



OUR ENGINEERING AT RENTECH CREATES
**RELIABLE BOILER
UPGRADES**

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NOT ALL BOILERS ARE REBUILT EQUALLY.

AN EFFICIENT REBUILT BOILER IS THE COMBINED RESULT OF ITS REDESIGN, ENGINEERING & FABRICATION.

"I was very impressed with the level of service and quality of work that Rentech Boiler Services was able to provide. I awarded a fast-track job to Rentech for fabrication of a boiler tube bundle on a critical piece of equipment. Rentech was able to deliver a great quality product to the refinery on schedule."

*Joseph Morgan
Valero Project Engineer, St. Charles Refinery*



RENTECH Boiler Services is your full-service boiler company because we provide reliable upgrades for many types of industrial boilers. We specialize in engineered repairs, rebuilds and retrofits of boilers using headered membrane waterwall design that eliminates refractory walls and seals. You'll find RENTECH's satisfied customers in a variety of industries – including refining, petrochemical, manufacturing and power generation – across the U.S. and in several other countries.

Our engineers along with our service and manufacturing technicians work together in the field and in our newly expanded, state-of-the-art plant.

RENTECH is proud of its reputation and record of service. We work diligently to help our customers operate their boilers more efficiently and safely, and our work is backed by the best warranty in the industry.

Our people make the difference because of their experience, knowledge and dedication to customer service. Our qualified engineers understand all process conditions, and they can optimize your system and improve its performance in a cost-effective manner on your original footprint. We offer fully integrated solutions that comply with all performance

criteria. Boilers upgraded or repaired by **RENTECH** provide:

- faster start-up and cool-down
- cooler furnace environment
- minimize unscheduled outages
- improved combustion control

The 142 employees at **RENTECH** Boiler Services have accumulated more than 1,500 years of service. Our engineers along with our service and manufacturing technicians work together in the field and in our newly expanded, state-of-the-art plant that



covers 12 acres at **RENTECH BOILER SERVICES** headquarters in Abilene, Texas.

Since 1997 **RENTECH** has provided quality products and services, including superheaters, economizers, sulfur condensers, burner and CO/SCR system retrofits, seal-welded furnaces, watertube and firetube boilers, heat recovery boilers, and solid fuel fired boilers. We strictly abide by National Board Inspection Code (NBIC) and American Society of Mechanical Engineers



(ASME) standards. Our engineering knowledge, advanced technology and commitment to customer service combine to produce value for each customer by reducing operating costs, eliminating shutdowns, reducing emissions and extending boiler life. Customers with boilers upgraded by RENTECH spend less on maintenance, allowing them to redirect those funds for other needs.

Not all boilers are rebuilt equally. An efficient rebuilt boiler is the combined result of its redesign, engineering and fabrication, and an efficient boiler contributes to your profitability. If a boiler is crucial to your plant's operations and your outdated boiler is costing you time and money, call or email today to discover a solution that's right for you from RENTECH Boiler Services.



CASE STUDY:

Texas Tech University, a major comprehensive research university, selected RENTECH Boiler Services to supply a new boiler, 175,000 PPH @ 750°F, to replace boiler #1 at its central heating and cooling plant.

Texas Tech enrolls about 28,000 students, and its main campus in Lubbock is comprised of 1,839 acres.

Boiler #1 is one of three used for heating campus buildings, but the client did not have access to a new footprint. Tech faced the dilemma of how to install a new boiler in this location because it was impossible to bring new boiler pieces through the main floor. Rentech designed and built a super-heated boiler and auxiliary equipment to meet Tech's unique specifications. The client's benefits included lower maintenance costs and lower emissions after the refurbishment. Other benefits included:



- quicker start-up and cool-down due to elimination of front and rear refractory walls
- reduced leakage of unburned combustion products due to bypass through refractory walls to reduce CO
- lower fuel loss due to less refractory to heat

Rentech replaced the existing headered wall tubes with its headered membrane waterwall design. Partial removal of the cement roof above the boiler was required, parts of the old boiler were removed, and new boiler pieces were set in place through the roof.



CASE STUDY:

A new headered waterwall boiler configuration from RENTECH Boiler Services for this client addressed multiple issues, including emissions and continuing maintenance costs.

The client, one of the leading chemical companies in the world, contracted with Rentech for redesign, retrofit and upgrade of a boiler at a petro-chemical plant in southeast Texas.

The client's wasteheat boiler produced steam using a gas turbine and auxiliary plant gas to make 235,000 PPH @ 760°F. The client's problems included (1) furnace gases going through original furnace tube design and (2) years of replacement of refractory and ceramic tile insulation along with outer steel-welded casing. The client tried several remedies to keep furnace gases from escaping to the atmosphere, but had not prevented the furnace refractory and insulation seals and boiler outer envelope from emitting these gases.

Rentech built a headered waterwall configuration for the boiler furnace and boiler side walls to incorporate the entire boiler in a welded headered membrane waterwall format. All furnace gases were contained within the boiler envelope without gases escaping.

The existing superheater was replaced, the unit was designed to be drainable, and tube material was upgraded. Rentech replaced the 24 plugged tubes with new finned tubes of the original design in a repair of the convection section.

Exterior walls utilized an older design of tangent boiler tubes, which Rentech replaced with its headered waterwall design. The new design offered a completely welded exterior wall that eliminated the expansion joint and refractory seals that eventually crack. In each Rentech inspection of the existing boiler, flue gas leaks were present, reducing the efficiency of the boiler and creating a personnel hazard. Through age, startup and shutdown cycles, and load fluctuations, these tubes warp to allow increasing leaks of flue gas.

Rentech minimized the amount of refractory in the boiler furnace and eliminated other types of insulation and hard steel casing. Insulation outside the membrane walls was reduced from 12-inch thickness to 4-inch thickness with corrugated lagging.



For more information, email us at INFO@RENTECHSERVICES.COM
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WE ARE BUILDING A REPUTATION NOT RESTING ON ONE