

## Individual Project Case Studies - Steel

### Bethlehem Steel

Bethlehem Steel Corporation (BSC) is a well established integrated steel manufacture that as five mills located throughout the United States. In January 1 998, BSC entered into a partnership with Shared Savings Contracts, Inc. (SSC), a leading performance-based energy conservation consulting firm. The partnership started with a pilot project at Bethlehem's Sparrows Point Division (SPD) and has since grown to have an SSC Project Team at each of Bethlehem's facilities. SSC is paid for its consulting services only when bottom line energy reductions are achieved for their clients. The initial contract for the SPD is about to expire, however, a contract extension for additional energy projects has been executed and a contract for productivity improvements is in its final stages of approval.

[444 KB Bethlehem Steel Case Study \(](#)

### Bethlehem Steel - Sparrows Point

Two capital projects in the powerhouse will have an energy savings impact on the plant operations.

WQC Blast Furnace Gas Cleaning Loop Refit

Project No. 9

No. 1 Turbine Generator Refit

Project No.10

The "powerhouse" is actually four buildings providing a variety of services/utilities to iron making

and general plant operations. They are the new boiler house, steam powerhouse, gas engine house, and old boiler house. Utilities provided are 25 cycle AC electricity, 250 volt DC electricity, 900 & 250 pound steam, blast furnace wind, service and recycle water, and compressed air.

25 cycle electricity is generated by #2 Turbine Generator, driven by 250 psi steam, and having a peak output of 17-17.5 MW. The unit acts as a buffer for the steam system which exists primarily to drive the turbo blowers making blast furnace wind, and secondarily to generate 25 cycle power. If there are any problems in the steam loop, the generator is dropped off line first.

[45kb Bethlehem Steel - Sparrows Point Case Study \(](#)

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## Gulf State Steel

[72kb Gulf State Steel Case Study \(](#)

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## Laclede Steel Company

SSC Incorporated has been retained by Laclede Steel to conduct an energy management project at the Alton plant. Approval for commencement of the project was received on April 11, 1995.

Since that date, SSC personnel have been conducting an analysis of plant equipment, technology, procedures, organization and information flow. The purpose of this review is to discuss the results of the analysis and to gain agreement on implementation of recommendations.

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## United Steel / Kobe Steel

12" by 14" and 10" by 10" blooms are trucked in from the caster. The blooms are then loaded hot or cold into the 321 MMBTU/hr rated reheat walking beam furnace and heated to 2300 degrees F. The heated blooms are rolled out the side of the furnace onto a transfer table. The transfer table moves the blooms onto a roll table, which rolls the blooms through the 40-inch reversing mill and the deseamer. The blooms are then moved across the transfer table to the six-stand mill and reduced further. From the six-stand mill most of the product is transported on roll tables where it is cut to length, stamped and then transferred onto the cooling beds where conditioning inspects the product for defects and grinds the steel accordingly. If the steel needs to be reduced further after the six- stand mill, the steel is moved across the transfer table and rolled through the four-stand mill. After the four-stand mill, the bloom is then cut to length, stamped, and transferred onto the cooling beds. Finished products are then loaded into rail cars and delivered to the other mills and/or customers.

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## USS / Kobe Steel

There are two projects related to capital improvements in the powerhouse that will have an energy savings impact on the plant operations.

### Description of operation

The “powerhouse” is actually four buildings providing a variety of services/utilities to iron making and general plant operations. The buildings are the new boiler house, steam powerhouse, gas engine house, and old boiler house. Utilities provided are 25 cycle AC electricity, 250 volt DC electricity, 900 & 250 pound steam, blast furnace wind, service and recycle water, and compressed air.

[126k USS / Kobe Steel Case Study \(](#)

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