

Oryx Engineering Solutions Centre Ras Laffan Industrial City



OESC's Service Offering

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1. OESC Facility and Services to be offered

1.1 Introduction

In response to Qatar's extraordinary growth in the oil & gas, power & water, industrial, petro-chemical and marine sectors. Oryx Energy Project & Services LLC ("OEPS") has taken a strategic decision to respond to the in-country demand for world-class engineering, fabrication maintenance and manufacturing services by creating Oryx Engineering Solutions LLC ("OES"), and to spearhead Oryx's long-term strategy to deliver sustainable "World Class" service performance levels in Qatar and the region. The outcome from that decision is a fully NFPA-5000 compliant, 10,400M² workshop and offices complex - the 'Oryx Engineering Solutions Centre' ("OESC") – on a plot size of 14,500M² in a prime location in the heart of Ras Laffan Industrial City located within the East Side Service Support Services Area. The Centre is the heart of Oryx' service support activities across the energy sector spectrum in Qatar and, as a consequence, it will be operational on a 24 hour / 7 days /365 days a year basis.

We are focused on:-

- Establishing the Oryx Engineering Solutions Centre as a world-class facility;
- Providing and Identifying relevant value-added service offerings;
- Developing partnerships and joint ventures with internationally recognised organisations that add value to our own skills and services;
- Continuing the development of the Centre so that it constantly outstrips the needs of Qatar's and the region's growing Oil & Gas, LNG, GTL, Petrochemical, Power and Water and Marine industries.
- Meeting customers' CTQ's in quality, on time delivery and service.

1.2 OESC Location



1.3 Management Systems

The Oryx Engineering Solutions Centre as the following management systems accreditations:

Seq.	Accreditation	Description	Accreditation Authority
(a)	API Specification Q1	American Petroleum Institute Quality Management Systems	American Petroleum Institute (API)
(b)	ISO 9001: 2008	International Organization for Standardization Quality Management Systems	American Petroleum Institute (API)
(c)	ISO 14001: 2004	Environmental Management Systems	Lloyd's Register Quality Assurance (LRQA)
(d)	OHSAS 18001: 2007	Occupational Health and Safety Management Systems	Lloyd's Register Quality Assurance (LRQA)

1.4 Technical Certification

The Centre will have the following Certification / Standard Systems as its initial offering:

- (a) API 5L - Line pipe
- (b) API 5B - Threading, gauging, tubing and line pipe threads
- (c) API 5LD - Clad or line steel pipe
- (d) API RP 6AR - Repair and remanufacture of Wellhead and Christmas tree equipment
- (e) API RP 6DR - Repair and remanufacture of pipeline valves (steel gate, plug, ball and check valves)
- (f) WPS's - Weld Procedure Qualifications
- (g) Others - including ANSI/ASME

Current Status

As of date the Oryx Engineering Solutions Centre is accredited for the technical certification:

Seq.	Accreditation	Description	Accreditation Authority
1	API 5CT	Tubing and Casing Connections/Accessories	American Petroleum Institute (API)
2	API 6A	Wellhead and Christmas Tree Equipment (PSL1, PSL2, PSL3, PSL4)	American Petroleum Institute (API)
3	API 7-1	Specification for rotary drill stem elements	American Petroleum Institute (API)
4	API 16-A	Drill through Equipment	American Petroleum Institute (API)
5	ASME "U" Stamp	Manufacture of Pressure Vessels	American Society of Mechanical Engineers
6	ASME "S" Stamp	Manufacture of Power Boilers	American Society of Mechanical Engineers
7	NBBI "R" Stamp	Repair & Alteration of Pressure Vessels	USA - National Board of Boiler & Pressure Vessel Inspectors (NBBI)
8	NBBI "NB" Stamp	Authorised to apply NB mark and to register boilers, pressure vessels, or other pressure retaining items with National Board of Boiler for equipment that is manufactured to ASME S and U Standards.	USA - National Board of Boiler & Pressure Vessel Inspectors (NBBI)
9	VAGT, VAsuperior VArroughneck connections	Premium Connections: License to thread and repair threads connections.	Voestalpine Tubulars
10	TP-CQ Series	Premium Connections: License to thread and repair threads connections.	Tianjin Pipe (TPCO)

1.5 Services Offered

The services offered include:

- General/Specialized Machine shop services with lifting capability of 100 MT and machine, drilling, turning CNC capability with range up to a weight of 20T and size of 3.0M x 3.5M x5.0M envelope.
- API threading of tubular pipes and connections
- Refurbishment, repair of Drill Through, Wellhead Christmas Trees equipment and other API equipment, tools and accessories
- Rotating and Turbomachinery equipment monitoring, overhaul, repair, and re-certification
- Dynamic balancing and vibration analysis
- Mechanical seal testing, repair, and re-certification
- Motor & Generator re-winding, repair and testing up to 12 MW

- Maintenance and repair of all types of valves, and their re-certification
- Compressors, pumps, fans and blowers refurbishment
- Manufacture of Components
- Reverse Engineering of component parts
- Mobile valve testing containers with ATEX certification for use in HAZOP areas
- Computer operated inline safety valve testing.
- Heat exchanger inspection, overhaul, and repair
- Pressure vessel testing, repair, and re-certification
- Piping and flange testing and repair
- On-line leak sealing
- Specialist inspection and non-destructive testing, including dye-penetrant (DP), MPI, UT and RT
- Specialist fabrication
- Heat Treatment, Blasting and Painting contract services including mobile services.
- Specialist welding and heat treatment services to BS 5500 category on exotic material i.e Inconel , tantalum hastelloy, stellite etc.
- Mobile field workshop facilities: in situ machining, shot blasting & painting.
- Upstream API and premium threading on state of the art machines
- Maintenance and repair of upstream API equipment and piping
- On-site field maintenance: maintenance turnkey services, technical manpower, shutdowns, instrumentation and control systems
- Integrated control system builds and Control system testing and modification
- High Velocity Oxygen Fuel technology for metal spaying using bespoke 'robot automation'.
- Specialist cladding of materials, internal and external, using specialist computerized automated equipment (flanges, valves, piping, bobbin sections)
- Technical Training to certification standards

1.6 Primary Listing of Key Equipment Categorised by Discipline

- **Machining Services:**
 - 3 CNC Large bore oil country lathes with up to 535mm hollow spindle
 - 4 Manual Large bore oil country lathes with 1560mm swing and up to 610mm hollow spindle and 6000mm length.
 - 2 CNC vertical lathes 1600 & 2000mm diameter and up to 12 ton components
 - 1 CNC horizontal floor borers 5000 x 3500 x 3,000mm Rotary table sizes 2,000 x 2,500
 - 1 CNC surface grinder 800 mm x 1500 mm table
 - 1 Cylindrical grinder 500 mm dia x 2500 mm long
 - 2 CNC welding / overlay / vertical cladding rigs and Heat-treatment furnace.
 - Faro measuring / scanning equipment capable of scanning equipment up to 3m X 3m
 - Flange facing machine up to 36" inch diameter, match boring, seal groves and raised faces.
- **Valve Repair & Test Services:**

Maintenance and repair of all types of valve/ actuators and their re-certification using industry standard test rigs and computer tacking equipment via:-

- Pressure testing control valves and actuators up to 30,000psi (hydrostatic) & 15,000psi (gas)
- Pressure relief valve testing up to 10,000 psi
- Range of test flanges throughout the ANSI pressure rating rage and industry size requirements

- **Rotating Equipment Services:**
 - Rotor balancing equipment up to 20,000kg x 6000 mm long

- **HVOF Coating System Services:**
 - State of the art fully robotic controlled
 - 3.5m lathe and 10 ton capacity
 - Unique hard and protective coatings available

- **Cladding Services (Vertical) Services:**
 - Polysoude - 4m x 4m Vertical Cladding Station Column & Boom
 - Polysoude - 3m x 2m Vertical Cladding Station - Column & Boom

- **Finishing Trades Services:**
 - Shot blast Chamber - 6m x 4m x 4m Fitted with a shot recovery screw and bucket elevator. Full extraction and air wash system
 - Portable Shot Blast Unit -2m x 2m x 3m Portable reusable shot blast system complete with high pressure blast pot and vacuum recovery system.
 - Paint Spray Booth - 6m x 4m x 4m Fitted with a 1700cfm ATEX rated air extraction system and airless spray system.
 - Portable Paint Spray Booth - 6m x 2.5m x 2.5 m fitted with 8800cfm ATEX rated extraction system.
 - Stress Relieving Furnace - 3m x 3m x 3.5m 800 Deg C. 570 kw Electrically charged Thyristor and PID controlled 20 tonne bogey hearth furnace fitted with a [6] channel Brainchild VR18 Paperless recording system.

- **Electrical Motors & Generators Services:**
 - Electrical motor rewind up to 12 mw capacity including 3m x 3m x 4.5m burn off oven and 3m dia VPI system.
 - Burn Off Oven - 3m x 4.5m x 3.5m 450 Deg C. 270 KW [2] Zone Electrically charged Thyristor and PID controlled Oven. 20 tonne capacity loading on a motorised loading trolley
 - Specialised Coil Rewinding Equipment
 - Vacuum Impregnation Plant – 3m x3.2m
 - Electrical Test Bench - Not full load, up to 12MW / 13.8Kv (50/60 Hz)
 - Curing Oven - 3.5m x 4.5m x 3.5m 250Deg C. Electric Curing oven fitted with an auto Gas detection and control system. Top and front loading options for up to 20 tonne components
 - Curing Oven - 2m x 1.5m x 2m Electric powered bogey loading 250 Deg C. Oven with remote control software.
 - EX repairs for low, medium and high voltage motors and generators

- **Instrumentation Services:**
 - On-site maintenance of field instrumentation and control systems

- **Test Pit – Hydrostatic & Gas Services:**

The test pit will be blast-proof with the following characteristics:

- Pit – 5m x 7m x 3m - Below ground blast-proof pit, with 5m x 7m blast-proof doors on top
- Control Room - A raised enclosed Control Room adjacent to, and above, allowing visibility via a blast-proof window into and over the test facility area.
- Nitrogen Cylinder Bank - located behind the Control Room, and supplying the test pit.
- The pit will be used to carry out Hydrostatic tests on equipment, up to 30,000psi, as well as Nitrogen testing up to 15,000psi., including cryogenic testing.
- The tests will be carried out according to client-specific procedures, OEM requirements, industry standards

- **Non-Destructive Testing (NDT) Services:**

The following NDT services will be carried out:

- Magnetic Particle Inspection (MPI)
- Dye Penetrant (DP)
- Ultrasonic Test (UT)
- Hardness Test (Electronic Digital Type - ASME, Poldi Type - API 6A & 16A)
- Radiography (RT)

- **Training Facilities Services:**

- Technical Training to certification-standards
- Classroom style lecture hall with complete audio, visual equipment and video conferencing facility for 45 Person.
- Classroom style lecture hall with complete audio, visual equipment and video conferencing facility for 10 Person.
- Conference Rooms (x2) with complete audio, visual equipment and video conferencing facility for 16 Person.
- Shop floor training providing real practical hands on training and experience

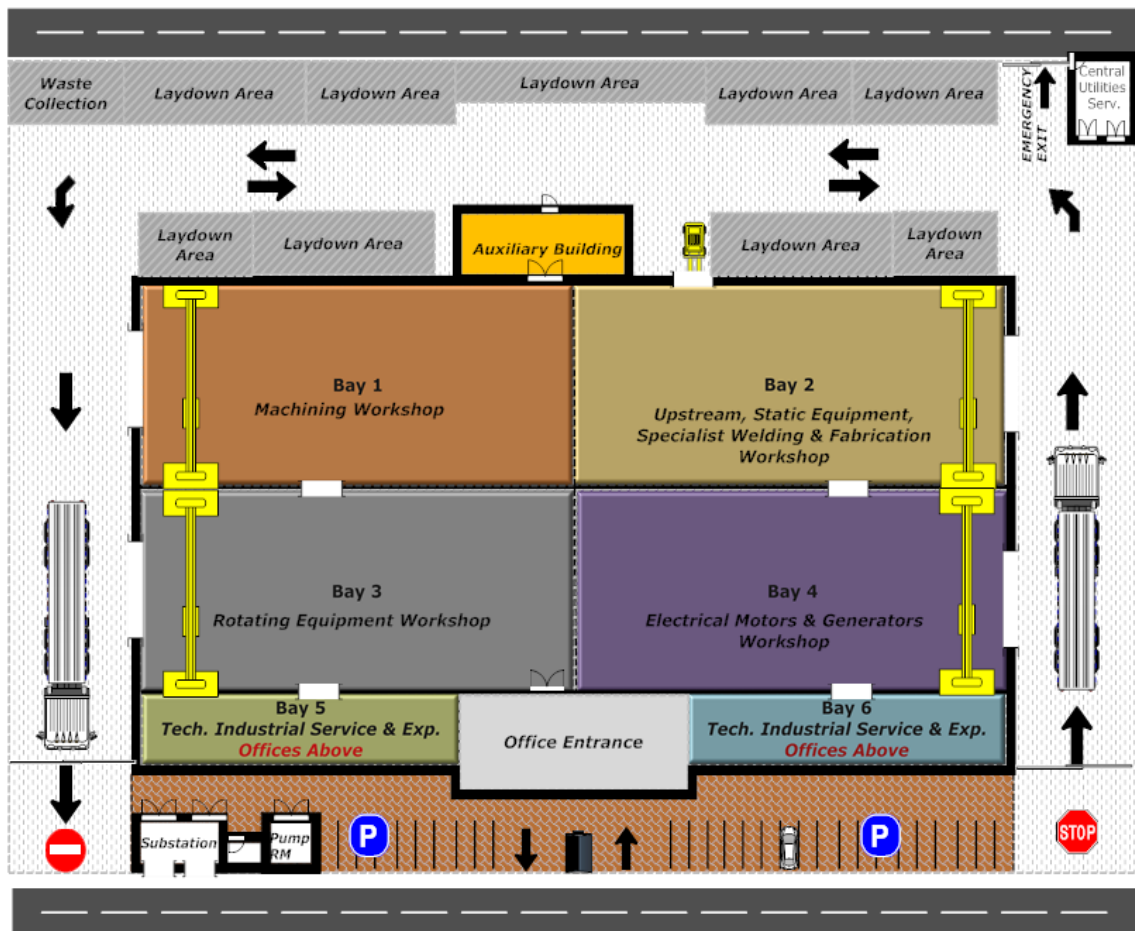
1.7 Summary Discipline Capability

No	Service Category	Sub-service Category
1	Mechanical	API Threading
		The refurbishment, repair of Drill Through, Wellhead Christmas Trees equipment and other API equipment, tools and accessories
		Manufacture of Components including reverse and re-engineering
		Valve Overhauling
		Welding and Cladding
		Piping / Fabrication
		Bolt Tensioning
		Leak Sealing
		Burner Cleaning
		Strainer / Filter Cleaning
		Flange Facing
		On Site Mobile Mechanical Workshop – Machining, etc., Mechanical Seal repair and pressure testing, Grit blasting, Steam Cleaning and Painting
2	Electrical & Generator Motors	Repair and testing of Electrical & Generator motors (LV, MV & HV), inclusive of EX rated units
3	Instrumentation	Design, Build and test systems; re certification of existing systems
4	Rotating Equipment Maintenance	Equipment Overhauling / Installation/ Alignment
		Mechanical seals /Bearing repair & replacement
5	Reciprocating Compressors and Turbomachinery repair and Maintenance	Equipment Overhauling / Installation, Alignment checks, Vibration Analysis, Lubrication Analysis, Bearings and Seal replacement and repair
6	Industrial Cleaning	Mechanical Cleaning
		Chemical Cleaning High pressure water jet cleaning.
7	Tanks Maintenance Services	Not intended at initial start up
8	Off site – Steel Fabrication	Fabrication and repair of pressure vessels, heat exchangers and associated bundles
9	Condition Monitoring /NDT	For Rotating Equipment/ Vib. Analysis
		For Static (NDT)
		Eddy current testing (For heat exchangers)
10	Inspection Services	Welding Inspectors / X ray Inspectors
		Tank Inspectors
		NDT Level II/III inspectors for LPT/MPT/UT
		Qualified External Inspection services
		Hydro test (Leak Test) Inspectors
		Thermal Insulation Inspection using Thermal Monitoring equipment.
11	Testing and certification of Tools	Not intended at initial start up
12	Material Handling	Belt maintenance / replacement
		Roller and pulley – Maintenance and replacement
13	Cooling Tower	Fan / Motor - Jobs
14	Heat Treatment	Stress Reliving and Curing
15	Stress Relieving	Stress Relieving Furnace

1.8 Workshop Details

The workshop area covers 6,481m², has four main bays, with three fully air-conditioned and fully serviced by two 50/10t and 50/5t overhead cranes along its length and 10m externally (for unloading/loading purposes); this area is protected by a full surface area fire sprinkler system to NFPA-5000. The four main bays are accessed by 9m x 9m automatic sliding doors, with personnel access via individual electronic security card. A facilities area is located in the rear office building comprising of Toilets, showers, mess room and prayer room and floor dedicated to training.

Bay 1	Machining operations utilising “state of art” computer controlled machine tools, including Manual/CNC centre lathes, Horizontal and Vertical Borers, and grinding machines.
Bay 2	Assembly and testing, welding and product finishing, including shot- blasting and painting. All chemicals associated with the painting and shot-blasting processes in the OESC have been environmentally approved. .
Bay 3	Rotating equipment workshop and as a ‘customer-specific’ area for dis-assembly and assembly of specific, high added-value, process equipment for the energy sector.
Bay 4	Electrical motor and generator rewind, repair, testing and shaft balancing.
Bay 5	Allocated as a ‘customer-specific’ area for dis-assembly and assembly of specific, high added-value, process equipment for the energy sector. It is fully air-conditioned.
Bay 6	Mechanical Seals Repair facility and high-tech Instrumentation workshop. It is fully air- conditioned.



1.9 Offices

The front aspect of the facility is a two-storey office, air conditioned, fully fire sprinkled, and serviced by a lift and central stair well. The rear office block is also two storeys.

- **Main Office Building:**
 - Ground Floor – Reception, Visitors waiting area, Security and First Aid room.
 - First Floor – Offices (1,000m²), Conference rooms, Mess hall facility and prayer room (male)
 - Second Floor -- Offices (1,000m²), Conference rooms (1x 16 and 1x 5 seating capacity) , staff training room and prayer room (female).

- **Annex Building:**
 - First Floor – Mess Hall, Quite room for resting and prayer room
 - Second Floor – Training Facility, toilets and associated offices

The offices will have the following services:

- Business Centre – offering hot desking, meeting rooms and reproduction services.

1.10 Typical views of Facility and Offices

Views of the Facility



Picture 1: Along the Front of Facility



Picture 2: Main Front Entrance of Facility



Picture 3: Rear of Facility - Laydown Area



Picture 4: Workshop Delivery Entrance – 2x50T Overhead Cranes can come out of the workshop and lift material from the delivery truck to minimise handling

Views into the Workshop Area



Picture 5: Bay 1 – Machining Workshop



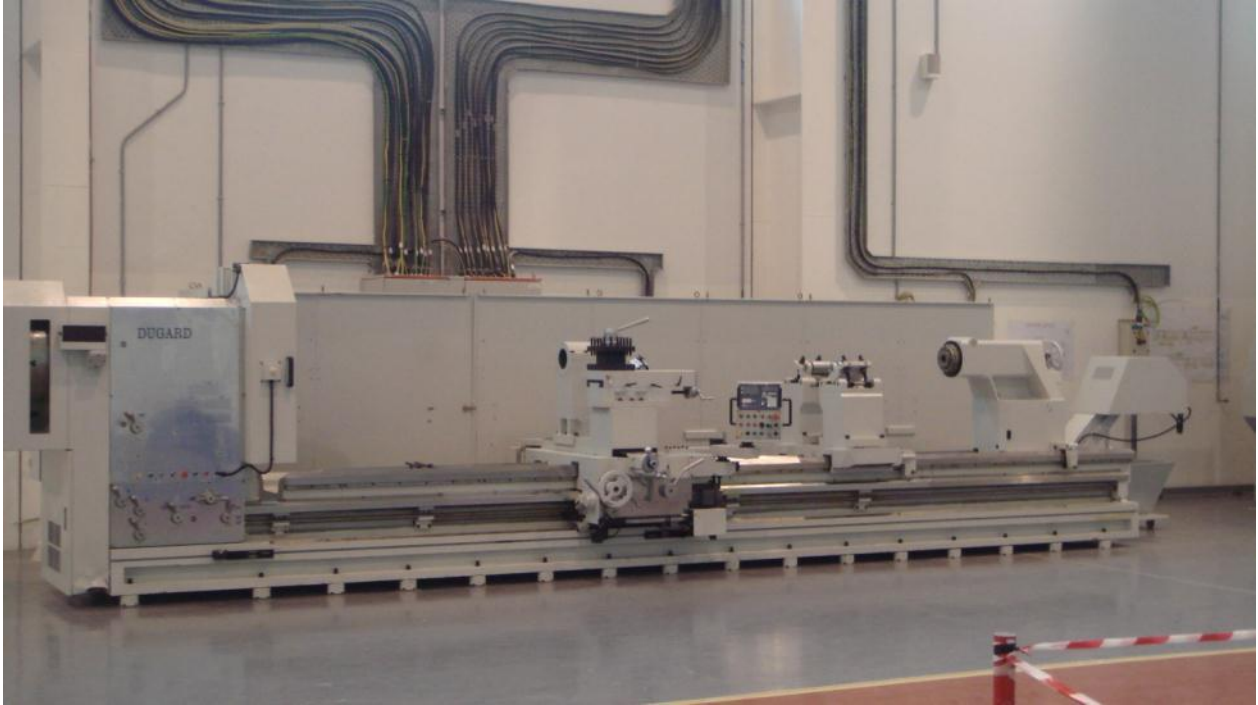
Picture 6: Bay 1 -4 – Dual Carriage 50T overhead crane in each bay



Picture 7: Bay 1- CNC Vertical Machine Centre VTL 1600ATC+C



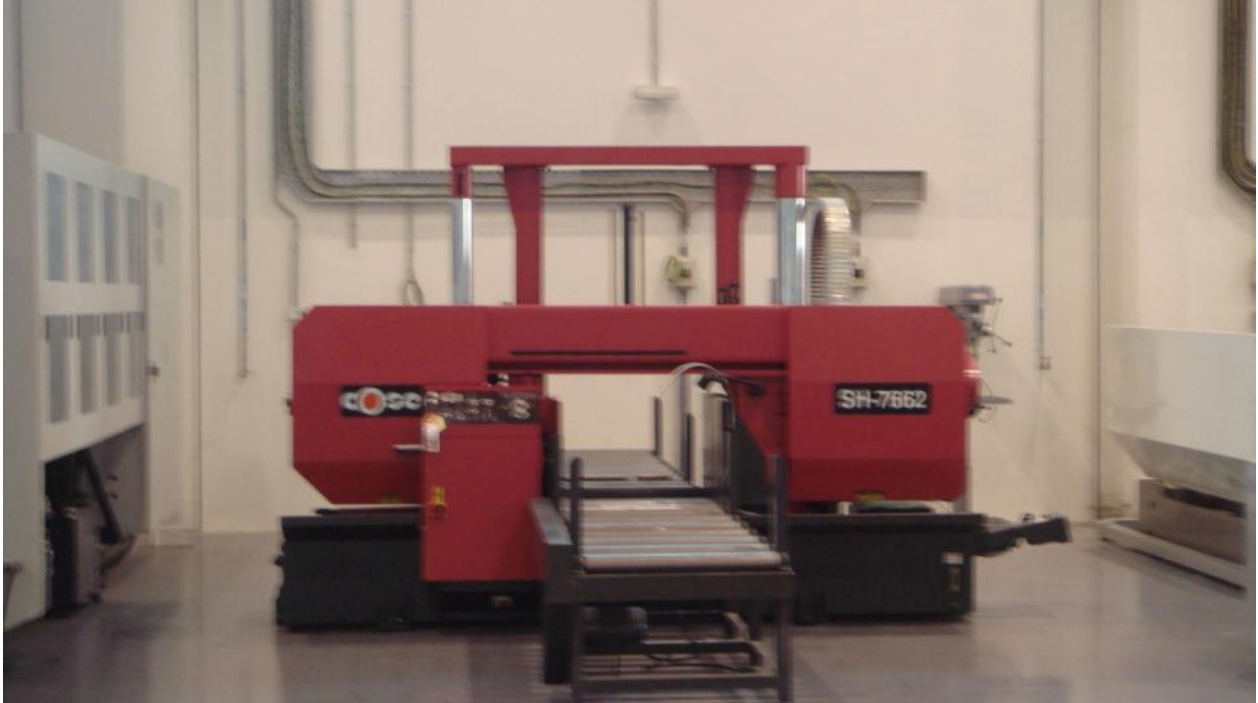
Picture 8: Bay 1- CNC Vertical Machine Centre VTL 2000ATC+C



Picture 9: Bay 1 - PB-60 Horizontal Lathe



Picture 10: Bay 1 - CNC Slant Bed Lathe



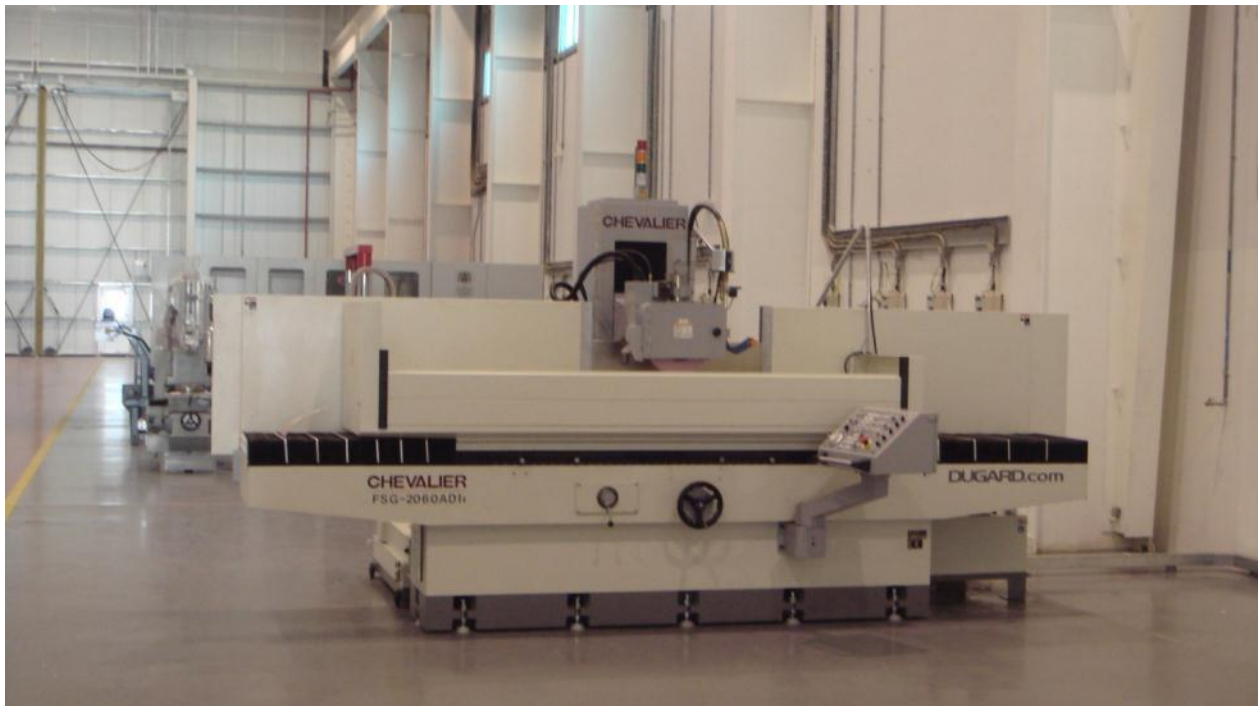
Picture 11: Bay 1 - Bandsaw



Picture 12: Manual Chieftain Lathe Valiant 2620 with DRO



Picture 13: Bay 1 - TOS Varnsdorf WHN 13.8 CNC Horizontal Table Borer and Milling



Picture 14: Bay 1 - Surface Grinder Chevalier FSC2060



Picture 15: Bay 1 –Faro Arm – Component Scanning



Picture 16: Bay 2 - Automated ABB Robotic Spray System incorporating Praxair JP 8000 HP/ HVOF & 8853 ARC Spray Coating Cell



Picture 17: Bay 2 –Vertical Cladding Units



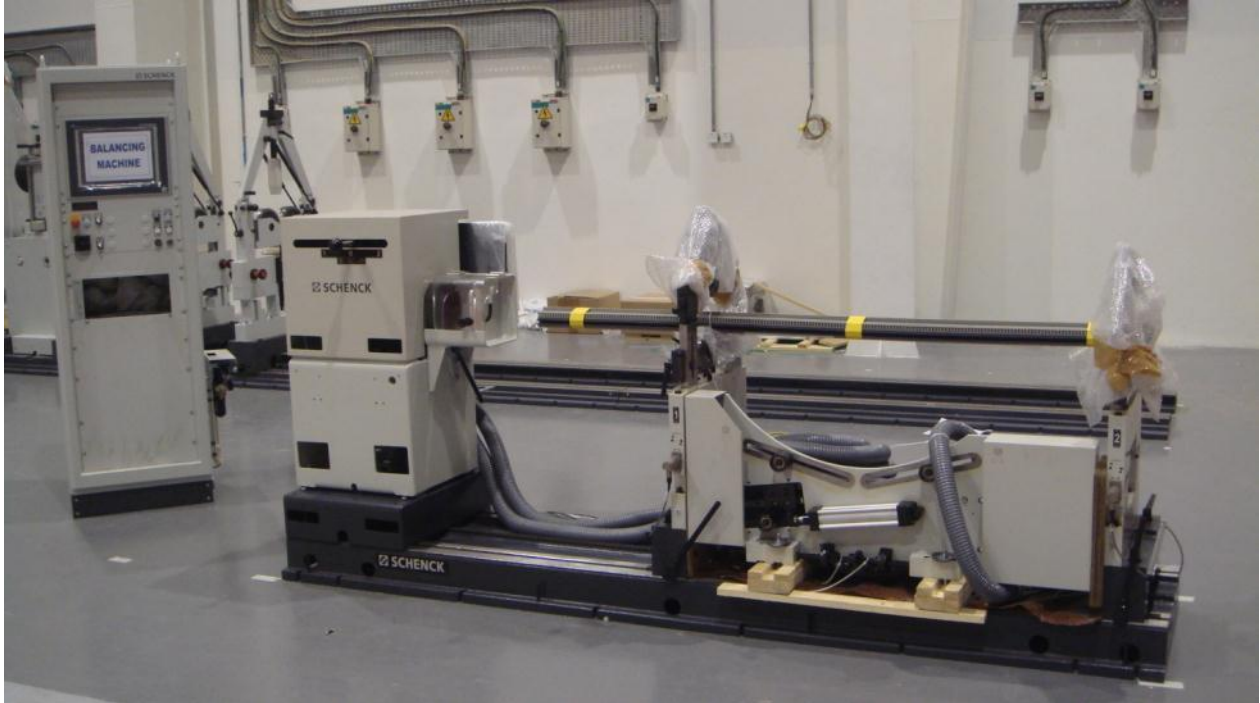
Picture 18: Bay 4 –Electrical Test Station



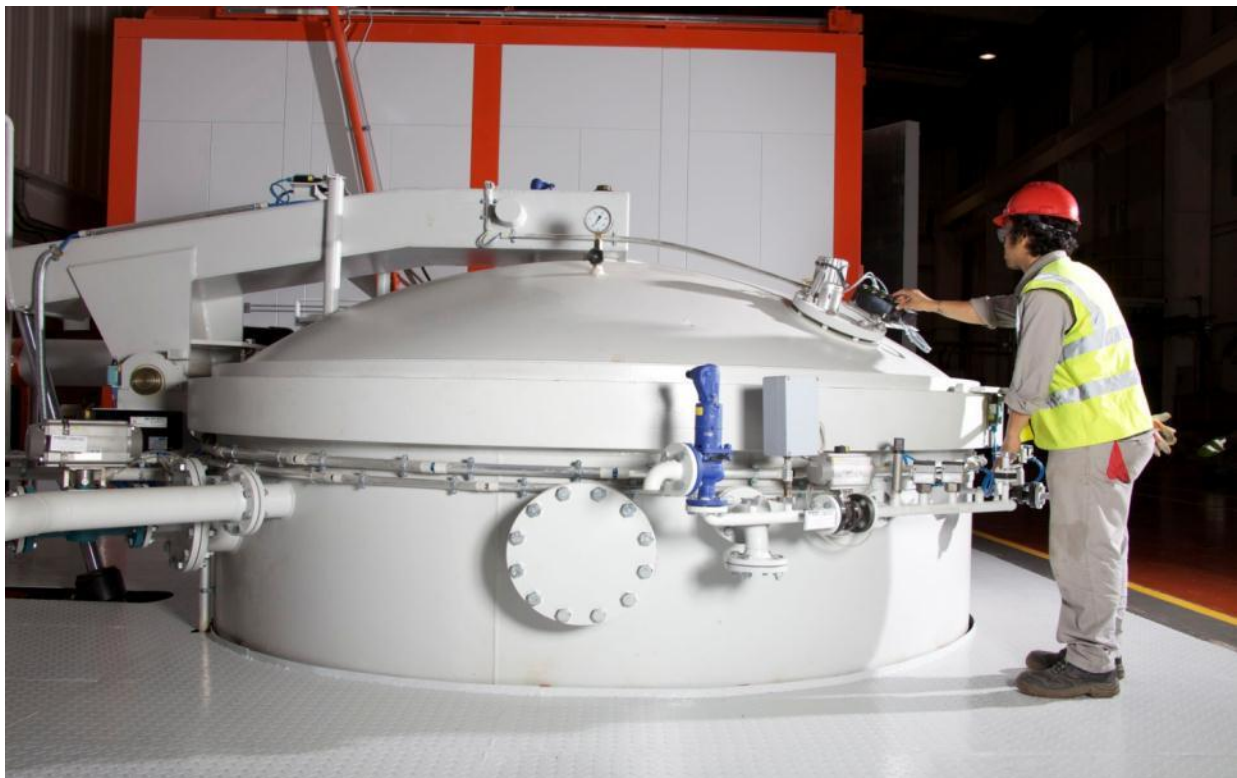
Picture 19: Bay 4 - Curing Ovens - Large and Small



Picture 20: Bay 4 -Schenck HM 60 U/BU Balancing Machine for Low Speed balancing of Rigid Rotors up to 20,000KG



Picture 21: Bay 4 -Schenck HM 40 U/BU Balancing Machine for Low Speed balancing of Rigid Rotors up to 3000KG



Picture 22: Vacuum Impregnation Plant Vertical 3000mm x Diameter 3200mm

View Inside the Offices area.



Picture 23: Main Visitors Lobby



Picture 24: First Floor Visitors Waiting Area



Picture 25: First Floor Office Corridor



Picture 26: First Floor Open Plan Offices



Picture 27: Annex Building - 45 Person Training Facilities



Picture 28: Main Office – Business Centre – 16 persons Board Room

1.11 Accreditations

Quality Management Systems:

- (a) API Specification Q1
- (b) ISO 9001 : 2008
- (c) ISO 14001: 2004
- (d) OHSAS 18001: 2007

API Monogram License

- (a) API – 5CT Tubing and Casing Connections/Accessories
- (b) API – 6A Wellhead and Christmas Tree Equipment
- (c) API – 7-1 Specification for Rotary Drill Stem Elements
- (d) API – 16A Drill Through Equipment

National Board of Boiler & Pressure Vessel Inspectors (NBBI) License

- (a) R – Stamp Repair and Alteration of Pressure Vessels
- (b) NB - Stamp Authorised to apply NB mark and to register boilers, pressure vessels, or other pressure retaining items with National Board of Boiler for equipment that is manufactured to ASME S and U Standards.

American Society of Mechanical Engineers (ASME)

- (a) U Stamp Manufacture of Pressure Vessels
- (b) S Stamp Manufacture of Power Boilers

Voestalpine Tubulars

- (a) VAGT,
VAsuperior
VArroughneck
Connections Premium Connections:
License to thread and repair threads connections.

Certificate of Registration

The American Petroleum Institute certifies that the quality management system of

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206) East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

has been assessed by the American Petroleum Institute and found to be in conformance with the following:

API Specification Q1

The scope of this registration and the approved quality management system applies to the:

Remanufacture, Repair and Refurbishment of Valves, Wellhead and Christmas Tree Equipment, Downhole Drilling Equipment and Associated Components; Repair and Refurbishment of Rotating Equipment, Electrical Motors and Generators; Provision of Machining, Weld Metal Spraying and Cladding Services

API approves the organization's justification for excluding:

No Exclusions Identified as Applicable



Effective Date: DECEMBER 8, 2014
Expiration Date: DECEMBER 8, 2017
Registered Since: DECEMBER 8, 2011

John A. Modine
Vice President, API Global Industry Services

This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of API Spec Q1, *Specification for Quality Programs for the Petroleum, Petrochemical and Natural Gas Industry*, and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. This certificate has been issued from API offices located at 1220 L Street, N.W., Washington, D.C. 20005-4070, U.S.A. It is the property of API, and must be returned upon request. **To verify the authenticity of this certificate, go to www.api.org/compositelist.**



Certificate of Registration

APIQR® REGISTRATION NUMBER

1589

This certifies that the quality management system of

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206) East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

has been assessed by the American Petroleum Institute Quality Registrar (APIQR®) and found it to be in conformance with the following standard:

ISO 9001:2008

The scope of this registration and the approved quality management system applies to the

Remanufacture, Repair and Refurbishment of Valves, Wellhead and Christmas Tree Equipment, Downhole Drilling Equipment and Associated Components; Repair and Refurbishment of Rotating Equipment, Electrical Motors and Generators; Provision of Machining, Weld Metal Spraying and Cladding Services

APIQR® approves the organization's justification for excluding:

No Exclusions Identified as Applicable

Effective Date: DECEMBER 8, 2014
Expiration Date: DECEMBER 8, 2017
Registered Since: DECEMBER 8, 2011


 Vice President, API Global Industry Services

Accredited by Member of
 the International
 Accreditation Forum
 Multilateral Recognition
 Arrangement for Quality
 Management Systems



This certificate is valid for the period specified herein. The registered organization must continually meet all requirements of APIQR's Registration Program and the requirements of the Registration Agreement. Registration is maintained and regularly monitored through annual full system audits. Further clarifications regarding the scope of this certificate and the applicability of ISO 9001 standard requirements may be obtained by consulting the registered organization. This certificate has been issued from APIQR offices located at 1220 L Street, N.W., Washington, D.C. 20005-4070, U.S.A., it is the property of APIQR, and must be returned upon request. To verify the authenticity of this certificate, go to www.api.org/compositelist.



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CERTIFICATE OF APPROVAL

This is to certify that the Environmental Management System of:

Oryx Engineering Solutions LLC
Rashid Street (206)
Ras Laffan Industrial City (75)
Qatar

has been approved by Lloyd's Register Quality Assurance
to the following Environmental Management System Standard:

ISO 14001:2004

The Environmental Management System is applicable to:

**Remanufacture, Repair and Refurbishment of Valves, Wellhead
Christmas Tree Equipment, Down-hole Drilling Equipment and
Associated Components; Repair and Refurbishment of
Rotating Equipment, Mechanical Seals, Electrical Motors and
Generators; Provision of Machining; Weld Metal Spraying,
Cladding Services and Field Services.**

Approval
Certificate No: MEA6014151/B

Original Approval: 21 March 2012

Current Certificate: 9 March 2015

Certificate Expiry: 20 March 2018

Issued by: Lloyd's Register Quality Assurance Limited



001

Festival Office Tower, Suite 2001, Dubai Festival City, Dubai
Hiramford, Middlemarch Office Village, Siskin Drive, Coventry, CV3 4FJ, United Kingdom
This approval is carried out in accordance with the LRQA assessment and certification procedures and monitored by LRQA.
The use of the UKAS Accreditation Mark indicates Accreditation in respect of those activities covered by the Accreditation Certificate Number 001
Macro Revision 13



CERTIFICATE OF APPROVAL

This is to certify that the Occupational Health & Safety Management System
of:

Oryx Engineering Solutions LLC
Rashid Street (206)
Ras Laffan Industrial City (75)
Qatar

has been approved by Lloyd's Register Quality Assurance to the following
Occupational Health & Safety Management System Standard:

OHSAS 18001:2007

The Occupational Health & Safety Management System is applicable to:

**Remanufacture, Repair and Refurbishment of Valves, Wellhead
Christmas Tree Equipment, Down-hole Drilling Equipment and
Associated Components; Repair and Refurbishment of Rotating
Equipment, Mechanical Seals, Electrical Motors and Generators;
Provision of Machining; Weld Metal Spraying, Cladding Services and
Field Services.**

Approval
Certificate No: MEA6014151/C

Original Approval: 21 March 2012

Current Certificate: 9 March 2015

Certificate Expiry: 20 March 2018



Issued by: Lloyd's Register Quality Assurance Limited



001

Festival Office Tower, Suite 2001, Dubai Festival City, Dubai
Hiramford, Middlemarch Office Village, Siskin Drive, Coventry, CV3 4FJ, United Kingdom
This approval is carried out in accordance with the LRQA assessment and certification procedures and monitored by LRQA.
The use of the UKAS Accreditation Mark indicates Accreditation in respect of those activities covered by the Accreditation Certificate Number 001
Macro Revision 13

Certificate of Authority to use the Official API Monogram

License Number: 5CT-1435

ORIGINAL

The American Petroleum Institute hereby grants to

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206) East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-5CT** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **5CT-1435**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Threader

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: DECEMBER 8, 2014

Expiration Date: DECEMBER 8, 2017

To verify the authenticity of this license, go to www.api.org/composite1ist.



®

**American
Petroleum
Institute**



2014-156

Certificate of Authority to use the Official API Monogram

License Number: 6A-1537

ORIGINAL

The American Petroleum Institute hereby grants to

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206)
East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-6A** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **6A-1537**

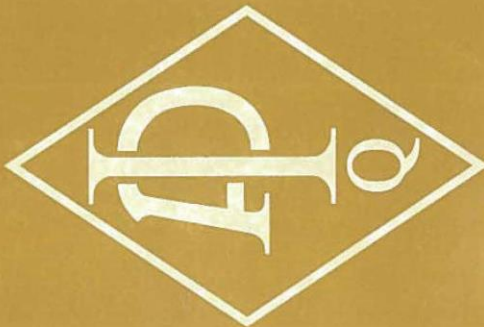
The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Actuators, Adapter and Spacer Spools, Casing and Tubing Hangers, Casing and Tubing Heads, Chokes, Cross-Over Connectors, Flanged Connectors, Fluid-Sampling Devices, Other End Connectors, Tees and Crosses, Threaded Connectors, Top Connectors, Tubing Head Adapters, Valves at PSL 1, PSL 2, PSL 3, PSL 3G, PSL 4; Bullplugs (PSL not Applicable); Ring Joint Gaskets (PSL not Applicable); Valve Removal Plugs (PSL not Applicable)

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: AUGUST 20, 2015
Expiration Date: DECEMBER 8, 2017

To verify the authenticity of this license, go to www.api.org/compositelist.



®

**American
Petroleum
Institute**



2014-298

Certificate of Authority to use the Official API Monogram

License Number: 7-1-0998

ORIGINAL

The American Petroleum Institute hereby grants to

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206) East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-7-1** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **7-1-0998**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Drill Stem Subs, Drill Collars, Heavy Weight Drill Pipe and Threading for Rotary Shouldered Connections

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: **DECEMBER 8, 2014**

Expiration Date: **DECEMBER 8, 2017**

To verify the authenticity of this license, go to www.api.org/composite1ist.

American Petroleum Institute



Vice President, Global Industry Services



®

**American
Petroleum
Institute**



2014-156

Certificate of Authority to use the Official API Monogram

License Number: 16A-0384

ORIGINAL

The American Petroleum Institute hereby grants to

ORYX ENGINEERING SOLUTIONS LLC
Rashid Street (206) East Side Support Services Area
Ras Laffan Industrial City, 75
Qatar

the right to use the Official API Monogram® on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1® and **API-16A** and in accordance with the provisions of the License Agreement.

In all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **16A-0384**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Ram BOP, Ram Blocks, Packers, and/or Top Seals, Annular BOP, Annular Packing Units, Hydraulic Connectors, Drilling Spools, Adapters, Loose Connections and Clamps

QMS Exclusions: No Exclusions Identified as Applicable

Effective Date: DECEMBER 8, 2014

Expiration Date: DECEMBER 8, 2017

To verify the authenticity of this license, go to www.api.org/compositeist.

American Petroleum Institute



Vice President, Global Industry Services

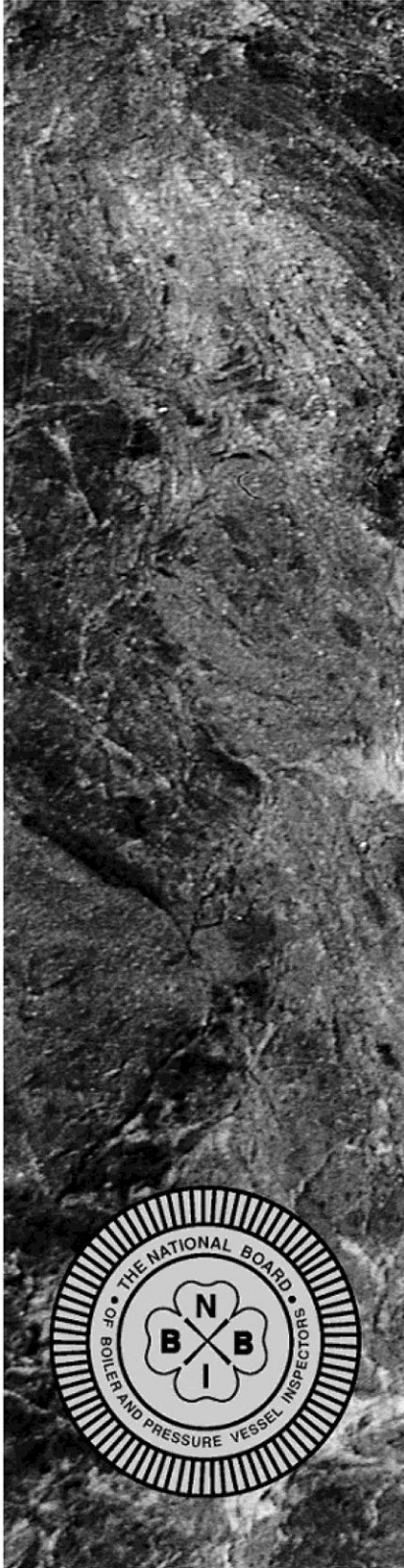


®

**American
Petroleum
Institute**



2014-156



**THE NATIONAL BOARD
OF
BOILER & PRESSURE VESSEL INSPECTORS**

Certificate of Authorization



This is to certify that

**Oryx Engineering Solutions LLC
Rashid Street (206), East Side Support Service Area
Ras Laffan Industrial City (75)
Qatar**

*is authorized to use the R Symbol in accordance with the
provisions of the National Board Inspection Code and NB-415,
Accreditation of "R" Repair Organizations.*

The scope of this Authorization is limited to:

Metallic
Repairs and Alterations
At
Shop and Field Locations

Certification Number: 10293

Issue Date: September 22, 2016

Expiration Date: April 26, 2019

Executive Director



CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

**Oryx Engineering Solutions LLC
Rashid Street (206), East Side Support Service Area
Ras Laffan Industrial City (75)
Qatar**

SCOPE:

Manufacture and assembly of power boilers at the above location and field sites controlled by the above location

AUTHORIZED: **September 12, 2016**

EXPIRES: **September 12, 2019**

CERTIFICATE NUMBER: **54,341**


Board Chair, Conformity Assessment


Director, Conformity Assessment

The American Society of Mechanical Engineers





CERTIFICATE OF AUTHORIZATION

The named company is authorized by the American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the certification mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with this certification mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

Oryx Engineering Solutions LLC
Rashid Street (206), East Side Support Service Area
Ras Laffan Industrial City (75)
Qatar

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: **September 12, 2016**

EXPIRES: **September 12, 2019**

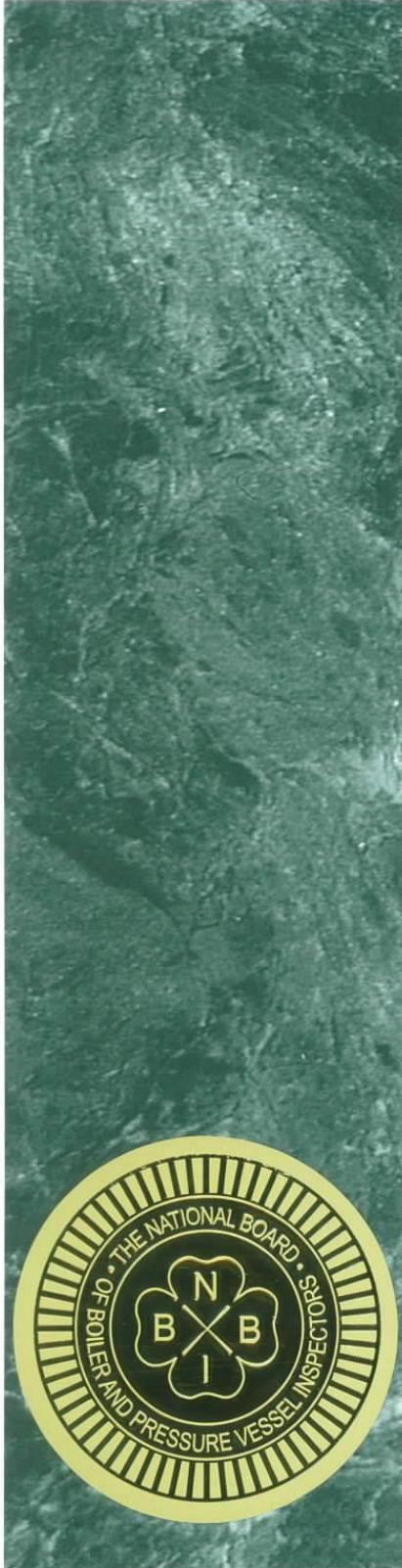
CERTIFICATE NUMBER: **54,342**


Board Chair, Conformity Assessment


Director, Conformity Assessment

The American Society of Mechanical Engineers





**THE NATIONAL BOARD
OF
BOILER & PRESSURE VESSEL INSPECTORS**

***Certificate of Authorization
to Register***



This is to certify that

**Oryx Engineering Solutions LLC
Rashid Street (206), East Side Support Service Area
Ras Laffan Industrial City (75)
Qatar**

*is authorized to apply the "NB" mark and register boilers,
pressure vessels or other pressure retaining items with the
National Board.*

*The scope of Authorization is limited to items manufactured
in accordance with:*

ASME Designator(s): S, U

Issue Date: September 12, 2016

*This Certificate of Authorization to Register will remain in
effect as long as the manufacturing organization holds a
valid Certificate of Authorization issued by the American
Society of Mechanical Engineers.*

Executive Director

voestalpine Tubulars

This certifies that **ORYX** Engineering Solutions LLC facility located at **Rashid Street, Ras Laffan Industrial City, Qatar** has successfully completed the requirements of voestalpine Tubulars for **Threading & Repair** of the

VAGT, VASuperior & VARoughneck Premium Connections.

This certificate is based on the License Agreement granted by voestalpine Tubulars for accessories threading and/or repair threading (PIN & BOX).


.....
i.V. P. Winkler i.V.M. Birchegger
voestalpine Tubulars GmbH & Co KG

License No. : LA/QP-14-01/OX
Effective Date : 2017.01.20
Expiration Date : 2020.01.20

To verify scope and authenticity of this certificate go to : www.voestalpine/tubulars.com -> CUSTOMER SERVICE -> LICENSEES

(Certified since 2015)

voestalpine

ONE STEP AHEAD.