



**INNOVATIVE ENGINEERING,
INSPECTION & INTEGRITY SERVICES**

**ENGINEERING DESIGN
PROCUREMENT
ENGINEERING PROJECT
MANAGEMENT
INTEGRITY SERVICES
PIONEERING INSPECTION
QUALITY AUDITS**





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INTRODUCTION

Ever wondered why other companies charge so much and are not able to deliver the innovative solutions Jaque-Michelson is known for?

Who We Are

Jaque-Michelson was founded in 2010 by a team of leading engineering project managers and consultants with years of experience, leading cutting edge and challenging projects in the UK/Europe North Sea, Middle East, Asia Pacific, Americas, Africa and around the world. We have worked on challenging projects globally and supported leading companies. Our standard of engineering and the services we provide speaks volumes, while the expertise and innovative solutions makes us unique. Jaque-Michelson has built an impressive track record in the area of engineering consulting, including design, integrity, procurement, 3rd party inspections, supplier quality surveillance (SQS) and quality audits, by serving oil and gas majors/independent producers, installation contractors, manufacturers and suppliers.

We innovate, provide and deliver tailored solutions where ever the challenges arises around the world; onshore or offshore, deepwater's, HPHT or arctic environments, or at manufacturing plants where we carry out inspection/supplier quality surveillance or quality audits, Jaque-Michelson are the leaders in this field of expertise. With offices in Reading and Aberdeen, UK alongside consulting outlets around the world, we are able to take-on inspection services, supplier quality surveillance (SQS), quality audits, feasibility desktop studies, FEED, EPC and procurement.

Due to our exceptional understanding of the operational conditions of facilities and products, coupled with our attention to detail we are able to focus on the following fundamentals to ensure the success of your projects:

- Inspection and 3rd Party Inspection Services
- Supplier Quality Surveillance
- Supplier Quality Audits
- Reduced Purchase & Quality Management Cost
- Process Improvements
- Reduced Operating Costs
- Enhanced Contractor-Client Relationship
- Contractor Accountability



WHY WE STAND OUT

We stand out due to our in-house and technical expertise, our approach to project delivery, coupled with the ability of our team to continually deliver challenging projects in all the industries we work in, within budget and on time. We innovate, provide and deliver tailored solutions wherever there are challenges around the world; we understand the complexities of the environments our customers high value equipments are installed in today, i.e., onshore or offshore, deepwater's, HPHT or arctic environments.

This type of equipment operates at elevated temperatures and pressures and have contact with or carry sour fluids, H₂S or CO₂, etc. and require superior experience, to ensure all equipment is suitable for such operation and are manufactured to the required specification. This is where Jaque-Michelson can be relied upon to provide tailor made solutions to your specifications.

Our innovative delivery solution also encompasses delivering 3rd party inspection services, supplier quality surveillance (SQS) and quality audit. We also have a team of specialists and consultants both within the UK/Europe and within easy reach of the main manufacturing sites around the world, who can be called upon at short notice to work round the clock to help resolve any challenging or manufacturing bottlenecks you may encounter.

Our experienced field or manufacturing site inspectors are linked to a virtual world with a dedicated SQS managers and metallurgists who provide required support they may need to undertake assignments on our customer's behalf.



OUR VISION AND VALUES

Our team operates at the the highest level of customer support, providing superior services which make Jaque-Michelson the most prominent in this field of expertise. Our values are closely aligned with our vision, bringing us to the forefront of the industry, including the following:

- Innovation
- Team Work
- Integrity
- Responsibility
- Relationship

Our vision and values are closely aligned to our service delivery approach, the confidence of our clients in our team speaks volumes of our ability to retain key projects and the faith outstanding multinational clients have in Jaque-Michelson. We are known for building long term and lasting client relationships; which is why we have a unique amalgamation of clients, including world class energy companies as well as Engineering Contracting companies, including Shell, Chevron, AGiP, BG, TengizChevroil, WorlyParsons, Foster Wheeler and RiNA.



QUALITY MANAGEMENT SYSTEMS

Jaque-Michelson continually strives to achieve client's satisfaction by applying quality standards. Our Quality Management system and Occupational Health and Safety Management has been independently assessed and accredited to BS EN ISO 9001:2008 and OHSAS 1800. Jaque-Michelson ensures the requirements of the Quality Management System and Occupational Health and Safety Management are continually reviewed, implemented and maintained. Our experts, consultants and staff at all levels are fully aware of the quality requirements in their day-to-day activities, as we continue to provide our clients the services that champion this field of expertise.

The Quality Management and Occupational Health and Safety Management elements of our system are continually subject to improvements, update audits and continuous re-certifications.

OUR APPROACH TO WORKING WITH CUSTOMERS

We class every call to work as an appreciation of the high standard we set, including those our competitors would classify as too little; We take them on and ensure we deliver them to a high standard. An example of how dedicated or responsive we are is that, a dedicated SQS Manager can detail an inspection specialist or a quality surveyor to attend a manufacture's site or a supplier's base to carry out inspections, Quality assessment or pre-sanction activity on behalf of our customers at a short notice. They can also work alongside our consultants and metallurgists who oversee the work and review each inspection work/report.

We are able to integrate our experienced inspectors within your project team, from Feasibility study stage, FEED and up to EPC, ensuring that at each phase of the project, our customer's high value equipments are designed and manufactured to the highest standards, before they are shipped out and installed.

OUR EXPERTISE

Engineering Consulting Service

Facility Upgrade/Integrity Services

Due to continued increment in the number of oil discoveries in both remote and arctic environments combined with steady increase in petroleum consumption, clients are steadily faced with either modification/debottlenecking of existing facility or the prospect of building a new facility. The task of building a new facility can be daunting, challenging, and expensive and may not be the best option. Examining debottlenecking the existing facility is usually an option, as a plant can be modified quickly, than a grass root plant build and start-up.

Our Approach to Debottlenecking your Asset

Our experienced team of experts can carry out a feasibility study and FEED on your asset to help you make the decision. Our typical approach will include, flow assurance and process modeling with state of the art software's to better understand your facility and to predict the behavior of process fluid flowing through them, while helping you decide equipment change out and upgrade. We work to help you choose the best option to enable you to maximize your return on investment.

Pipeline System Design and Field Development

Our team provide specialised services to the petroleum industry. The most modern techniques, tools, and approaches will always be used to provide you with the best design and advice suitable for your business. Economics and practicability are always at the heart of our pipeline system design and field development solutions - we think out ways of solving your diverse challenges and provide you with options and cutting edge solutions from feasibility study, through to FEED and EPC. We have significant experience over the full asset life-cycle in each of the following areas:

- Pipeline Engineering
- Riser Analysis and Design
- Pipeline Route Selection & Survey Support
- Seabed Structures
- Controls System Engineering
- Xmas Trees & Completions

During design phase, most of these areas are brought together by our systems engineering team to provide an integrated approach to the engineering solutions.

We use the latest pipeline design software to ensure that your pipeline can operate wherever they are installed, withstand stresses it may be subjected to and that it is fit for purpose. As part of our in-house tools and softwares, we use the following and a host of others to ensure we achieve design objectives:

- MathCAD
- Ceaser II
- AutoCAD
- Autopipe
- Orcaflex
- ArcGiS

With LiDAR, satellite imagery, we are able to help you screen and choose the best and optimum route using the last ArcGiS technology with an actual topographical survey or routing validation ensuring we continually deliver projects ahead of time and budget.



FLOW ASSURANCE AND OPERABILITY

Our strategy for delivering operative Flow Assurance solutions to our Clients is focused on business-value driven and structured to help every objective to be met and expectations exceeded. We will explore the potential Flow Assurance challenges surrounding your production system and will provide expert advice to satisfy your business needs. Our dedicated team of experts will assist you in all aspects of the design of complete production systems while providing you with the following Flow Assurance services:

- Liquid management
- Operating Procedure
- Process & Network Modelling and Analysis
- Process Optimisation
- Thermal-hydraulic analysis (Hydrate, Wax and Asphaltene management), prediction, inhibition, and remediation analysis

PRODUCTION / FLOW SYSTEM OPERABILITY

We are very proficient with most Oil & Gas state of the art process simulation software such as:

- OLGA
- PVT Sim
- Pipesim/Pipesim.Net
- MP Suite of Software (GAP-MBAL-PROSPER-RESOLVE-REVEAL)
- Hysys
- Pipephase

PROCUREMENT SERVICES

Our team of experts can assist in developing contracting strategy and all necessary enquiry packages to be issued to contractors for most upstream and downstream oil and gas engineering projects.

Our Procurement activities include, preparation of detailed specifications for equipment and materials, Preparation of documents for the invitation to tender, Technical and commercial evaluation of tenders, and Preparation of purchase order and contractual documents.

We are able to prepare and purchase long lead and project critical items at any project phase, leveraging a network of vendor and manufacturers by ensuring client and project specific needs are satisfied.

We are experienced in the use of industry standards from most International Organisations including:

EAGA	American Gas Association
ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society for Mechanical Engineering
BSI	British Standards Institute
DNV	Det Norske Veritas (Norway)
HSE	Health and Safety Executive (UK)
IP	Institute of Petroleum (UK)
IChemE	Institution of Chemical Engineers (UK)
IMechE	Institution of Mechanical Engineers (UK)
IEE	Institution of Electrical Engineers (UK)
IMO	International Maritime Organisation
TWI	The Welding Institute (UK)

THIRD PARTY INSPECTION SERVICES

Jaque-Michelson offers an integrated Inspection Envelope, ensuring an audit trail for high value equipment, from manufacture to delivery on site or storage. An essential part of our services; include the preparation of an inspection report to accompany and the preparation of equipment test certificate prior to dispatch. The full envelope includes the following:

Vendor inspection/Audits Pre- PO Award

Independent assessments to determine vendor/sub-vendor suitability prior to Purchase Order award. Criteria assessment is usually on client equipment specification.

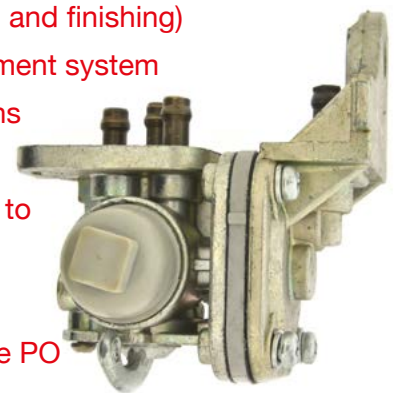
New Equipment Inspection & FAT

We offer detailed equipment inspection during manufacture, FAT and shipping, ensuring every stage has a compliance report which is produced with a test and inspection report. This ensures total conformance to client's standards, codes, specifications and specific scope of work stated in the PO.

Supplier Quality Surveillance (SQS)

We ensure your supplier quality surveillance services are co-ordinated by an experienced Project Surveillance Manager, who has a team of experienced Quality Surveyors and Inspectors working under them and their quality and certifications are continually reviewed, in accordance with existing procedures before working at the supplier's site undertaking quality surveillance to set requirements already agreed with the customer. The achievement aims are in line with the clients' requirements including:

- Evaluation of a supplier Quality System to suit product manufacture
- Perform a Supplier Plant Survey
- Obtain, verify and report purchase order status
- Survey manufacturing operations (forming, processing, welding, testing and finishing)
- Survey, verify and report effectiveness of the supplier's quality management system
- Witness NDE and review results for compliance to product specifications
- Prepare written reports documenting surveillance activities
- Issue Non conformance Reports (NCRs) to supplier and provide advice to attain compliance and solution
- Verify and report NCR corrective action results
- Prepare release report to ensure product is shipped when in compliance PO
- Complete Supplier Performance Measurement on all orders



SUPPLIER QUALITY AUDITS

Quality audits can help identify quality shortfalls in your strategic supply chain relationships or free up valuable and often scarce in-house resources to focus on strategic supply chain management. Our approach is structured for flexibility and consistency, enabling us to execute a value-adding audit program. All our auditors are experts in various fields, providing innovative and quality solutions in areas of supply critical to your project's success. Our solution provides support along the way, ensuring every audit we perform has a defined and clear technical, quality and business objective. Their close proximity to suppliers across the world is an added advantage, so emphasis may be placed on your first priority - the systems that create products that go into your supply chain. We work in many industries but our main expertise and experience is in the upstream and downstream sector of the oil and gas profession and is unparalleled. We achieve our goals by rapidly adapting to client's proprietary procedure and working to industry standards, including, ISO 9001, QS 900, AS 9100 whichever suits the client's requirement.

Expediting Services

Our experienced Supply Chain Management team works well with vendors/sub-vendors to identify and remove all bottlenecks at all levels to mitigate delays and to deliver to clients on schedule, while also ensuring that standards and specifications set out in the scope of work are complied with.

Customer sector

Jaque-Michelson has provided a comprehensive range of expert services to the following industries:

Oil & Gas

Offshore Oil & Gas (Topsides & Subsea)
Onshore Oil & Gas
Pipelines
Export Facilities & terminal
Production Facilities
LNG

Chemical & Petrochemicals

Refining
Petrochemicals

Environment & Infrastructure

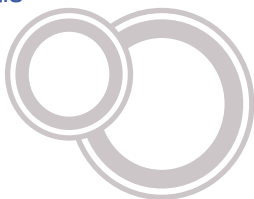
Ports and Terminal
Water
Transport
Waste management
Infrastructure development

Power

Gas Turbine Plants
Renewable Energy
Power Energy

Pharmaceuticals

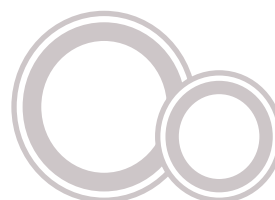
Pharmaceuticals
Polymers



KEY AND RECENT JAQUE-MICHELSON PROJECTS

1. Ongoing Factory Acceptance Test (FAT) and integration management Inspection for Integrated Control and Safety System (ICSS) Package for Eskene West Rail Project Kazakhstan. The EWRP facility supports the Kashagan Field Experimental Program (EP) for the loading and rail export of oil and sulphur. The project provides oil export capacity of 300,000 bopd, sulphur forming of 4,500 tons/day, sulphur bagging 1,800 tons/day, bulk sulphur loading of 4,500 tons/day, and associated utilities.
2. Corrosion Control Inspection and Non-Destruction Testing (NDT) contract services for BG India.
3. Ongoing Inspection Services Contract with RinA international.
4. Iraq Crude Oil Export Expansion Project (ICOEEP) for the Scheduled Early delivery of 2.7 MMBOPD by the installation of 2 x 48" x 70KM Pipeline (Onshore to Offshore), 3 x SPMs and a Central Metering and Manifold Platform (CMMP). Detail include Pipeline Design, Design verification of SPM, Risers, including bend stiffener and end connection designs, Hydrodynamic and structural design verification of the SPM Buoy, Installation Engineering for Spread moorings for the SPMs, SBM Buoy Hook-up, Offloading Lines, SPM mooring line foundation piles, Wet parking of Steel Tube Umbilicals, as well as static & dynamic analysis of proposed installation procedures.
5. (Confidential customer) Performing FEED study to determine realistic riser hang-off loads for design of the hang-off arrangement to submerged turret mounted buoy to allow long-lead items design and procurement for the project prior to detailed design, Provide independent flexible pipe expertise during EPC bid review. Perform independent verification of flexible riser, including pipe cross-section analysis, also provide ongoing expertise on various issues related to the design of the riser and flow lines at all stages of the project. Jaque-Michelson approach allowed early identification of critical challenges that were subsequently highlighted to the EPC contractor for detailed design review, also supplied skilled and expert manpower to support EPC phase of the project, including:

- Quality Assurance Managers & Engineers
- Quality Control Engineers & Managers
- Safety Managers
- Pipeline Engineers
- Inspector Engineers
- Lead Auditors
- Corrosion Engineers & Inspectors
- Welding Engineers
- Certification Engineers
- Material Engineers
- Integrity and Asset Management Specialists
- Risk Based Inspection Engineers
- Vendor Engineers & Inspectors
- Non Destructive Testing Technicians



OUR MEMBERSHIPS AND AFFILIATIONS

Jaque-Michelson is a member of and/or registered with the following organisations:



National Association of Corrosion Engineers (NACE)



Society of Petroleum Engineers (SPE)



The Institute of Marine Engineering, Science and Technology (IMarEST)



Institute of Mechanical Engineers (IMechE)



First Point Assessment



Achilles Joint Qualification System



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