

HARP RETROFITS

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OVERVIEW

From the infancy of the power industry in the 19th century to today's high demands for sophisticated technology blended with top-notch performance, the business units of Babcock Power Inc. (BPI) have shaped us into a global leader in our field, offering products and services as diverse as the customers we serve.

In order to keep up with the demands, our customers have been experiencing several growing, shifting needs. Among those needs have been retrofitting of HARPS including economizers, superheaters, and evaporators. Under our umbrella organization, and in keeping with our mission to be a single-source provider to the industry, Vogt Power International Inc. and TEiC Construction Services (TEiC) have combined their skills and expertise to offer comprehensive, turnkey long-term alternatives that successfully address this critical situation. Through this type of collaboration, we gain knowledge as we grow, while providing our customers with the best our industry can offer.

As a global leader in the field, the Babcock Power organization continues to develop and seek out the most efficient, cost effective, environmentally responsible generation solutions available today, that will bring us all safely into the future.

This value is shared by Vogt's Aftermarket group which is also committed to serving the needs of HRSG users in maintaining and operating their equipment in this ever-changing market.

BENEFITS

- **Experience:** As a pioneer OEM, Vogt has a rich history in redesigning and retrofitting HRSG pressure part components and HARPS on Vogt and other OEM units.
- **Innovation:** Our innovative, proprietary thermal software, TRS, is a technological forerunner in the industry. Vogt investigates options to improve efficiency and reliability.
- **Latest Technology:** Industry standards change. Vogt understands the HRSG failure mechanisms from operational cycling, FAC, duct firing, and under deposit corrosion and is able to incorporate the latest up-to-date. .



TEiC on site of HARP retrofit

BENEFITS

- **TURNKEY SOLUTION PROVIDER:** As a BPI company, our greatest strength comes from our integrated business units. Our teams at Vogt and TEiC combine to provide innovative and cost competitive solutions for HARP and pressure part retrofit projects with options to increase efficiency and reliability. Vogt provides the expert analysis, design and materials; TEiC completes the construction needs.
- **DOMESTIC FABRICATION FACILITIES:** Vogt is the only remaining HRSG OEM in the Industry to have domestic HARP and pressure part fabrication offered through our sister company Boiler Tube Company of America (BTA). BTA also has an in-house spiral finning machine capable of handling all tube/pipe size and fin combinations. We are geared to service any emergent needs for the plant.
- **CONSTRUCTABILITY/MANUFACTURABILITY ANALYSIS:** During the design phase, we have the benefit of collaborating with and utilizing the expertise of TEiC to ensure constructability and BTA to ensure manufacturability. This approach effectively lowers project costs. This includes evaluation for pre-assembled/modularized HARPS to minimize outage/turn-around period.
- **TUBE INVENTORY WAREHOUSE:** Co-located with the fabrication facility in Lyman, SC, BTA has an inventory of about 1.5MM feet of tubing for addressing emergent needs.
- **EXAMPLE OF TURNKEY DESIGN AND CONSTRUCTION EFFORT:** Recent Turnkey Project:
www.youtube.com/watch?v=aa69hQaQOQ4&t=46s



BTA Tube Inventory



Vogt Power International Inc., a Babcock Power Inc.® company

has a rich history in replacing HRSG components and understands the HRSG failure mechanisms from operational cycling, duct firing, and under deposit corrosion. Vogt Power's Aftermarket Services is committed to serve the needs of HRSG users in maintaining and operating their equipment in the ever-changing power market. Our goal is complete customer satisfaction through effective communication and teamwork. The results of such an approach are evident in our growing number of repeat customers.

Vogt Power offers Aftermarket products and services for all OEM HRSGs. Our core competencies lie in turnkey HARP replacements, distribution grid or baffle retrofits, plant heat rate improvements, safety upgrades and engineering studies. Vogt Power offers domestic pressure part fabrication and construction services through our Babcock Power sister companies, Boiler Tube Company of America and TEiC Construction Services. In addition, Vogt Power has excellent vendor alliances offshore for high quality and cost competitive fabrications. We provide a seamless project execution experience across our companies and through these alliances.

Vogt also offers services to assess the general condition of the HRSG through regular, FAC or high energy piping inspections and life expectancy studies. Our Parts department can provide replacement or spare parts for the plant including a 2-year spare parts list with typical consumables.

Contact Vogt Power International Aftermarket products at 1.888.VOGTPWR or email: aftermarket@vogtpower.com.

SAFETY³ PEOPLE. POWER. PROJECTS.

We're giving safety the third degree.

Babcock Power Inc. and its subsidiaries place the safety, health and security of our people at the core of our company values. Our team is our most valuable resource, generating solutions everyday to deliver safe, clean, reliable energy globally. With a keen focus on safety, Babcock Power Inc. conducts business in a manner that protects our people, our customers and the environment. From innovation to generation, we are proud of our award-winning safety record and are committed to operating with integrity and excellence.

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