is the first US supercritical coal plant developed by an independent power producer (IPP), the first greenfield coal plant in the northeastern USA in over 20 years, the first major private equity participation in a new US coal plant project, and the first Siemens steam reference plant in the US.

Described in this paper are the project participants, structure, and status, the main boiler design features, and the innovative FW/BENSON low mass flux boiler technology.

INTRODUCTION

Since supercritical once-through boiler technology was introduced to the power industry in the early 1960's, there have been many innovative boiler design configurations and features introduced to reduce capital and operating costs, simplify operation and maintenance, and increase reliability. A notable example is the introduction of in-line steam/water separators which eliminated complicated valve manipulations that made every start-up an adventure. Another milestone was use of a spiral furnace tube configuration which, by having a single upflow configuration, permitted both furnace and superheater variable pressure operation. This allowed for cycling operation with the benefits of reduced low load auxiliary power and optimum matching of steam and turbine metal temperatures to maximize turbine life. In the 1980's, the spiral configuration became the state-of-the-art for new supercritical power projects. However, the inclined tube configuration requires high (power consuming) mass flow rates to maintain good tube cooling, and a special (complex) support system.

In the 1990's, vertical tube configurations with standard rifled tubes were introduced to simplify fabrication, construction, and maintenance while permitting full variable pressure cycling operation with reduced pressure loss. However, with standard rifled tubes there is a minimum fluid mass flow that must be maintained when passing near the critical pressure. As will be described in more detail later, this minimum mass flow for standard rifled tubes results in a negative flow characteristic which means that tubes that receive more heat get less flow. To prevent tube overheating, the tubes must be properly orificed to push more flow to the tubes receiving the most heat.

In the mid 1990's, after extensive laboratory testing of many rifled tube rib geometries, Siemens developed and began licensing the BENSON Vertical evaporator configuration for once-through boilers. The BENSON Vertical evaporator includes optimized rifled tubes that provide enhanced tube cooling with very low mass flow rates. With low mass flow rates a positive flow characteristic, similar to a drum type boiler, is achieved. Tubes that receive more heat receive more flow. This self-compensating, low mass flux feature eliminates the need for customized orificing which must be engineered for each project, and minimizes pressure loss which reduces auxiliary power consumption.

In 2002 the BENSON Vertical technology was first commercially demonstrated in a 300 MW_e *subcritical PC boiler* (Yaomeng, Ref. 1). Commissioning of the first *supercritical CFB boiler* (Lagisza, Ref. 2) using the low mass flux FW-BENSON Vertical technology began in early 2009. When the 769 MW_e (gross) Longview Power Project commences commercial operation in the spring of 2011, it will set another milestone by being the first *supercritical PC boiler* in the world with a low mass flux vertical tube FW-BENSON boiler (Figure 1). Described in this paper are the project participants, structure, and status, the main boiler design features, and the innovative FW/BENSON low mass flux boiler technology.

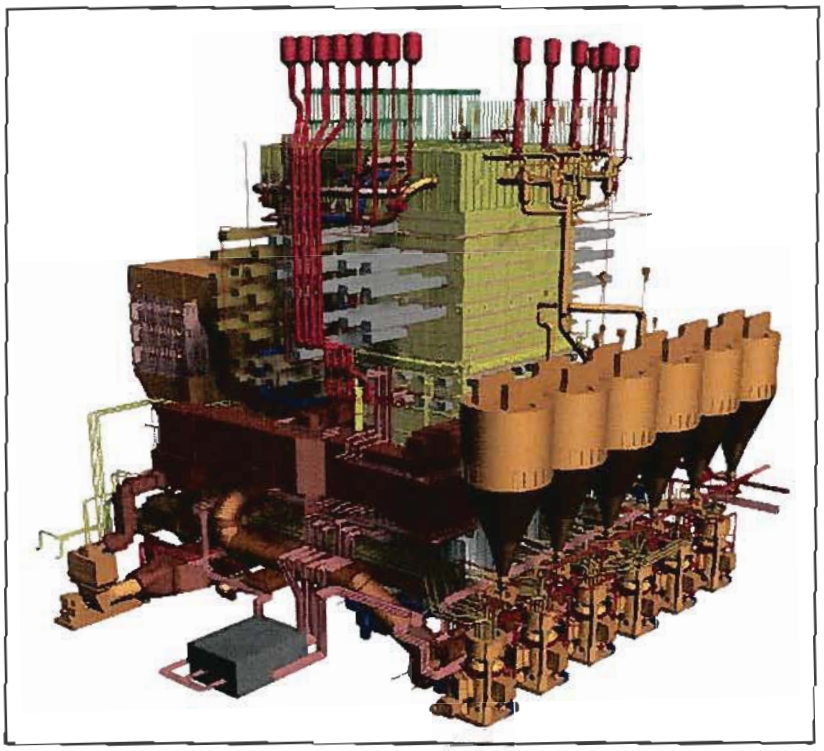

Figure 1. 750 MWe Longview Boiler

PROJECT DESCRIPTION/ORGANIZATION

Ownership

The Longview Project is 100% owned by Longview Power, LLC, which is in turn 100% owned by GenPower Holdings, L.P. GenPower Holdings is jointly owned by management (formerly of GenPower LLC, a privately held Boston-based power plant developer) and a fund managed by First Reserve Corporation, the largest private equity firm focused exclusively on energy investments.

The management of GenPower Holdings, L.P. (formerly with GenPower, LLC) has extensive experience within the power industry in development, finance, construction and operations.

First Reserve Corporation was founded in 1983, and is the oldest and largest private equity firm specializing in the energy industry. Throughout its 23-year history, the strong franchise that the firm has developed by investing exclusively in companies involved in the energy industry has served as a competitive advantage for First Reserve.

Project Participants

The Longview power plant is being constructed by a consortium composed of Siemens Energy, Inc. (formerly known as Siemens Power Generation, Inc.) and Aker Construction, Inc. (formerly known as Aker Kvaerner Songer), a subsidiary of Aker Solutions, under fixed-price, date-certain contracts. The total cost of the Project, including financing and transaction expenses, is in excess of $1.8 billion, of which the non-owner portion price is approximately $1.3 billion.

The scope of supply (Figure 2) for Siemens includes the turbine island design and major turbine island equipment, including a three stage, single reheat steam turbine generator, a Siemens plant control system and an advanced air quality control system (AQCS). The

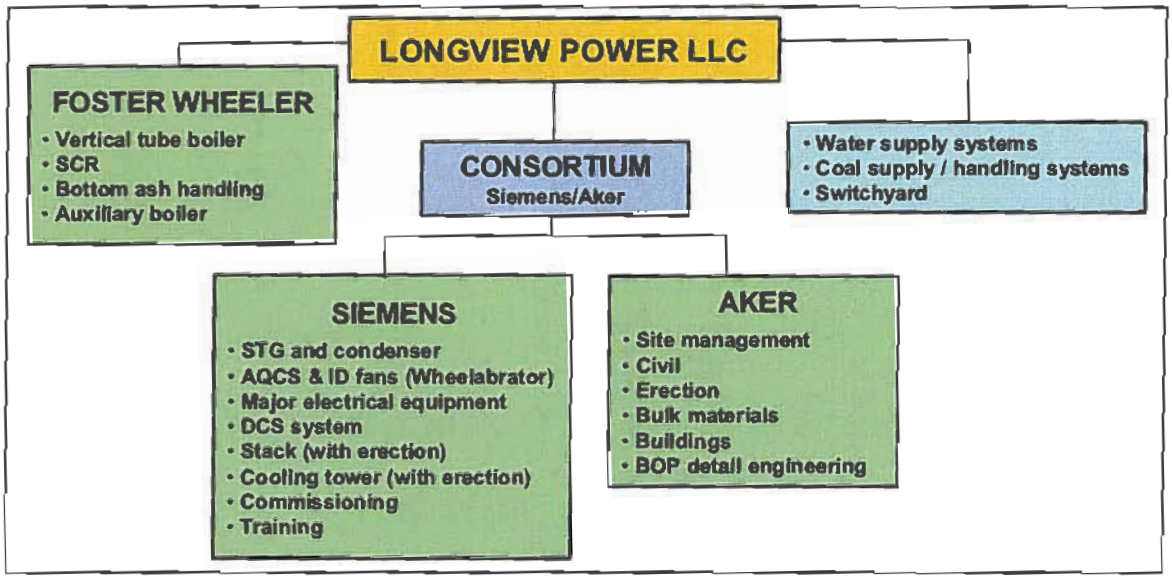

Figure 2. Scope Split

AQCS consists of a wet scrubbing system and pulse jet baghouse, both provided by Siemens Environmental Systems and Services (formerly Wheelabrator). It reduces the emissions of particulates, heavy metals, hydrochloric acid, and sulfur compounds. Additionally, Siemens is supplying the condenser, mechanical draft cooling tower, and major electrical equipment. Siemens is also responsible for plant commissioning.

Aker has responsibility for overall construction, including construction labor and materials for the turbine island and boiler island, including the buildings. They also have design and supply responsibility for the waste water treatment facilities, foundations, all underground systems, and balance of plant equipment.

Foster Wheeler North America's scope of work is for the design and supply of a supercritical once-through pulverized coal (PC) boiler. As part of an extended boiler scope, FW is supplying an SCR system for NO_x control, ash handling equipment, and an auxiliary boiler.

Longview Power LLC will contract directly for the coal supply and handling systems, water supply system, natural gas (for start-up), and the electrical switchyard.

PPL EnergyPlus, the energy marketing subsidiary of PPL Corporation, has contracted to purchase 300 MW_e of energy and capacity from the Longview facility. The electric sales to PPL will begin in 2012 and will be for a five-year term, with an option to extend for energy only for an additional year. The balance of the Project's generation will be sold on a merchant basis into PJM. PJM Interconnection is a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

Mepco LLC will provide all the coal for the project by conveyor from adjacent mines under a 20 year contract. Mepco is a third-generation, family owned coal mining company based in Morgantown, WV, with both underground and surface mines. The coal is a good quality medium sulfur bituminous coal, which may be blended with pond fines. Ash disposal will be contracted to Coresco LLC, an affiliate of Mepco. In December 2007, GenPower Holdings acquired Mepco, Coresco and their affiliated companies.

Project Schedule

The Project received all necessary permit approvals to commence construction in January 2007, and Substantial Completion Date will be March 12, 2011. Construction is being performed by the Siemens and Aker consortium, under fixed-price, date-certain contracts, incorporating performance and completion guarantees. Supply of the supercritical PC boiler is by Foster Wheeler North America Corp.

Key dates in the construction schedule are:

Civil Work

- o Boiler foundation.....Completed in March 2008
- o Main boiler steel erection.....Completed in September 2008
- o Turbine building foundation.....Completed in July 2008
- o Other major foundations.....Completed October 2008
  e.g., cooling tower, AQCS, stack, etc.

Boiler Equipment Deliveries

- o Pressure parts, fabricated in FW's shop in Xinhui, China.....Fabrication began in January 2008, shipments began in September and were completed in January, 2009.
- o Other boiler equipment.....2nd Qtr 2008 to 3rd Qtr 2009

Turbine Generator Delivery

- o Steam turbine.....March 2009
- o Generator.....June 2009

AQCS Delivery.....March 2009

Mechanical Completion.....October 2010

Substantial Completion/Commercial Operation.....March 2011

STATUS

Full Notice to Proceed was February 28, 2007, and overall project progress is on schedule.

Piling for the major equipment has been completed, except for the wet ash bunker and the limestone pile storage areas, which will be done in the spring of 2009. Foundations are complete for the boiler and turbine areas, and the absorber and absorber pump area foundations. Concrete placement is completed for the steam turbine table top foundation as well as the ground floor/mezzanine floor slabs. Foundation installation is completed for the

waste water treatment (Demin) area, cooling tower basin and pump well, generator step-up (GSU), and auxiliary transformers and AQCS building structure areas. The water treatment (Demin) area building erection is in progress and the cooling tower erection started in November 2008.

All of the major boiler building steel has been erected. The first major "heavy haul" load (boiler girders) delivery was completed in July 2008 with the load moving from the recently upgraded barge unloading facility to the storage area on site. Boiler pressure parts have been delivered and boiler erection started in December 2008. All remaining Foster Wheeler deliveries are projected to be on or ahead of schedule. Major turbine building steel erection has been completed and siding installation is in progress. Erection of the fabric filters and flue gas absorber is progressing with the stack essentially complete. Figure 3 shows the boiler structure and flue gas absorber as of early February 2009.

Figure 3. Boiler Structure and Flue Gas Absorber (January 2009)

PLANT DESCRIPTION

The Longview power plant will be a 769 MW_e (gross, 695 MW_e net) single-unit supercritical cycle pulverized coal-fired mine-mouth generating facility. It is located in Maidsville, West Virginia near the Monongahela River, approximately 70 miles south of Pittsburgh.

Longview will be a highly efficient plant with a highly advantageous low guaranteed heat rate and mine-mouth coal supply that results in a very low dispatch cost, including emissions costs. It is located in PJM Interconnection, a favorable market with significant upcoming capacity needs as well as a redesigned capacity market structure that is expected to provide greater and more predictable value for capacity. The key performance parameters are summarized in Table 1. The plant is located on a 224 acre site with a layout as shown in Figures 4 and 5. Fuel is delivered from the Western end of the site, with a 20 day on site storage pile. Fuel is conveyed to six (6) fuel silos, located in the enclosed boiler building. Each silo feeds one (1) MBF pulverizer. The wet scrubber, baghouse, induced draft (ID) fan and stack are aligned in the West direction from the boiler. The concrete stack is 554 feet tall. The ash storage area is located North of the boiler building, and has a capacity of four (4) days to allow for long weekends. The ash silos load into 50 ton trucks, which transport the ash to a nearby ash disposal area. The turbine generator is enclosed in a building next to the boiler building. The mechanical draft cooling tower is in the Northwest portion of the site.

Site Conditions:			**Steam Conditions:**		
Elevation	m (ft.)	340 (1115)	Main Steam Flow Rate	kg/s (M lb/h)	614.3 (4876.4)
Design Air Pressure	bar (psia)	0.97 (14.1)	Main Steam Temperature	C (F)	569 (1056)
Dry Bulb Temperature	C (F)	17.2 (63)	Main Steam Pressure	bar (psia)	257.6 (3735)
Wet Bulb Temperature	C (F)	13.9 (57)			
Relative Humidity	%	70	Reheat Steam Flow Rate	kg/s (M lb/h)	505.4 (4012.0)
			Reheat Steam Temperature	C (F)	556.7 (1052)
West Virginia Bituminous Coal			Reheat Steam Pressure	bar (psia)	55.3 (788)
Proximate Analysis					
Moisture	wt. %	4.5	Feedwater Temperature	C (F)	298 (569)
Ash	wt. %	18.5			
Volatile Matter	wt. %	32.0	**Emission Permit Limits:**		
Fixed Carbon	wt. %	45.0	SO2	mg/MJ (lb/MMBtu)	40.843 (0.095)
			NOx	mg/MJ (lb/MMBtu)	30.095 (0.07)
Ultimate Analysis			CO	mg/MJ (lb/MMBtu)	47.291 (0.11)
Moisture	wt. %	4.5	Particulate	mg/MJ (lb/MMBtu)	7.739 (0.018)
Carbon	wt. %	62.5	VOC	mg/MJ (lb/MMBtu)	1.720 (0.004)
Hydrogen	wt. %	4.4	Sulfuric Acid	mg/MJ (lb/MMBtu)	3.224 (0.0075)
Nitrogen	wt. %	1.4	HCl	mg/MJ (lb/MMBtu)	0.0043 (0.00001)
Sulfur	wt. %	2.5	HF	mg/MJ (lb/MMBtu)	0.0043 (0.00001)
Ash	wt. %	18.5	Mercury	kg/s (lb/h)	0.007 (0.0146)
Chlorine	wt. %	0.04	Beryllium	kg/s (lb/h)	0.002 (0.00546)
Oxygen (by difference)	wt. %	6.16	Lead	kg/s (lb/h)	0.049 (0.109)
HHV	kcal/kg (Btu/lb)	6111 (11,000)	**Plant Performance**		
			Turbine Back Pressure	mm Hg (psia)	55.9 (1.1)
Power Generation			Net Plant Efficiency	% LHV (HHV)	40.8 (39.1)
Gross Output	MWe	769	Net Plant Heat Rate*	kJ/kWh (Btu/kWh)	8820 (8728)
Net Output	MWe	695	*LHV (HHV) Basis		

Table 1. Performance Parameters

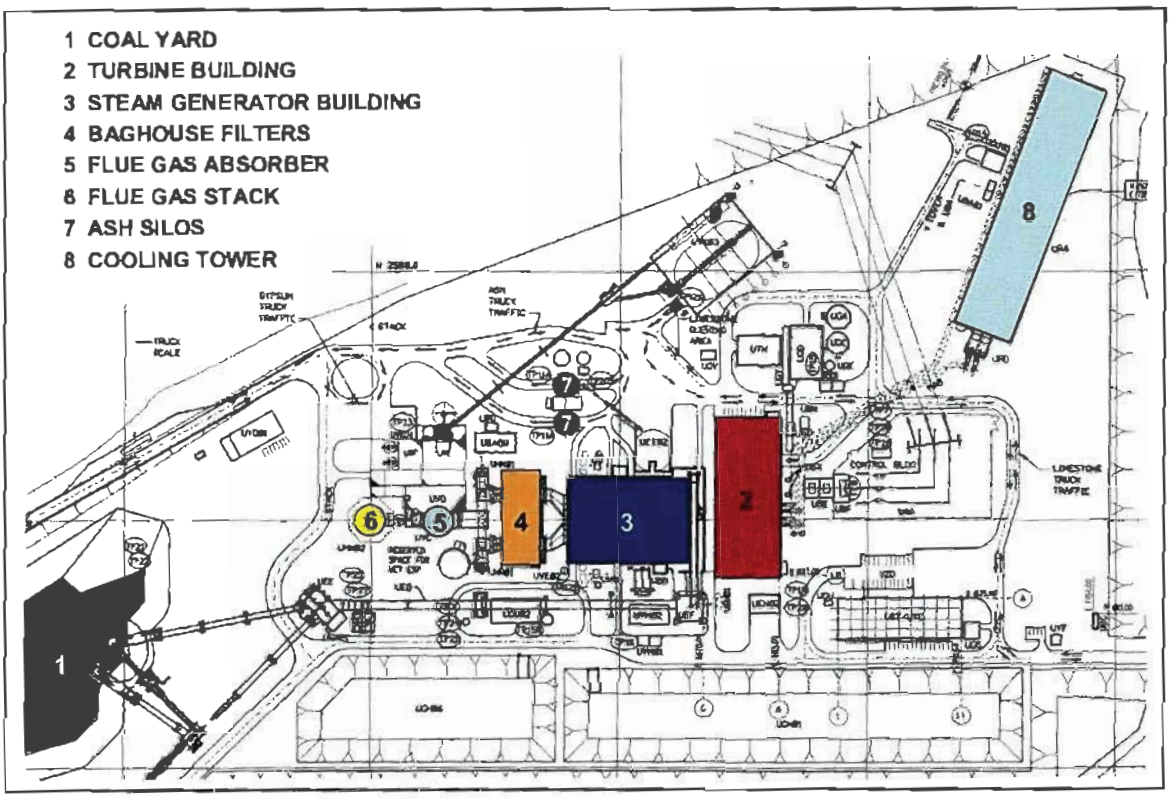

Figure 4. Site Plan

Figure 5. Site Aerial Photograph (August 2008)

BOILER DESCRIPTION

The FW/BENSON Vertical once-through, supercritical steam generating unit is a two-pass configuration which consists of a vertical tube water wall furnace and a gas down-flow parallel pass heat recovery area (HRA). Features of the unit shown in Figure 7 can be summarized as follows (refer to Ref. 3 for additional details):

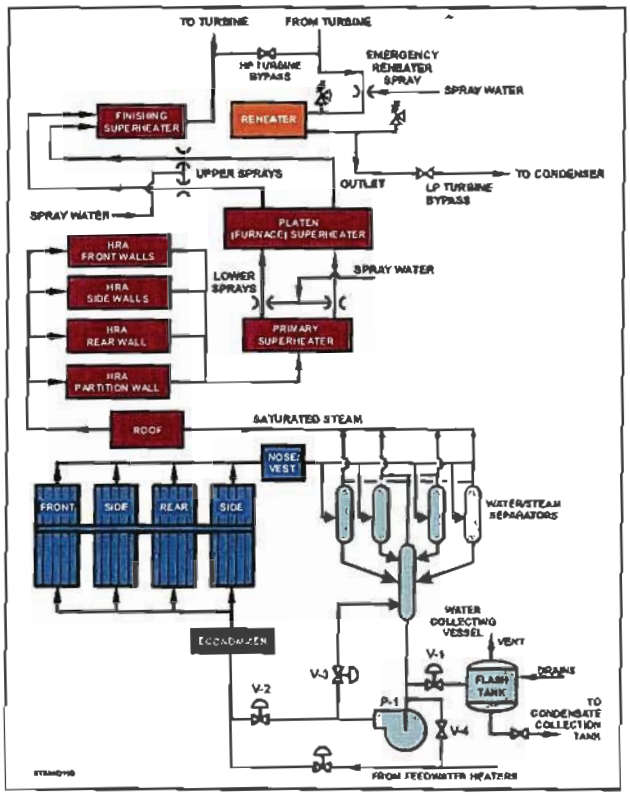

Figure 6. Steam/Water Circuitry

Steam/Water Circuitry. The steam and water flow circuitry is schematically illustrated in Figure 6 and includes:

o Economizer. Feedwater is introduced into the unit through the economizer which is positioned at the bottom of the HRA below the parallel pass upper portion of the HRA. From the economizer the heated feedwater flows to the furnace evaporator.

o Evaporator. The furnace circuitry consists of a lower section with optimized, vertical rifled tubes that extend up to transition headers located at an elevation below the furnace nose. Above the transition headers, vertical smooth bore tubes extend up to the furnace roof, and also form the furnace exit screen and part of the vestibule side walls. Risers pipes extend from the furnace enclosure upper headers and are routed to a collection manifold from which the flow is directed to a final evaporator zone that forms the furnace nose, vestibule floor and approximately half of the vestibule sidewalls.

The furnace enclosure tube size and spacing were selected to provide a low mass flux (nominally 1000 kg/m^2-s at full load) to provide a "natural circulation" flow characteristic (as be described in a subsequent section) to accommodate radial heat absorption variations around the perimeter of the furnace. Tube sizes and spacing, membrane fin sizes, and materials are all selected to provide for base load service as well as the defined cyclic operation of the plant.

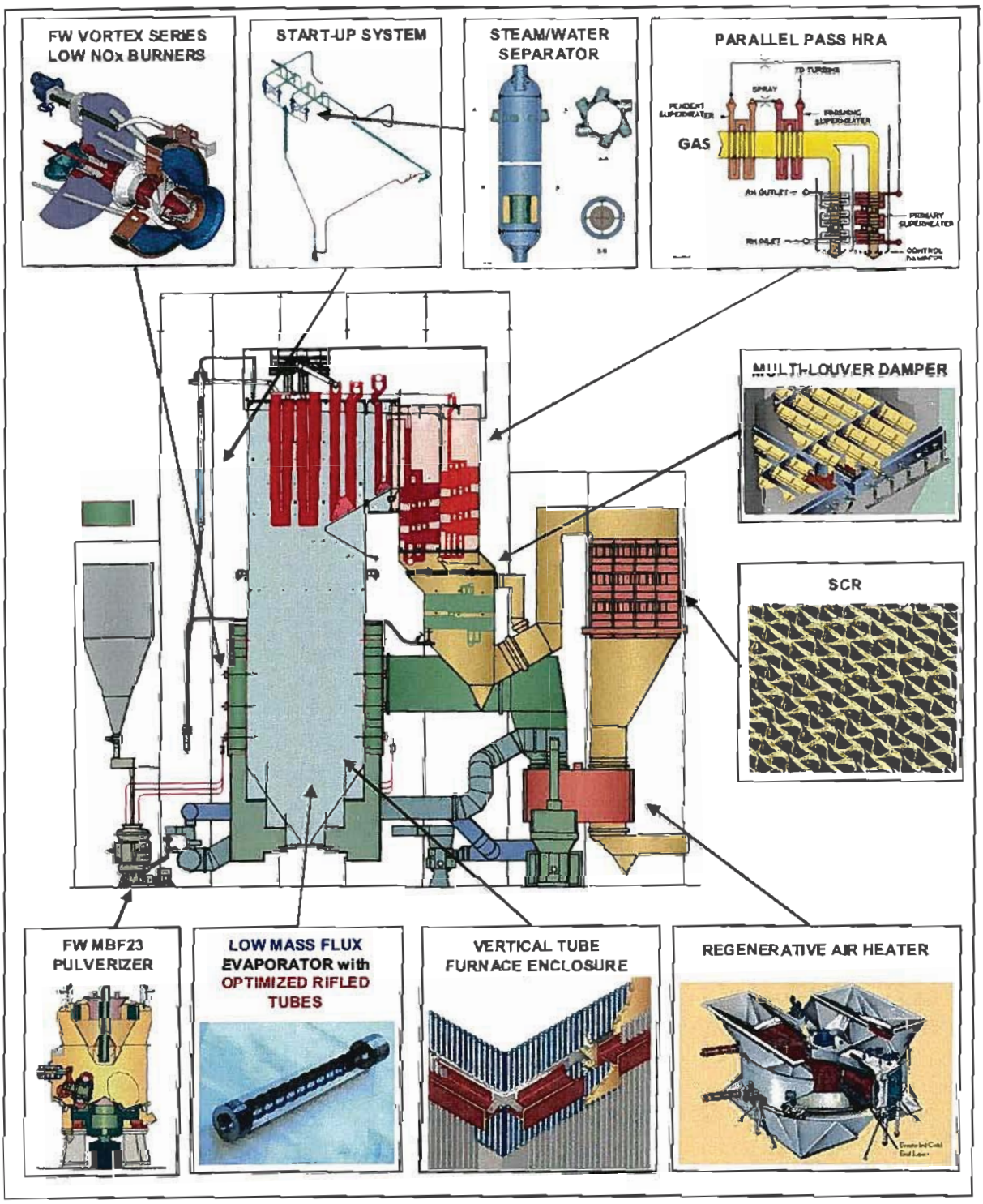

Figure 7. Boiler Side Elevation View and Design Features

o **Superheaters.** From the in-line steam/water separators the fluid passes through the superheater circuitry which includes the furnace roof, the heat recovery area (HRA) enclosure and half of the vestibule sidewalls, the primary superheater located in the outboard pass of the parallel pass HRA, the furnace platen superheaters, and the pendant finishing superheater at the furnace exit. Spray water attemperators are positioned upstream of the furnace platen superheaters, and the pendant finishing superheaters for initial rapid final main steam temperature control which is coordinated with the feedwater and firing rate controls.

o **Reheater.** Reheat steam is first heated in the inboard pass of the HRA. The reheater tubes then extend into the vestibule area to achieve the final reheat steam temperature. Reheat steam temperature is controlled by multi-louver dampers which proportion gas flow through the parallel pass HRA. A spray water attemperator is provided in the inlet piping for transient conditions.

o **HP/LP Turbine Bypass.** The design includes high (HP) and low (LP) pressure turbine bypass systems to facilitate short start-up times and permit the plant to ride out upsets.

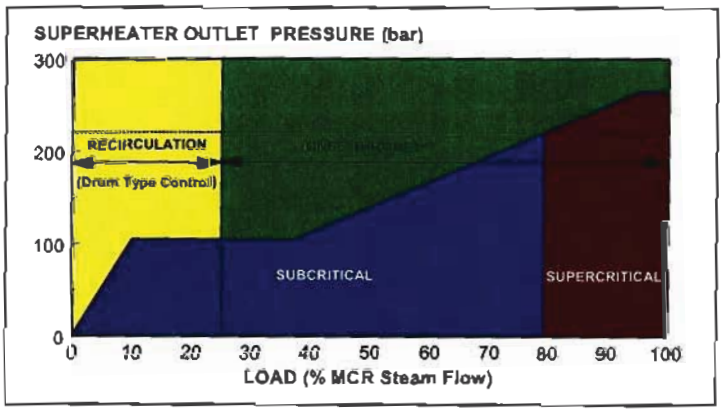

Figure 8. Variable Pressure Operation

o **Start-Up System.** Before fuel can be fired in a once-through boiler, a minimum fluid mass flow rate must be established within the evaporator tubes that form the furnace enclosure to protect the tubes from overheating. This minimum flow is provided by the feedwater pump and a recirculation pump that returns the heated water back to the boiler in a closed loop for maximum heat recovery. During this start-up phase the boiler is controlled similar to a drum type unit (Figure 8) by having four (4) in-line steam/water separators downstream of the evaporator to separate liquid and vapor phases. The load below which the evaporator flow rate is not further reduced is called the BENSON load (typically designed for 25%). Separated water is drained to a water collecting vessel from which the water is pumped back to the economizer.

Firing System

o **MBF Pulverizers.** The design includes six(6) MBF23 pulverizers that have the capacity to deliver the required size and quantity of coal to achieve full load operation with one mill out of service. The MBF pulverizer is a vertical ring and roller type mill. It is designed for a very low speed of operation and has corresponding large diameter grinding elements. These conservative design parameters make the mill capable of long uninterrupted runs and enable the mill to handle large feed sizes. The mill also has the ability to maintain capacity and fineness over extended operating periods and the ability to pulverize very wet materials. The mills are pressurized so that the most efficient and reliable primary air fans can be utilized.

o **Coal Burners.** To achieve efficient fuel combustion with minimal release of NO_x and carbon monoxide, thirty six(36) FW Vortex Series, low NO_x pulverizered coal burners are included in the design. The dual zone low NO_x burner design uses contoured axial vanes to generate a high degree of swirl and recirculation compared to radial vane designs. Features of the design include adjustable sleeve and cone dampers to optimize air distribution, dual series registers for improved flame shape control, adjustable coal nozzle tip that allows on-line control of primary air/coal jet velocity, and a split flame nozzle that segregates the coal into four concentrated streams which are exposed to more radiation early in the combustion process that results in fuel nitrogen being driven out during initial devolatization which reduces the conversion of fuel nitrogen to NO_x.

o **Overfire and Boundary Air System.** To provide additional NO_x emission reduction, overfire airports are provided above each column of burners. The ports are sized to compliment the low NO_x burners and maintain proper mixing velocities during this final stage of the combustion process. Four (4) outboard OFA ports are also provided between the furnace sidewalls and the outboard burner columns. These help reduce carbon monoxide that could otherwise channel upward along the waterwalls. Boundary airports are also located between the furnace sidewalls and columns of burners to provide an oxidizing boundary air layer. Flow control is provided to bias air flow to the front and rear wall windboxes, and each airport has a damper to optimize air flow distribution profiles across the front and rear walls based on emissions.

Auxiliary Systems

Combustion air will be provided by pairs of axial flow forced draft fans, and centrifugal type primary air fans. The furnace draft system includes axial flow type induced draft fans, as well as two (2) tri-sector regenerative airheaters and two(2) baghouse filters for particulate control. A ceramic fiber type selective non-catalytic reduction (SCR) system positioned upstream of the airheater, in combination with the low NO_x burners and advanced overfire air system, are included to minimize NO_x emissions.

FW/BENSON VERTICAL BOILER TECHNOLOGY

Large coal-fired utility boilers used for power production, can be configured as either "drum" or "once-through unit (OTU)" types. These terms refer to how water is circulated through the tubes that form the furnace enclosure so that the tubes can be protected from overheating. The selection of the circulation method will dictate the configuration of the boiler and its auxiliary systems as well as the modes and method for operation and control. In drum type units (Figure 9) the steam flow rate is controlled by the fuel firing rate. Superheat steam temperature is determined by the proper sizing of the superheater heat transfer surface and is controlled by spray water attemperation. In a once-through type boiler, the steam flow rate is established by the boiler feedwater pump, and the superheat steam temperature is controlled by coordinating the fuel firing rate and feedwater flow rate. Since the once-through boiler does not rely on the density difference between steam and water to provide proper circulation and cooling of the furnace enclosure tubes, it can be operated at supercritical [>220 bar (3200 psia)] pressures. Operation above the supercritical pressure, in combination with increased final steam

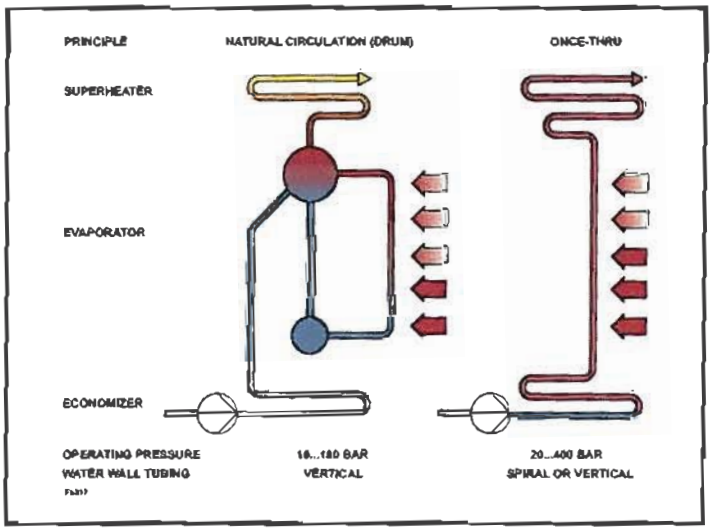

Figure 9. Utility Boiler Circulation Methods

temperatures, significantly improves plant efficiency which results in the economic and environmental benefits that result from firing less coal for the same power output.

Unique OTU Boiler Design Requirements

To reap the high efficiency benefits of the OTU boiler there are special design requirements that must be factored into the configuration of the evaporator circuitry of an OTU boiler. For comparison, in a drum type unit which operates at subcritical pressures, large diameter tubes are used to minimize flow resistance so that a sufficient amount of steam and water can flow through the tubing by natural circulation (Figure 10). By designing for a sufficiently high circulation rate, the water passing through the tubing never completely evaporates to steam and a liquid film is maintained on the tube wall so that departure from nucleate boiling (DNB) and/or dryout do not occur (see Figure 11). With the high heat transfer coefficient resulting from nucleate boiling, all the evaporator tubes remain at essentially the saturation temperature for the operating pressure of the boiler.

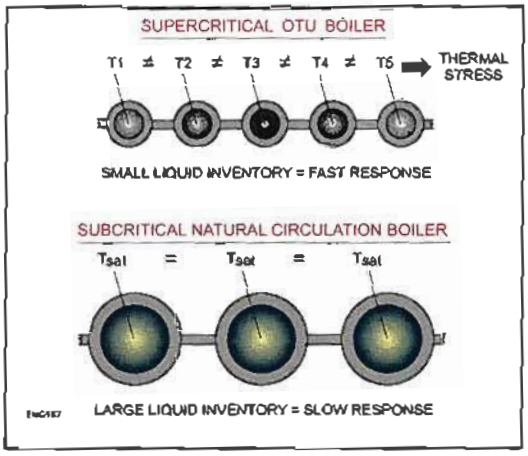

Figure 10. Evaporator Tube Temperature

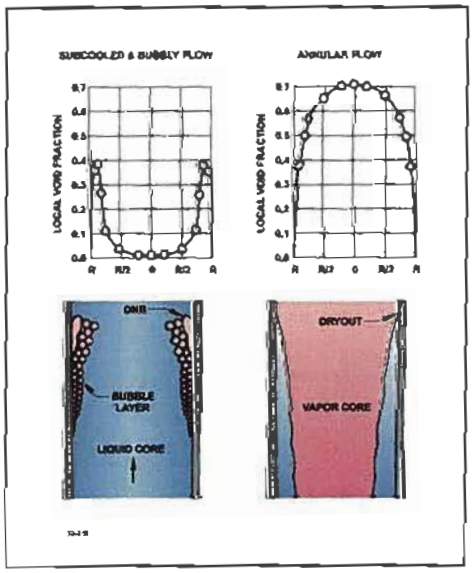

Figure 11. DNB and Dryout

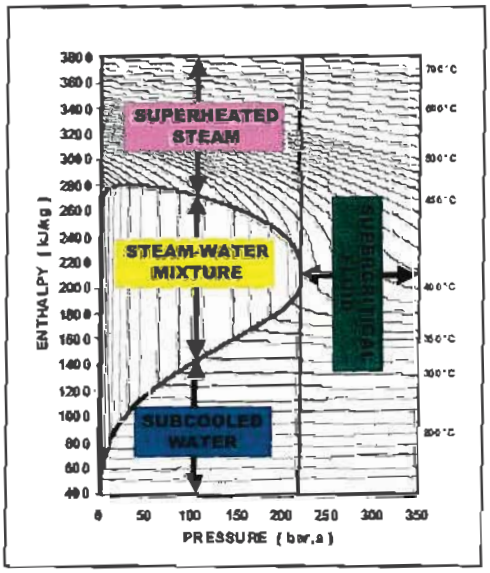

Figure 12. Subcritical vs Supercritical Steam

In an OTU boiler, which operates at supercritical pressure, there is no distinction between liquid and vapor phases and there is a continual increase in fluid temperature (Figure 12). With unbalances in heat absorption due to geometric tube position (corner versus center of a wall), burner heat release pattern, and furnace cleanliness, and variations in flow rate due to hydraulic resistance differences from tube-to-tube, variations in tube temperatures occur. If the unbalance in temperature is not limited, high thermal stresses will result which can lead to tube failure.

The design of the evaporator circuitry of an OTU boiler must therefore meet the following requirements:

o Provide a means to accommodate heat absorption variations from tube to tube so that the temperature difference between adjacent tubes is limited.

o Provide good tube cooling to avoid DNB and suppress dryout so that peak tube metal temperatures are minimized.

FW/BENSON Vertical Boiler Features

The FW/BENSON Vertical boiler addresses these requirements in the following unique and effective ways:

o ***Heat Absorption Variations.*** Historically, heat absorption variations in OTU boilers has been addressed in two different ways:

- In units with multiple passes (Figure 13) in the furnace evaporator, the differential temperature is limited by the fact that each pass picks up a fraction of the total evaporator duty which limits the magnitude of the unbalance and intermediate mixing occurs before the fluid is distributed to the next downstream pass. However, with multiple passes, the furnace must operate at supercritical pressure to avoid the difficulties of uniformly distributing a steam-water mixture to the down stream passes.

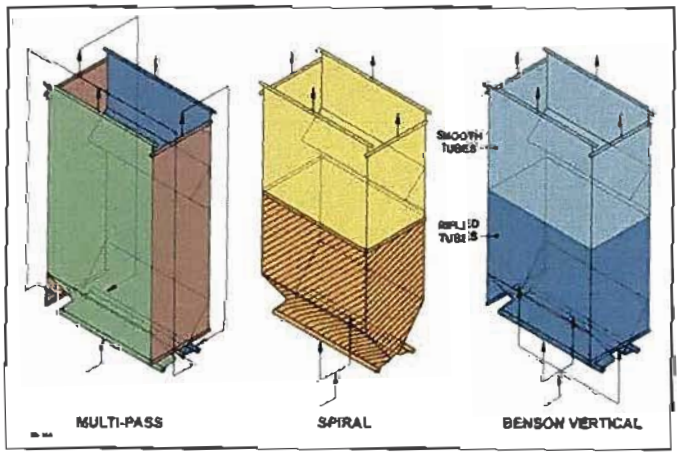

Figure 13. OTU Evaporator Configurations

- In units with a spiral tube configuration (Figure 13), the unbalance issue is addressed by having each inclined tube pass through the varying heat absorption zones so that each tube absorbs approximately the same amount of heat. With a single up-flow pass, the spiral design can operate with variable pressure steam, which minimizes part load auxiliary power requirements and allows matching of steam and turbine metal temperature for extended steam turbine life. However, the spiral tube evaporator configuration requires a special support system for the inclined tubes, which are not self-supporting. Inclined tubes are also more prone to slag formation.

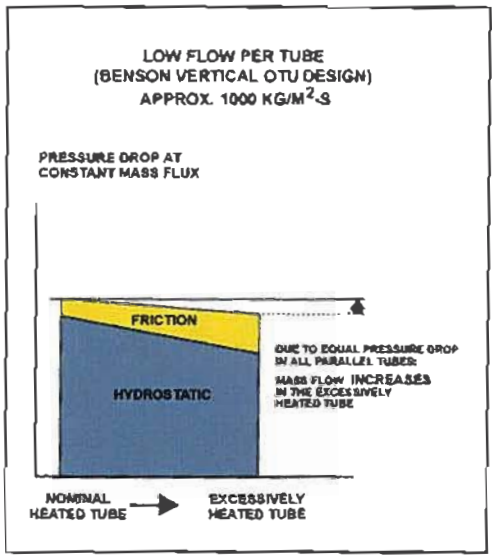

Figure 14
"Natural Circulation" Characteristic

In the FW/BENSON Vertical design (Figure 13), the furnace enclosure is formed from a single, upflow pass of vertical tubes (rifled in the lower furnace, smooth-bore in the upper furnace). The tube size and spacing is selected to provide a low fluid mass flow rate of approximately 1000 kg/m^2-s. As illustrated in Figure 14, with this low mass flow rate, the frictional pressure loss is low compared to the gravitational head, and as a result, a tube that is heated strongly, i.e., absorbs more heat, draws more flow. With an increase in flow to the strongly heated tube, the temperature rise at the outlet of the tube is limited which limits the differential temperature between adjacent tubes.

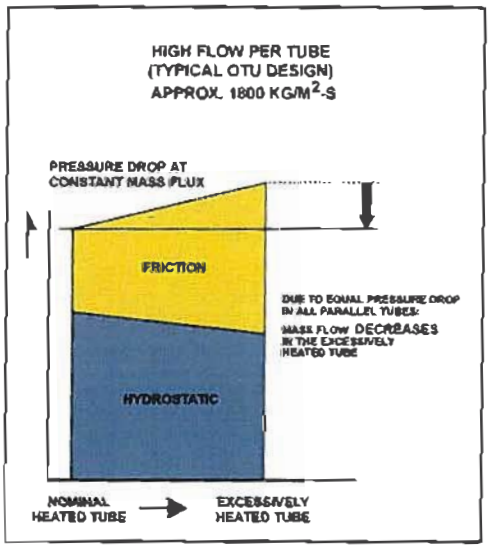

Figure 15
"Once-Through" Characteristic

o ***Peak Tube Temperature.*** To minimize peak tube metal temperatures, multiple pass and spiral types designs use high fluid mass flow rates to achieve good tube cooling. However, high fluid mass flow rates results in high pressure losses as well as a "once-through" flow

characteristic which, as illustrated in Figure 15, means that strongly heated tubes have a reduction in fluid mass flow and a correspondingly high increase in fluid and therefore metal temperature which can result in excessive tube-to-tube temperature differentials.

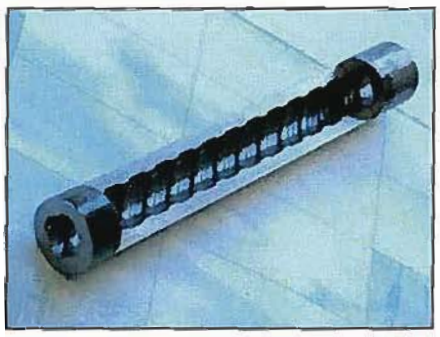

Figure 16. Optimized Rifled Tube

As noted above, the FW/BENSON Vertical technology is characterized by low fluid mass flow rates. Normally, low fluid mass flow rates do not provide adequate tube cooling when used with smooth tubing. However, unique to the BENSON Vertical technology is the use of optimized rifled tubes (Figure 16) to eliminate this concern. The greatest concern for tube overheating occurs when the evaporator operating pressure approaches the critical pressure. In the 210 to 220 bar (3055 - 3200 psig) pressure range the tube wall temperature (called the Leidenfrost temperature) required to cause film boiling (departure from nucleate boiling – DNB) quickly approaches the fluid saturation pressure (Figure 17). DNB will occur in this region and a high fluid film heat transfer coefficient is required to suppress the increase in tube wall temperature. As shown in the example in Figure 18, standard rifled tubing will provide an improvement in heat transfer. However, full load mass flow rate of approximately 1500 kg/m^2-s would be required at full load to have a sufficiently high heat transfer coefficient at reduced loads when passing through the critical pressure. This mass flow rate would be too high to achieve a "natural circulation" flow characteristic as described above. What permits the use of a lower full mass flow rate is an "optimized" rifled tube rib configuration (Figure 16) that will improve tube cooling as illustrated in Figure 18. Extensive laboratory and field testing has been conducted to define the optimum rib geometry (lead angle, rib height, corner/ edge rounding, etc.) that will provide the best enhancement to heat transfer.

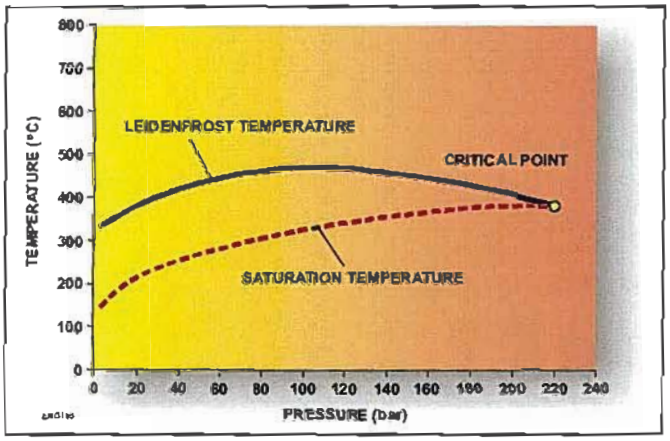

Figure 17. Leidenfrost Temperature

The benefits of the low mass flow rate FW-BENSON Vertical evaporator design can be summarized as follows:

- Self-compensating to accommodate heat absorption variations
- Excellent tube cooling with optimized rifled tubes
- Vertical tube wall construction, which simplifies erection, maintenance and repair
- Low pressure loss for improved plant efficiency and lower design pressure for pressure parts
- Full variable furnace/superheater pressure for cycling operation
- Low minimum once-through load (BENSON load); not limited by minimum mass flux

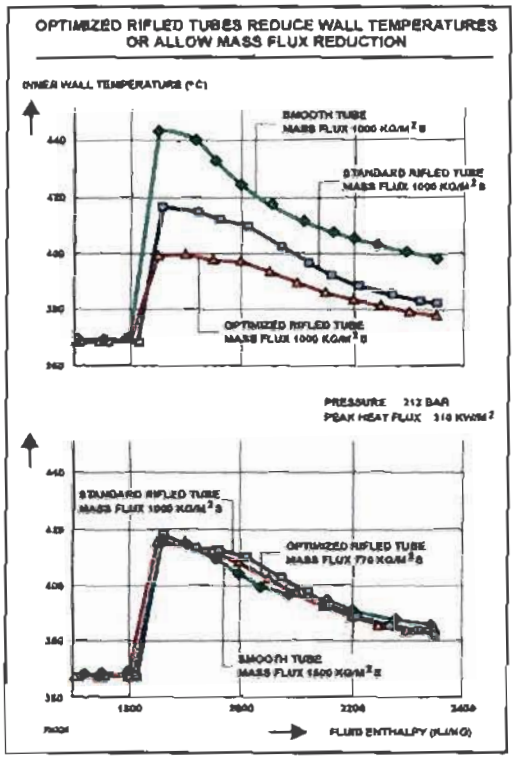

Figure 18. Optimized vs. Standard Rifling

CONCLUSIONS

Coal fired power plant pollutant and greenhouse gas emissions can be significantly reduced by using efficient supercritical steam cycles. The innovative design features incorporated into the 769 MW_e (gross) Longview Power Project, as described in this paper, provide a means for implementing the supercritical steam cycle with significant improvements for boiler fabrication, construction, operation, and maintenance. The project is on schedule and when it goes into commercial operation in the spring of 2011, it will demonstrate these advantages and set the standard for future advanced, high efficiency steam cycle power projects.

REFERENCES

1. DTI 2004, "Refurbishment of Yaomeng Power Plant," DTI Cleaner Fossil Fuels Programme Best Practice Brochure BPB005, DTI, London.
2. R. Psik, Z. Slomczynski, "Final Stage of First Supercritical 460 MWe CFB Boiler Construction - Project Update," POWER-GEN International, Orlando, December 2-4, 2008.
3. S.J. Goidich, K.P. Melzer, R.V. Roche, W. Bousquet, "Innovation in Supercritical Boiler Technology - The 750 MWe Longview Power Project," POWER-GEN International, Orlando, December 2-4, 2008.

October 1, 2009

Top Plants: Nebraska City Station Unit 2, Nebraska City, Nebraska

Dr. Robert Peltier, PE

Owner/operator: Omaha Public Power District

Omaha Public Power District commissioned Unit 2 at its Nebraska City Station in May of this year. The new 682-MW unit joins Unit 1, which went commercial 30 years ago in the same month. The project is outfitted with all the requisite air quality control systems and sports a very good thermal efficiency. More importantly, the plant will provide reasonably priced power for customers of eight municipa utilities that share ownership of the plant's electrical output. Those utilities paid for their portion of the construction cost and now receiv a like portion of the electrical output from Unit 2 under a unique participation power agreement.

Nebraska Governor Dave Heinemann, officials of the Omaha Public Power District (OPPD), and other dignitaries gathered at the Nebraska City Station (NCS) on July 10 to officially dedicate Unit 2, the newest plant, and the one with the lowest air emissions, in OPPD's fossil fuel – fired fleet. Unit 2, the first new baseload plant OPPD has constructed in 30 years, will ensure a reliable energy supply for OPPD's 340,000 customers located in all or parts of 13 counties in east and southeast Nebraska for many years to come (Figure 1).

1. Unit 2 is synched. Omaha Public Power District's 682-MW Nebraska City Station Unit 2 (left) entered commercial service on May 1, 2009, 30 years to the month after the 648-MW Unit 1 began service (right). Courtesy: OPPD

Nebraska City Station Unit 2 (NC2), located on the Missouri River about five miles south of the town of Nebraska City, adds 682 MW to OPPD's 2,548 MW of existing capacity, raising the utility's total generating capacity to 3,211 MW, an increase of 27%. OPPD originally contracted for 663 MW, but recent performance tests have shown the unit capable of producing 682 MW, which was excellent news for the project team.

OPPD will use only half of the plant's generation for its customers' needs; the remaining half will go to seven other public power entities.

"This plant is a wise investment in energy security for our customer-owners, allowing us to provide the generation needed to satisfy the increasing demand for electricity for many years to come," said OPPD President Gary Gates. In his remarks at the plant dedication in July, Gates noted that the new plant was completed on time and several million dollars under budget.

The timing of construction proved beneficial for OPPD and the other utilities participating in the project, observed Gates, adding that costs for similar plants now under construction elsewhere are significantly higher.

The 646-MW Nebraska City Station Unit 1 (NC1) entered commercial service on May 31, 1979, and reached the milestone of producing 100 million MWh net of electricity on Feb. 2, 2009. In recent years, NC1 has consistently ranked among the lowest cost-of-production steam electric power plants in the U.S.

OPPD's baseload generating resources now include the two coal-fired units at NCS, five units at the 646-MW North Omaha Station, and the 484-MW Fort Calhoun Station nuclear plant. These three baseload plants, which provide most of the power used by OPPD's customer-owners, are augmented by three peaking plants and miscellaneous renewable energy resources, which include wind power and a baseload landfill gas – fired plant.

Accounting for Electricity

Under a participation power agreement (PPA) with the seven other public utilities, OPPD owns and operates NC2. The PPA required project participants to buy into the project by contracting for the supply of a specific amount of power and paying for the proportionate amount of the plant's construction cost. Since the plant achieved commercial service, the other participants have purchased electricity from OPPD at the wholesale price or OPPD's cost to produce the electricity (Table 1).

Organization	Ownership share (%)
Omaha Public Power District	50.00
Nebraska Public Power District	23.67
City of Independence (Missouri) Power & Light	8.33
Missouri Joint Municipal Electric Utility Commission	8.33
City of Grand Island Nebraska Utilities Dept.	5.00
Central Minnesota Municipal Power Agency	2.17
Nebraska City Utilities	1.67
Falls City Nebraska Utilities	0.83
Total	**100**

Table 1. Participants in Nebraska City Unit 2. Source: OPPD

The accounting methods get more complicated when the different classifications of costs are distributed. Specifically, costs include those related to project construction, operation and maintenance (O&M) after the plant enters commercial service, and the variable cost of fuel. For example, the pro rata share of the initial cost of the project included the engineer-procurement-construction (EPC) contract price, other site improvements made as part of the NC2 project, and the direct costs of OPPD employees assigned to the project.

OPPD, as the owner, also made expenditures that are shared, such as the initial coal inventory, spare parts, upgraded and shared facilities, and other supplies inventory. OPPD also supplied the working capital necessary to finance day-to-day operations. O&M costs — defined as the payroll costs with consulting, legal, and insurance fees rolled into the mix — were also proportionally split. Fuel costs include transportation, maintenance, and fuel handling in addition to the purchase price of the coal and oil start-up fuel.

Prime Project Team

HDR and its partner, Stanley Consultants, provided owner's engineer (OE) technical support services to OPPD for NC2. Early in the project, the OE team helped guide OPPD through the preliminary engineering phase of the project, including permitting, setting the schedule, developing project specifications, and selecting the EPC contractor. An extensive amount of research and effort went into this front-end work, which paid benefits toward the project's success. The OE also provided construction management support during the construction and commissioning of NC2.

OPPD selected the familiar EPC approach for constructing NC2 to have a single point of responsibility for the entire project, with a project wrap guarantee that included plant overall performance, plant air emissions, and on-time project completion.

The EPC contract was awarded to NCPP, short for Nebraska City Power Partners, after a comprehensive and rather lengthy selection process (Table 2). The initial project schedule was established early in the process, and the OPPD NC2 team was able to keep the project on schedule; every major milestone was met on time or early. The NCPP team included the well-respected and highly experienced team of Black & Veatch, Gilbert Industrial Corp. (a wholly owned subsidiary of Kiewit Construction Group Inc.), and Zachry Industrial Inc. The key equipment suppliers selected by NCPP are listed in Table 3. By the end of the project, NCPP had issued a total of 228 separate procurement contracts. A significant contributor to the success of the project was the cooperative EPC approach that the OPPD team promoted and NCPP fully embraced. At every significant decision milestone, NCPP allowed the OPPD team to provide input and feedback, which resulted in a very satisfied customer and a great product.

Event	Date
Project authorization	Sept. 21, 2003
Prequalify EPC firms	Dec. 12, 2003
RFP sent to five EPC firms	Jan. 22, 2004
Four EPC firms submit proposals	May 13, 2004
Two EPC firms selected for final negotiations	July 7, 2005
NCPP selected; contract negotiations begin	Dec. 1, 2004
EPC contract NCPP for NC2 is signed	Apr. 27, 2005

Table 2. Selecting the right EPC contractor takes time. Source: OPPD

Equipment	Supplier
Subcritical pulverized coal steam generator and five coal mills	Ishikawajima-Harima Heavy Industries Co., Ltd.
Steam turbine	Toshiba
Air quality control system	Alstom Power
Primary and forced draft fans	Howden
Sootblower system	Clyde Bergemann
Stack	Hoffmann
18-cell cooling tower	Marley
Condenser, feedwater heaters	TEI
Boiler feed pumps, condensate and closed cooling water pumps	Flow Serve
Deaerator	Ecodyne
Bottom ash	UCC
Cooling water pumps	Flow Serve
Condensate pumps	Flow Serve
General and house service transformers	Hyundai

Table 3. Key vendors for OPPD's Nebraska City Station Unit 2 project. Source: OPPD

Project Accounting

NC2's EPC contract was the largest contract ever signed by OPPD. The contract's essential terms cover the expected performance, emissions, and completion date guarantees. The size of the plant was required to be at least 663 MW net with a maximum heat rate of 9,188 Btu/kWh (34.2% net efficiency). The guaranteed price for the plant — set at $629,600,000, or $950/kW installed — certainly came after some sharp bargaining by OPPD.

Other OPPD-specific work was performed outside of the EPC contract. For example, costs related to plant interface modifications to common systems, spare parts and other inventory, and overhead brought the total project budget to $710,000,000, or $1,041/kW. The coal delivery system was also upgraded, and a new 50-mile 345-kV transmission interconnect was constructed to move the power to a new substation in southeast Nebraska. Those upgrades added another $76,600,000 to OPPD's construction tab and were handled

through a separate agreement with other regional utilities. Overall, the project and necessary capital improvements remain a bargain f all the project's participants at $786,600,000 or $1,153/kW when all the cost categories are included.

The EPC contract included various liquidated damage clauses for failing to meet key contract performance goals, but with the stick comes the carrot. Bonuses were paid to NCPP for exceeding the plant guaranteed output and for keeping the heat rate low. NCPP broke ground for the facility in September 2005; the construction completion date was set for May 2009 and was met by NCPP (Table 4).

Event	Date
Groundbreaking	Sept. 13, 2005
Steam drum lift	Jan. 11–12, 2007
Boiler hydro test	Mar. 31, 2008
Lube oil flush	Apr. 1, 2008
First fire in boiler (burning fuel oil)	Aug. 19, 2008
First generator synchronization	Oct. 31, 2008
First fire on coal	Nov. 12, 2008
Commercial operation	May 1, 2009

Table 4. Key Nebraska City Station Unit 2 project milestones. Source: OPPD

Clearing the Air

The new plant incorporates state-of-the-art emission controls, including an Alstom spray dryer absorber and pulse jet fabric filter baghouse; an IHI selective catalytic reduction system (SCR); and fly ash – and bottom ash – handling systems (Figure 2). In the order o treatment, these are the components:

- *High-efficiency burners.* Low-NO_x burners limit emissions by carefully mixing and combusting the pulverized coal supplied by the mills.
- *SCR system.* The SCR system injects an anhydrous ammonia solution into the flue gas stream as the gas comes into contact with a catalyst, causing a chemical reaction that removes NO_x.
- *Spray dryer absorber.* Although OPPD uses low-sulfur coal, the scrubber uses a pebble-lime slurry to further minimize sulfur dioxide from the flue gas.
- *Powder-activated carbon-injection system.* The mercury removal system removes the trace amounts of mercury found in flue gas by injecting a very finely ground powder-activated carbon into the exhaust gas prior to the spray dryer absorber.
- *Particulate baghouse.* The baghouse collects fly ash. This ash is transferred to and stored on site in a specially designed landfill.
- *Monitoring station.* A continuous emission-monitoring system measures the concentration of different stack gas constituents, including CO_2, in the flue gas that exits the exhaust stack. NC2's emissions limits are summarized in Table 5.

2. **All the right steps.** NCS2 uses an SCR followed by a spray dry absorber and a baghouse to keep the plant's emissions within its permit limits. Courtesy: OPPD

Constituent	Tons/year	Lb/million Btu	Lb/MWh
NO_x[a]	1,986	0.07	
SO_2	2,695	0.48	
CO	4,450	0.16	
VOC	96.5	0.0034	
PM	510.7	0.018	
Hg[b]			18×10^{-6} for a 12-month rolling average

Notes: a. During the first 18 months of operation, the NO_x emissions from NC2 may be 3,405 tons/year based on 0.12 lb/million Btu emission limit.

b. Based on gross energy output and based on a case-by-case MACT determination. It is subject to revision in the event of a final federal MACT standard for mercury.

Table 5. **Nebraska City Station Unit 2 emissions limits.** Source: OPPD

Modern Control System

NC2 uses Emerson's PlantWeb digital plant architecture with an Ovation control system. PlantWeb uses high-speed communications networks, intelligent field devices, and bus I/O technologies to manage more than 8,500 I/O points. Specifically, the Ovation system will monitor and control the IHI Heavy Industries boiler (the first installation of an IHI-supplied utility boiler in the U.S.), the burner management system, and balance-of-plant processes. The system will also perform data acquisition and interface to the plant's Toshiba steam turbine generator (Figure 3).

3. **Tried and true.** Toshiba supplied the steam turbine for Nebraska City Station Unit 2. Courtesy: OPPD

The project specifications included the purchase of a high-fidelity simulator as a training tool, enabling operators to fine-tune their skills and familiarize themselves with the new controls and plant equipment before start-up. The simulator can also be used as an engineerin tool to test changes in the control logic before updating the operating software.

Kudos All Around

Although this was the first coal-fired plant constructed by OPPD in a generation, the team overcame its lack of construction experience. "My thanks go to NCPP and their suppliers, and the OPPD project management team for their fantastic coordination of this challenging project, and to HDR Engineering and Stanley Consultants, whose support was superb," said Ken Roth, division manager of projects anc construction at the project dedication. "The OPPD team included Bud Eidem, project manager; Dave Wesely, site project manager; and Dave Wetrosky and Tim Yager, who alternated in the role of startup manager," Ken said. "Other project team members include David Aderemi, Sue Badberg, Eric Bender, Mike Neu and John Wichman. They've all done an excellent job."

The plant will remain a valued employer in the Nebraska City region for many years to come. Its staff has gradually grown from about 98 employees prior to the construction of NC2 to approximately 164 employees today.

—Dr. Robert Peltier, PE is *POWER*'s editor-in-chief.

Close Window

Kelly, Linda

Sent: Tuesday, June 29, 2010 1:00 PM
Subject: SNL Interactive: Briefing Book: Power Plant Units - Details
Attachments: ATT00008.bin; ATT00009.bin; ATT00010.bin; ATT00011.bin; ATT00012.bin

SNL

SNLFinancial

Oak Grove Project

Power Plant Units - Details

	Oak Grove Project ST OG1	Oak Grove Project ST OG2
Generator Information		
Current Status	Operating	Under Construction
In-Service Month/Year	12/2009	6/2010
Retirement Month/Year	-	-
Nameplate Capacity (MW)	944.0	944.0
Summer Net Capacity (MW)	799.0	803.0
Winter Net Capacity (MW)	799.0	803.0
Expected Availability (%)	-	-
Station Energy Use (%)	-	-
Energy Pricing Node/Zone	-	-
Construction Costs ($/kW)	2,550.00	2,550.00
Turbine Information		
Turbine Manufacturer	-	-
Turbine Type	-	-
Boiler Information		
Earliest Boiler In-Service Date	-	-
Boiler Retirement Date	-	-
Shared Unit at Boiler?	No	No
Boiler Manufacturer	-	-
Fuel Data		
Efficient Heat Rate (Btu/kWh)	-	-
Incremental Heat Rate (Btu/kWh)	-	-
Primary Fuel Type	-	-
Secondary Fuel Type	-	-
Tertiary Fuel Type	-	-

Commitment & Dispatch

Minimum Capacity (MW)	-	-
Minimum Uptime (Hours)	-	-
Minimum Downtime (Hours)	-	-
Ramp Up Rate (MW/hour)	-	-
Ramp Down Rate (MW/hour)	-	-

News Stories

Prairie State coal plant coming right along

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Our energy future

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Metro East has energy AND jobs

Prairie State coal plant provides economic power to the economy

Prairie State Energy Campus shows energy = jobs!

Applications for Power Plant Technicians Now Being Accepted

News

Prairie State Energy Campus Reaching New Heights

by Jamie Forsythe

From *The Belleville News-Democrat* (10/30/08)

DASH: With 20 of the largest cranes in North America on site and completion of a 700-foot chimney expected soon, progress is evident on a major electricity generating station and coal mine under construction in Washington County, Prairie State Energy Campus officials say.

A year after work started, the project is 6 percent complete with regard to construction and 8 percent complete with regard to total project, said Peter DeQuattro, president and CEO of Prairie State Generating Co.

Heavy spring rains did slightly delay work. "We're happy to say we're catching back up," DeQuattro said. "Our rate of completion is exceeding the original plan."

The $3.9 billion Prairie State Energy Campus will include a 1,600-megawatt pulverized coal power plant that will sit on a 500-acre site near Lively Grove Township. The plant will be powered by coal from the adjacent underground Lively Grove Mine spanning 200 acres.

The new target completion date for the first 800 megawatt generating unit is June 2011, DeQuattro said, which is two months ahead of the original target of August 2011. The second 800 megawatt generating unit will be completed 10 months after Unit 1. "Now that I'm in charge I can stir the pot a little bit," said DeQuattro, who took over in May.

He expects the next big milestone of the project's construction phase to occur in spring 2009, when construction begins on two massive boilers. The boilers require natural gas to ignite, and Ameren plans to install five miles of natural gas pipeline to the Prairie State site.

DeQuattro provided a project update to a packed house Oct. 23 at the VFW Post No. 6865 in Coulterville. More than 200 people attended the bi-annual Regional Leadership Breakfast hosted by the Regional Leadership and Development Committee.

The Illinois Environmental Protection Agency inspects the construction site monthly, according to DeQuattro.

Prairie State Generating Co. has all the necessary permits with the exception of a revised water permit.

Prairie State officials say emissions restrictions would increase costs for consumers

Prairie State Unit 1 Transformer Delivery

Overview: Staffing of the Prairie State Generating Company Mine

Prairie State's Transmission and Specialty Contract Manager honored for over 30 years dedication to region's construction industry

Talk of the town: Prairie State generator part makes low-speed journey through Lenzburg

Prairie State Unit 1 Stator Delivery

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Route 4 Bridge Letter to the Editor

Solving a Crucial Problem

Operating Engineers at work at Prairie State

Prairie State Energy Campus Reaching New Heights

Mascoutah Hotel May Profit from New Power Plant Guests

Prairie State Air Permit Review Process Successfully Concludes

Peabody Closes on Agreement With American Municipal Power-Ohio to Purchase 368 Megawatts of the Prairie State Energy Campus

Prairie State Energy Campus Completes Financial Closing

AMP-Ohio Joins Prairie State Energy Campus

"We are looking forward," he said, to getting that permit.

Despite environmental concerns, many residents of surrounding communities attending the Oct. 23 event were in support of the project and what it will bring to the region.

"This is an exciting time for our area," Coulterville Mayor William Jarrett said. "We can already see the positive changes" because of Prairie State.

Jarrett has supported the project since the beginning, he said, because the community realizes the importance of mines. "This (Prairie State Energy Campus) is going to benefit the area for years to come," he said. "It's going to bring thousands of jobs."

In addition to bringing domestic energy to the region in the future, Prairie State has had an immediate impact with 1,100 construction workers currently on site, and more expected in the future.

Prairie State Generating Co., DeQuattro said, is forecasting as many as 2,500 construction jobs and 500 permanent "high-paying," skilled jobs once construction is complete.

"We appreciate all the support we have received so far," DeQuattro said. "We're very happy as Prairie State Generating Co. to be here and be a part of this community."

St. Louis-based Peabody Energy owns 5 percent of the project, and eight public power entities own the remaining 95 percent.

San Francisco-based Bechtel Power Corp. is providing engineering services for Prairie State Energy Campus.

Partner Group With Commitment to 300 Megawatts of the Project

Prairie State Energy Campus Advances To Full-Scale Construction

Belleville News-Democrat, The (IL)
2010-05-10
Section: Regional/Business
Page: 1b

Area businesses are getting a boost from the workers building **Prairie State Energy** Campus
Jamie Forsythe

For the News-Democrat DASH: -

LIVELY GROVE - At 9 a.m., the phones start ringing at Waller's Market in Lively Grove with lunch orders from workers at the **Prairie State Energy** Campus under construction just a few miles away.

Two employees man the phones at Waller's for the next three hours, writing down orders on top of Styrofoam containers and totaling bills. Another half-dozen workers prepare the meals in the full kitchen, which owner Dave Waller said he added two years ago along with a sitting area in preparation for the influx of construction workers.

The place is hopping until well past noon as Waller mans the meat counter and his sister, Marilyn Wienstoer, stocks shelves, prepares pizzas ordered and rings out customers. Another sister Donna Waller-Weber keeps everything running smoothly in the kitchen.

At 11 a.m., **Prairie State** employees in training start arriving from the mining school set up just two miles northwest of Waller's Market.

They are among 2,300 working at the $3.9-billion **energy** campus that is under construction. It will include a 1,600-megawatt pulverized coal power plant, which will be powered by the adjacent underground Lively Grove Coal Mine spanning 200 acres. The first 800-megawatt generating unit at **Prairie State** is expected to be complete in June 2011 with the second 800-megawatt generating unit to be completed 10 months after Unit 1. At least 500 permanent skilled jobs are expected at the **energy** campus.

"Long term, we are hoping the county will have the skill set necessary to fill the permanent jobs at **Prairie State** and the coal mine that will be feeding **Prairie State**," said Bob Myerscough, interim coordinator for Randolph County Department of Economic Development.

Rob McCramie, of Belleville, a shift supervisor at the power plant, said a new school opened back in October and currently has 25 students enrolled with another 19 expected to be added in the next few weeks.

The trainees and their instructors flood the cafeteria window at Waller's where they order up lunch one at a time. The kitchen staff work fast and have lunches prepared in a few minutes.

McCramie said he frequents Waller's a couple times a week. On Friday, he ordered chicken tenders with a side of barbecue sauce.

T.J. Prazer, of St. Louis, a student at the training center, said he comes to Waller's practically every day. "I give them most of my paycheck," he joked.

Bob Jarrett of Coulterville, an electrician at the power plant, said he eats at Waller's at least three times a week. "I know these are good people," he said. "The food is excellent and very reasonable."

Once the 11 a.m. crowd dies down, workers from **Prairie State Energy** Campus start pouring in. "Those who can get away come in here and eat," Waller said.

"Everyone who comes in here is super nice," Wienstoer said. "We meet a lot of good people," Waller added, noting a lot of workers originate from Chicago, Michigan or other places around the country where work is hard to find.

Construction workers who can't get away can still enjoy lunch from Waller's, which delivers to the campus at 11:30 a.m. every weekday.

Lively Grove businesses aren't the only ones benefiting from **Prairie State Energy** Campus. The economic effects of the $3.9 billion project expand far beyond Washington County and into Randolph and St. Clair counties.

"They are going to our restaurants, shopping at our stores and buying fuel and other necessities," Myerscough said. "It has been a positive impact."

Renee Smith, owner of the Butcher's Block in Sparta, said the **energy** campus has brought business to her fresh meat and deli shop. "There's a lot of nice people working out there," she said.

Holly Perry, manager at Pistol City in Coulterville, said the restaurant has seen a "steady increase" in customers. "We get quite a few of them in here," she said of the construction workers, "usually they come in and eat in the afternoon.

"A lot of time when they get rained out they come in and drink," she added.

Construction workers not only need a place to eat, but a place to stay as well. Myerscough said the **energy** campus has "positively" impacted housing in Randolph County. "The rental units are full," he said, and individuals have taken the opportunity to provide temporary housing for workers by setting up camp ground areas.

Mike Minks, president of the Marissa Chamber of Commerce, said every home previously vacant in town is now rented out. "It's helped our housing market in town," he said.

Mike Patel, owner of the Sparta Motel, said he's usually over 50 percent capacity due to long-term occupants from the **energy** campus. "Everybody is doing good," he said of businesses in town. "There are slow economies elsewhere but here it (**Prairie State Energy** Campus) is a plus."

Minks agrees. "I would have hate to see what this area would have been like without **Prairie State**," he said. "I think it would have been really ugly this recession we went through without **Prairie State**. It made things better for our little community."

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FEATURED STORY

Prairie State officials say emissions restrictions would increase costs for consumers

Although the coal-powered Prairie State Energy Campus under construction outside Lively Grove will include the latest carbon dioxide-restricting technology, proposed federal legislation could place more restrictions on emissions at the plant.

These restrictions would increase the cost of compliance and increase consumers' power bills, according to Prairie State officials.

- **PDF:** More on Prairie State plant construction

HOMEPAGE

Monday, Oct. 12, 2009

| Comments (9) | Recommend (1)

Prairie State officials say emissions restrictions would increase costs for consumers

Power plant is under construction outside Lively Grove

BY WILL BUSS - News-Democrat

Although the coal-powered Prairie State Energy Campus under construction outside Lively Grove will include the latest carbon dioxide-restricting technology, proposed federal legislation could place more restrictions on emissions at the plant.

These restrictions would increase the cost of compliance and increase consumers' power bills, according to Prairie State officials.

Sen. John Kerry, D-Mass., one of the sponsors of the legislation, said the legislation has major consumer protections built in, according to a statement on his Web site.

Power plant construction in late summer 2009 at the Prairie State Energy Campus. - Provided/BND

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- **PDF:** More on Prairie State plant construction

Construction of the $4 billion, 1,600-megawatt power plant and coal mine has been under way for the past year. When completed in 2011, it will supply power to residents in nine states.

But a bill that sits before lawmakers in Washington, D.C., proposes a 15 percent further reduction in emissions. The federal climate bill, sponsored by Kerry and Sen. Barbara Boxer, D-Calif., is an attempt to make changes to a similar bill sponsored by Rep. Henry Waxman, D-Calif., and Edward Markey, D-Mass., that passed the House in June.

The Kerry-Boxer bill calls to further reduce emission targets while keeping the same timetable that was in the Waxman-Markey bill. The House bill proposes 17 percent reductions by 2020, while the Kerry-Boxer bill pushes for 20 percent reduction by that time. The Obama administration has proposed a 14 percent reduction.

According to a letter sent Aug. 17 to legislators from Prairie State Generating Co. LLC President and Chief Executive Officer Peter DeQuattro, both bills would have a devastating impact on the Washington County plan. DeQuattro said the Kerry-Boxer bill places "unrealistic reduction targets" and "insufficient time to develop the program," which would be a "recipe for economic disaster."

He said the Waxman-Markey bill carries an estimated price tag that cost that nation's power plants more than $3 trillion in the first 20 years, and the Kerry-Boxer bill would be more costly.

He also said it is too ambitious and moving too quickly for everyone involved to understand or regulatory bodies to provide opportunity for public comment needed to successfully and fairly implement the bill.

Sheri Bilderback, manager of public relations for the Prairie State Generating Co., said if this bill passes, the 2.5 million families who will be served by the Prairie State Energy Campus could witness steeper utility bills. Prairie State Energy Campus is owned by a consortium of nine owners, including eight nonprofit municipal power companies. Any added cost would have to be passed on to consumers.

"Prairie State is absolutely environmentally a cutting-edge power plant as far as how it is set up and designed using 21st century up-to-date technology out there that is commercially available," Bilderback said. "Although we have a positive environmental profile, this bill would be extremely challenging for Prairie State to meet should it pass."

Also concerned is the Southern Illinois Power Cooperative in Marion. Like most of the Prairie State Energy Campus owners, the co-op is nonprofit. Co-op president and general manager W. Scott Ramsey estimates that adopting the proposed federal restrictions would cost its 200,000 members in living between East St. Louis and the Indiana border and as far south as the Ohio River $1,300 more on their electric bills each year.

"It leave home-owned business owners and farmers at severe risk to price volatility for electricity," Ramsey said.

In his online statement in response to arguments against his bill, Kerry said, "The ink wasn't even dry on The Clean Energy Jobs and American Power Act before the same tired attacks and bold face distortions were launched by those committed to inaction.

"We predicted long ago that those on the other side would adopt the misleading jargon of oil companies, lobbyists, and special interests, which maximize their profits at the expense of progress. Let's be clear: The Clean Energy Jobs and American Power Act will put America back in control of our energy future. It invests in coal, natural gas, nuclear, and renewable energy companies that make America great, while vigorously protecting the American consumer. It can finally put us on a path to energy independence, in spite of the misleading campaign that would keep us hostage to foreign and unreliable governments."

But Bilderback said the bill does not include time for the Environmental Protection Agency to promulgate regulations to enforce the law.

"No one has any idea what the EPA will do," Bilderback said. "The timetables are so unrealistic already under the bill the House passed. The (Senate) bill ratcheted it down and further tightened it so much."

Illinois EPA Director Doug Scott released a statement Friday that said: "We believe that climate change legislation can spur innovative technologies to be developed. This can help us keep green jobs in the state and in the country, and the dollars that go with them."

Ramsey said that the co-op already works to reduce emissions of sulfur dioxide, nitrogen oxides, particulate and mercury from generating units. But agrees with Bilderback and others from Prairie State that the 821-page bill, although complicated, does not provide enough time for the new power plant to adjust.

"It is a very complex issue," he said. "The way it's authored in both houses is short on time and short in support, and I don't think that's the way to go."

"It has significant impact on us, our workers, the owners and their consumers," Bilderback said.

"We're just trying to get our arms around this."

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www.chicagotribune.com/news/local/ct-met-coal-plant-20100710,0,3747005.story

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Clean coal dream a costly nightmare

Five Chicago suburbs and dozens of other Midwest towns in power-plant deal now face the prospect of rising electricity bills

By Michael Hawthorne, Tribune reporter

4:18 PM CDT, July 12, 2010

Sold on a promise of cheap, clean electricity, dozens of communities in Illinois and eight other Midwest states instead are facing more expensive utility bills after bankrolling a new coal-fired power plant that will be one of the nation's largest sources of climate-change pollution.

As the Prairie State Energy Campus rises out of a Downstate field, its price tag already has more than doubled to $4.4 billion — costs that will largely be borne by municipalities including the suburbs of Naperville, Batavia, Geneva, St. Charles and Winnetka.

The communities are locked into 28-year contracts that will require higher electricity rates to cover the construction overruns, documents and interviews show. Municipal officials told the Tribune they expect costs to soar even higher before the plant begins operating next year.

Then there are the environmental costs of the project, which was designed by St. Louis-based Peabody Energy, the world's largest private-sector coal company, to burn fossil fuel from one of its nearby coal mines.

Though the company and its partners promote the plant as a national model for environmentally friendly "clean coal" technology, Prairie State will be the largest source of carbon dioxide built in the United States in a quarter-century.

Each year, it will churn more than 13 million tons of heat-trapping gases into the atmosphere, an amount equivalent to adding 2 million cars to the nation's highways. Most U.S. power plants emitting that much climate-change pollution date to the 1960s and '70s.

The pollution also could make the plant more expensive to operate. Climate and energy legislation pending in Congress would slap a price on greenhouse-gas emissions, requiring Prairie State's owners to spend hundreds of millions more a year. Local officials didn't account for those costs when buying into the plant.

It is difficult to estimate what the tens of thousands of households in the five suburbs ultimately will pay for electricity. But even without any carbon-related costs, the Prairie State plant will drive up energy costs for communities that have long prided themselves on keeping rates lower than ComEd and other competitors, according to records obtained by the Tribune under the Freedom of Information Act.

"We don't know yet if we've been sold a bill of goods," said Ray Pawlak, a Geneva alderman who was one of the few Chicago-area officials to vote against the project. "But why should we take a risk like