

Quality Requirement

Product Manufactured and Monogrammed according to API specs. General Requirements

| | | |
|------------------------|------------|----------------|
| RIG/PLANT | | |
| ADDITIONAL CODE | SDRL CODE | TOTAL PGS 7 |
| REMARKS | | |
| MAIN TAG NUMBER | DISCIPLINE | |
| CLIENT PO NUMBER | | |
| CLIENT DOCUMENT NUMBER | | |

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1 PURPOSE

This specification defines the minimum quality requirements for suppliers providing turnkey product manufactured according to applicable API Product Specification to NOV Rig Technologies.

2 APPLICABILITY

This specification is applicable to all suppliers of turnkey manufacturing services of NOV Rig Technologies (referred to as NOV for remainder of this document) designed products used by NOV to fulfil customer orders.

Turnkey manufacturing services includes the supplier sourcing the raw material, Non-Destructive Testing (NDT), Heat treatment, Welding, Machining, Pressure/Load Testing, and coatings as applicable per the NOV Approved Vendors List (AVL) in order to supply a 100% completed component or assembly to NOV in a ready to use condition that has been manufactured according to the applicable API Product Specification

3 REFERENCES

| API Specification | Document Title |
|-------------------|--|
| Q1 | Quality Management Systems |
| 2C | Offshore Pedestal mounted Cranes |
| 4F | Specification for Drilling and Well Servicing Structures |
| 6A | Specification for Wellhead and Christmas Tree Equipment |
| 7-1 | Specification for Rotary Drill Stem Elements |
| 7K | Drilling and Well Servicing Equipment |
| 8C | Drilling and Production Hoisting Equipment |
| 16A | Specification for Drill-Through Equipment |
| 16C | Choke and Kill Equipment |
| 16D | Specification for Control Systems for Drilling Well Control Equipment and Control Systems for Diverter Equipment |
| 16F 20E | Specification for Marine Drilling Riser Equipment |

4 RESPONSIBILITIES

The supplier shall ensure the requirements of this specification are fully implemented and compliant at all times. The supplier shall ensure that individuals with responsibilities, authorities and accountabilities associated with this specification are identified and communicated within the supplier's organization

5 PROCEDURE

5.1 Quality Program Verification

The supplier's quality system shall be described in a written manual or procedure with revision control and identification

The quality system manual should be approved and supported by the supplier's management and cover the requirements of API Spec Q1

When the supplier is the holder of a current API License, or ISO 9001 Registration Certificate, a copy of the applicable certificate may be submitted to NOV Quality Assurance department in lieu of the quality system manual as objective evidence of quality system implementation

When a supplier is approved by NOV based on an API License, or ISO Registration Certificate, the supplier is required by this specification to invoke the provisions of the applicable API License, or ISO Registration to the work performed for NOV

All suppliers shall have Shop Routing/Job Traveler with the following information at minimum:

- NOV P/N and revision
- Part Description
- Drawing number and revision
- L/N, S/N or HT numbers
- Manufacturing steps broken down by operation sequence with enough operational data that the employee can make adequate decision on what drawings or programs to use for the manufacturing process applicable

5.2 Use of Sub-Tier Suppliers

Sub-tier suppliers used to perform any manufacturing service (i.e. NDE, heat treating, welding, plating or coating operations) must meet the requirements for each type of service and shall be on the supplier Approved Vendors List (AVL). It shall equally be controlled in compliance with API Q1 requirements with the appropriate scope of supply at the time of services rendered

Sub-tier material distributors shall equally be in the Supplier AVL

5.3 Conflicts in Specified Requirements

In cases where the purchase order disagrees with the referenced drawings or specifications, such differences must be discussed and resolved with NOV. The supplier shall initiate a Request for Information (RFI). Records of the results shall be maintained by the supplier.

6 SPECIFIC QUALITY CONTROL REQUIREMENTS

6.1 Inspection

The supplier shall be responsible for performing 100% inspection of all pieces with actuals recorded on an NOV supplied Inspection Process Form (IPF) or equivalent inspection record supplied by the supplier.

Serial number(s) of inspection equipment used shall be recorded on the inspection form. If using the NOV IPF, the serial number shall be recorded in the HCC# column

6.2 Monitoring; Measuring and Test Equipment

All Inspection, monitoring, measuring and testing equipment used at supplier's locations to inspect/test NOV product shall be calibrated and traceable to recognizable national or international standards.

The calibration system shall meet the requirements of ISO 10012-1 or equivalent at a minimum.

It is expected that suppliers have sufficient gages of their own to manufacture the parts quoted to NOV.

6.3 Material Control and Identification

The supplier shall ensure that materials are properly identified and supported with documentation as required by the applicable purchase order.

If serialization is required, the supplier shall create and assign a serial number that shall be marked on the individual piece of material according to NOV design drawing or applicable API Product Specification as well as recorded on all the supplier's required documentation for the individual piece.

6.4 Control of Nonconforming Material

When a supplier detects a nonconformity to purchase order/drawing requirements, the supplier shall prepare and submit a Request for Deviation (RFD) to NOV for review and disposition. Nonconforming piece(s) is to remain in its current state until the RFD is dispositioned by NOV.

No rework shall be performed on the nonconforming piece(s) without written disposition of the RFD or written agreement with the buyer

6.5 Making of products

When product referenced by the purchase order require marking, such marking shall be performed in accordance with the NOV design drawing or applicable API Product Specification.

- All stamping shall be legible and in approximate straight lines.

- For any corrections that might need to be made, that area is to be ground clean first before re-stamping. Re-stamping over another character is not acceptable.
- Unless specifically called out on the design documentation, the preferred stamping size will be ¼" (0.250") high characters, smaller characters or engraving may be substituted if the part is too small for ¼" high characters or if stamping will have a detrimental effect on the part.
- All stamping will be done using low stress stamps; stamps with solid lettering are preferred, but dotted stamping and machine engraving are acceptable as long as they are legible. All stamping must be deep enough that it remains legible after further processing, e.g., grit blasting and painting of parts and equipment. Parts that are not stamped in such a way that they will still be legible after coating, etc. will be rejected and will have to be re-stamped.

6.6 Documentation Requirements

Documentation, as applicable per API Product Specification, shall be retained by the supplier for a minimum of five (5) years.

Documentation submitted to NOV shall be per 'Manufacturing Record Book (MRB) Requirements For NOV-Rig Equipment Suppliers, Document No. 101444171'.