



HPI, LLC

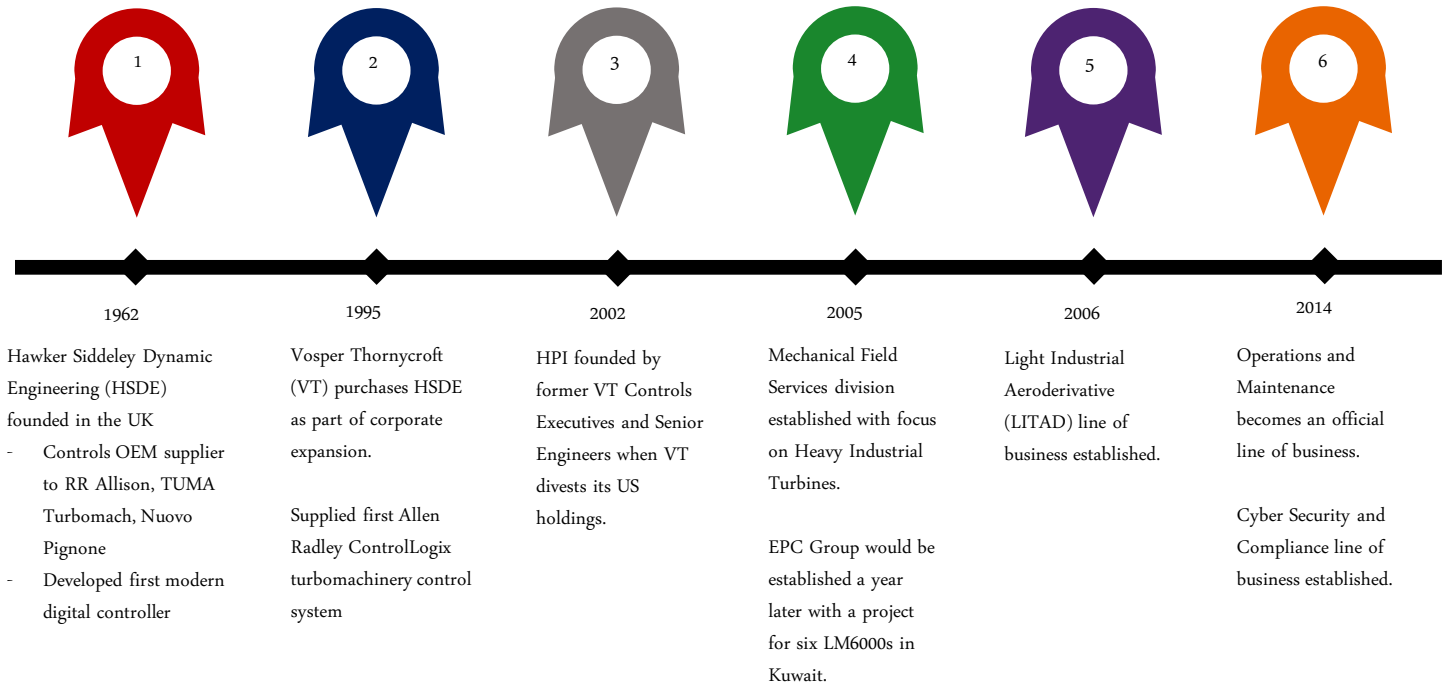
SMART SOLUTIONS FOR A ROTATING
WORLD

A close-up, low-angle shot of a large industrial turbine, likely a gas turbine engine. The image shows multiple rows of blades, with the foreground blades being a vibrant blue and the background blades being a metallic silver. The blades are arranged in a radial pattern, creating a sense of depth and scale. The lighting is bright, highlighting the metallic surfaces and the precision of the engineering. A red banner with white text is superimposed over the center of the image.

WHO WE ARE

HPI History

Founded in 2002, with a legacy in turbine controls dating back to the 1960s



Who We Are

We are an international rotating equipment solutions provider for the oil & gas, power generation and marine sectors



Oil & Gas

We are an industry leader in providing an array of services to the upstream, midstream and downstream sectors of the oil and gas industry.

Power Generation

We deliver turnkey solutions to plan, design, construct and operate power plants and improve the performance and reliability of turbines, high-speed rotating equipment, pumps and compressors.

Marine

We provide whole life-cycle assessments, EPC of marine power generation solutions, shipboard machinery control, Integrated Platform Management Systems and propulsion control systems for marine applications.

Where We Are

Worldwide Resources and Locations



United States : Global Headquarters

15503 West Hardy Road
Houston, Texas 77060
+1 713 457 7500

Canada

PO Box 49290
1000-595 Burrard Street
Vancouver, BC V7X1S8

United Kingdom

Units 1-4
Gallagher Enterprise Park
Runcorn Road
Lincoln LN6 3QP
+44 (0) 1522 519944

Central America

Oficentro Plaza Roble, Edificio Las
Terrazas
5 Piso, Seccion A , Oficina 350
San Jose, Costa Rica

Nigeria

No. 2a Emeka Nweze St
Lekki, Lagos
Nigeria
+ 234 807 769 1710

West Africa

No. 3 Hon. Avenue, Baatsonaa
DTD Post, Sakumono
Tema, Ghana
+ 233 276 043933

Middle East

Plot no. 3E MN-3
Musaffah, Abu Dhabi
United Arab Emirates
+971 2 6171000/5553558

HPI also has agency agreements in place within Mexico, sub-Saharan Africa, South America and the Middle East to further expand our coverage.

Selected Clientele

Global, “Blue-Chip” Customer Base

ExxonMobil

- British Petroleum (BP)
- Citgo
- Marathon Oil
- ConEdison
- GUPCO
- Royal Dutch Shell
- Valero
- United States Navy
- Zueitina
- Harouge
- BC Hydro
- Ontario Power Generation
- AERA
- The Dow Chemical Company
- Vitro
- Northrup Grumman
- US Army Corps of Engineers
- Austin Energy
- Apache Corporation
- Bruce Power
- National Grid
- SCE&G
- Military Sealift Command
- Maersk



MÆRSK



- Evonik
- Conectiv
- Petronas
- Silicon Valley Power
- Sirte
- ADMA
- PPG
- Iberdrola
- Emarat
- Freeport–McMoran Copper & Gold
- NRG
- Kinder Morgan
- ABB
- Emerson
- Sacramento Municipal Utility District
- Chugach
- General Electric
- DTE Energy
- Volta River Authority
- Zakum Development Company (ZADCO)
- Exxon Mobil
- Kuwait Oil Company
- Instituto Nacional De Electrificación

Customer-Centered, Quality Driven

ISO 9001 | ISO 14001 | ISO 18001 |
CAN/CSA Z299.2 | CE-1002-STD | CSA N286-05

Lloyds Register | ABS | DNV |
US MIL-SPECs Compliant



We pride ourselves on delivering on-time, quality, innovative solutions that meet or exceed customer expectations.

We ensure consistent quality through strong governance and compliance with applicable regulations and standards in every country in which we operate.

As part of this, every HPI employee is committed to:



Understanding customer expectations and driving customer satisfaction with all HPI services and solutions



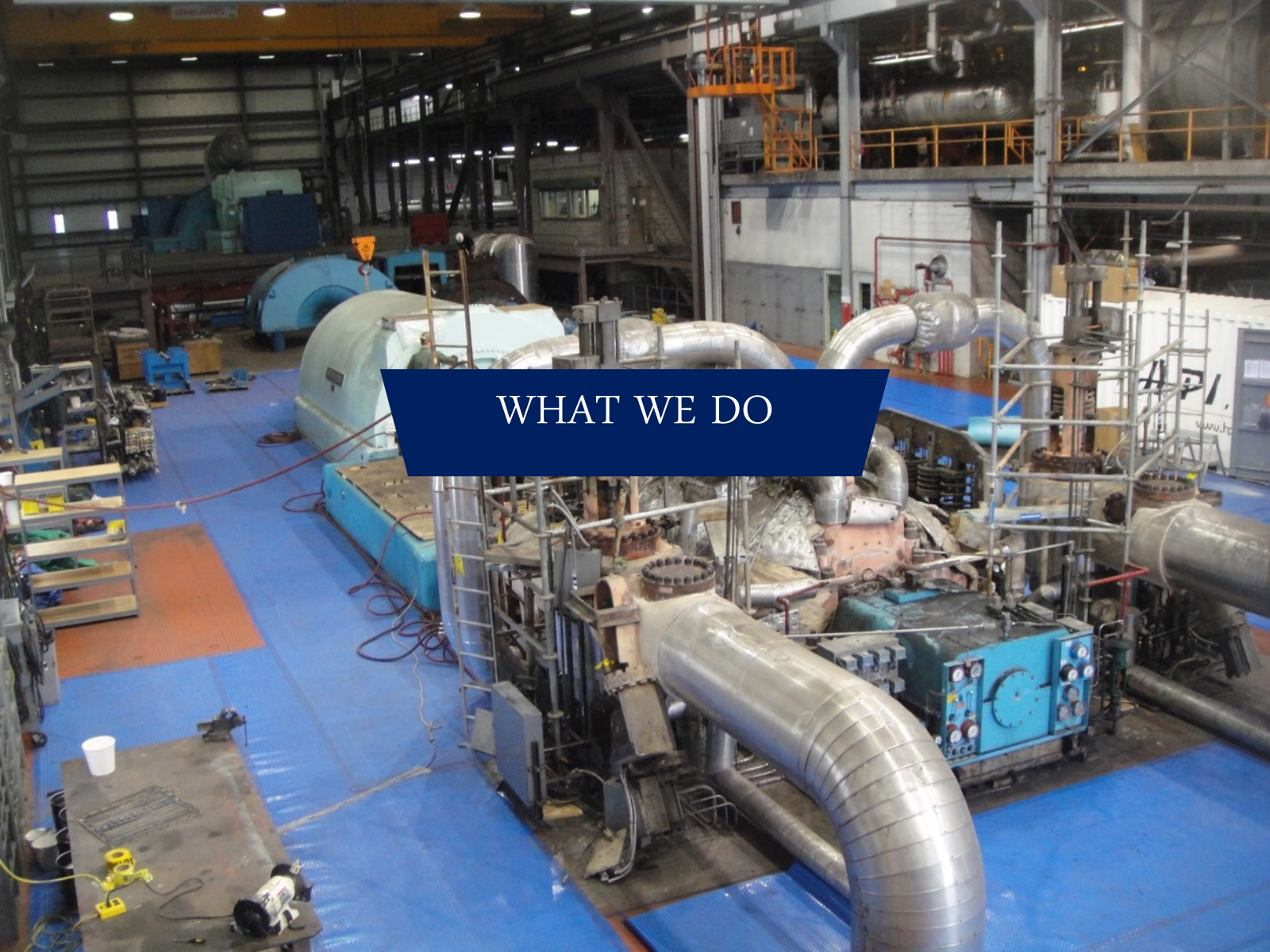
Undergoing routine training and professional development to increase their skills and provide additional value to our customers



Continuously seeking ways to improve the effectiveness of HPI's Quality Management System to drive operational performance



Performing work with integrity and adhering to company ethics policies in all work done on behalf of HPI

A wide-angle photograph of a large industrial facility, likely a power plant or manufacturing plant. The floor is painted blue with orange safety markings. In the foreground, a large, curved, silver-colored metal duct or pipe dominates the view. To its right, there's a blue control panel with various gauges and switches. In the background, more industrial equipment, including large blue cylindrical tanks and complex piping systems, are visible. The ceiling is high with exposed steel beams and industrial lighting. A dark blue banner with white text is overlaid in the center of the image.

WHAT WE DO

What We Do

HPI specializes in five key areas:



Engineering, Procurement & Construction (EPC)

Integrated services, proven processes and fast-track solutions for turnkey power projects



Marine

EPC power generation solutions, shipboard machinery control, IPMS and propulsion control systems



Operations & Maintenance

Reliable solutions to reduce life cycle costs and improve performance



Cyber Security & Compliance

Cyber security and compliance solutions to meet both business and regulatory challenges



Maintenance, Repair, Overhaul & Controls

Comprehensive solutions for rotating equipment and controls



EPC

Engineering, Procurement and Construction

Integrated Services, Proven Processes and Fast-track Solutions for Turnkey Power Projects



Conceptual Design and Detailed Front-End
Engineering



Feasibility Studies



Planning and Scheduling



Project Financing



Systems Integration and Process Simulation



Project, Construction, Contract and Materials
Management



Procurement of Major Equipment



Balance of Plant

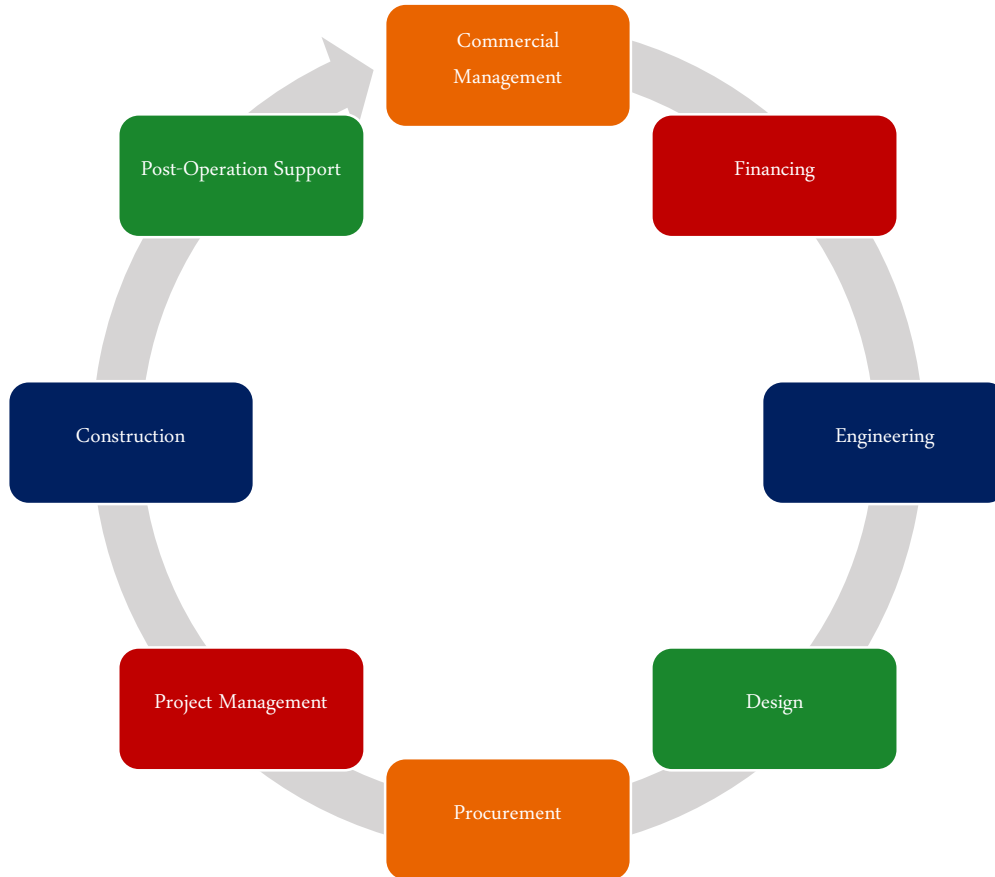


Start-Up and Commissioning



EPC Services

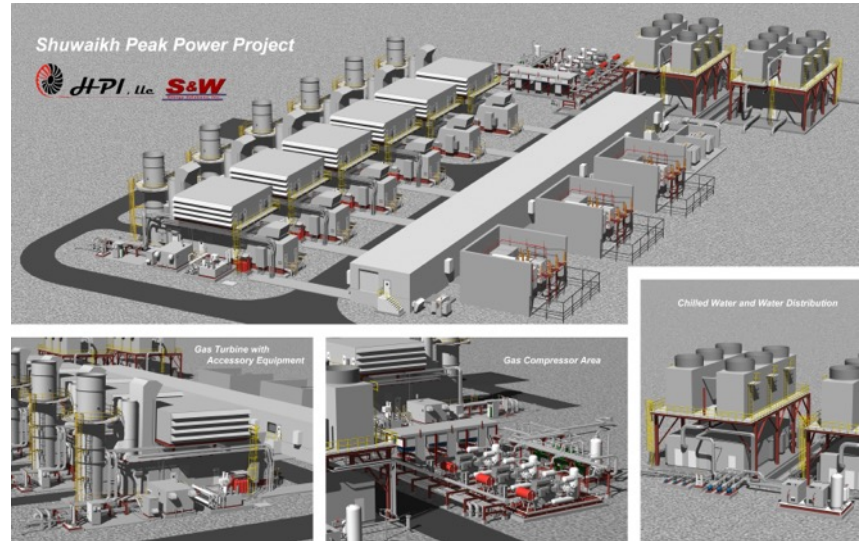
HPI's commercial and site experience can seamlessly integrate various components of any power project



Selected Power Plants EPC Case Study

Kuwaiti Power Plants – Shuwaikh & Sabiya

- The HPI team commissioned the second of two 306 MW power plants in Kuwait utilizing six GE LM6000 GTG sets.
- The Sabiya contract was awarded after the success of a similar plant in Shuwaikh, which was designed, constructed, and commissioned within six months by the HPI team.
- Each plant incorporated design, procurement, construction, and commissioning of:
 - Fuel and water tank farm
 - Two fuel gas compressors
 - De-mineralized water treatment facility
 - 10,000 ton chilling system
 - Generator step-up transformers and all associated switchgear
 - Modularized control facilities
 - Maintenance and warehouse



Selected Power Barges EPC Case Study

Venezuela Power Barge

- The power barges were designed for installation alongside an existing power plant in Tacoa
- Each facility consists of two barges, each with the following:
 - GE Frame 7FA (each nominally rated for 171 MW) gas turbine generator
 - Fuel storage and water treatment
- The next phase will include the following for each barge:
 - 260 MW steam turbine generator
 - Heat recovery steam generators (HRSGs)



EPC Overview

HPI Project Roles

Project Development

- Pre-FEED

Conceptual Design

- EIA

Conceptual Engineering

- Feasibility Studies
- Cycle Optimization
- Energy Balances

Detailed Design

- Mechanical Engineering
- Electrical Engineering
- Civil/Structural Engineering
- Controls Engineering
- Process Engineering
- Manufactured Products

EPC Project Management

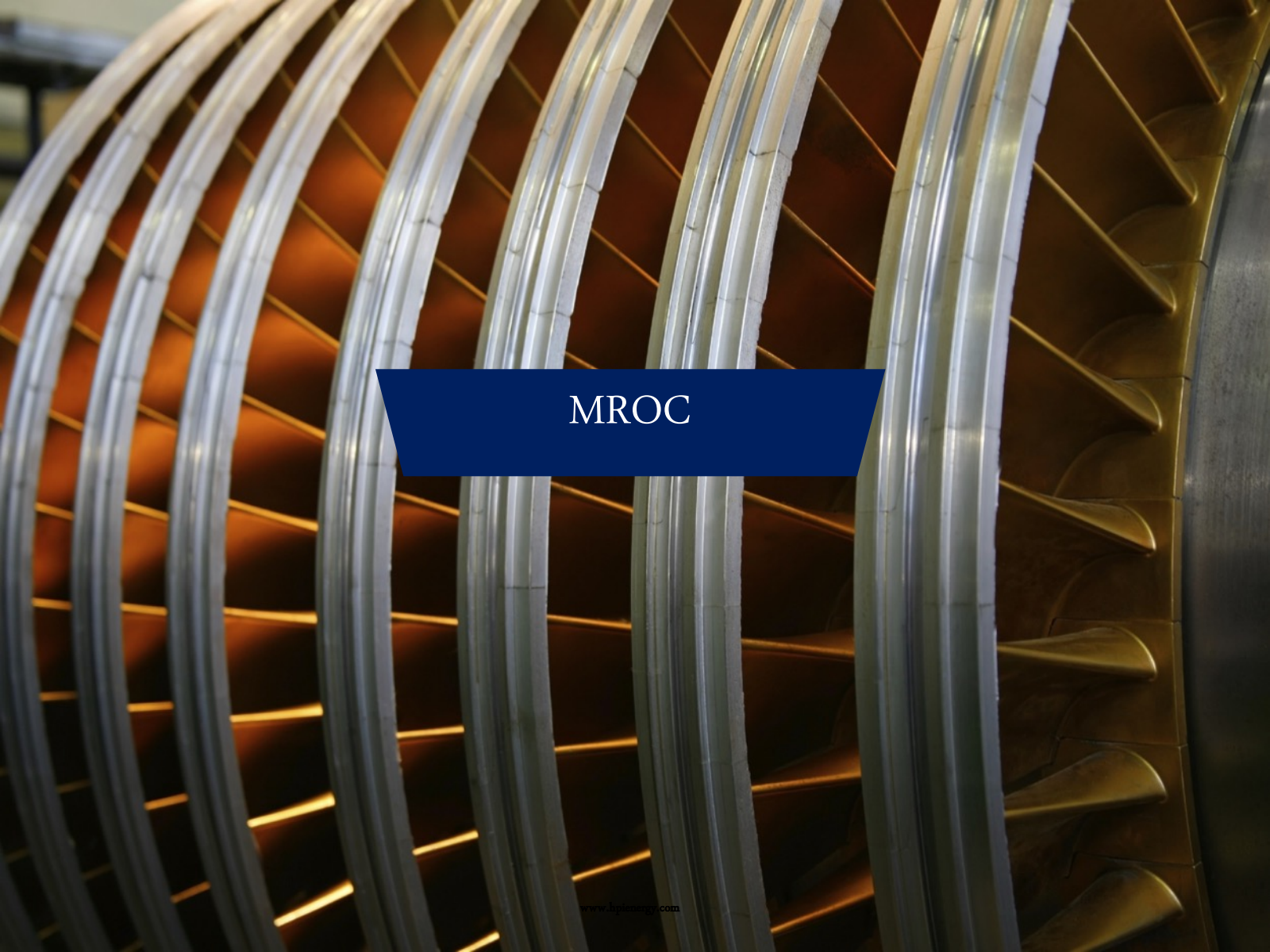
- Turnkey Estimating
- Scheduling
- Subcontract Support/Monitoring
- Contract Support
- Logistic Coordination
- Startup/Commissioning
- Performance Testing

Onsite Engineering Support

Owner's Engineer

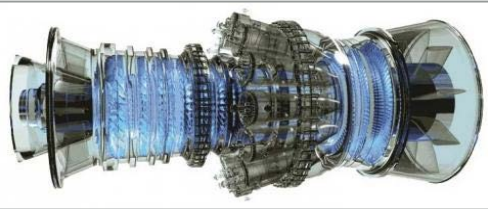
Turnover

- Training
- Documentation Support

A close-up photograph of a jet engine's compressor section, showing multiple rows of curved, metallic compressor blades. The blades are arranged in a radial pattern, creating a series of concentric arcs. The lighting is warm, highlighting the metallic surfaces. A dark blue banner with the text 'MROC' is centered over the middle of the image.

MROC

Heavy Frame and Light Industrial Aero-derivative Mechanical Field Turbine Services



HPI is the preferred field services solutions provider of major owners and operators for heavy industrial turbine projects across the oil and gas and power generation industries.

Services include:

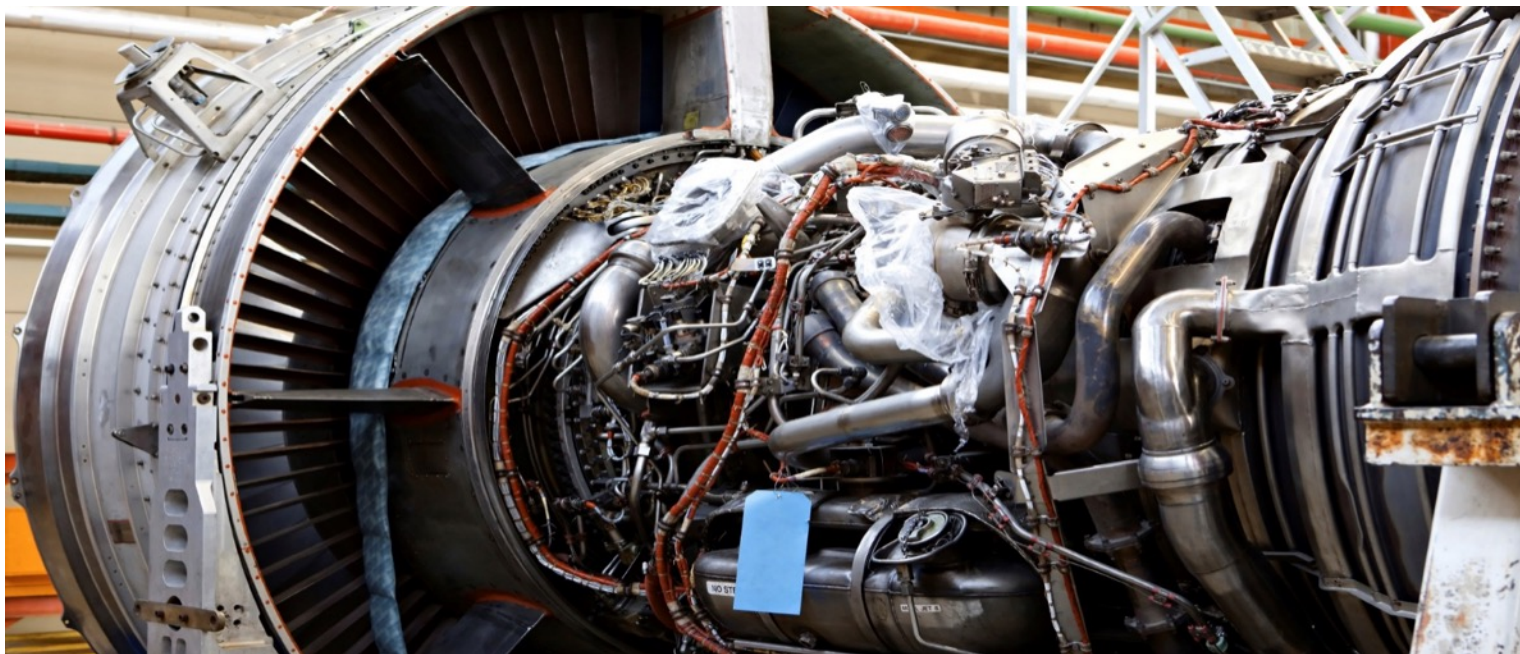
- Balance of plant
- Combustion, Hot Gas Path, Borescope and Major Inspections
- Alignment and Trim Balancing
- Instrument calibration and loop checks for all field devices

HPI supports light industrial aero-derivative gas turbines for an array of OEMs. We have a worldwide service network, and pride ourselves on finding fast, competitive solutions for our diversified customer base.

Services include:

- Level 1 & 2 field service support and Level 3 & 4 depot level needs
- Consumables and spare parts supply
- Component, accessory and repair requirements

Turbine Overhaul



- Line Boring Turbine Casings for Diaphragms, Glands and Seals
- Steam Inlet & Outlet Flange Machining
- Turbine Joint Faces
- Casing Stud Removal
- Tip Grinding of Rotary and Fixed Blading
- H.P. / I.P. / L.P. Valve Machining Work
- Coupling Hole Machining
- Turbine Rotor Journal Machining

Typical Overhaul Procedure includes:

- Unit Disassembly
- Remove and Repair Rotor
- Remove and Replace Instrumentation (As Necessary)
- Full Inspection and Repair
- Reassembly
- Balance and Alignment

Field Services

- Grit-blast clean / strip coating if required
- Fluorescent penetrant inspection & documentation
- Grind to remove all cracks
- Solution anneal heat treat in vacuum
- Weld repair of cracking & wear surfaces
- Finish machining operations
- Blend / deburr of all welds to original airfoil contours
- NDE Fluorescent penetrant inspection & documentation
- Component reassembly using new hardware
- Application of Thermal Barrier or hardfacing
- Visual Inspection and Dimensional Documentation



Steam Turbine Experience

HPI's Technical Directors have a combined experience of 189 Years, and have carried out major inspections on units up to 150MW. Staff have experience up to 750MW.

RECENT EXAMPLES OF WORK

Black Hills Power

- (2) 120 MW GE Major Inspections 2012
- 89MW GE Major Inspection

Packaging Corporation of America

- 50 MW GE Major Inspection 2012
- 50MW GE Minor Inspection 2011

City of Garland

- 150 MW GE Major Inspection 2012
- 150 MW Generator field rewind 2012

Formosa Plastics

- 32MW Fuji Major Inspection 2010

Mosaic Corporation

- 35 MW GE Major Inspection 2013



Controls Retrofit Solutions

An open-architecture approach, customized to meet your individual needs



FEATURES

- Custom HMIs, SCADAs and DCS
- Plant-wide instrumentation and control

MULTIPLE CONTROL PLATFORMS

- AB Logix, Siemens S7, GE Fanuc, Modicon, Emerson Ovation, ABB S800, etc.
- FTView, Wonderware, iFix and Cimplicity supported

POWER GENERATION ASSETS

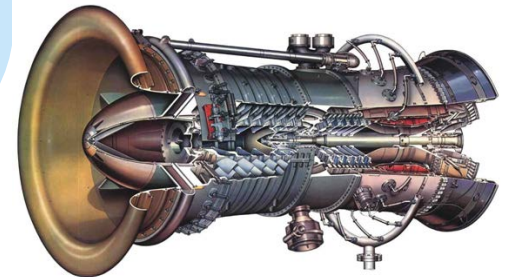
- Power Management Systems (PMS): load shedding, load mode, Power System Stabilizer
- Complete generator control systems

COMBINED CYCLE APPLICATIONS

- Steam turbine, boiler control and marine applications

Turbomachinery Controls Experience

ABB Alstom	GT-9, GT-11, GT-16, GT-35
Allison	501-KB, 501-KB5, 501-KB7, 501-KC, 501-KC5, 601
Centrax	CS600-2
Dresser-Clark	DC990
Fiat	TG-16
General Electric	• LM1600, LM2500, LM5000, LM6000 • MS1001, MS1002, MS3002, MS5001, MS5002, MS6001, MS7001
Hitachi	MS5001
Kawasaki	K7-A
Konsburg	KG-2
Lycoming	T53
MAN Turbo	M38, THM1100, THM1202, THM1203, THM1304
Mashproekt	GT2500, GT16000, GT25000
Mitsubishi	MF-111
Nuovo Pignone	MS1002, LM2500, PGT2, PGT5, PGT10
Orenda Aerospace	OT3, OT5, OGT2500, OGT25000
Pratt & Whitney	GG3, GG4, FT4, FT8
Rolls Royce	AVON, GEM, GNOME, PROTEUS, OLYMPUS, RB211
Ruston	TA1750, TD4000, TB3000, TB4000, TB5000, TB5400, TYPHOON, TORNADO
Siemens	SGT-100, SGT-200, SGT-500
Solar	SATURN, CENTAUR, TAURUS, MARS
Stahl Laval	GT-35
Westinghouse	W101, W191, W251, W301, W501

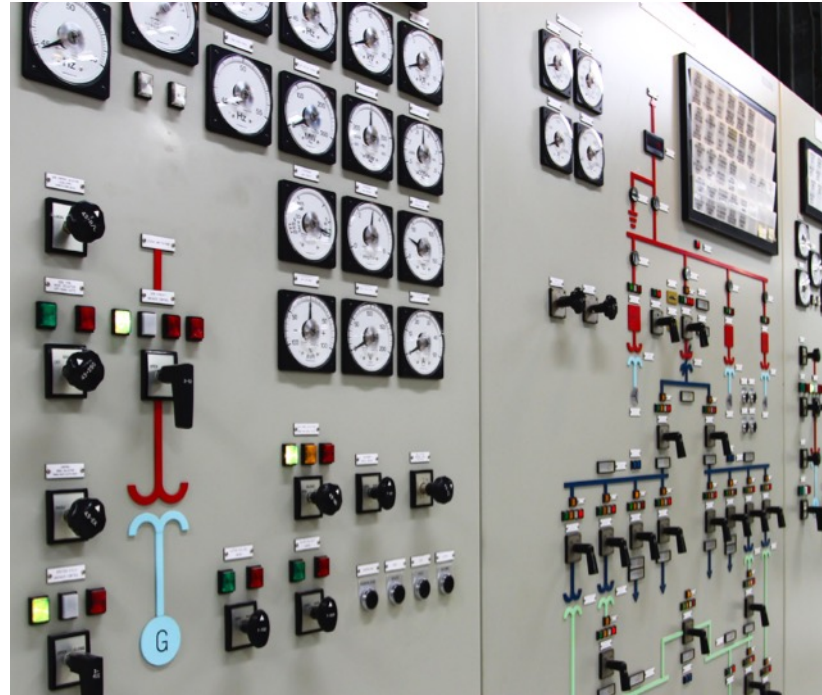


HPI Controls Solutions

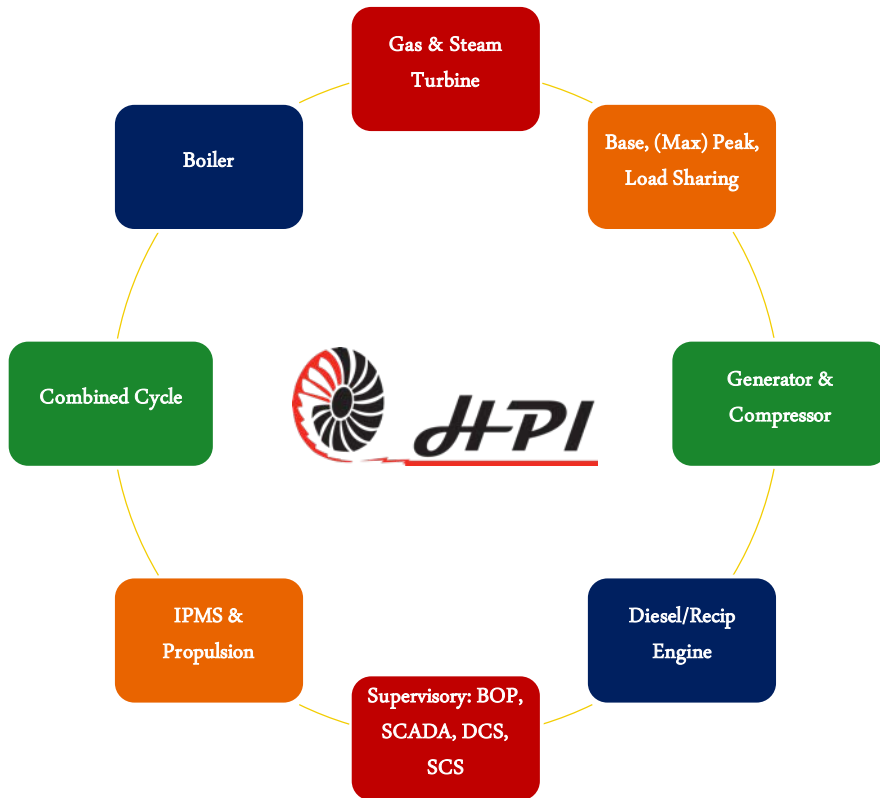
HPI Control Solutions are built to meet customer-specific requirements.

All design, engineering, and programming are completed with in-house assets.

- HPI turnkey solutions have been applied to the **energy** (power generation, oil & gas, nuclear) and **marine** industries
- HMIs based on customer requirements
- Integration to plant control network
- Remote monitoring and control
- Turbine control and automation solutions
 - Turbine control solutions (gas, steam, diesel)
 - Balance of Plant (BOP), SCADA, DCS, SCC
 - Marine propulsion & integrated platform management systems (IPMS)



HPI Control Capabilities



EXPERIENCE WITH MULTIPLE CONTROL PLATFORMS, INCLUDING:

- ABB S800
- Allen-Bradley Logix® family
- Emerson Ovation
- GE PAC Systems™
- GE Series 90-70
- GE Speedtronic™ Mark IV, V, VI, VIe
- HSDE DIGICON®
- MicroNet™
- Modicon®
- NetCon™
- RTP
- Siemens S7
- TMR Platforms

OEM-Alternative Controls

BENEFITS OF HPI CONTROLS

- PAC- and PLC-based control systems
- Commercially off-the-shelf (COTS) controls
- Open architecture system
- Easy integration with other systems (SCADA, DCS, etc.)



Control Solutions Distributed Control Systems

Integrate with an HPI- or OEM-control system



HPI DCS DESIGN ALLOWS FOR

- Local control stations unmanned
- Reduced O&M footprint

SCALABLE CONTROL PACKAGE

- Similar design ordered for other power plants
- Simple and combined cycle



SPECIALIZE IN SHORT PROJECT TIMELINES

- Kuwaiti plant systems installed 3 months ARO
- Twelve LM6000s and BOP at two different sites
- GE Frame 7FA power barges installed 10 weeks ARO

Selected Distributed Control Systems (DCS)

Shuwaikh & Sabiya Power Stations in Kuwait (2 x 300 MW Power Plants)

- Six GE LM6000 gas turbines per plant
- Turbine controls, gas compressors, fuel handling, inlet chilling, relay monitoring, switchgear, transformer protection, metering, etc.

East Texas Electric Company in USA (2 x 170 MW Power Plants)

- Two GE Frame 7EA gas turbines per plant
- Turbine controls, gas compressors, fuel handling, relay monitoring, switchgear, vibration monitoring/analysis, PI historian, CEMS, interplant communication/control

Vera Cruz Power Station in Venezuela (340 MW Power Plant)

- 2 Barge Mounted GE Frame 7FA Gas Turbines
- Fuel handling, plant monitoring, generator protection monitoring, barge system controls and monitoring

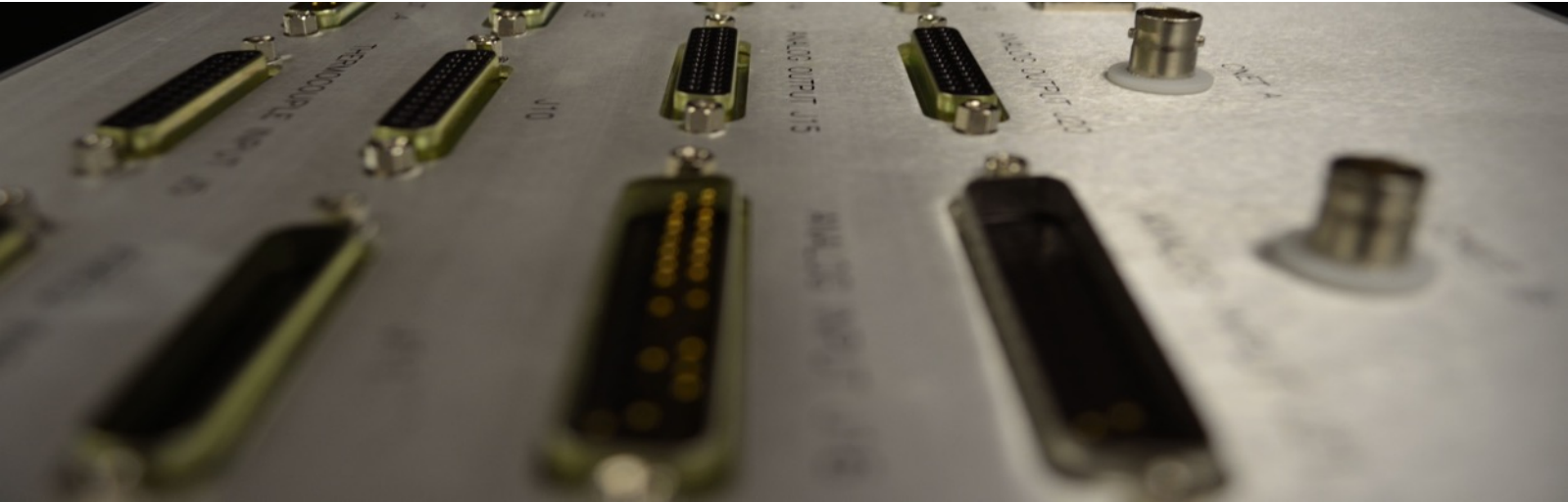
South Carolina Electric & Gas Hagood in USA (150 MW Power Plant)

- Two GE LM2500 and one Westinghouse 501D5 gas turbines
- Turbine controls, fuel handling, generator protection, electrical protection, de-min water system, glycol system, CEMS



Control Solutions

Direct Replacement Controllers



FEATURES OF DIRECT REPLACEMENT CONTROLLERS

- High-speed processor, HMI, increased functionality available
 - Sequencing
 - Embedded anti-surge
 - Embedded load control
- Similar back-panel connectors to allow reuse of existing communication modules
- Viable for all applications

SIGNIFICANT COST SAVINGS

- Engineering and design costs already expended
- Rapid installation and commissioning
- Reduced outage costs (< 3 days possible)

REPLACEMENT DIGICON® UNIT (RDU™)

- For all DIGICON-series controllers
- Designed by original DIGICON team

REPLACEMENT NETCON™ UNIT (RNU™)

- For Woodward NetCon 5000 or MicroNet™ processors

REPLACEMENT RUSTRONIC UNIT (RRU™)

- For Ruston (aka Siemens or EGT) controllers

Design & Manufacturing Capabilities

HPI Provides a Turnkey Approach

Design, purchasing, manufacture, integration, commissioning, aftermarket service

- 90% Houston for core engineering, design, and manufacture
- 10% UK for concurrent/round-the-clock execution methodology = high BTS stats

Panel manufacturing is nearly all done in Houston (some small pre-fab units are bench assembled and tested in UK)

Capacity of approximately 20 panels in assembly or test at any given time

- Typical throughput on a panel from beginning of assembly through shipment is two weeks

Typically, 30–40% of HPI's cost of a control systems order is in third-party equipment specified by HPI



Nuclear Services

With a wealth of experience and expertise largely gained from working on projects at nuclear plants in both North America and Europe, including one of the largest nuclear power plants in the world, HPI can provide complete nuclear power system solutions, including mission-critical standby emergency power. We also offer a suite of maintenance and repair to help protect your investment and ensure availability and reliability.

- Gas Turbine and Diesel Engine Controls
- Standby and Emergency Power Generation
- FMEA Studies to Identify Critical Components and Spare Parts
- Design Services
- Mechanical Inspection and Repair of all Turbine Overhauls
- Exacting Quality Requirements and Standards



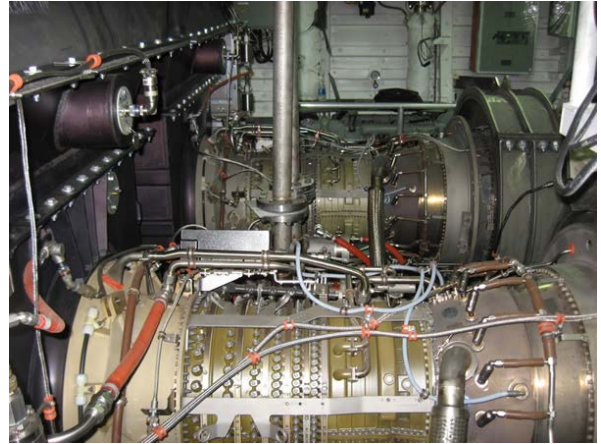
Marine



Capabilities

Mechanical repair and overhaul (MRO) services for gas and steam turbines, and diesel engines

- ✓ Marine integrated platform management systems (IPMS)
- ✓ Application engineering for a full range of propulsion control, electrical power management, and auxiliaries control
- ✓ Turnkey control solutions for gas and steam turbines, diesel engines, and associated electronic controls on marine vessels
- ✓ Steering control, thruster control, fire pump control, stabilizer control and controllable pitch propeller (CPP) automation
- ✓ Factory authorized repair facilities
- ✓ Fully integrated logistics
- ✓ Customize “planned maintenance” for the climate, environment, operations, and condition of equipment realities
- ✓ Coordination of maintenance activity and outages
Work pack that includes HSE plan, quality plan, and method statements



Marine Services

Main propulsion control and integrated platform management systems for increased reliability and lower operating costs

- Maintenance, Repair and Overhaul services for gas and steam turbines and diesel engines
- Integrated Platform Management Systems (IPMS)
- Turnkey control solutions for gas and steam turbines, diesel engines and associated electronic engine controls
- Steering, thruster, fire pump and stabilizer control
- Application engineering for a full-range of propulsion control, electrical power management and auxiliary control
- Factory authorized repair facilities
- Propulsion plant systems training



Selected Marine Experience

Allison: 501-KB, KB5

GE LM1600, LM2500, LM6000, LM500

Mashproekt: GT2500, GT16000

Pratt & Whitney: GG4, FT8

Rolls-Royce OLYMPUS



CYBER SECURITY AND COMPLIANCE

Cyber Security & Compliance Services

Custom Security and Compliance Solutions to Meet both Business and Regulatory Challenges

- ✓ Compliance Program Design and Implementation
- ✓ Compliance Applicability Assessments
- ✓ Cyber Vulnerability Assessments
- ✓ Systems and Network Risk Assessments
- ✓ Internal Control Program Effectiveness Review
- ✓ Security Architecting
- ✓ Operations Network Security Upgrades
- ✓ Remediation and Recovery Planning
- ✓ Detailed Security Engineering
- ✓ Hardware and Software Monitoring
- ✓ Security System Conversion
- ✓ Compliance Filings with Government Agencies



Environmental Compliance Programs

Addressing Customer Concerns in Today's Environment

ADVANCED DIAGNOSTICS

- Lower Emissions with DLE/DLN Mapping
 - Uses Existing Control System, No Outage Period Required
 - Possible via Remote Connection
- Root Cause Analysis diagnoses and troubleshoots installation issues
- HPI can directly monitor combustor temperature with new technology

MECHANICAL SOLUTIONS

- Valve Packing and Repair Program for Larger Steam Turbines
 - Greatly Reduces or Eliminates Leakage
 - Attains Environmental Compliance for Installation

EMISSIONS REDUCTION SYSTEMS FOR LEGACY TURBINES

- Water Injection Skids
- SCR Systems
 - Integrate into HPI Control System

INTEGRATE EMISSIONS MONITORING INTO HPI CONTROL NETWORK

- CEMS / PEMS
- Periodic Report Generation





O&M

Asset Managment

Operations & Maintenance Services

Reliable Solutions to Reduce Life Cycle Costs and Improve Plant Performance



- Predictive and preventative maintenance
- Daily Plant Operations
- Outage Management Support

- Operator Training
- Staff Augmentation & Contractor Management
- Routine Maintenance

- Regulatory HSE Compliance

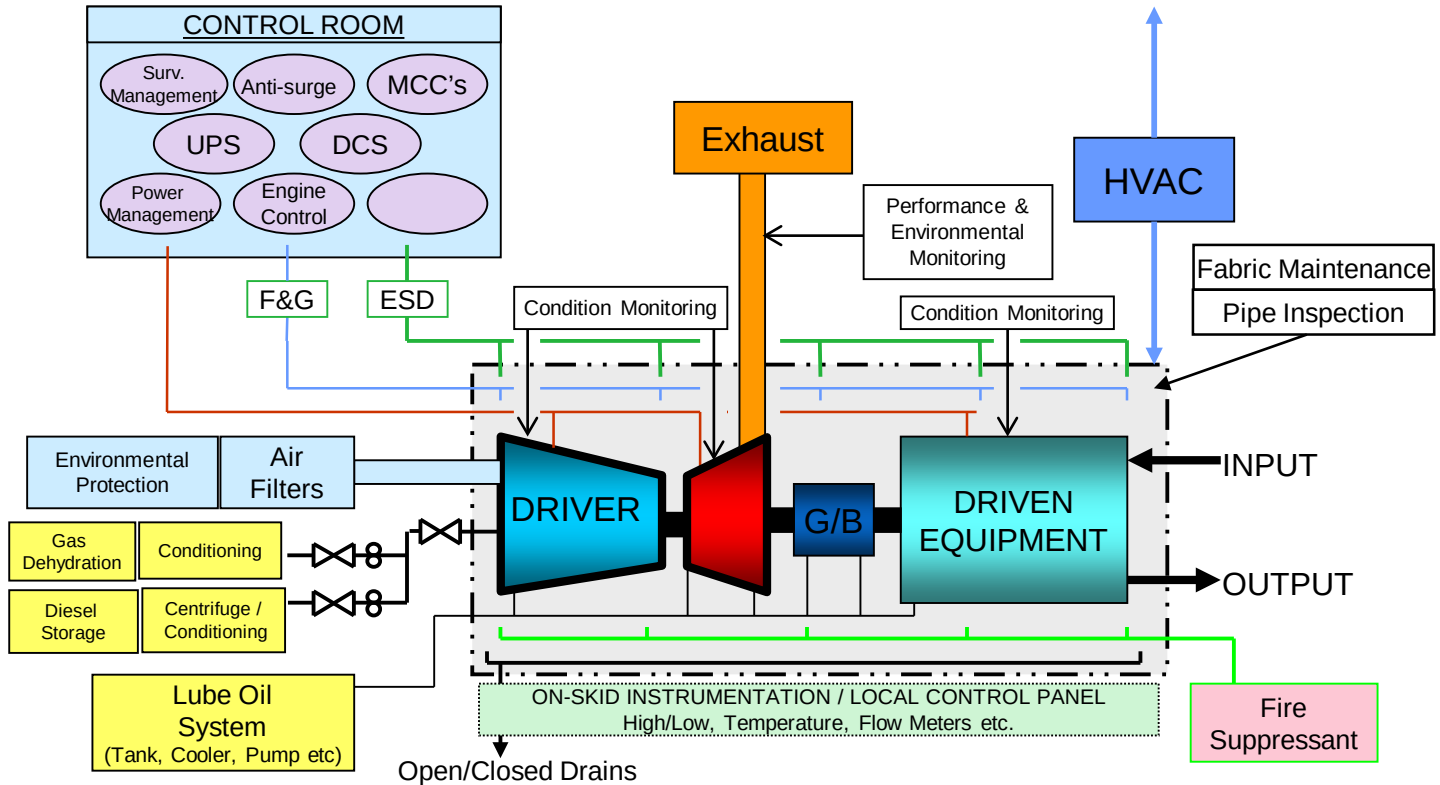
Asset Management & LTSA's

HPI can deliver a full spectrum of services for rotating equipment and associated critical plant to the Energy industry. Enhancing the value of clients' assets through increased availability and reliability.

- ✓ Full spectrum services ranging from the transactional supply of parts and maintenance services through to turnkey managed services including Asset Management, LTSA, O&M, etc.
- ✓ Client focused interface – aligned with the clients' business drivers, not the OEM's.
- ✓ Single point of contact for all support activities.
- ✓ Access to a comprehensive Supply Chain that includes OEMs, accredited suppliers and maintenance depots
- ✓ Fast track problem resolution
- ✓ Proven track record on delivering reliability and availability improvements
- ✓ Rotating equipment expertise from both Asset O&M and equipment OEM backgrounds.
- ✓ Maintenance, repair and overhaul services for all critical rotating and static equipment.
- ✓ Site Surveys, performance improvement recommendations and proposals available without obligation

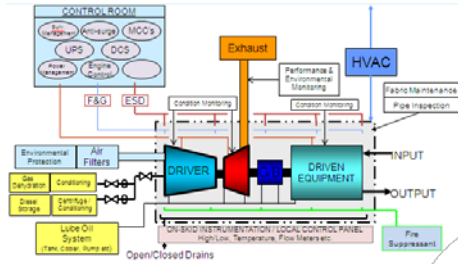
The Equipment We Cover

HPI doesn't cover just the Driver or the Driven Equipment, but the ENTIRE PLANT.



HPI Asset Management Approach

HPI is a Single Point of Contact



KEY PARTNERS...

THI
Realize your dreams

GAS TURBINE SERVICES
PART OF THE BRUSH

BRUSH

ap.m

Rockwell Automation
Allen-Bradley • Rockwell Software

ORBITAL
Energy Services

TRS
GLOBAL SERVICES

CHROMALLOY
Turbine Services

ACT
INDEPENDENT TURBO SERVICES

StandardAero



CAPABILITIES

Maintenance, Repairs, Overhauls & Controls

Operations & Maintenance

Engineering Procurement & Construction

Cyber Security & Compliance



... and SUPPLIERS

Score Energy Limited
Medium Gas Turbine Services

tyco
Fire & Integrated Management

Endress+Hauser **EH**

alba power

GREENFLAME

AAF INTERNATIONAL

GOWRINGS CONTINENTAL

GTC

SIEMENS

TURNER EPS

EMERSON
Process Management

SULZER

DOWDING & MILLS

GE

C

John Crane

Cartech
Medium Gas Turbine Services

VOITH

FLOWERVE

WERN

Long Term Service Agreements (LTSA's)



ADMINISTRATIVE ACTIVITIES:

- Service Director
- Parts Sourcing / Procurement
- Parts Refurbishment Management / Expediting
- Outage Planning
- TIL Administration
- Client Interface
- OEM Interface
- Major Maintenance Budget Reparation and Management
- Coordination of PDM Activities and Application of Data Collected to Outage Plans



INSPECTIONS INCLUDE:

GAS TURBINES

- Combustion Inspections
- Hot Gas Path Inspections
- Major Inspections

STEAM TURBINES

- Minor Inspections
- Valve Inspections
- Major Inspections

GENERATORS

- Minor Inspections
- Major Inspections

CENTRIFUGAL COMPRESSORS

- Major Inspections

AUXILIARY EQUIPMENT

PM ACTIVITIES

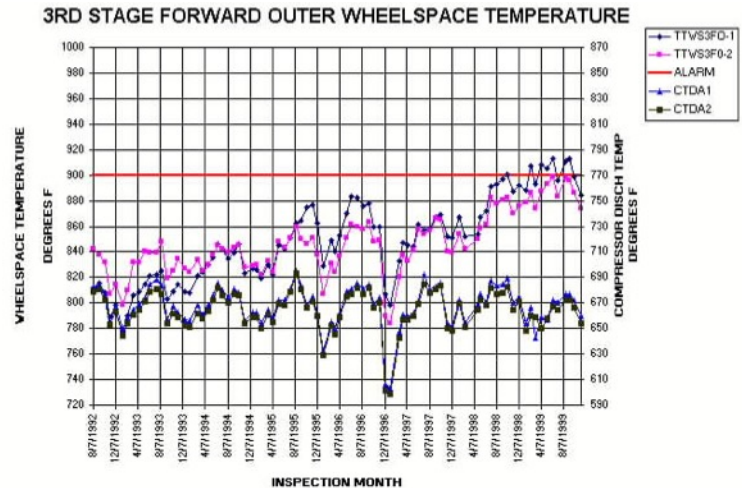
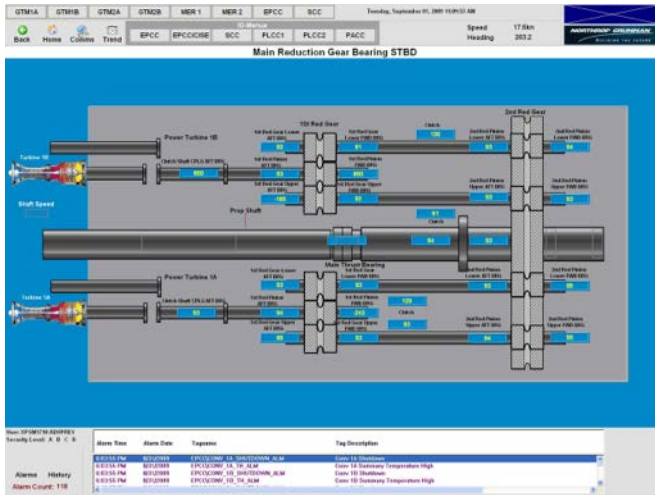
Long Term Service Agreements (LTSA's)

Fashioned after typical OEM program offering superior reliability at lower customer cost

- Comprehensive Services
- Preventive Maintenance
- Predictive Maintenance
- Repair Maintenance
- Inspections and Overhauls
- Single Source of Bundled Services
- Level Cash Flow For Maintenance
- Anticipates and plans for long term needs
- Reliability centered maintenance at low cost
- Accelerates budgeting and approval process for major maintenance expenditures
- Minimal downtime due to crew familiarity with equipment
- Continuity and knowledge transfer between inspections
- Motivation not based on selling parts
- Low cost reliable alternative to the OEM



Predictive Maintenance Programs



- Applied To Large Rotating Equipment
- Extends Time Between Overhauls
- Maintains Design Throughput and Efficiency
- Decreases Unscheduled Outages
- Prevents Catastrophic Failures



Contact HPI

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