Petroleum Development Oman L.L.C.

Specification for Quality Management System Requirements for Product and Service

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i Revision History

The following table lists the most recent revisions to this document. Details of all revisions prior to these are held on file by the issuing department.

Version No.	Date	Author	Checked	Scope / Remarks
Version 1.0	24/04/2000	OTT/151	OTT/15	Revision and re-formatting of ERD 84-02 (September 1995 issue).
Version 2.0	17/12/2007	UEC/111	UEC/11	Revised following Shell Philosophy
Version 3.0	10/06/2012	UEQ/11	UEQ	Re-formatted and revised entirely.
Version 4.0	17/01/2017	UEQ/1 and UEQ11	UEQ	Revised entirely.
Version 5.0	29/04/2018	UEQ/1 and UEQ11	UEQ	Minimum experience of staff working under Provision of QA/QC and TPI Services contract(s) added.
Version 6.0	13/10/2022	UEQ11	UEQ/1 & UEQ	The document is updated to align with ISO 29001:2020 standard

ii Related Corporate Management Framework (CMF) Documents

Doc. ID	Document Title
CP-117	Project Engineering Code of Practice
CP-190	Quality Management System for Project Delivery Code of Practice
CP-131	Risk and Opportunity Management Code of Practice
SP-1131	Plant Lifecycle Information Plan (Handover and As-Built Documentation)
SP-2061	Technical Authority System
SP-2065	Document Management in Engineering & Operations
SP-2050	Specification for Construction Activities on Oil, Gas and Utility
SP-2269	Specification for criticality rating and quality intervention for procurement of products.
SP-2270	Specification for Receiving Inspection of Materials/ or Equipment
SP-2338	Specification for Discipline Authority of PDO design Consultants/ Contractors
SP-2412	Technical Integrity Verification process in Project
PR-1247	Project Management of Change Procedure
PR-1279	Material Management and Storage Procedure
PR-1866	Quality Audit Procedure
PR-2053	Control of Product Non-Conformities
PR-2066	Managing Variations from Technical Standards
PR-2364	Quality Incident reporting procedure

PR-2366	Project Certification and Completions Management
GU-927	Technical Standard Selection and Challenge
GU-364	Vendor Registration Guidelines
GU-707	Project Preservation Guideline
DEP 31.10.00.10	Material Control and verification of pressurised product
DEP 70.10.70.11	Preservation of Old and New Equipment

iii Related International Standards

Doc. ID	Document Title
ISO 9001: 2015	Quality Management Systems – Requirements
ISO/TS 29001:2020	Petroleum, Petrochemical and Natural Gas Industries - Sector specific quality management systems - Requirements for product and services supply Organisations
API-Q1	Specification for Quality Management System Requirements for Manufacturing Organisations for the Petroleum and Natural Gas Industry
API-Q2	Specification for Quality Management System for Service Supply Organisations for the Petroleum and Natural Gas Industry
ISO 10005:2005	Quality Management Systems- Guidelines for quality plans
ISO 19011:2018	Guidelines for Quality and/or Environmental Management Systems auditing
BS EN 10204	Metallic Products. Types of Inspection documents
ISO 10474	Steel and steel products — Inspection documents
ISO 9712	Non-destructive testing — Qualification and certification of NDT personnel
ASNT SNT TC-1A	Non-destructive testing — Qualification and certification of NDT personnel

Note: latest versions of the standard will be applicable for all undated versions

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1 Introduction

1.1 Purpose

The purpose of this specification is to specify Company's minimum requirements for Quality Management System of Suppliers intending to provide a service or a product or execute a contract for Petroleum Development Oman.

Compliance to this specification will enable Suppliers to:

- Demonstrate ability to consistently provide products and services that meet Company applicable statutory and regulatory requirements
- Provide necessary assurance about organisational conformity to Company, applicable statutory and regulatory requirements through effective application of the quality system including improvement processes for continual improvement
- Provide necessary assurance that the WPSF, EPSF, OPSF requirements as applicable is complied.
- This specification is based on International Technical Specification ISO/TS 29001: 2020 - Petroleum, Petrochemical and Natural Gas Industries – Sector-Specific Quality Management Systems - Requirements for Product and Service Supply Organisations which is adopted by Company with additional requirements as specified in this document.

1.2 Scope

This specification shall apply to all organisations providing a service to PDO directly or through Company's appointed Contractors (contracts, frame agreements, Purchase orders awarded by Company directly or placed in PDO projects during Opportunity realisation phases of the project) except for those specified below.

This specification is not applicable for providers of utilities with no MAH (Major Accident Hazards) and other low risk products and services such as real estate, technology trials, supply of specialist manpower, highly specialized single discipline studies/surveys, DBOOM contracts etc. Compliance to the requirements of internationally accepted version of ISO 9001 is sufficient for these providers.

Stockists shall be ISO 9001 (internationally accepted version) certified by a certification body accredited to International Accreditation forum/ Accredited bodies.

All requirements stated in this document are mandatory, however the extent of applicability depends on the scope of work, risk, complexity, and size.

1.3 Changes to the Specification

This specification shall not be changed without approval from the Document Authority. Any user of this specification, who encounters an inaccuracy or ambiguity, is requested to notify the Document Custodian, using the User Comment Form provided, see Appendix 7.

1.4 Effective period

The requirements of this specification shall remain in force indefinitely unless superseded by an authorised revision.

1.5 Review and Improvement

As a minimum, this specification will be reviewed and if necessary updated when current version of ISO/TS 29001 (Year 2020) is revised or every three years whichever is earlier.

1.6 Definitions

For the purposes of this document, the terms and definitions given in ISO 9000 and the following apply.

PDO/ Company / Principal Contractor	Petroleum Development Oman L.L.C. The party which carries out all or part of the design, engineering, procurement, construction, pre-commissioning, commissioning or management of a project, or operation or maintenance of a facility
Frame Agreement (FA)	Long term price agreement between Company and material supplier/vendors
Item	Product, Equipment, material, package
ITP	Means of setting out practices, resources, Interventions of relevant inspection personnel and sequences of activities relevant to the quality control of a particular product, service, contract, or project.
Joint Venture (JV)	Business entity created by two or more parties to achieve specific objectives.
Local Agent	Agent based in Oman of Company approved Vendor(s) with which Company or its Contractors have placed a Purchase Order.
Project	Unique process undertaken to achieve an objective, consisting of a set of coordinated and controlled activities with start and finish dates, conforming to the specific requirements, including constraints of time, cost, and resources. Project can be execution of a Contract or PO for provision of products and/or services.
Manufacturer	The Party responsible for the fabrication/ manufacture of equipment and services to perform the duties specified by the Consultant or the Company
Vendor	A party responsible for the supply of equipment, materials, or product related services in accordance with the purchase order issued by PDO or it's nominated purchasing office
Supplier	The term Supplier refers to Company's appointed Contractors, manufacturers, Vendors, Service Providers and Joint Ventures
Sub-supplier	The term Sub-supplier refers to any organisation employed by Supplier to perform part of the Contract/PO
Stockist	Supplier who supply Item already in stock against PO placement and available for immediate delivery
Shall	The word "shall" used throughout this specification indicates a mandatory requirement
Should	The word "should" used throughout this specification indicates a recommendation.
Technical Standards	CP's, SP's, PR's, DEP's, MESC SPE's, International Standards

1.7 Abbreviations

AFC	Approved for Construction
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ANSI	American National Standards Institute
ASNT	American Society for Non-destructive Testing
ASTM	American Society for Testing and Materials
AUT	Automated Ultrasonic Testing
AVME	Approved Vendors for Materials and Equipment
AWS	American Welding Society
BGAS	British Gas Approved Scheme
BS EN	British Adoption of European Standard
CCMS	Construction Completion Management System
CFDH	Corporate Functional Discipline Head
CP	Code of Practice
CR	Criticality Rating
CRA	Corrosion Resistant Alloy
CSWIP	Certification Scheme for Welding and Inspection Personnel
CV	Curriculum Vitae
CWI	Certified Welding Inspector
DA	Discipline Authority
DBOOM	Design, Build, Own, Operate & Maintain
DCAF	Discipline Control and Assurance Framework
DDM	Document Deliverable Matrix
DEP	Shell Design and Engineering Practice
DEM1/ DEM2	Design Engineering Manual requirements
DSS	Duplex Stainless Steel
EP	Engineering & Procurement
EPC	Engineering, Procurement and Construction
EPCC	Engineering, Procurement, Construction and Commissioning
EPSF	Engineering Process Safety Fundamentals
EWE	European Welding Engineer
FA	Frame Agreement
FAT	Factory Acceptance Test
FCAW	Flux Core Arc Welding
FCP	Flexible Composite Pipe also known as LLRTP
FOC	Fibre Optic Cable
FPD	Flawless Project Delivery
GMAW	Gas Metal Arc Welding

GRE	Glass Reinforced Epoxy
GRP	Glass Reinforced Plastic
GTAW	Gas Tungsten Arc Welding
HDPE	High Density Polyethylene
HIC	Hydrogen Induced Cracking
HNC	Higher National Certificate
HND	Higher National Diploma
HSSE	Health, Safety, Security & Environment
ICorr	Institute of Corrosion
IRCA	International Register of Certificated Auditors
ISAT	Integrated System Acceptance Testing
ISO	International Organisation for Standardisation
ITP	Inspection and Test Plan
ITR	Inspection and Testing Requirements
IWE	International Welding Engineer
KPI	Key Performance Indicator
LLRT	Long Length Reinforced Thermo Plastic
MAH	Major Accident Hazard
MESC	Materials and Equipment Standards and Codes
MFL	Magnetic Flux Leakage
MIC	Maintenance Integrity Contract
MOC	Management of Change
MoM	Minutes of Meeting
MRB	Manufacturing record Book
MSS	Manufacturer's Standardisation Society
MPI	Magnetic Particle Inspection
MUT	Manual Ultrasonic Testing
MT	Magnetic Testing
NDT	Non Destructive Testing
NCR	Non Conformance Report
ODC	Off-plot Delivery Contract
OHL	Overhead Line
OMC	Off-plot Mechanical Contract
OPSF	Operation Process Safety Fundamentals
PCN	Personnel Certification in Non-Destructive Testing
PDC	Project Delivery Contract
PGSC	Product Group Service Category
PIM	Pre-Inspection Meeting
PMI	Positive Material Identification

PR	Procedure
PQR	Procedure Qualification Record
PO	Purchase Order
PT	Penetrant Testing
PWHT	Post Weld Heat Treatment
QA	Quality Assurance
QC	Quality Control
QP	Quality Plan
RABQSA	A personnel and training certification body created merging Registrar Accreditation Board (RAB) with Quality Society of Australasia (QSA).
RCA	Root Cause Analysis
RT	Radiographic Testing
SAT	Site Acceptance Test
SAW	Submerged Arc Welding
SMAW	Shielded Metal Arc Welding
SP	Specification
SS	Stainless Steel
SSC	Sulphide Stress Cracking
TA	Technical Authority
TIV	Technical Integrity Verification
TOFD	Time of Flight Diffraction
TPI	Third Party Inspection
UT	Ultrasonic Testing
WPS	Welding Procedure Specification
WPSF	Well Process Safety Fundamentals

2 Specification Requirements

2.1 Quality Management System

Supplier (Contractor, Vendor or Joint Venture) shall implement and maintain a Quality Management System that complies with ISO/TS 29001 and additional requirements of this specification.

Suppliers shall attain Third Party Registration of their Quality Management System to ISO 9001 or sector specific international standard e. g. ISO/TS 29001, ISO/IEC 17025, API Spec Q1, API Q2 etc. The registration shall be from an Accredited Certification Body e.g., BSI (British Standards Institution), BV (Bureau Veritas), DNV (Det Norske Veritas), LRQA (Lloyds Register Quality Assurance) etc, who are themselves accredited by a National Accreditation Board to assess Quality Management Systems.

Suppliers shall also maintain API Q1 registration/ API monogram for their products where applicable.

Service providers involved in Well Engineering activities shall attain and maintain API Q2 registration for their scope of service.

The company shall have rights to verify, validate QMS certification and reject/ not consider certificates from unknown/ untraceable resources.

If any part of the Contract/PO is outsourced, Supplier shall ensure that the Sub-supplier maintains a Quality Management System that meets the requirements of this specification for the outsourced scope of work. Supplier shall remain ultimately responsible for the quality of the outsourced scope of work.

3 Additional Company Requirements to ISO/TS 29001

The following sub-section details “Amendments/Supplements” to ISO/TS 29001. Where relevant, the applicability for Contractors (PDC, MIC, ODC, OMC, EPCC, EP, EPC, Special Contracts etc.) /Joint Ventures and Vendors is shown separately.

3.1 ISO/ TS 29001 Clause 4 - Context of the Organisation

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3.1.1 ISO/TS 29001 – 4.2 Understanding the needs and expectations of the interested parties

Organisation shall understand current and future Company needs and other interested parties’ requirements, meet these requirements and strive to exceed Company expectations.

When determining the balance between time, cost and product/service quality, potential impacts on the project’s product or service shall be evaluated, taking into consideration Company’s and other interested parties’ requirements.

Interfaces shall be established with all interested parties to facilitate exchange of information, identification of risks and opportunities as appropriate, throughout the project. Any conflicts between the interested parties’ requirements shall be resolved.

The resolution of conflicts shall be agreed by Company and other interested parties and these agreements shall be retained as documented information.

When conflicts arise between requirements and applicable statutory & regulatory requirements, statutory & regulatory requirements will always take precedence. When conflicts arise between the requirements of the Company and other interested parties, the Company requirements shall take precedence over requirements of other interested parties.

3.2 ISO/TS 29001 – Clause 5 Leadership

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Applicable to Contractors/ Joint Venture

3.2.1 ISO/TS 29001 5.2.1 Establishing Quality Policy

Top management of project organisation shall review corporate quality policy for their suitability in project based on its context. If a dedicated project quality policy is preferred, it shall be documented, implemented, and referenced in Project Quality Plan / Contract Quality Plan.

3.2.2 ISO/TS 29001 – 5.3 Organisational Roles & Responsibilities

The top management of Project where required by the Contract shall appoint a project manager as early as possible/ in line with the contractual mobilization requirements. The project manager is the individual with defined responsibility and authority for managing the project and ensuring that the project’s quality management system is established, implemented, and maintained. The authority delegated to the project manager should be commensurate with the assigned responsibility.

Quality Focal point
Top management shall appoint a member of project management Team as Quality focal point who, irrespective of other responsibilities, is responsible and authorized to fulfill the requirements stated in ISO/TS 29001 Clause 5.3 a- e.

3.3 ISO/TS 29001 – Clause 6 - Planning

3.3.1 ISO/ TS 29001 - 6.1 Actions to address risks and opportunities

Applicable to Contractors and Joint Venture:

Supplier established process to manage risk and opportunities shall define the frequency for updating risk register. A Quality Risk Assessment shall be conducted in alignment with the Company’s risk assessment approach specified in the Scope of Work. The results of the Quality Risk Assessment shall be reported to the Company. Risks and opportunities shall be

recorded in the Project Risk Register with mitigation plants that identify how to avoid, minimize, and improve possibilities of opportunities. Risk register shall be reviewed periodically

Risk assessment shall consider the following as applicable:

a) The overall Scope of Work of the project

b) Identification of critical management activities

c) Contracting strategy (with respect to the Subcontractors)

d) Selection of the Contractors and Subcontractors

e) Work performed in new/less experienced manufacturing locations

f) Impact of quality defects of bulk items in large quantities

g) Ability to recover from quality incidents if a quality issue is encountered (time and cost to repair or replace)

h) Local content requirements if any

i) Novel equipment design, manufacturing, or operating procedures

j) Complex equipment design, manufacturing, or operating procedures

k) Quality risks associated with cleanliness, tightness (leakages), and testing

l) Risks associated with coinciding events or schedule risks

m) Impact of poor quality from lower tier subcontractors or past poor performance from Suppliers

n) Areas where work may be executed outside of established work procedures

o) Contractual interfaces

p) Inadequate resources (quantity and competency)

q) Requirements from or involvement of National and International Regulatory Authorities

Note: Supplier shall ensure that risk assessment is conducted for each project or work order if multiple projects or work orders are issued under the same contract.

3.3.2 Contingency Planning

Applicable to all Suppliers
Supplier shall maintain a documented procedure for contingency planning needed to address risk associated with impact on delivery and quality of product. Procedure shall also address frequency of review, update of mitigation plan and output results.

Contingency planning is based on assessed risks and output is documented and communicated to the relevant personnel within the organisation and updated as required.

Planning Output
The documented contingency plan will include, at a minimum:
1. Action required in response to a significant risk scenario to mitigate effects of disruptive incident.
2. Decide the time frame for implementation of each contingency action.
3. Identifying the authority, with contact details.
4. Internal and external communication control.

3.4 ISO/TS 29001 – Clause 7 – Support

3.4.1 ISO/ TS 29001 – 7.1 Resources

3.4.1.1 ISO/TS 29001 – 7.1.2 People

Supplier shall establish and implement processes that aim to create an environment in which personnel can contribute effectively and efficiently to the project such as the project organisational structure, allocation of personnel and team development.

Organisational structure shall be appropriate to the project scope, the size of the project team, local conditions and the processes employed. The project organisational structure should encourage effective and efficient communication and cooperation between all participants in the project. The relationships of the project organisation should be identified and established:

- to the customer and other interested parties
- to the functions of the corporate organisation supporting the project (particularly those in charge of monitoring project functions such as schedules, quality, and cost)
- to other relevant projects in the same organisation.

Job or role descriptions, including assignments of responsibility and authority, shall be defined, documented, and included in the quality plan. The division of authority and responsibility within the project organisation structure should also take into account division of authority and responsibility in the originating organisation and its organisational structure.

The Project Organisation shall show Quality Management function responsible for the project's quality management system and identify its interfaces with other project functions, company, and other interested parties.

Supplier shall determine the number of quality function resources including inspection personnel based on the Contract/PO requirements and the quality risk assessments to ensure that all Contract activities are adequately covered and that the Quality Management System is effectively established, implemented, and maintained throughout the Contract duration/PO execution.

There shall be sufficient inspection personnel to cover all disciplines work and activities, sub-supplier's work at the site and offsite facilities based on criticality of the activities and the number of locations. Inspection personnel shall be independent of the work being performed and shall have no other duties or responsibilities. Details of QA/QC resources shall be clearly documented along with their responsibilities and authorities.

Applicable for Contractors/Joint Ventures only:

Contractor shall assign at least one dedicated quality focal point (Quality Manager/ Sr. Quality Engineer) for each Contract and work location. The quality focal point shall functionally report to Contractor Corporate Quality Representative on all Quality matters and administratively report to the Contract Project Representative on day to day activities. The necessity of assigning a dedicated Quality Manager/ Senior Quality Engineer managing the quality functions will be indicated in the contract

Contractor planned and actual staffing levels shall comply with Contract requirements. The Company shall approve any proposed reduction from required levels in advance, in writing.

The proposed quality organisation chart covering all QA/QC personnel shall be submitted to Company for approval prior to the mobilisation phase of the Contract.

Organisation chart shall be identified with an unique document number indicating the revision status/ date of issue and updated whenever changes are made.

Contractor shall anticipate, plan, and make all quality personnel changes required due to vacations, illness, temporary assignments, emergency leave, resignations, or other reasons as necessary to maintain required quality coverage. Contractor shall notify the Company on all planned quality personnel changes at least thirty (30) calendar days in advance. Contractor shall notify in writing Company on unplanned personnel absences and changes within twenty-four (24) hours. Contractor shall deploy Company approved replacement quality Personnel within seven (7) calendar days of each unplanned absence.

Contractor shall prepare Quality personnel resource mobilisation/ demobilisation plan on a monthly basis or as identified within Contract to cover all verification activities as required by ITP.

Reviews of the project organisational structure shall be planned and carried out regularly to determine its suitability and adequacy.

The adequacy of the Quality resources shall be reviewed by Company quality representatives during progress review meetings.

3.4.1.2 ISO/TS 29001 – 7.1.5 Monitoring and Measuring Resources

Supplier shall maintain a Master list of Measuring & Test Equipment for the required testing, measurement, and monitoring equipment used to determine product conformity to meet requirements that includes a unique identification, location, calibration or verification method, frequency, and acceptance criteria specific to each piece of equipment. The calibration and verification methods & acceptance criteria shall be specified.

3.4.1.3 ISO/TS 29001 –7.1.6 Organisational Knowledge

Contractor shall maintain a system which clearly records on an ongoing basis, Lessons Learned from all work performed. Contractor shall convene a Lessons Learned workshop/meeting with Company participation within sixty (60) days of the contract effective date to review and develop potential Lessons Learned. The status of identified Lessons Learned should be part of Monthly Report.

Contractor shall maintain a Project specific Lessons learned Register (can be extracted from Contract specific LL register) that should capture lessons learned from previous and ongoing Projects/Contracts. Pro-active actions taken by the Contractor to avoid recurrence of such incidents should be documented in the Register and implementation of the same should be reviewed/assessed frequently by the top management. Frequency of such reviews of implementation of actions shall be defined in the Contract/Project Quality Plan.

This knowledge shall be maintained and made available to all personnel to the extent necessary. When addressing changing needs and trends, current knowledge shall be considered and determine how to acquire or access any necessary additional knowledge and required updates.

3.4.2 ISO/TS 29001 –7.2 Competence

QA/QC personnel working for the Contract on site shall be evaluated for their competence, project specific requirements if any and shall be approved by Company. The minimum competency requirements for Contractor / Joint Venture Personnel are provided in Appendix 2. Company shall have the right to reject Contractor quality Personnel that do not comply with the requirements in Appendix 2 or have demonstrated poor work performance to Company.

Contractor shall review, verify, and submit legible CV's, certificates, and credentials for all proposed quality Personnel to Company for review and Approval at least thirty (30) calendar days prior to the start of work for each individual. Company shall have the right to interview and/or test all quality Personnel.

The approval of Company's Inspection personnel shall not absolve Supplier's responsibilities to supply the product that meets contractual requirements.

Where 3.2 certification in accordance to BS EN 10204/ EN 10474 is specified, the inspector shall be approved by Company.

Personal attributes shall be considered in the selection of project personnel. Special attention shall be given to the competence requirements of key personnel.

Supplier's inspection personnel (QC Inspector/TPI) roles and responsibilities shall be as follows but not limited to:

- Verify product conformance to Contract/PO requirements at various stages of fabrication/construction as stated in approved ITP and applicable specifications.

- Review quality documentation to verify product conformance to Contract/PO requirements.
- Carry out surveillance inspections to verify processes and procedures compliance.

  The surveillance role shall be as follows but not limited to:

  - To monitor Supplier activities with respect to quality performance.
  - To ensure that the materials are from the approved Vendors.
  - To ensure close out of NCR's after verifying approved correction and corrective actions are implemented.
- Issue Inspection Release Note of Product/ Sign test pack (QC dossier), as applicable.
- Report to relevant authorities on daily, weekly, and other defined frequencies as applicable.

Note: Non-metallic (GRE/HDPE/FCP) Personnel performing work shall be interviewed by PDO relevant Technical authority prior to mobilisation.

QA Personnel required to be approved by PDO relevant Technical Authority through review of Curriculum Vita/Resume followed by an interview prior to mobilisation shall be indicated in the Contract. Where no such requirement is defined, then approval requirements shall be agreed with the Project Quality Engineer.

3.4.3 ISO/TS 29001 –7.4 Communication

Applicable for Contractors/Joint Ventures only:

The content of monthly quality report shall be discussed and agreed with Company. Typical content of the monthly quality report should be as follows:

- Summary of Project / Contract Quality Documents development and approval status.
- Project quality induction, engagements, presentations, and awareness conducted.
- Resource plan showing status of resources deployed against specified mobilisation plan.
- Contract Quality Management Review Minutes of Meeting (MoM) as applicable.
- Summary of Internal and External Audits carried out and reported against the Audit Schedule.
- Updated audit tracking system listing corrective actions for each audit, current status, and planned dates for follow-up and closeout.
- Summary of inspections and tests done at Vendors' premises.
- Look ahead for PIM's, planned inspections and tests at Vendors premises.
- Summary of Completed and Planned Site Inspections
- Quality lessons learnt during the period.
- Contractually agreed project specific KPI's and their status.
- Status of project/ product NCR's, Jawda cards
- Status of Request for Inspection (RFI) for Planned, Accepted and Rejected at Site
- Highlights of any new quality risks and oppurtunities and update of high-quality risks

3.4.4 ISO/TS 29001 –7.5 Documented Information

3.4.4.1 ISO/TS 29001 –7.5.1 – Documented Information - General

New Codes and Standards shall not be used unless approved by the Company. Requests for concessions or deviations from approved project codes and standards (including revisions), project specifications, data sheets, drawings or specified construction material shall be submitted to the Company for review and approval and shall be managed by the projects Management of Change (MOC) procedure.

All Engineering deliverables shall be approved as per PCAP or DDM (as applicable). Supplier should prepare a vendor deliverables approval matrix highlighting review and approval authority of Contractor/Company personnel and necessary approvals obtained from Company.

Documents formally handed over to Company shall be indexed in accordance with the Company's Scope of Work. A method of tracking Handover Dossier and Manufacturing Data Record Books shall be implemented. A final documented in-house quality check of each Handover Dossier shall be conducted to ensure that all vital and essential non-conformance items have been closed out and evidence provided.

SP-2065 (Document Management in Engineering & Operations) requirements shall be complied where required by the Contract/ purchase order

3.4.4.2 ISO/TS 29001 –7.5.2 – Documented Information – Creating and Updating

Applicable for Contractors/ JV

Document Control procedure established shall also include the following

a. List of technical authorities related to approval of documents

b. Access of Master list to all users for current document status and their revisions

c. Distribution of documents as per the defined distributions matrix

d. Actions to be taken on superseded revisions and obsolete document to ensure only latest approved revisions are available at all points of use

Applicable for Suppliers:

Supplier shall establish a system to demonstrate that they maintain the relevant revision of all Contract/PO requirements including statutory, regulatory, contractual and Technical Standards.

All documentation related to the Quality Management System shall be available at the location where work is being carried out.

When identified in Contract/Purchase Order, the following documents shall be approved as applicable:

S l No	Document Description	Approval Authority
1	Quality Plan	Company Quality Management TA-2
2	CV's of Contract Quality Manager	Company Quality Management TA-1/ Delegated TA1
3	ITP's issued by Contractor/Joint Venture	Company Quality Management TA-2
	ITP's for procured items	For CR 1 & 2 items as per SP-2269, Company Quality Management TA-2. Others by Contractor Senior Quality Engineer approved as minimum DA-2.
4	CV's of Senior Quality Engineer, Quality Engineer and all Inspection personnel related to welding, painting, mechanical, electrical, C&A and non-metallic activities	Company Quality Management TA-2
5	CV's of Welding Engineer and NDT Engineer	TA2 – NDT and Welding

Note:

CV' S Shall be Submitted with self-evaluation and compliance sheet as per this Specification -Appendix 2 and with Relevant testimonials as Educational, Experience, Technical Certifications, Previous Approvals from Clients

Where Suppliers are required to implement Discipline Authority procedure in accordance to PDO requirements as per contract, Senior Quality Engineers shall be approved as a minimum DA2 in accordance to their Discipline authority approval process. In other instances where DA

requirements are not applicable, approved Senior Quality Engineer or Quality Manager shall be considered as the approval authority for Inspection and Test Plans for CR III, CR IV items.

ITP's submitted for approval shall include copies of forms/ checklists referenced in the Inspection and Test Plan.

3.4.4.3 ISO/TS 29001 –7.5.3 – Control of Documented Information

Master list of critical documented information required to manage and implement quality management system shall be maintained and updated at all times.

List of critical documented information retained as evidence of conformity as required by the contract shall be maintained with their retention periods at all times

Documented information retained as evidence of conformity shall be kept for a minimum period of 5 years from the date of completing the activity or as required by the contract, statutory and regulatory requirements or other applicable requirements whichever is longer.

Records retained to demonstrate compliance to requirements shall include, but not limited to records related to control of engineering, construction, mechanical completion activities as required by the Contract, Project Quality Plan, relevant manuals, plans and procedures. Project Quality records shall also include results and evidence of quality verification activities performed as part of inspection, surveillance, testing, audits, welding and NDT activities, non-conformances, certificates of conformity etc.

3.5 ISO/TS 29001 – Clause 8 – Operations

3.5.1 ISO/TS 29001 –8.1 Operational Planning and Control

3.5.1.1 Quality Plan

Unless otherwise stated in a Contract, a specific Quality Plan (QP) shall be prepared at the beginning of the Contract.

Purchase Orders identify requirement for Quality Plan (QP) for procured products based on its criticality, which shall be followed.

The Quality Plan (QP) describes the organisation's corporate quality management system elements applied to the Contract/PO and additional measures to comply with the requirements of this specification. In specifying and developing the quality plan, Supplier shall apply risk-based thinking to quality management system processes involved in the achievement of project objectives. Risks and opportunities should cover planning and support processes as well as in the project risk-related processes.

Quality Plan (QP) shall address applicable inter-related Company systems to the scope of work such as Discipline Controls and Assurance Framework (DCAF), Operations Readiness, Technical Integrity Verification (TIV) and Flawless Project Delivery (FPD), etc. when applicable as per scope of work.

Quality Plan (QP) shall integrate fully with other project processes and plans. Quality Plan (QP) shall be reviewed with other components of project management Plan / Project execution Plan for consistency and resolve any discrepancies; these include but not limited to:

- work breakdown structure
- project schedule
- communication plan
- risk management plan
- engineering plan
- procurement plan
- construction plan etc.

Quality Plan (QP) shall be prepared based on Appendix 1 requirements and ISO 10005. The degree of detail included can depend on factors such as scope, size, and complexity of the project.

The QP shall be submitted within stipulated time as per the Contract/PO requirements. Supplier shall not commence any work until the Quality Plan (QP) is approved at least in Code B (Incorporate comments and re-issue for review; work may proceed).

Sub-suppliers shall comply with Supplier QP requirements. In case the Quality Plan (QP) of Supplier does not adequately cover sub-contracted scope of work, Supplier shall ensure that the Sub-supplier submits a separate Quality Plan (QP) for the applicable scope of work for Company approval complying with this specification.

The Tender issue of the Quality Plan (QP) (normally Revision 0) is a preliminary issue addressing all requirements of this specification in general terms in such a way that it demonstrates the understanding of the SP-1171 requirements. On award of the Contract or placing of the PO, the Quality Plan shall be revised addressing specific details.

QP shall be maintained and updated as a live document. As a minimum, it shall be reviewed every year and /or revised when Supplier and/or Company identify significant changes.

3.5.1.2 Inspection & Test Plan (ITP)

Unless otherwise stated in the Contract an Inspection and Test Plan (ITP) shall be prepared by respective Supplier and submitted to Company for approval prior to start of relevant activities. This shall also apply to Sub-supplier activities as applicable.

For procured items, the ITP's shall be issued and approved as per SP-2269 requirements. For packages the Supplier shall issue ITP's for the items part of the package.

ITP shall be issued for all items irrespective of an ITR being issued for MESC related items.

Where required the ITP's for procured items shall be approved by Company. Company has the right to identify and re-assign surveillance, witness and hold points during ITP review

No work shall start unless the ITP is approved at least in Code B (Incorporate comments and re-issue for review; work may proceed).

Appendix 4, Inspection and Test Plan (ITP) Template, offers Supplier guidelines on the content and development of an ITP.

Standard Quality Plans for some products/ activities have been prepared by COMPANY as a guideline. Suppliers can obtain the same as guidance document to develop Test plan for the project/ purchase orders where applicable

Quality Alerts and function protocols issued on products/ services shall also be reviewed to ensure additional controls/ measures recommended are included in the Inspection and test Plan.

Note:

ITP's submitted for approval shall include copies of forms/ checklists referenced in the Inspection and Test Plan.

Documents approved in Code B (Work May proceed) shall be submitted within 14 working days for final approval. Delays in submission of documents for final approval beyond the stipulated period requires Company authorised personnel approval (Personnel who performed the original approval of document) to perform further activities based on those documents.

Supplier and sub supplier personnel involved in execution of activities shall maintain copies of the latest ITP during inspection activities.

3.5.2 ISO/TS 29001 – 8.2 Requirements for Products and Services

3.5.2.1 ISO/TS 29001 – 8.2.1 Customer Communication

The communication plan shall define the information that will be formally communicated, the media used to transmit and communication frequency. The requirements for purpose, frequency, timing, and documented information of meetings should be defined in the communication plan.

The communication plan should also define the formal exchange of documented information, identify who will send and receive information, and should reference the relevant controls on documented information, including security processes.

The format for progress reports should be designed to highlight deviations from the project plan.

Note:

Company is in the process of developing and implementing various applications for management of Quality (i.e., Incident/ Observations/ Non-conformances management system, Inspection Management, Factory Acceptance Test, Variance Tracking, Audit Management etc..). Supplier shall use these applications when implemented to provide the required data and information for the effective functioning and management of quality activities.

3.5.2.2 ISO/TS 29001 – 8.2.3 Review of Customer requirements

Quality intervention and criticality rating

Where required by the Contract / PO, Supplier shall perform criticality rating of equipment and systems to assist in determining the level of quality management, control and monitoring required during Opportunity realisation process (i.e., detail engineering and design, procurement, fabrication, construction, installation to commissioning and start up as applicable).

The Criticality rating and quality intervention programs shall be established prior to procurement from Vendors/ Subcontractors.

The risks associated with likelihood and consequences of failure of procured material, equipment and services shall be assessed to determine the Criticality Rating and level of Quality Intervention needed. The level of Quality Intervention needed directly impacts the inspection coverage identified in Inspection and Test Plans for the Scope of Work. Quality Intervention and Criticality Ratings shall be established in accordance to Company document SP-2269.

The Company will have the right to participate in the quality risk and criticality assessment events performed by the Contractors.

3.5.2.3 ISO/TS 29001 – 8.2.4 Changes to requirements for Products and Services

The current agreed baseline shall be summarised and maintained in a controlled document such as Basis of Design. Proposed changes which would modify the form, fit, function, design concept, have HSSE implications, increase cost or adversely affect schedule shall be referred to management for authorisation via the established Management of Change (MOC) procedure. Effects of all proposed changes shall be assessed in multidisciplinary way before approval is to proceed.

The Project Quality Plan shall reference or include a procedure for Management of Change (MOC). The principles of change management requirements shall be included in contracts and purchase orders.

3.5.3 ISO/TS 29001 – 8.3 Design and Development of Products and Services

3.5.3.1 ISO/TS 29001 – 8.3.1 Design & Development Planning

When design and development activities are outsourced, the organisation shall ensure that the subcontracted facility meets the requirements of clause 3.5.4 of this specification

3.5.3.2 ISO/TS 29001 – 8.3.2 Design & Development Controls

A design review program shall be established and conducted at appropriate stages of the engineering work. Design reviews shall include peers, interfaces, technical authorities, operations, and client personnel where appropriate. Design Review shall cover the following:

- Compliance with the contracts, requirements, and Basis of Design
- Optimisation for minimum lifecycle costs

- Verification of technical and process integrity
- Mitigation of Lessons Learned and quality risks identified
- Completion of documentation in readiness for the next project phase.

Where specified in scope of work, technical assurance system such as Discipline Controls and Assurance Framework (DCAF) shall be implemented via the Project Controls and Assurance Plan. Appropriate drawing/document distribution and approval matrix shall be developed and agreed with Company for guiding document distribution for the technical authority approval.

Where specified in scope of work, DEM1/DEM2 Compliance shall be verified taking appropriate Shell DEP template and shall submit verification results to Company.

Where specified in scope of work, Technical Integrity Verification shall be implemented, and verification results submitted to Company.

Quality Plan shall identify equipment and/or processes that are novel, cumbersome and/or complex and which represent a particular risk to the project during design, fabrication, construction, installation, and operation for design validation purpose. Where applicable, Design validation such as FAT, prototype test etc. shall be performed as per established procedure to ensure that the design requirements have been met on completion of design.

Evidence of design validation and any subsequent activities to mitigate findings shall be maintained as documented information.

3.5.3.3 ISO/TS 29001 – 8.3.2 Design & Development Outputs

Design/Development Deliverables, as identified in the Contract/Purchase Order for Company review / approval shall be submitted as per agreed schedule.

The document control procedure shall contain a system for control and tracking of design 'holds' on issued documents. The tracking shall be registered such that parts of a document which are not approved for use are clearly marked and controlled. A register for design holds shall be maintained.

Supplier shall also define the controls for monitoring and management of handling of site queries, RED Line mark Up drawings, and issuance of As Built documents till project handover where applicable

3.5.4 ISO/TS 29001 – 8.4 Control of externally provided process/ products/ services

3.5.4.1 ISO/TS 29001 – 8.4.1 General

Supplier shall have access to latest PGSC List/ AVME directly or through Company Representative. Supplier shall procure materials, equipment etc. from Vendors listed in "PGSC/AVME List". Products made at any other place than the approved facility are not acceptable for the same approved Vendor.

Where Suppliers' outsourced product or Sub Supplier is not listed in Company's PGSC/AVME List, the outsourced product (where applicable) and/ or proposed sub-supplier details shall be submitted to Company for approval before placing the PO. All deviations from AVME list shall be recorded through Variance tracking tool and approved obtained from appropriate functions prior to acceptance.

In tender evaluations, all deviations from specification in an external provider proposal shall be identified and taken into account during evaluation. Deviations from specification, and recommendations for improvement, shall be approved by the same functions that carried out the original review and approval of specification. All deviations to specifications shall be processed through Variance tracking tool for acceptance.

Applicable for Vendors only:

The Local Agent representing a foreign Vendor is responsible for seamless and on time communication between the Vendor and Company such as PO clarifications, document approvals, deviation / concession requests, performance feedback, Quality Alerts, and function notes etc.

Where yellow / red card is issued to a Vendor as per GU-364, the Local Agent shall ensure that the quality issue is investigated to find the root cause, identified corrections are completed and corrective actions are taken to prevent their re-occurrence.

As part of Root Cause Analysis, Company has the right to request for sacrificial testing of materials in PDO approved laboratories and/or perform an onsite assessment. The related costs shall be supported by respective Vendor. Company has the right to retain samples taken for RCA.

The documented evidence of completed actions shall be submitted to Company on a timely manner in order to withdraw the yellow card.

3.5.4.2 ISO/TS 29001 – 8.4.2 Type and Extent of Control

Supplier shall maintain a material tracking register that identifies as a minimum Purchase order number, supplier details, type of product sourced, inspection requirements, delivery dates and the current status of the order throughout the procurement phase of the project

Applicable for Suppliers (as required):

Pre-Inspection meeting (PIM)

Requirements for the PIM's related to procured items shall be identified during the criticality rating process (see SP-2269). PIM shall be held at vendor premises. The following should attend the PIM: Quality Engineer, Discipline Engineer (for engineered items) and Expeditor, TPI appointed by Company/ Supplier if applicable. At least the following documents shall be Code B (Incorporate comments and re-issue for review; work may proceed) prior to PIM: applicable drawings, ITP, procedures (WPS's, NDT, Heat treatment, FAT Procedure with Applicable Checklists and test Forms etc)

Refer to Appendix 3 for further details.

A Pre-construction quality alignment meeting shall be conducted prior to start of construction scope of work. Ref. Appendix 6 for guidelines

Supplier shall ensure that the material test certificates conform to Contract/PO requirements.

Where Third Party Certification is specified in Supplier's Scope of Work in the Contract or utilised to perform inspections the following requirements shall be complied with

Supplier shall use a Third-Party Inspection Agency identified in Company's TPI approved list and shall exclude Agencies that have a contract with Company to perform inspections on their behalf.

Supplier shall ensure that TPI agencies nominated to perform inspections do not subcontract their inspection activities to Freelancers.

Inspection reports shall be made available to PDO within 5 working days. (Minimum requirements to be complied during procurement of materials is detailed in Appendix 5)

FAT/SAT shall not be performed unless all relevant documents (drawings, datasheets, procedures, ITP's, WPS's etc.) are in Code A (Document accepted; do not re-submit except modified) and NCR's/technical deviations issued during manufacturing/fabrication/construction activities closed out.

Inspection Release Note (IRN) shall be issued after review and compliance of following requirements

Inspection Release Note (IRN) shall be issued after review and compliance of following requirements

Verification of item(s) for compliance to product requirements

All critical documents are approved in Code A (Document accepted; do not re-submit except modified) as required by ITP

NCR's/technical deviations issued during manufacturing/fabrication/construction activities are closed out

If IRN is issued based on approved variance / specific project team instructions, Supplier shall state such conditions of product release along with any Outstanding Working List / Punch List as applicable. Supplier shall submit a punch listing procedure detailing how engineered items procured with carry over works or punch points will be closed out at site.

Note:

With advancement in digital Technology, there is likely to be following scenarios

- Inspections may be performed remotely.
- Materials may be procured via Additive manufacturing route through 3D printing technology.

PDO Quality Function (UEQ) shall be approached for approval of all such digital technology Quality system requirements

Applicable for Contractors/Joint Ventures only:

Supplier shall ensure that any outstanding actions or punch points identified during release of material are uploaded to GoTech (Application for Project Completion and management systems) for tracking and close out.

3.5.5 ISO/TS 29001 – 8.5 Production and Service Provision

3.5.5.1 ISO/TS 29001 – 8.5.1 Control of Production and Service Provision

Applicable for Suppliers:

All welding and related activities (e. g. Post Weld Heat Treatment and Non-Destructive Examination) shall satisfy the requirements of relevant specifications as specified in the Contract / PO.

An index / register of all approved welders/welding and NDE operator's continuity records shall be maintained and made available to Company on request. The register as a minimum shall have information on training and date and results of qualification tests. It should also record WPS and PQR number, base metal, type of welding consumable, joint design, welding position etc.

Company Representative or TPI shall witness procedure qualification tests and/or operator qualification (e. g. welder, cable jointers, FOC splicing technicians, NDT technician, blaster, painter, GRE bonders, laminator etc.) as advised by the Company, where applicable.

3.5.5.2 ISO/TS 29001 – 8.5.1 Identification and Traceability

Applicable for Suppliers:

Identification and traceability of all items shall be maintained (i.e., using tags, stencils, stamping, colour coding etc..) and documented throughout the receiving, manufacturing/fabrication and installation process for all pressure retaining components and non-pressure retaining components welded to pressure retaining components. Shell DEP 31.10.00.10-Gen and other company requirements if applicable shall be complied with.

3.5.5.3 ISO/TS 29001 – 8.5.3 Property belonging to Customer or external Providers

Applicable for Contractors/Joint Ventures only:

Material Management Procedure shall clearly define the interfaces and responsibilities especially for EP (Engineering & Procurement) + C (Construction) projects and detail the controls for transfer of responsibility from EP contractor to Construction Contractor

Reconciliation of materials shall be carried out within the timelines specified in contract scope of work and surplus material handed over to company after project completion

3.5.5.4 ISO/TS 29001 – 8.5.4 Preservation

Applicable for Contractors/Joint Ventures only:

Documented procedure established shall include methods of handling (including special requirements if any) and storage (Indoor, Outdoor, climatic controlled, controlled materials, hazardous chemicals, paints, quarantined items etc).

Supplier shall assess the status of preservation in accordance with manufacturer's recommendations or six months whichever comes earlier.

The preservation program shall be implemented as per manufacturer's recommendation, GU-707, DEP 70.10.70.11. Gen and other applicable equipment specific company standards/ international specifications.
Preservation requirements identified as part of Flawless project delivery (FPD) shall be complied

3.5.6 ISO/TS 29001 – 8.7 Control of Non-conforming products

Applicable for Suppliers:

Nonconforming product shall be brought to the attention of Company using Non-conformance Report within 24 hours with the proposed resolution for Company consideration.

Closed out NCR's shall be reviewed by Company / TPI as applicable and included in the final documentation.

Applicable for Contractors/Joint Ventures:

NCR Management Procedure addressing both system and product non-conformities shall be submitted to Company for approval

Note: Company will issue Non-conformances (Quality Incident Management System)/ observations (Jawda application) to suppliers or customer complaints. Suppliers shall provide details of disposition, agree, and address corrective actions for non- conformances identified on Company developed application. Currently this will be carried out through e-mail and will move to an application-based system for addressing and close out.

3.6 ISO/TS 29001 – Clause 9 – Performance Evaluation

3.6.1 ISO/TS 29001 – 9.2 Internal Audits

Applicable for Contractors/Joint Ventures only:

Contractor shall carry out internal audits on their activities and external audits on Sub-suppliers based on the criticality of the activities and the confidence level on the quality management system applied for these activities. As a minimum, audits shall be performed at the following project phase stages covering all activities at all work locations on every project:

- Design phase: 30% and 75% (approximately)
- Procurement Phase: 25% and 75 % (approximately)
- Construction Phase: 25% and 75% (approximately)

For projects less than six months/EMC/ODC/IMC/EPCC duration the need of an audit shall be agreed with Company.

Audit schedule shall be reviewed at the time of the Contract quality management review and updated as required. The updated audit schedule shall be issued to Company for information.

Lead Auditors and Auditors shall be qualified and certified by an international recognised body or otherwise approved by the Company.

Contractor shall notify Company Project representative to participate in internal audits, external audits on Sub-suppliers as an observer. The audit notification shall be delivered to Company at least 15 working days in advance of the audit date.

The audit reports shall be issued to Company within 2 weeks after the audit closing meeting.

Contractor shall maintain a tracking system of all system NCR's raised during Internal and External Audits.

The target date for completion of root cause, correction and corrective action shall be submitted to Company within 14 working days from the date of issuance of audit report.

The target completion dates will be commensurate with the quality risk and be realistic; concurrence of Company shall be obtained for the target completion date.

3.6.2 ISO/TS 29001 – 9.3 Management Review

Applicable for Contractors/Joint Ventures only:

Contractor shall ensure that the contract quality management system is frequently reviewed at an appropriate frequency in order to ensure timely development and continued suitability of the quality management system:

- Initial review within 6 (six) months from effective date of the Contract focussing mainly on ensuring that all Contract “enablers” such as resources, plans, procedures, tools, systems etc. are in place.
- Thereafter the review frequency may be changed to once a year unless system deficiencies impacting project delivery requires more frequent reviews.
- Within one month prior to the demobilisation of the key project team members, a final contract quality management review shall be performed focussing mainly on Contract “results” and capturing lessons learned.

Contractor’s Project Manager, Contract Quality Manager or Sr. Quality Engineer shall participate in the review meetings.

The minutes of meetings of the review shall be maintained and made available to Company. The MOM shall contain areas of concern and weakness identified in the Quality Management System and actions recommended for mitigation.

3.7 ISO/TS 29001 – Clause 10 – Improvement

3.7.1 ISO/TS 29001 – 10.2 Non-Conformity and Corrective action

Applicable for Suppliers:

The target date for completion of root cause, correction and corrective action shall be submitted to Company within 14 working days after issuing of non-conformity report.

The target completion dates will be commensurate with the quality risk and be realistic; concurrence of Company shall be obtained for the target completion date.

Note:

Supplier shall demonstrate the methodologies used to identify the root cause for high or severe NCR

Close out of non-conformances in all respects shall not exceed ninety (90) days and Jawda cards shall be closed within thirty (30) days

Appendix 1 Quality Plan Content

Contract Quality Plan

The QP should follow the following structure, as applicable:

A. Purpose and Scope (shall identify exclusions of requirements if any)

B. Special Terms, Definitions, Acronyms and Abbreviations

C. References

D. Requirements

1. Project Codes and Standards
2. Regulatory, Legislation, Permits and Consents Compliance

E. Quality Policy and Objectives

F. QMS Structure

G. Management Responsibility

1. Management Commitment
2. Management Review

H. Quality Organisation

1. Roles and Responsibilities and Accountabilities
2. Project Quality Organisation and Quality Function Organisation Charts
3. Quality Resources
4. Training and Competency

I. Information Management

1. Document Control
2. Quality Records Management and Certification
3. Control of Software

J. Communication and Interface Control

K. Management of Change

L. Continuous Improvement

1. Audits
2. Corrective and Preventive Actions
3. Lessons Learned
4. Quality Metrics and KPIs

M. Project/Product Realization

1. Quality Planning
2. Quality Risk and Opportunities Assessment
3. Equipment Criticality Rating
4. Design/Engineering Management (If applicable)

I. Design Planning

II. Engineering Deliverables

III. Design Reviews

IV. Technical Assurance

a) Technical Integrity Verification

b) Design and Novel Technology Validation

V. Technical Deviations

VI. Control of Design Changes

5. Contracting and Procurement (If applicable)

I. Prequalification Requirements

II. Contract Quality Requirements

III. Tender Documentation and Assessment

IV. Post Contract Award Requirements

V. Performance Monitoring

6. Fabrication, Construction, Assembly, Mechanical Completion (if applicable)

I. Material Management

a) Material Handling Controls

b) Control of Company Supplied Materials

c) Packaging, Preservation and Protection requirements

d) Shipping and Transportation (if applicable)

7. Inspection and Testing

I. Inspection and Test Plan

II. Inspection and Test Execution and Monitoring

III. Verification Activities by Company

IV. Inspection Function and Competency

V. Pre-inspection and Quality Alignment meeting

VI. Inspection and Test Records

VII. Control of Measuring and Testing Equipment

8. Hook-Up, Commissioning, Start-up, and Handover (If applicable).

I. Commissioning Planning

II. Commissioning Execution

III. Completion and Handover

N. Non-Conformance Management and Control

O. Appendices (as needed)

Shall include or make a reference as a minimum (Contractor Organisation Chart, List of QA/QC procedures, Inspection & Test Plan, Audit schedule (Internal/ External)

Note: Organisations claiming exclusions to any requirement shall demonstrate organisation's ability or responsibility to ensure the conformity of its products and services and the enhancement of customer satisfaction without complying to these requirements

Vendor's Quality Plan

The QP should follow the following structure, as applicable:

A. Purpose and Scope

B. Definitions, Acronyms and Abbreviations

C. References

D. Quality Policy and Objectives

E. QMS Structure

F. Management Responsibility

- Management Commitment
- Management Review

F. Quality Organisation

- Roles and Responsibilities
- Quality Organisation Chart

G. Information Management

- Document Control
- Quality Records Management and Certification
- Control of Software

H. Communication and Interface Control

I. Management of Change

J. Continual Improvement

- Audits
- Surveillance Visits
- Corrective and Preventive Actions
- KPIs

K. Product Realization

K1. Quality Planning

K2. Quality Risk Assessment

K3. Design/Engineering Management

- Design Planning
- Engineering Deliverables
- Design Reviews
- Technical Assurance
  - Design Verification
  - Design and Novel Technology Validation
- Technical Deviations
- Control of Design Changes

K4. Contracting and Procurement

- Prequalification Requirements
- Contract Quality Requirements
- Tender Documentation and Assessment

- Post Contract Award Requirements
- Performance Monitoring

K5. Fabrication

- Material Management
  - Material Handling Controls
  - Control of Company Supplied Materials
  - Packaging and Preservation requirements
  - Shipping and Transportation (if applicable)
- Inspection and Testing
  - Inspection and Test Plan
  - Inspection and Test Execution
  - Pre-inspection Meeting
  - Inspection and Test Records
  - Control of Measuring and Testing Equipment

L. Non-Conformance Management

M. Appendices (as needed)

Shall include or make a reference as a minimum (Contractor Organisation Chart, List of QA/QC procedures, Inspection & Test Plan, Audit schedule (Internal/ External)

Appendix 2 Competency of Quality personnel

Applicable for Contractors/Joint Ventures only

Note: Vendors / Manufacturers should have their own system for which this Appendix can be guideline for equivalent roles.

Contract Quality Manager

(Required for projects ≥ 500 million USD/PDC/ MIC/ OMC/ North and OMC/ODC South)

Qualifications	Duties
• Shall be a Graduate Engineer (B.Sc. Eng. / BE/ B. Tech.) either in Mechanical / Metallurgical / Welding / Electrical / Instrumentation / Civil engineering as appropriate. • Shall be a Registered or Certificated Lead Assessor with IRCA, RABQSA or equivalent (where equivalent is proposed, evidence of equivalence shall be provided). • Shall have minimum of 15 years of relevant experience in onshore oil and gas facility projects, including live installations. Out of 15 years of experience, 5 years of experience should have gained preferably in the Middle East. Shall have a minimum of 5 years management experience in establishment, operation, and maintenance of quality management system in accordance with applicable international standard with the capability of developing quality system, quality plans, work procedures and inspection plans. • Shall have sound knowledge in quality management in projects covering design / engineering, procurement, construction, pre-commissioning, and commissioning phases. • Shall have sound knowledge in quality management aspects within various technical disciplines and shall be familiar with standards and codes used in oil and gas industries. • Preferably be familiar with practices such as Flawless Project Delivery (FPD) and Technical Integrity Verification (TIV).	The Contract Quality Manager shall: • Shall be the focal point for all Quality activities of the project • Be responsible for implementation, operation, and maintenance of Quality Management System in compliance with contract and SP-1171. • Be responsible for advising, guiding, and motivating project line management/ project team members on all Quality and verification activities and related technical matters, communicate lesson learnt information as applicable. • Be responsible for allocation of quality resources and Quality training of all project personnel. • Manage QA/QC staff at all worksites and ensure project quality targets are achieved. • Identify and manage risks that may have impact on quality and technical integrity. • Plan and manage Quality audits (external and internal). • Ensure all non-conformances are identified, documented, review and approve root cause analysis performed, proposed corrective actions, and verify effectiveness of implemented actions • Ensure compliance of all project functions, Sub-suppliers, and Vendors with the Project Quality Management System requirements. • Provide input and steer to the annual QMS Management Review and track opportunities for improvement. • Liaise with Company on matters related to Quality.

Senior Quality Engineer

Qualifications	Duties
• Shall be a Graduate Engineer in relevant discipline. Alternative qualification may be accepted at the discretion of Company. • Shall be a Registered/ Certificated Lead Assessor with IRCA, RABQSA or equivalent. (Where equivalent is proposed, evidence of equivalence shall be provided). • Shall have minimum of 12 years of relevant experience in oil and gas projects. Shall have a minimum of 2 years management experience in establishment, operation, and maintenance of a quality management system in accordance with applicable international standard with the capability of developing and	The Senior Quality Engineer shall: • Perform the duties of Project Quality Manger listed in this specification when identified as responsible for overall quality activities of the project as applicable. • Prepare, implement, monitor, revise and update the Quality Plan. • Develop, prepare, implement, and monitor all Contract Specific Quality Procedures and Work Instructions. • Review and monitor Sub-suppliers Quality Management Systems and quality performance.

implementing quality system, quality plans, work procedures and inspection plans. • Shall have experience in quality management in projects covering design / engineering, procurement, construction, pre-commissioning, and commissioning phases. • Shall have supervisory skills • Shall have technical knowledge of inspection and exposed to multi discipline works of oil and gas construction field. • Shall be familiar with relevant codes used in oil and gas industries. • Preferably be familiar with practices such as Flawless Project Delivery (FPD) and Technical Integrity Verification (TIV).	• Prepare, review, and monitor the implementation of the Inspection and Test Plans (ITP's). • Report Quality activities as directed. • Liaise with Company on matters related to Quality as applicable. • Be responsible for auditing activities – internal, external, and follow up and close out of Corrective Actions. • Responsible for review, verification and close out of all product non- conformities • Be responsible for overall management of day-to-day quality activities, control, supervision and implementation of Contract quality and technical requirements; resolution of quality problems; preparation and maintenance of Contract quality records.

Quality Engineer

Qualifications	Duties
• Shall be a Graduate Engineer in relevant discipline. Alternative qualification may be accepted at the discretion of Company. • Shall have minimum of 8 years of relevant experience in oil and gas projects. Shall have the capability of developing and implementing quality system, quality plans, work procedures and inspection plans as directed. • Shall have experience in quality management in projects covering design / engineering, procurement, construction, pre-commissioning, and commissioning phases. • Shall have technical knowledge of inspection and exposed to multi discipline works of oil and gas construction field. • Shall be familiar with relevant codes used in oil and gas industries. • Preferably be familiar with practices such as Flawless Project Delivery (FPD) and Technical Integrity Verification (TIV). • Shall have at least ASNT SNT–TC-1A level II NDT qualifications where required • Shall be a Registered/ certificated Lead Assessor with IRCA, RABQSA or equivalent. *Note: Lead Auditor registration is not required if auditing is not part of the activities.*	Same as the duties of Senior Quality Engineer except that it is done under supervision.

Welding Engineer

Qualifications	Duties
• Shall be a post graduate qualification in Welding Engineering or Degree in Mechanical/Metallurgical Engineer with IWE/EWE certification. Welding Inspection Personnel qualifications such as CSWIP/AWS shall not substitute as an acceptable qualification for Welding Engineer in lieu of the requirements given above. • Shall have at least 6 years relevant experience in the construction of oil & gas or petrochemical industry facilities (pressure vessels, tanks, mechanical fabrication, pipelines, piping, etc.). • Shall demonstrate sound technical knowledge and extensive experience in welding processes (SMAW, SAW, GTAW, GMAW, FCAW, etc.), materials, welding and fabrication methods in onshore oil and gas industry. Expert knowledge in	The Welding Engineer shall: • Plan, review and approve welding activities (welding consumable, process selection and controls, WPS PQR preparation (qualifying new PQRs, witnessing and accepting), weld repair control and analysis, welder qualification, root cause analysis of welding failures. • Guide Corrosion and materials departments on the material selection with respect to welding as on when required, address

welding of high strength pipeline steels and improved corrosion resistant alloys (CRA) used in oil and gas industry is a must. • Shall have sound technical knowledge of corrosion / fracture / fatigue / creep / embrittlement behaviour of welded joints and materials used in oil and gas industry. • Shall demonstrate capability in preparation of WPS, selection of welding consumables; ability to undertake weldment failure analysis; welding related problems diagnosis and solutions; qualification of welding procedures. • Shall have experience of working to and fully conversant with international codes (ANSI/ASME, ASTM, API, BS, EN, MSS, ISO, etc.) used in oil and gas industry, and preferably with PDO Technical Standards.	technical queries/ variances on welding. • Site visits, site audits for control and implementation of welding, PWHT activities. Develop Welding specifications to ensure integrity of equipment and facilities used in PDO. • Support Quality team for review Vendor Welding deliverables, ITP reviews of welding activities.

NDT Engineer

Qualifications	Duties
• Shall be a graduate in Engineering and shall have qualifications as NDT Level III in accordance with ISO 9712 or ASNT SNT-TC-1A in methods, RT, UT, PT and MT • Shall have at least 6 years relevant experience in the construction of Oil & Gas or Petrochemical industries facilities (pressure vessels, tanks, mechanical fabrication, pipelines, piping etc.). • Shall have demonstrated sound technical knowledge and extensive experience in methods RT, UT, PT, MT, and VT. • Shall have sound technical knowledge of TOFD, Phased array UT, long range UT, digital radiography, radioscopy with PCN/ISO 9712 Level-II • Shall be fully familiar with B scan, C scan, D scans, S scans (Computer image techniques) of UT • Shall be fully familiar with corrosion mapping using MFL, UT, etc • Shall have knowledge of application of UT on coarse grained materials • Shall demonstrate capability of preparation and qualification of NDT procedures • Shall have experience of working to and fully conversant with international codes (ANSI/ASME, ASTM, API, BS, EN, MSS, ISO, etc.) used in oil and gas industry and preferably with PDO Technical Standards.	The NDT Engineer shall: • Prepare, review, and approve NDT procedures • Advise and guide in developing and qualifying NDT procedures • Witness NDT activities • Develop NDT specifications to ensure integrity of equipment and facilities used in PDO. • Analyse NDT data and report results including AUT raw data • Prepare, review, and approve validation block drawings for AUT and witnessing AUT validation • When required, perform MUT crosschecks

Overhead Line (OHL) Engineer

Qualifications	Duties
• Shall be a graduate in Electrical Engineering and shall have qualifications on OHL Installations and, cable termination. • Shall have at least 10 years of relevant experience in the construction of electrical transmission and distribution, 132kV, 33kV power overhead lines. • Shall have demonstrated sound technical knowledge and extensive experience in power overhead lines. • Shall have sound technical knowledge of OHL design, plan & profile, routing layouts and Installation methods	• The OHL Engineer shall: • Prepare, review, and approve OHL procedures as per the company and project requirement. • Be familiar with PDO specifications and guidelines. • Be familiar with different types of HV cable termination. • Advise and guide in developing and qualifying OHL procedures.

• Shall be fully familiar with OHL construction equipment, tools and OHL accessories. • Shall be fully familiar with stringing methods and equipment used during the stringing. • Shall have knowledge of application of cable termination • Shall demonstrate capability of preparation and qualification of OHL installation, testing and commissioning procedures • Shall have experience of working to and fully conversant with international codes (ANSI/ASME, ASTM, API, BS, EN, IEC, ISO, etc.) used in oil and gas industry and preferably with PDO Technical Standards. • Shall have sound technical knowledge of various HV cable jointing & terminations.	• Witness OHL activities • Develop OHL specifications with the electrical function to ensure integrity of equipment and facilities used in PDO. • Inspect OHL accessories, materials used in OHL. • Analyse OHL plan & profile, stringing results, and report results. • Prepare, review, and approve validation OHL routing, Plan & profile drawings for OHL and witnessing OHL validation. • Supervise electrical cable termination and report results • When required perform OHL integrity health checks. • Carry out technical audit on construction activities.

Competency of Auditors

The training requirements for auditors shall be as follows:

- For External Audits – Successful completion of 5 days course registered with IRCA, RABQSA or equivalent acceptable to Company. Where relevant, approved transition courses shall be passed to update the competency to the applicable version of ISO 9001.
- For Internal Audits - Successful completion of 2 days course registered with IRCA, RABQSA or equivalent acceptable to Company. Where relevant, approved transition courses shall be passed to update the competency to the applicable version of ISO 9001.

Auditor log of all auditors identifying the type of audits performed (internal or external, role, audit mandays) shall be maintained demonstrating their competence and capability.

Competency of Inspection personnel

The Inspection personnel shall have formal qualifications (e.g., CSWIP, AWS, British Gas, NACE or equivalent) as appropriate. When Contractor has its own internal qualification scheme (e. g. Welding Inspector, Painting Inspector), the qualification scheme shall be approved by Company.

Quality Control Inspector

Qualifications	Duties
1. <u>Multi-Discipline Inspector (MDI)</u> Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy with minimum 4 years of inspection experience in construction industries out of which 2 years shall be gained in oil and gas facility construction. MDI shall possess CSWIP 3.1 / AWS for welding inspection or equivalent and certified to ASNT / PCN level II in RT, PT, MT, and UT techniques and BGAS Level 2 or NACE CIP level 2 or equivalent. **2. <u>Painting/Coating Inspector</u>** Shall be HNC or HND with minimum 4 years of inspection experience in construction industries out of which 2 years shall be gained in oil and gas facility construction. The Painting/Coating Inspector shall be certified, as applicable: - BGAS-CSWIP Painting Level 2 or equivalent - NACE Coating Inspector – Level 2 or equivalent	**The Quality Control Inspector** shall: • Implement QA/QC activities including those of sub-suppliers works in accordance with approved ITPs and procedures, method statements and other Contract documents. • Prepare and sign-off applicable records for quality surveillance / inspections / tests.

Qualifications	Duties
3. NDT Inspector Shall be HNC or HND with minimum 4 years of inspection experience in construction industries out of which 2 years shall be gained in oil and gas facility construction. NDT Inspector shall be certified to ASNT level II or equivalent in RT, PT, MT, and UT techniques. **4. Inspector (Non-metallic – GRE/ HDPE/FCP)** Shall be HNC or HND with minimum of 4 years of inspection experience in construction industries out of which 2 years shall be in the construction of oil and gas facilities on relevant Non-metallic pipeline / piping construction (2 years of experience working with Non-metallic manufacturer may be considered to give equivalent competence). GRE Inspector - Competency and assessment as per in SOP-GRE Crew Assessment V2 shall be applied (details will be provided on request). HDPE / FCP Inspector: Shall demonstrate knowledge on welding procedure (Heat fusion, extrusion, electrofusion as applicable), welding machine used, installation process, Handling and storage of FCP pipes as applicable. The inspector shall be knowledgeable on related non-metallic international and company standards. Shall pass interview conducted by Non-Metallic Quality Engineers. **5. Refractory/Insulation/ Fire-proofing Inspector** Shall be HNC or HND with minimum 4 years of inspection experience in construction industries out of which 2 years shall be gained in oil and gas facility construction. The Refractory/Insulation Inspector shall be certified, as applicable: - ICorr Level 2 (Insulation/ fire proofing) or equivalent - API 936 (Refractory) or equivalent **6. Senior Mechanical Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy and shall have at least 8 years (Mechanical Engineering graduates) or 12 years (HNC/HND) of experience in inspection of tanks, pressure equipment and piping as applicable. The Inspector shall be certified, as applicable: API-510, API-570, API-653 Shall also have Welding Inspection Qualification (CSWIP 3.1 or AWS-CWI) or equivalent and ASNT Level 2 or equivalent in UT, RT, PT, MT. Specialist manufacturing knowledge of plant equipment or material to be inspected and knowledge of industrial codes and standards Familiar with Equipment, instrument and tubing installation and preservation requirements. Experience in Flawless project delivery and project completion systems Able to review technical requirements in Contracts/ Purchas Orders **7. Senior Pipeline Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering, Welding Engineering or Metallurgy and shall have at least 8 years (Mechanical Engineering graduates) or 12 years (HNC/HND) of experience in pipeline and ancillary construction and maintenance projects in the Oil and Gas Industry. Thorough knowledge of and experience in other associated fields related to pipeline construction and commissioning Experience in installation of CS, duplex, super duplex, CRA & non-metallic construction, and commissioning	• Maintain records of calibration, inspection and testing equipment. • Ensure availability of appropriate version of applicable work documents. • Witness qualification procedures, tests and certify the results • Provide feed-back to Site Quality Engineer or next immediate authority in quality organisation chart (where SQE is not identified) on the day-to-day quality issues.

Qualifications	Duties
Experience in Flawless project delivery and project completion systems Able to review and interpret technical requirements in Contract/ Purchase orders Pipeline Inspector shall have CSWIP 3.1 or equivalent, BGas /NACE Level 2 and ASNT Level 2 or equivalent in UT, RT, PT, MT **8. Static Equipment/ Plant Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy and shall have at least 8 years (Mechanical Engineering graduates) or 12 years (HNC/HND) of experience in inspection of tanks, pressure equipment and piping as applicable in inspection of pressure vessels, mechanical fabrication, construction, coatings and NDE Certification to API 510 (Pressure Vessels) & API 653 (Storage Tanks) API 570 (Piping), CSWIP 3.1 for welding and ASNT Level II in NDT disciplines Coating Inspector Grade 2 preferable i.e., TWI equivalent Computer literate in Windows operating system and Microsoft Office *For Omanis, experience years can be subject to agreement with the CH **9. Electrical and Instrumentation Inspector** Shall be HNC or HND or graduate in Electrical or Instrumentation Engineering or equivalent with knowledge in Ex requirements and shall have a minimum of 4 years (Engineering graduates) or 6 years (HNC/HND) of quality control and inspection experience in construction activities (Electrical & instrumentation) personnel. Shall be thoroughly familiar with electrical design packages, construction activities, materials of construction, construction methods and international standards for electrical design Experience shall also include electronic and pneumatic equipment including analogue and digital control systems, field instruments, Valve calibration at Shop Bench and Site, Instruments Loop testing, SAT, ISAT, relay based and solid-state logic systems, transmitters, control valves and accessories, etc. Demonstrate hands on experience in testing of electrical equipment installation, pre-commissioning and commissioning, SAT/ Pre-commissioning of Switchgears, Transformers, Motors, Generators, cable laying, jointing and termination activities Shall be thoroughly familiar with instrument installation methods, testing of instrumentation and international standards for instrumentation. Note: Electrical Inspector responsible for Overhead line (OHL) activities shall fulfil requirements listed above and additional requirements as below Shall be skilled with the good construction practice in OHL material and construction, familiar / Expertise with Material Inspection of OHL materials and Accessories, related Inspection and testing, Cable jointing, Termination, Hi potential Electrical Test, Root cause analysis. **10. Rotating Equipment Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering and shall have at least 8 years of experience in inspection of rotating equipment. Understanding of condition monitoring techniques (vibration diagnostics, temperature monitoring, etc.) which could be used on the test stand during FAT (Factory Acceptance Testing) and/or SAT (Site Acceptance Testing).	

Qualifications	Duties
Familiar with Equipment Installation Practices (specifically knowledge of API Recommended Practice RP686) including purging and preservation. **11. Pipeline Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering, Welding Engineering or Metallurgy and shall have at least 4 years (Mechanical Engineering graduates) or 6 years (HNC/HND) of experience in pipeline and ancillary construction and maintenance projects in the Oil and Gas Industry. Pipeline Inspector shall have CSWIP 3.1 or equivalent, BGas /NACE Level 2 and ASNT Level 2 or equivalent in UT, RT, PT, MT. **12. Pressure Equipment, Piping, Tank Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy and shall have at least 4 years (Mechanical Engineering graduates) or 6 years (HNC/HND) of experience in inspection of tanks, pressure equipment and piping as applicable. The Inspector shall be certified, as applicable: - API-510 - API-570 - API-653 Shall also have Welding Inspection Qualification (CSWIP 3.1 or AWS-CWI) or equivalent and ASNT Level 2 or equivalent in UT, RT, PT, MT. **13. Civil and Structural Inspector** Shall be HNC or HND or graduate or equivalent in Civil Engineering or other technical discipline and shall have a minimum of 4 years (Engineering graduates) or 6 years (HNC/HND) of quality control and inspection experience in construction activities (civil and structural). The experience shall include works involving soil excavation and earth works, concrete works, block works, structural steel works and roofing, roads and paving, tank pads, bunds and other general activities associated with civil and building works. Shall be thoroughly familiar with civil and structural steel construction codes (i.e., AWS D1.1), materials and construction methods, testing of civil construction materials, international codes, and standards for civil design. **14. Instrumentation Inspector** Shall be HNC or HND or graduate in Instrumentation Engineering or equivalent with knowledge in Ex requirements and shall have a minimum of 4 years (Engineering graduates) or 6 years (HNC/HND) of quality control and inspection experience in construction activities (instrumentation) personnel. Experience shall include electronic and pneumatic equipment including analogue and digital control systems, field instruments, Valve calibration at Shop Bench and Site, Instruments Loop testing, SAT, ISAT, relay based and solid-state logic systems, transmitters, control valves and accessories, etc. Shall be thoroughly familiar with instrument installation methods, testing of instrumentation and international standards for instrumentation. **15. Electrical Inspector** Shall be HNC or HND or graduate in Electrical Engineering or equivalent with knowledge in Ex requirements and shall have a minimum of 4 years (Engineering graduates) or 6 years (HNC/HND) of quality control and inspection experience in construction activities (electrical). Shall be thoroughly familiar with electrical design packages, construction activities, materials of construction, construction	

Qualifications	Duties
methods and international standards for electrical design. Demonstrate hands on experience in testing of electrical equipment installation, pre-commissioning and commissioning, SAT/ Pre-commissioning of Switchgears, Transformers, Motors, Generators, cable laying, jointing and termination activities Note: Electrical Inspector responsible for Overhead line (OHL) activities shall fulfil requirements listed above and additional requirements as below Shall be skilled with the good construction practice in OHL material and construction, familiar / Expertise with Material Inspection of OHL materials and Accessories, related Inspection and testing, Cable jointing, Termination, Hi potential Electrical Test, Root cause analysis. **16. Mechanical Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy and shall have at least 4 years (Mechanical Engineering graduates) or 6 years (HNC/HND) experience in inspection of tanks, pressure equipment, valves, piping, rotating equipment as applicable. Familiar with mechanical and metallurgical testing requirements. The Inspector shall be certified, as applicable: API-510, API-570, API-653 Shall also have Welding Inspection Qualification (CSWIP 3.1 or AWS-CWI) or equivalent and ASNT Level 2 or equivalent in UT, RT, PT, MT. **17. Material Receiving Inspector** Shall be HNC or HND or graduate or equivalent in Mechanical Engineering or Welding Engineering or Metallurgy and shall have at least 8 years (Mechanical Engineering graduates) or 10 years (HNC/HND) of experience in inspections during fabrication of onshore Oil & Gas or Petrochemical Equipment. Good knowledge of GRP, GRE, HDPE, RTP, DSS and CRA steel piping systems. Shall also have Welding Inspection Qualification (CSWIP 3.1 or AWS-CWI) or equivalent and ASNT Level 2 or equivalent in UT, RT, PT, MT for mechanical discipline. Electrical/ Instrument inspectors shall have experience in inspection of Electrical goods (Cables, electrical consumables, instruments) related to Oil and gas facility and shall have at least 8 years (Engineering graduates) or 10 years (HNC/HND) of experience	

Notes:

1. For information on qualification and experience of various jobs not described in this document, contact the relevant Corporate Function Discipline Head.
2. For Contractor's quality staff working under Provision of QA/QC and TPI Services contract(s), minimum years of experience is more since they work on behalf of PDO and in most cases in remote areas and with no direct supervision.

Sr. No	Position	Experience in Oil & Gas (Years)	Sr. No	Position	Experience in Oil & Gas (Years)
1	Sr. Quality Engineer	12	7	Electrical Inspector	8
2	Quality Engineer	8	8	Instrumentation Inspector	8
3	MDI	6	9	Welding Engineer	10
4	Painting/Coating Inspector	6	10	Material Receiving Inspector	6
5	Pipeline Inspector - Non-Metallic	8	11	Mechanical Inspector	8
6	Civil & Structural Inspector	6			

Appendix 3 Pre-inspection Meeting

Applicable for Suppliers

Pre-Inspection Meeting

Where identified, a pre-inspection meeting shall be conducted in Supplier's premises prior to the start of the manufacturing processes. The agenda should be customized for the Scope of supply as a minimum (as applicable):

A. Define contact names and positions of all involved parties. Define lines of communication between all parties.

B. Review Supplier's organisation for the supply.

C. Reconfirm and agree on the Scope of Work. Review Scope of Work breakdown between Supplier and Sub-suppliers. Confirm location of all Sub-suppliers.

D. Confirm documentation requirements.

E. Confirm production schedule and inspection / testing programme.

F. Confirm procedures for notification, approval, reporting progress (format, frequency), deviations, non-conformities, concession requests and quality issues.

G. Confirm Technical Standards and their availability.

H. Quality Risks Assessed, Lessons Learned from Previous Projects/ Contracts incorporated.

I. Clarify identification and traceability requirements.

J. Confirm / clarify Company's Quality Assurance, Inspection, Testing and Certification requirements.

K. Confirm / clarify Inspection visit arrangements. Confirm arrangement for office and communication facilities for Company /TPI.

L. Confirm / clarify stage wise inspections, Factory Acceptance Testing / Final inspection and Release authorisation.

M. Confirm / clarify packing, packaging, protection, and preservation requirements.

N. Confirm / clarify handling and transportation requirements including additional controls if any for statutory inspections.

O. Confirm / clarify requirement for progressive compilation of manufacturing data book/ Installation operation manual (IOM) and labelling / index of manufacturing data book/ IOM.

P. Review Contract/PO status – status of document approval, material status,

Q. Review status of Inspection and Test Plan, clarify sign off authority of ITP and re-confirm quality intervention points.

R. Review the plan for ITP execution.

S. Review manufacturing and testing resources, facilities and processes.

T. Review production and inspection /test procedures and record forms.

The minutes of meeting shall be documented and endorsed by the parties involved and distributed to all stakeholders.

Appendix 4 ITP Template

Applicable for Suppliers

The ITP shall be prepared based on the requirements of PO/Contract. The ITP should be completed as follows:

Note: the numbers below refer to those on the ITP (next page).

1. Title of the ITP, describing product / service being supplied.
2. Contract number or Purchase Order number. The name of the Supplier. The address (City and Post Code) where the item is being manufactured or the Job Site, in the case of construction.
3. Sequential number. Each entry in the ITP will have a unique number. This is used when notifying inspection parties of an impending inspection or test.
4. Description of the activity being inspected, tested or documented. All operations will be listed in the sequence in which they will be performed and will include the inspection method to be used.
5. Reference to the controlling document and the form to be used to record the results of the inspection and/or test.
6. Document and clause that provide the acceptance criteria or the criteria itself.
7. Quality records stating results achieved or providing evidence of activities performed
8. Verification personnel responsible for witnessing, monitoring, document review and approval
9. The inspection and test interventions M, W, H, R or A. The inspection and test mark-up of all parties involved shall be finalised during the pre-inspection meeting and typed under each inspection party's column and this shall then become the master document. Each party will be presented with the master document immediately following an inspection or test point. Once they are satisfied with the inspection and/or test activity being successfully completed, they shall sign and date the inspection or test report relevant to that activity.
10. Comments or remarks relevant to the inspection or test if applicable.
11. On completion of the ITP, all involved parties shall sign in the master document before final shipment to site or to another supplier.

The following definitions shall apply:

Hold Point (H): A critical step in fabrication and testing where it is mandatory that Company inspect the component/equipment or witness an activity. Activities designated as a Hold Point shall not proceed unless Company/Representative is present, or the Hold Point is formally waived. Company shall be notified at a duration specified in the Contract/PO in advance of the activity.

Witness Point (W): A critical step in fabrication and testing where it is desirable that Company/Representative inspect the component/equipment or witness an activity. Company shall be notified at a duration specified in the Contract/PO in advance of the activity. Once proper notification is given, the activity may proceed according to the schedule regardless of Company's attendance.

Monitor Point (M): A critical step in fabrication and testing where it is optional that Company inspects the component/equipment or witness an activity. Company shall be notified at a duration specified in the Contract/PO in advance of the first occurrence of the activity at each worksite. No further notification for like activities at each worksite shall be required. The activity may proceed with or without Company's attendance.

Approval Point (A): A critical step in design, procurement, and or fabrication and testing where it is mandatory that Company approve a document/qualification/ equipment/or activity. Company shall be notified at a duration specified in the Contract/PO in advance of the first occurrence of the activity or provided the document in a time-period as specified by the Contract/PO. The activity may not proceed without Company's approval.

Review Point (R): A critical step in design, procurement, and or fabrication and testing where it is desirable that Company review the document/qualification/ equipment/or activity. A

separate notification is not needed unless otherwise specifically requested; Company may perform this along with any of the other intervention types.

Note:

ITP'S submitted for approval shall include copies of forms/ checklists referenced in the Inspection and Test Plan.

Company has established Inspection and Test Plan for many products/ construction activities as a guideline. Suppliers can contact Company Quality focal point for the guidance document

Company has established a standard operating procedure for preparation of Inspection test plans (UEQ-SOP-002) that provides guidance in preparation of inspection & test plan. Supplier can contact Company quality personnel for a copy of this standard operating procedure.

Project Name X		**Inspection & Test Plan**	Contract/PO No.:
	Product / Service:	1	Organisation: 2
	ITP No:		Location:

Seq. No	Description / Activity	Controlling Document	Acceptance Criteria Reference	Quality Record	Verification Personnel	Inspection Frequency	Intervention (M, H, W, R or A) *			Comments/Remarks	
							Sub-supplier	Supplier	3rd Party (e. g. ASME – AI, TPI etc.)	Company	
3	4	5	6	7	8			9			10

		***Inspection and test mark-up legend: I = Inspect/Test, M = Monitor, W = Witness, H = Hold Point, R = Document Review, A= Document Approval**
		Inspection and testing activities completed

Signed on behalf of:	**Sub-Supplier**		**Supplier**	**3rd Party**	**Company**
Signature:					11
Print Name:					
Date:					

Appendix 5 Product Quality requirements to be complied during Procurement

1. Inspection and test Plan (ITP)

- Quality requirements for stockist orders shall comply with SP 2269.
- Manufacturer QAQC shall prepare & approve in wetted, the Manufacturer's ITP with unique number, revision status and revision number, prior to submission to PDO for approval. This is mandatory for materials requiring BS EN 10204/ ISO 10474 3.1 and 3.2 certification.
- Refer SP 1171 for QA/QC requirements for products/ services (ITP & TPI) for additional Guidelines.
- For MESC specified items, Manufacturer shall prepare & submit ITP based on ITRs inputs. Note: ITRs do not substitute to ITP. For engineered items, Project specific QA/QC requirements shall be followed as per Material requisition.

2. Third party inspection (TPI)

Third party inspection is mandatorily performed for goods inspections at approved Manufacturer's facility or at a location as per Company approved ITP (as per the TPI stages identified in ITP).
Where Vendor is responsible for deployment of vendor TPI as per PO/ ITP, vendor shall select only PDO approved TPI agency (other than DNV GL/ Intertek) and the proposed TPI shall be approved by PDO.

3. Testing laboratories QMS requirements

The testing laboratories shall be accredited to ISO 17025 for CRA material.

4. MTC validation/ authorization by Manufacturer (MTC)

- MTC shall clearly identify Manufacturer Name/ facility address / country/ date of issue with unique MTC number and revision. In addition, a bar code or QR code may be included on MTC (as appropriate) for 3.1 and 3.2 certification for Manufacturer future reference for traceability, accountability & liability of supplied product warranty.
- MTC (3.1 and 3.2 certification) shall be validated by authorized Manufacturer QA Dept identifying their name, position, and stamp with date for traceability and correlation to materials/ items as per PO & BS EN 10204/ISO 10474
- All declaration of compliance with order & test report to 2.1 and 2.2 certification shall be validated by Manufacturer, but with correlation to supplied materials/ items as per PO.

5. MTC transmission / submission (transmission)

- For direct orders on Manufacturers: 3.1/ 3.2 MTCs with unique MTC number, date of issue and revision shall be submitted as ''wetted'' copies(original) clearly identifying the year/ version of the standard and PDO PO number
- For stockist orders the ''verified true copies'' are acceptable subject to possession of wetted (original) MTC with the Stuckists for verification. For full quantity deliveries the stockist shall submit MTC ''wetted'' copies (original) to PDO, which is in line with ISO 10474/BS EN 10204.
- 3.1 MTC shall be colour prints with wetted sign& stamp & date by Manufacturer QA Dept.
- 3.2 MTC shall be colour prints with wetted sign& stamp & date by Manufacturer QA Dept and Company agreed/ appointed TPI.
- MRB hard/ soft copies: for non-MESC items with or without criticality rating and MESC valves the MRB shall be provided as per VDRL and approved ITP.
- Manufactures shall submit the TPI signed off ITP along with Manufacturer Record Book (MRB)
- Verified true copies (colour scan) of MTCs are permitted for partial deliveries by Stockist.
- The stockist shall possess originals to issue Verified true copies. Note: PDO has the right to verify original MTC at any time.

For 2.1/2.2 MTC: Digital (pdf colour scan) copes may be allowed through PDO email from OEM as a Verification step of originals. PDO email ID: *majanqasupervisor@pdo.co.om*

6. Country of Origin (COO)

''Original copy of Country of origin'' issued by the Original equipment manufacturers and endorsed by chamber of commerce from country of supplier is required.

7. AVME

- Local vendor / stockist shall only source materials from approved Manufactures as per AVME.
- Stockist sourcing materials, which they are not representing in AVME category, is prohibited.
- Materials shall not be sourced from vendors who are on ''hold '' by CFDH and ''hold'' in AVME.
- Sourcing of materials from one vendor/ stockist by another vendor/international stockist is prohibited.

8. Stockist supplies

- FA items shall not be sourced from any Stockist.

MTC for Materials supplied from stocks shall be older than the PO date.

9. Receipt inspection / Sacrificial testing:

PDO has a right to request for sacrificial testing/ check testing of materials at vendor cost for any detected anomalies upon receipt or any reported Quality issues for appropriate Vendor consequence management, irrespective of TPI/IRN/ITP control & interventions at factory/Mill.

Appendix 6 Pre-Construction Quality Alignment Meeting

A pre-inspection/ start up meeting shall be conducted at site premises prior to the start of the plant/ pipeline/ flowline scope of construction activities. The agenda should be customized for the Scope of construction activity as applicable. A guideline for such meetings is given below

A. Organisational Review

Key Personnel - Contact names and positions of all involved parties.

Lines of communication between all parties.

Approval Status and Readiness of Overall Project Construction, QA/QC Organisation Chart,

Availability of Infrastructure requirements and statutory compliance requirements

B. Work Scope

Review Scope of work. Agree Changes if any

Construction schedule, Discipline work details

Work breakdown between Supplier and sub-contractor/ sub-supplier,

Equipment, Material Availability, Resource mobilisation status

Fabrication and Coating Yard, Warehousing Facilities

C. Quality Documentation

Project Quality Plan, QA and QC Procedures, Welding and NDT procedures, Test Plans approval Status,

Method Statements, AFC Drawings, Checklists, and test Formats

Note – All relevant documents shall be in Code B and confirmed in the meeting.

D. Communications and Approval process

Confirm procedures for inspection notification, approval, reporting progress (format, frequency), deviations, non-conformities, concession requests, lessons learnt and quality issues, meetings.

E. Resources

Competence and Training of personnel

F. Contract Specifications and Standards

Review Understanding of PDO requirements, specifications, handling of site technical queries

G. Sub-Contracted Activities

Review List of sub-contracted activities, organisational interface, lines of communication, approval status of subcontractors performing work

H. Site Calibration Lab arrangements and approval (where applicable)

Availability of Valid master calibration equipment and competent calibration technicians

I. Management of Quality Activities

Receiving Inspection, In-process and final inspections, Testing, drying, and purging requirements, understanding of witness and hold points inspection, Material traceability, Equipment calibration, set up of civil/ mechanical testing labs if any, Bench testing of Valves if applicable, Internal and External audits, Quality Metrics and KPI (as a minimum, Inspection data, Rejection ratio, Welding and NDT, NCR's)

J. Welding, NDT, Coating and Non-metallic construction Activities

Procedure and Personnel approval, Control of Process, Awareness of Company specifications and requirements, management of radio-active materials if applicable

K. Handling and Storage

Storage facilities, preservation requirements (Understanding of Company requirements for lifting and hoisting activities)

L. Training and Awareness

Quality Awareness Sessions, Training needs, lessons learnt communication

M. Completion Process

Mechanical Completion, Handling of Punch items (A, B, C), management of CCMS activities as part of construction completion, System/Sub system management and completion.

N. Documentation Requirements

Approval of final QC dossier index, Piping Test Pack, Loop testing, Hydro-testing, Pneumatic Testing, Hi-Pot testing, Calibration, Flange management

Appendix 7 User Comment Form

	SP-1171 - Specification for Quality Management System Requirements for Product and Service		
	Any user who identifies an inaccuracy, error or ambiguity is requested to notify the custodian so that appropriate action can be taken. The user is requested to return this page fully completed, precisely indicating the amendment(s) recommended.		
Name:			
Ref ID		**Date:**	
Page Ref:	**Brief Description of Change Required and Reasons**		

To:	Quality Manager (UEQ)		
	Document Authority	Date:	