



Office No. 1306, 13th Floor, Sky Tower, Al Reem Island,
P.O. Box 29991 - Abu Dhabi, United Arab Emirates.

T (+971) 2 6397171 | 02 641 5577 **F** (+971) 2 6397172

Mob (+971) 52 6812846 **E** bakhr@heatechps.ae

HISE - KOREA Engineering Head Office

#11-317, 91 Chunghon-ro, Uichang-gu,
Changwon-si, Gyeongsangnam-do,
Republic of Korea P.O. Box 51410





HEAT TECH
POWER SOLUTIONS

HEAT TECH POWER SOLUTIONS. LLC.

HTPS Corporate Profile

STRONG FOUNDATIONS

Backed by more than a decade of experience in providing the total suite of cutting-edge engineering and construction services for various industries, HTPS Heat Tech power Solutions. LLC has come a long way to be recognised as a reputable industry player in middle east

Our comprehensive workshop facilities, certifications that have met the highest standards, as well as accreditations by various statutory, regulatory and professional bodies, are a testament to the top quality assurance which we provide. Building on this foundation, we will continue to raise quality and service standards to greater heights to ensure clients' total satisfaction.



TOTAL QUALITY MANAGEMENT

Through the years, HTPS has honed our niche of providing state-of-the-art, total engineering and construction solutions via our total quality management approach to satisfy the needs of our clients from diverse industries.

The wide range of successful projects we have completed, including structural steel, piping and mechanical works, as well as supply of skilled workforce for the power generation and oil and gas industries, aptly reflects our commitment to total quality management.



Vision

To become the industry leader renowned for spearheading the total suite of one-stop, total engineering and construction solutions to raise infrastructural perfection to greater heights.



Mission

- To provide the most efficient, sustainable and reliable engineering and construction services, guided by our total quality management approach.
- To strive for continuous technological innovations so as to power our clients' infrastructural needs with the most advanced, state-of-the-art systems and achieve greater efficiency.
- To engage our clients actively and uphold a personalised approach in project management, thus surpassing clients' expectations and achieving service excellence.
- To develop the best talents for the industry by enhancing professionalism, fostering commitment and inculcating a can-do spirit among our staff.



Power and Industrial Boiler Business

POWER GENERATION

With more than 30 years of combined experience in managing a wide array of power plant projects, the team in our power generation division is known for delivering impeccable engineering, fabrication, construction, inspection, repair, maintenance and refurbishment services for thermal power plants, co-generation power plants, combined-cycle power plants.

Coupled with our expertly engineered upgrading solutions to lower emissions for all boiler systems and offer greater fuel efficiency, we have the parts and maintenance solutions needed to keep your boiler system operating safely and reliably at its peak condition, whether you are running a ~~Doosan / BHEL HRSG or~~ a boiler from another manufacturer.



BOILER INSPECTION

HTPS provides inspection resources, technology and software to provide the most thorough and comprehensive boiler inspections unlike any other boiler inspection company. HTPS will provide the plant O&M team the ability to PRIORITIZE and MONITOR corrective action, tracking the status of all repair recommendations. HTPS will provide detailed reports with analysis and predictive failure information to determine an accurate current and future state of their boiler systems, and repair recommendations to help minimize unscheduled (forced) outages. HTPS ensures its clients a thorough and proper inspection is done on every outage, scheduled or unscheduled. And finally, HTPS ensures repairs are done correctly with no “short cut” that would jeopardize the boiler integrity.



SERVICES FEATURES

Basic Inspection Service

Visual inspection of pressure parts, gas path, steel structure and piping. HTPS will carry-out evaluation of the results and presenting Inspection report with recommendations.

Additional Options Include

- Pre-outage walk down and punch list report based on findings and interviews
- Thermographic survey to review casing and piping and identify leaks or faulty insulation
- Recommendation for specialist non-destructive examinations (NDE) tasks to be performed during the detailed HRSG inspection (NDE to be performed by a qualified NDE technician)
- Information Management and Outage planning support

Type of Boilers Include

- Heat Recovery Steam Generator (HRSG)
- Circulating fluidized bed boiler
- Waste to energy Boiler
- Balance of Plant
- Industrial Boiler
- Coal Fired Conventional Boiler
- Oil Fired Conventional Boiler
- Once Through Boiler
- Oil Heater
- Tubular Type Heat Exchanger



Services

ALIGNING BOILER INSPECTIONS FOR OPTIMIZED AVAILABILITY

In order to prevent forced outages, periodic inspections should be conducted during scheduled outages. This allows the identification of component damage in the earliest stages – when there is still time to schedule a cost-effective repair.

HTPS recommends a general inspection every 1 to 2 years and a more detailed inspection every 3 to 5 years. In order to optimize the overall plant availability, it is important to align these inspections with those of the gas turbine. Therefore, the detailed inspection should coincide with a gas turbine planned outage, e.g. the major or hot gas path inspection.

GENERAL BOILER INSPECTIONS

A visual survey of the general Boiler condition, external casing, internal gas-side mechanical parts and auxiliary equipment. Readily accessible pressure part components are visually inspected. HTPS recommends performing such a general inspection in addition to the basic inspections stipulated by local regulatory requirements.

Time frame requirement: 2 – 3 days Boiler accessibility.

DETAILED BOILER INSPECTIONS

Includes all the general inspection steps plus a more detailed visual inspection of all accessible pressure parts. This visual inspection will identify any areas of concern that require subsequent non-destructive examination (NDE) to be performed by HTPS qualified NDE technician.

Time frame requirement: 4 – 6 days Boiler accessibility.

Detailed HRSG Inspections

Includes all the general inspection steps plus a more detailed visual inspection of all accessible pressure parts. This visual inspection will identify any areas of concern that require subsequent non-destructive examination (NDE) to be performed by HTPS qualified NDE technician.

Time frame requirement: 4 – 6 days Boiler accessibility.

Pre-Outage

- Walk down and punch list report based on findings and interviews
- Thermographic survey to review casing and piping and identify leaks or faulty insulation
- Recommendation for specialist non-destructive examinations (NDE) tasks to be performed during the detailed Boiler inspection (NDE to be performed by a qualified NDE technician)
- Outage planning support

During the Outage

- Supervision of repair or installation works
- Visual inspection of Desuperheaters, blow down system, deaerator and valves
- Review of any critical indications from the NDE inspections carried out during the detailed Boiler inspection
- Documentation and evaluation of the inspection results, using OEM lifetime information management system database for efficient Boiler condition optimization

Post-Outage

- Walk down to identify start-up problems

Services

BOILER REPAIR

HTPS provides a comprehensive selection of boiler repair services. Our services include: -

- Retubing – Partial or complete retubing for watertube and firetube boilers.
- Welding & fabrication – All welding repairs; boiler shell plate, tubesheets, headers, staybolts, handholes / manholes, faceplates, doors, breechings & supports. Pipe fabrication of steam, water & gas piping to ASME and/or API code, X-Ray quality welding.
- Appurtenances, Auxiliaries & Fittings – Safety, blowdown, stop & check valves; gauges, test connections, water column piping, feed pumps, cutoffs, preheaters and backflow preventers.
- Refractory – Firebrick chambers, burner tile, venturi rings, dry oven rings and all refractory repairs.
- Thermal & Acoustic Insulation – Mineral wool blanket & pipe covers, calcium magnesium silicate (CMS) repairs for interior & exterior of boiler.
- Mixing Valves – Rebuilding or replacement

RETROFIT AND UPGRADE CAPABILITIES

Your current boiler system can benefit from a burner retrofit, control upgrade supplemental heat recovery equipment or fuel conversion which can all serve to increase efficiency or reduce emissions.

The retrofitting and upgrading method to be adopted should be decided based on the results of inspection and design review.

HTPS can evaluate your current boiler unit and recommend the right upgrade or retrofit package for your system.

Some of the retrofits services provided by HTPS include: -

- Engineered improvements, modifications and solutions
- Heat transfer surface and other pressure part replacement
- Supply of piping systems, such as attenuators and drains
- Burner repair and addition
- Tube leak retrofit
- Expansion bellow upgrade & retrofit
- Duct and casing and liner upgrades
- Selective Catalytic Reduction (SCR) and CO system addition and replacement
- Gas & Acoustic baffle modifications
- Performance efficiency improvements
- Steam-quality improvements
- Turnkey demolition and installation services



BOILER CLEANING

A clean boiler saves you money, because it burns more efficiently and lasts longer. HTPS has always stressed the importance of regular and complete boiler cleaning as part of its clients' ongoing preventive maintenance and fuel-efficiency programs.

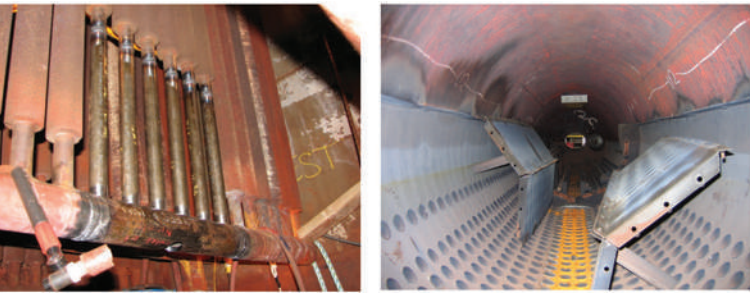
Our boiler cleaning services include:

- Boiler fireside, flue and chimney base cleaning
- High-powered truck mounted vacuum system
- Dry-ice (CO₂) Blasting – Deep Tube Cleaning
- Chemical Cleaning of Tube Internal Walls
- Re-gasketing / re-lining of access doors
- Repair / Replace door fasteners
- Sending notification/reminder for scheduled cleanings.

CONDITION ASSESSMENT SERVICES

To provide a genuine one stop option for all your inspection and assessment needs, HTPS also offers basic or advanced NDE/DE techniques to support inspections or follow-on repair works including: -

- Phased Array • Radiography
- Surface replication
- Metallurgical tube sample analysis
- Alloy identification
- TOFD (Time-Of-Flight-Diffraction) Ultrasonic Testing
- CHIME Inspection for Corrosion Under Supports
- Superheater / Reheater Tube Life Prediction (TLP)
- Remote Inspection with Video Probes, Borescopes and Crawlers



QUALITY ASSURED BOILER INSPECTION SERVICES

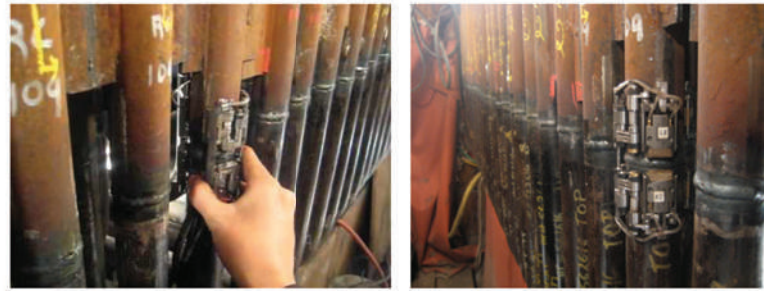
- Recovery boilers inspections and all components associated with the equipment in the power, industrial and manufacturing industries.
- Visual boiler inspections, including coal fired boiler and fluidized boiler inspections.
- Power boilers including fossil fuel for utility and industrial customers.
- Supplementary firing – Burner inspection, assessment and evaluation
- Auxiliary equipment
- Quality Control
- Code shop inspections
- Solutions to welding problems including weld monitoring
- Facility planning and scheduling

Additional Services

- Quality service and inspection of port cleaning and damper systems.
- Monthly service contracts specific to customer's requirements and will work with maintenance personnel to ensure proper protective maintenance is met.
- Turnkey service packages, quarterly or annually, with trained personnel to ensure full potential of the equipment.
- We offer equipment installation supervision to ensure timely schedules are met along with quality observation for the benefit of client's best interest.
- Boiler Rebuild Schedules, ASME Code repair verification, waterside inspections, furnace fireside inspections, boiler hanger evaluations, component assessments and component replacement planning.
- Monitoring NDE data
- Contractor Cost Reviews
- Contractor Schedule Reviews

SPECIALIZED HRSG CONDITION ASSESSMENT

- Header Inspection – Specialized visual inspection technique to inspect headers for signs of Flow Accelerated Corrosion (FAC)
- Phased Array Butt Weld Scanner – Specialized device that uses phased array ultrasonics, combined with an encoded circumferential scan, to check the quality of butt welds on manual TIG / orbital pipe welds with diameters from 1.5" to 4.5"
- Water Chemistry Review / Corrosion Assessment – Corrosion risk assessment based on design, historical chemistry readings, applied chemistry concept and operation profile.
- Root Cause Analysis – For specific problems



DETAIL SERVICES

- Detail internal and external inspection, including auxiliary equipment
- Punchlist for critical work items
- Recommendations for both current and future repairs
- Required material list to accomplish our recommendations
- Detailed service report including photographs and electronic copy
- Detail AutoCAD drawings for report illustrations and mapping
- Ultrasonic data review and planning
- NDE review and trending
- Code material requirement and procurement

Services

SUPPLY OF SPARE PARTS & REPLACEMENT

Regardless of the ancillary equipment required by your boiler system, every part you need is available through the spare parts division of HTPS. Each part we offer is engineered and manufactured specifically to suit the original specifications of your equipment.

HTPS is dedicated to providing our clients with replacement parts of the highest quality delivered in a timely manner. To benefit our clients, HTPS maintains a variety of stock items. These parts are available for immediate delivery, and on very short notice.

Trust us to supply the exact replacement parts you need. You will never go wrong with our professional product knowledge. Not only can we supply OEM replacement parts such as valves, gaskets and tubes, we also provide a wide range of specialty replacement parts and upgrade items.



Just let us know the parts you require.

- | | | |
|--|--|--|
| <ul style="list-style-type: none">• Fin Tubes• Safety Valves• Control Valves• Gate, Check, Globe, Ball Valves• Motor-operated Valves• Manway and Handhole Assemblies• Demisters and Steam Drum Internals | <ul style="list-style-type: none">• Bundles, Headers, Tubes, Piping / Fittings• Instruments, Transmitters, Thermocouples and Thermowells• Stack Dampers and Diverter Dampers• Level Gauges and Electronic Level Indicators• Strainers and Steam Traps• Expansion Bellows / Joints | <ul style="list-style-type: none">• Pumps• Burners and BMS Systems• SCR Systems• Environmental Controls & Instrumentation• Pre-fabricated Piping |
|--|--|--|

TRAINING

Based on our experience, many users of boiler units have never been properly trained. To meet productivity targets and emissions regulations, it is crucial to operate and monitor the essential equipment in the right way every day.

By conducting on-site personnel training seminars which can be tailored for specific site requirements and providing the services of technical personnel to assist our clients' operations teams in unit start-up, we have been able to ensure that all operating procedures are properly and efficiently implemented.



Below are some of the training programs that HTPS can provide on-site to suit our clients' schedule:-

- | | |
|--|---|
| <ul style="list-style-type: none">• Thermal Review of Boiler• Codes / Pressure Parts• Component Engineering• Improvements• Life / Age Analysis• Damage Mechanisms | <ul style="list-style-type: none">• Water Chemistry• Impact of Operation• Formulating Strategy• Preventive & Reactive Maintenance• Inspection Techniques• Integrity Tool |
|--|---|



OIL & GAS Marine Business

OIL & GAS

Given the burgeoning developments in the construction, infrastructure, as well as oil and gas industries in the region, HTPS has the expertise to keep various sectors well-oiled, literally. With in-depth competencies in turnkey project management and budget development, we have the edge to offer the full range of services, from fabrication, construction, transportation, installation, commissioning, inspection and maintenance of onshore and offshore structures and piping works.

Coupled with specific skills in fabricating and constructing topsides, process skids and modules, jackets, accommodation modules and living quarters, we have become the trusted vendor for oil and gas production facilities, gas processing plants, oil refinery plants and petrochemical plants.

Combining onshore process plant expertise with offshore module fabrication experience, we will continue to spearhead premium value-added services and go the extra mile to deliver the best quality for the oil and gas industry. These are some of the services HTPS have been providing since 2003.

Engineering Fabrication and Construction

- Steel work, piping and mechanical construction
- Topsides / Central Processing Platform
- Process skids and modules
- Jackets
- Accommodation modules and living quarters.
- Provision of manpower services for Onshore and Offshore works

Well-trained, competent and experienced in all aspects of project management, the team at HTPS is committed to offering total engineering and construction solutions to satisfy the needs of its clients from diverse industries. At HTPS, our professional capabilities span various fields. Whether it is providing marine services to meet shipbuilding needs across different countries, driving power plants with energy solutions, or customising structural and piping works for the oil and gas industries, we have developed the edge to execute a wide array of projects through our three business divisions as follows.

MARINE

The Marine division is capable of building, repair, refurbish, and maintain various types of ships to meet various demands from its clients. It provides engineering and construction capabilities for various type of ship and offshore structure and carries out all phases of project implementation.

Shipbuilding

- Tugboats
- Barges
- Container Shipping Vessels
- Oil Tankers
- Onshore Support Vessels
- Anchor Handlers
- Platform Supply Vessels
- Crew Boats
- Drilling / Tender Barge

Ship Repair, Refurbishment and Maintenance

- Precision machining
- Pipe fabrication
- Hull refurbishment
- Electrical works
- Mechanical works
- Diesel engine repairs
- Supply of spare parts

Engineering Fabrication and Construction

- FPSO/ FSO/ FSU Conversion
- Jack Up/ Semi Sub/ Tender Rig Conversion

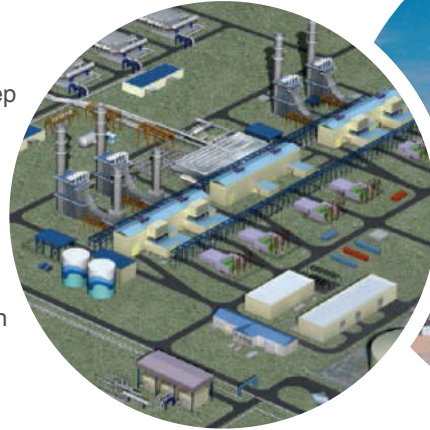
Our Certification



CEO MESSAGE

HISE has been contributing to boiler integrity management by step assessment such as visual inspection, non destructive test, metallurgical assessment, life assessment and monitoring. As results of activities, it coordinated to monitoring, repairing, retrofitting and upgrading considering minimizing cost, maximizing return and mitigating risk.

Our team members had a technology and know-how for boiler service which contained engineering, installation and commission by past working experience in Korea heavy industries. Coal fired conventional boiler, heat recovery steam generator, industrial boiler and incinerator are able to perform.



Our technological achievements have also been significant. In addition to securing proprietary technologies in boilers, we have also stepped up our R&D efforts to develop new technologies applicable to boilers. Committed to higher quality and satisfaction, we will continue to direct our efforts towards quality innovation to achieve zero defects as well as higher customer satisfaction.

ENGINEERING SOLUTION

- Heat Recovery Steam Generator
- Industrial Boiler
- Power Boiler
- Heat Transfer Equipment



- Performance evaluation including efficiency
- Mechanical stability including fatigue and creep
- Auxiliary equipment selection and sizing
- Noise and vibration
- Operational optimization
- Combustion including fuel supplying system
- Ash handling system
- Emission equipment
- Horizontal bottom support
- Horizontal top support
- Natural circulation vertical

- Forced circulation vertical
- Ash contained HRSG
- Benson HRSG
- Package boiler
- Middle sized boiler
- Large sized boiler
- Processing steam in pulp, iron, refinery, petrochemical, cement, etc.,
- Oil fired power boiler
- Coal fired power boiler
- Once through boiler

INSPECTION

- Visual Inspection
- NDT (Non-destructive Testing)
- Metallurgical Assessment
- Engineering Assessment
- Monitoring System

- Dispatch expert
- Visual inspection
- Present inspection results
- UT, MT, RT
- Measure data
- Office works
- Sample test
- Life assessment

- Provide report
- Discussion
- Fatigue, Creep
- Install measurements
- Provide the software
- Connect software
- Monitoring
- Analysis data



HEAT TECH POWER SOLUTIONS. LLC.