

SUCCESS STORIES

CITY OF GRAND ISLAND UTILITIES PLATTE GENERATING STATION

LOW NO_x BURNER REPLACEMENT UPGRADE

LOCATION GRAND ISLAND, NE, U.S.A.

CAPACITY 100 MWE (GROSS)

PROJECT OVERVIEW

Platte Generating Station is a 100 MW coal fired steam-electric generating unit placed in service in 1982. The boiler was designed and built by Alstom Power (formerly Combustion Engineering). The unit is currently able to produce a gross load of 109 MW (100 MW net) firing Powder River Basin (PRB) coal.

Scope of supply included the following:

- + Separated Overfire Air (SOFA) System
 - » Four SOFA tube panels
 - » Four SOFA windbox assemblies
 - » Four fabric expansion joints
 - » Interconnecting ductwork and supports
- + Main Windbox Equipment
 - » 20 new air tips
 - » 16 all new coal compartment assembly
 - » 40 type K damper drives
 - » Compartment damper modifications
 - » 16 ceramic lined coal pipe elbows
 - » 16 coal anti-ropeing devices



RILEY POWER SOLUTION

- + Used 3-D modeling for design. This demonstrated an understanding of the scope and showed the complexity of the components which facilitated installation
- + Performed multiple unit inspections and walkdowns with BPS contractor TEIC to install a Separated Overfire Air (SOFA) system, new main windbox tips, and miscellaneous coal piping
- + Worked with customer to address coal mill system optimization and balancing

UNIT DESCRIPTION

Riley Power Inc "Wall Fired" Unit

Unit Output	109 Gross MWe
Steam Flow	765 kpph
SH Steam Temperature	1005°F
RH Steam Temperature	1005°F

continued on back

PROJECT PERFORMANCE RESULT

Boiler Load Condition	---	Full
Baseline / Acceptance Test #	---	BL1 / A1
Feedwater Flow		
Baseline	(klb/hr)	729.3
Acceptance		756.5
Generator Load		
Baseline	MWg	99.6
Acceptance		104.9
Mills in Service	---	ABC
NO _x Guarantee	lbm/MMBtu	< 0.14
NO _x Acceptance (CEMS)		0.138
CO Guarantee	ppmv	<100
CO Acceptance (CEMS)		99
Flyash Unburned Carbon Guarantee	wt %	<1.0
Flyash UBC Acceptance		0.32
SH Outlet Temperature Guarantee	°F	1005 ± 10
SH Outlet Temperature Acceptance		1002
SH Spray Guarantee	% / (klb/hr)	< 5 / (33.4)
SH Spray Acceptance		2.4 / (16.3)
RH Spray Guarantee	% / (klb/hr)	< 5 / (32.5)
RH Spray Acceptance		1.5 (11.5)
RH Outlet Temperature Guarantee	°F	1005 ± 10
RH Outlet Temperature Acceptance		1005
Economizer Exit Gas Temp Guarantee	°F	803 ± 30
Economizer Exit Gas Temp Acceptance		829
Boiler Efficiency Guarantee		≥ 84.4
	%	≥(84.9 - 0.5)
Boiler Efficiency Acceptance		85.51

