PETROBRAS	**SPECIFICATION**	Nº **ET-0000.00-0000-972-1AL-001**	
	CLIENT:	ALL	**SHEET:** 1 OF 27
	PROJECT:	ALL	-
	AREA:	GENERAL	-
SUPRIMENTOS RMF/RFDQ/GQS	**TITLE:**	**QUALITY OF GOODS GENERAL REQUIREMENTS**	**PUBLIC** / **GQS**

INDEX OF REVISIONS

REV.	DESCRIPTION AND/OR ALTERED SHEETS
0	Original Issue
A	General Revision
B	Altered items 4.26, 8.1.1; 8.2.1.1 d); 8.2.2; 8.3.1 a) b) d); 8.3.3; 8.3.6; 9.1.3; 9.4.2; 9.6; 9.6.1; 9.6.4 d); 10.1 a); 11.2.4; 12.1.1; 12.2; 14.5.2.1; Removed items 6.2; 6.2.1, 8.2.1.1 e); 8.3.1 e); 11.2.4.2; 11.2.4.2; Included items 11.2.5; 11.3.2; ANNEX II II.6.
C	Removed items 3.9; 4,5; 4.6; 6.1 NOTE; 6.1.3; 7.2; 7.2.1; 7.2.2; 7.2.3; 9.1.2 g); 9.2.2; 9.4.2; 9.6.4 NOTE; 13; 14.5.3; Altered items 2.2; 4.13; 6.1.1; 6.1.2; 7.1; 8.2.1.1 a) e d); 9.1.3; 9.2; 9.2.1; 9.4.1; 9.6.1; 9.6.2; 10.1 c) f); 11.3.5; Included items: 7.1.1; 7.1.1.1; 9.1.2.g) h) i) j); 9.1.3.1; 9.2.4; 10.1 NOTE 2; 13.5.3; ANNEX III; ANNEX IV.
D	Removed items: 3.2; 3.3; 3.4; 3.5; 3.6; NOTE 3;4.1; 4.4; 4.6; 4.7; 4.15; 4.23; 6.1.1; 6.1.2; 7.1.1.1; 8.1.3; 8.2.2; 8.2.3; 8.2.4; 8.3.3; 8.3.8; 9.2.3; 11.2.1; 12.1.1. Revised items: 1; 2.1; NOTE 1; NOTE 2; 3.10; 4 (general review); 6.1; 7.1; 7.1.1; 8.1; 8.1.1; 8.1.1.1; 8.2.1; 8.3.1; 8.3.3 a 8.3.6; 9.1.2; 9.1.3; 9.2.1; 9.3; 9.5.1.1; 9.5.2; 9.5.4; 10.1; 11.2.2; 11.2.3; 11.2.4; Table 1; 11.3.1; 11.3.3; 11.3.5; 12.3; 12.3.1;13.1.1.1. 13.1.1.2; 13.1.2; 13.1.5; 13.4.2; 13.5.3; 13.6.1; 13.6.2. Included items: 4.1; 4.4; 4.6; 4.8; 4.12; 4.13; 4.14; 4.15; 4.16; 4.17; 4.18; 4.21; 7.1.2; 7.1.3;9.5.3; NOTE 8; 12.4; 13.2.1; 13.2.2; 13.3.1; 14; 14.1; 14.1.1; 14.1.2; 14.1.3; 14.1.3.1; 14.1.4; 14.1.5; 14.1.6; 14.1.7; 14.1.8.
E	Included items: 3.7, 3.8, 4.1; 4.4; 4.6; 4.8; 4.12 a 4.18; 4.35, 6.2, 7.1.1.1, 7.1.1.2, 7.1.2; 7.1.3, 9.5.3; 7.2, 8.2.1.2, 9.2.4, 9.4.1, 9.4.2, NOTE 12, 9.5.4 l) do, NOTE 13, 10.1.1, 10.1.2, NOTE 14, 11.1.2, 11.1.3, 11.3.1.1, 11.3.5.1, 11.3.5.2, 12.1.1, NOTE 15, 12.3.2, NOTE 16, 12.4; 13.2.1; 13.2.2; 13.3.1; 13.4.4, 13.4.4.1, 13.4.5, 13.4.6, 13.4.7, 13.7, 13.8, 13.9, 14; 14.1; 14.1.1; 14.1.1.2.; 14.1.3.1; 14.1.7; 14.1.8, ANNEX III - Minimum Manufacturing Inspection Activities by Type of Goods Appendix, ANNEX IV - PAC Model; Removed items: ANNEX III - Impartiality and Independence Term, ANNEX IV - Models, 7.1.3, removed numbers 8.3.1 i) to vii), 9.1.2 g) and h), 11.4.3, 13.1.1.1, 13.1.1.2, 13.5.2.1, 13.5.3, 13.6.3, 13.6.4. Revised items: ANNEX I, 2.2, NOTE 1, NOTE 2, NOTE 3, 3.2, NOTE 4, NOTE 5, 4.1 to 4.34, NOTE 6, 6.1, 7.1, 7.1.1, 7.1.2, NOTE 7, 8.1.1, 8.1.1.1, 8.1.3, 8.2.1, 8.2.1.1, 8.3.1 e), 8.3.2, 8.3.3, 9.1.2 a), b), c), e), f), 9.1.3, 9.1.3.1, 9.2.1, NOTE 8, 9.2.2, 9.2.3, 9.3, 9.4, 9.5.1, 9.5.1.1, 9.5.2, 9.5.2.1, 9.5.4 a), d), e), h), j), 10.1 f), g) do, NOTE 9, NOTE 10, 11.1, 11.2.1, Table 1, 11.2.2, 11.2.3, 11.2.4, 11.3.1, 11.4.2, 12.1, 12.2, 12.3 o), t), NOTE 11, 12.3.1, 13.1.1, 13.1.2, 13.1.3, 13.1.4, 13.1.5, 13.1.6, 13.2.1, 13.2.2, 13.3, 13.3.1, 13.2.2, 13.3.4, 13.4.1, 13.4.2, 13.4.3, 13.5, 13.5.1, 13.5.2, 13.6, 13.6.1, 13.6.2, 14.1.2, 14.1.3; 14.1.4.; 14.1.5, 14.1.6.

	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F
DATE	12/12/2018	03/29/2019	08/05/2019	05/26/2020	06/15/2021	26/12/2023	
PROJECT	QB	QB	QB	GQB	GQTD	GQS	
EXECUTION	CSM5, EM1E, RNIU, CTNR, CTMV	CSM5, EM1E, RNIU, CTNR, CTMV	A50O, RNIU, CTNR, MF84, UT6E	A50O, CTNR, BEJZ, UT6E, ES29, RC9D, CQJ4, UPKG, MF84	ES29, BEJZ, CJNI, CJS1, XPDC, UPKG	BEJZ, CJNI, CSWY, ES29, UPKG, US1D, R29H	
VERIFICATION	UTE9, UTJ6, TW9O, SMS8, CTM5	UTE9, UTJ6, TW9O, SMS8, CTM5	TW9O, UTE9, UTJ6	TW9O, UTJ6	TW9O	TW9O	
APPROVAL	CXX6	CXX6	CXX6	CXX6	TW9O	CFG3	

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THIS FORMULARY BELONGS TO PETROBRAS N-381 REV. M.

INDEX

ANNEX:

1. PURPOSE

This Technical Specification aims to establish the minimum quality requirements to be met in the supply of goods directly or indirectly to Petrobras.

2. SCOPE

2.1. This document applies to the Petrobras' family of materials in the Critical and Strategic segments, according to the USE GUIDE - QUALITY REQUIREMENTS.

2.2. This document can be supplemented by a Complementary Requirement or a Petrobras Technical Standard of this technical specification.

NOTE 1: The USER GUIDE – QUALITY REQUIREMENTS is available on the Supplier Channel website – Hiring Rules – Standardization Catalog (https://canalfornecedor.petrobras.com.br/en/) and applies to the edition/revision available on the date of publication of the Public Notice / Tender.

NOTE 2: The Complementary Quality Requirement applicable to each family of material can also be consulted on the Supplier Channel website - Hiring Rules - Standardization Catalog and applies to the edition/revision available on the date of publication of the Public Notice / Tender.

NOTE 3: Communication with Petrobras' Quality Department shall be through the CSE website - External Services Catalog (https://petrobras.service-now.com/cse).

3. REFERENCES

3.1. ISO 2859-1 - Sampling procedures for inspection by attributes

3.2. ISO 9000 - Quality Management Systems - Fundamentals and vocabulary

3.3. ISO 9001 - Quality Management Systems – Requirements

3.4. ISO/IEC 17020 – - Conformity Assessment - Requirements for the Operation of Various Types of Bodies Performing Inspection.

3.5. ISO/IEC 17025 - General Requirements for the Competence of Testing and Calibration Laboratories.

3.6. *ABNT NBR 5426 - Planos de amostragem e procedimentos na inspeção por atributos.*

3.7.*ABNT NBR 16278 - Inspeção de Fabricação - Qualificação e Certificação de Pessoas para o Setor de Petróleo e Gás.*

3.8. Petrobras Standard NI-2941 - Personal Competencies for Inspection Activities.

3.9. Petrobras Standard NI-215 - Quality and Inspection Requirements of Piping Materials

3.10. IOGP REPORT 609 - Guidance for remote quality surveillance.

NOTE 4: The edition/revision of the documents applicable to the project shall be defined in the contractual documentation. If not specified therein, the current edition/revision at the date of publication of the Public Notice / Tender shall be applied.

NOTE 5: The Petrobras Standards referenced above are also available on the Supplier Channel website - Hiring Rules - Standardization Catalog (https://canalfornecedor.petrobras.com.br/en/).

4. DEFINITIONS, TERMINOLOGIES AND ACRONYMS

The definitions adopted in this document are presented in ABNT NBR 16278 or ISO 9000. In addition, the following terms are used in this document:

4.1. API
American Petroleum Institute.

4.2. API *Source Inspector* – API SI
API certified Inspector.

4.3. Certifying and/or Classifying Organization
An organization which develop and apply technical standards for the design, construction, inspection and maintenance of ships, to ensure adequate standards for these purposes.

4.4. NDO - Notice of Divergence Ocurrence (COD – *Comunicado de Ocorrência de Divergência*)

A process that formalizes the occurrence of non-compliance with the expected technical or contractual conditions. The process begins when a non-conformity is identified in the equipment and reported by the Petrobras user to the quality department. It aims to lead the Supplier or Manufacturer of such equipment to make corrections, identify the root cause, and implement corrective actions in their Quality Management System, following the requirements of ISO 9001.

4.5. MRN - Material Release Note (*CLM - Certificado de Liberação do Material*)

An inspection record issued by the responsible for manufacturing inspection (RMI) after the completion of the activities specified in the inspection and testing plan (ITP) with satisfactory results, approving the item and allowing it to be released for delivery.

4.6. CRM - Material Rejection Note (*Certificado de Rejeição do Material*)

A document issued by the responsible for manufacturing inspection (RMI) when critical subassemblies or the final item is rejected for non-conformity to the contractual documentation. This document shall contain a detailed description of the reasons for rejection, with justifications based on the contractual documentation.

4.7. CSE – External Services Catalog (*Catálogo de Serviços Externo*)

Service Platform (https://petrobras.service-now.com/cse) for the Supplier to request services and notify activities related to the Quality Department and other areas of Petrobras.

4.8. ET - Technical Specification (*Especificação Técnica*)

A document specifying the technical characteristics of the material. It is a document intended for the supplier market to contract products or systems.

4.9. Manufacturer

The company responsible for manufacturing the good in accordance with the Contract.

4.10. Family of Materials

A set of similar materials that are manufactured and/or sold by a specific group of Suppliers due to their size, manufacturing process, and technology involved in their production.

4.11. Supplier

The contracted company that will supply the good to Petrobras according to the Contract.

4.12. Contract Manager

A Petrobras employee responsible for all contractual matters with the Supplier.

4.13. Audit Guide

A document designed to inform the Supplier about the methodology and processes that will be addressed in the Petrobras Quality Audits (available at https://canalfornecedor.petrobras.com.br/en/).

4.14. ILAC

International Laboratory Accreditation Cooperation.

4.15. INMETRO

Brazilian National Institute of Metrology, Quality and Technology (*Instituto Nacional de Metrologia, Qualidade e Tecnologia*).

4.16. IQF - Supplier Quality Index (*Índice de Qualidade do Fornecedor*)

Value, ranging from 0 to 100%, resulting from the Supplier's / Manufacturer's performance after a Petrobras Quality Audit. This index is related to the family of material and the audited facility.

4.17. IDF Quality - Supplier Performance Index (*Índice de Desempenho do Fornecedor*)

An index representing the Supplier's performance in providing services and supplying goods to Petrobras.
The IDF is a moving average of all performance assessments, weighted by the value of the assessments, recalculated daily. The IDF scale ranges from 1 (Poor) to 6 (Excellent).

4.18. Critical Item

Integral part of the supply scope whose failure may cause operational disruption, loss of functionality, environmental damage, compromise of people and facility safety, or a

reduction in the service life of the supplied item, as defined by the Supplier, Design Standard, or Petrobras specification.

4.19. NR – Regulatory Standards (*Normas Reguladoras*)

These are complementary provisions to *Chapter V (Occupational Safety and Medicine) of Title II of the Consolidation of Brazilian Labor Laws (CLT*). They consist of obligations, rights and duties to be fulfilled by employers and workers with the aim of ensuring safe and healthy work, preventing the occurrence of illnesses and accidents at work.

4.20. OEM - Original Equipment Manufacturer

Original items from manufacturers that develop and assemble products for other companies, which sell them under their own name or incorporate them into their own equipment.

4.21. AIB – Accredited Inspection Body

Third party company accredited to provide Manufacturing Inspection services in accordance with ISO/IEC 17020 Type A, with a scope of activities compatible with the good to be inspected.

4.22. Accreditation Body

Member and signatory of ILAC, responsible in the country of origin for assessing the competence and impartiality of local certification or inspection bodies to give them confidence in their services.

4.23. Quality Department

Petrobras department responsible for managing the Supplier’s quality of critical and strategic goods.

4.24. PO – Purchase Order *(PC - Pedido de Compras)*

Contractual instrument that constitutes a formal request for a Supplier to meet a need to acquire goods or contract services, with determined values, deadlines and conditions. It may or may not be associated with a Contract.

4.25. CAP - Corrective Action Plan

A plan prepared by the Supplier detailing corrective actions related to identifying the root cause of a non-conformity to be implemented in their Quality Management System.

4.26. Qualified Professional

A competent person to perform the activity based on education, training, experience, or compliance with normative requirements.

4.27. Records

Documents that present obtained results or provide evidence of performed activities. Such documents shall be traceable to the supplied good.

4.28. Complementary Quality Requirement

A document issued by Petrobras that complements and overrides this General Quality Requirement for applicable family of materials.

4.29. Reseller / Distributor

A Supplier that sells third-party goods, duly accredited and authorized by Petrobras.

4.30. RMI - Responsible for Manufacturing Inspection (*Responsável pela Inspeção de Fabricação*)

The Responsible for Manufacturing Inspection (RMI) witnesses inspection events and assesses the documentation related to manufacturing inspection activities, as established in the Inspection and Test Plan (ITP).

For a Supplier required to hire an Accredited Inspection Body (AIB), the RMI shall be nominated by the AIB itself.

For a Supplier waved from hiring an AIB, the RMI shall be formally nominated by the Supplier and shall maintain independence from the manufacturing process, inspection process, and be properly qualified.

In both cases, the RMI activities may be performed by one or more professionals, as long as they are formally identified.

4.31. IR-NCR - Informative Report - Registration of Nonconformity (*RI-RNC - Relatório de Inspeção – Relatório de Não Conformidade*)

Inspection record issued by the Responsible for Manufacturing Inspection to report any deviations from contractual requirements observed during the manufacturing process

that were not identified by the Supplier's / Manufacturer's Quality Control. It should be issued for rejections of intermediate inspection events.

4.32. NCR - Nonconformity Report (*Relatório de Não Conformidade*)

Inspection record issued by the Supplier's / Manufacturer's Quality System.

4.33. Material Requisition (*Requisição de Material*)

Design document for the acquisition of material, systems, equipment, and materials. The document shall establish all the technical requirements and additional instructions necessary for this purpose.

4.34. Inspection Service

Service provided by an independent Inspection Body in the execution of Manufacturing Inspection activities.

4.35. Subsupplier

The company chosen and qualified by the Supplier, through its Quality Management System, to provide services or components of the item subject to the Contract.

5. HIERARCHY OF DOCUMENTS

When not specified in the contract, documents shall follow the hierarchy below in descending order:

a) Material Requisitions (RM), Technical Specifications (ET), Data Sheets (FD), Drawings (DE), Circulars, Technical Standards, and other documents in the bidding process;
b) ET for Complementary Quality Requirements;
c) ET for General Quality Requirements.

NOTE 6: The most severe requirement shall prevail in case of conflict between contractual documents.

6. COMPETENCIES FOR INSPECTION ACTIVITIES

6.1. When not specified in the contractual documents, professionals shall meet the requirements for personal competencies in Welding Inspection, Non-Destructive Testing, and Industrial Painting inspection as per Petrobras Standard NI-2941.

6.2. When not specified in the contractual documents, manufacturing and other inspection activities shall be carried out by qualified professionals.

7. METROLOGY

7.1. Calibration of instruments and measuring equipment shall be performed in accredited laboratories according to ISO/IEC 17025, in line with the calibration service scope.

7.1.1. Alternatively, instruments and equipment may be calibrated in non-accredited internal or external laboratories once the calibration is performed directly against a Standard traceable to the accreditation system of the country of origin.

7.1.1.1. For these calibration activities, the following conditions shall be met:

a) Availability of specific instructions for the execution of each type of calibration performed;

b) The equipment and instruments used shall be in climate-controlled environments with temperature and humidity control;

c) Calibration shall be carried out only by qualified professionals.

7.1.1.2. The reports issued (Calibration Certificates) shall minimally contain the following information:

a) Identification (traceability) of the calibrated instrument;

b) Expected results (references) and the results found;

c) Standard or calibration equipment used;

d) Indication of measurement uncertainties, including the error of the instrument used as a reference;

e) Signature of the professional responsible for the calibration.

7.1.2. For calibrations performed in non-accredited laboratories under ISO/IEC 17025, copies of the calibration certificates of the standards used shall be kept.

NOTE 7: For measuring equipment requiring calibration by the original equipment manufacturer (OEM) due to their expertise or property requirements, the execution of preventive maintenance and calibration services in accordance with OEM recommendations shall be proven.

7.2. The Supplier / Manufacturer shall have a systematic identification and calibration control system for instruments and establish criteria for instrument selection, taking into consideration manufacturing standards, the tolerance range to be measured,

resolution, as well as suitability for use based on measurement uncertainty and its proper application.

8. MANUFACTURING INSPECTION

8.1. Accredited Inspection Body

8.1.1. The Supplier shall engage an Accredited Inspection Body (AIB) to perform the required Manufacturing Inspection activities, with the option to delegate this responsibility to the Manufacturer.

8.1.1.1. The AIB is responsible for releasing the item through the issuance of a MRN (Material Release Note). The MRN is not subject to approval by Petrobras' Quality Department.

8.1.2. The engagement of Inspection Services does not exempt the Supplier from responsibility for the quality of the supplied item, including items procured from Sub-Suppliers.

8.1.3. The Supplier is responsible for conveying all contractual technical specifications to the AIB to conduct the necessary verifications to confirm compliance of the supplied item with the terms of the contract.

8.1.4. This General Quality Requirement and the Complementary Quality Requirement, when applicable, shall be part of the contract scope between the Supplier, Manufacturer, and AIB.

8.2. AIB Requirements

8.2.1. The Manufacturing Inspection service shall be carried out by an independent accredited Inspection Body as **ISO/IEC 17020 Type A**, with a scope of operation compatible with the supplied item.

8.2.1.1. For Inspection Bodies certificated in Brazil, accreditation shall be granted by INMETRO for the scope of Manufacturing Inspection in the Oil & Gas sector.

8.2.1.2. For Inspection Bodies certificated outside Brazil, accreditation shall be granted by an ILAC member Accreditation Body with a scope of operation compatible with the supplied item. Additionally, Manufacturing Inspectors representing the AIB shall be certified according to Personal

Competencies Requirements for Manufacturing Inspection detailed in Petrobras standard NI-2941. Other certifications of individuals, issued by internationally recognized independent entities, shall be submitted for prior approval by Petrobras' Quality Department.

8.3. Dispensation of Hiring the AIB

8.3.1. The Supplier/Manufacturer may be dispensed of hiring an AIB, as required by items 8.1 and 8.2, if the following criteria are fully met:

a) Average IQF equal to or greater than 94.0% in the last two (2) audits;

b) No IR-NCR or CRM reporting Serious or Very Serious Non-Conformities in the last 12 months;

c) No overdue CAR with justifications accepted by Petrobras related to Quality Audits;

d) No overdue CARs with justifications accepted by Petrobras related to ongoing NDO;

e) Approved qualification in the supply family of material;

f) Specific criteria may be set out in the Supplementary Quality Requirement applicable to the respective family of material.

8.3.2. The exemption shall be formalized by Petrobras' Quality Department following a prior request by the Supplier or Manufacturer through the Petrobras Service Catalog (CSE).

8.3.3. Exemption from engaging an AIB applies to the manufacturing facility and family of material, each family shall have undergone at least one audit and be listed as approved in the Supplier Register.

8.3.4. Exemption from AIB engagement does not exempt the Supplier or Manufacturer from issuing, executing, and recording the required inspections and meetings as per this Quality Requirement and Complementary Quality Requirement, which shall be included in the Quality System and be available for audits at any time.

8.3.4.1. The Responsible for Manufacturing Inspection shall carry out all inspection activities as outlined in the ITP. Records of these activities may be replaced by the Supplier's internal quality records, except for the MRN, which shall be issued as per item 12.3.

8.3.5. After obtaining this exemption, the Supplier/Manufacturer shall maintain the criteria of item 8.3.1 for its continuation. If it fails to meet one of the criteria, it shall engage an AIB at its sole expense within 30 days, during which time any deliveries shall be approved by Petrobras' contract manager.

8.3.6. If the Supplier/Manufacturer has achieved an IQF lower than 88.0% in any audit, it cannot be exempt from engaging an AIB until it reaches the average IQF indicated in section 8.3.1 a).

NOTE 8: The Supplier or AIB shall maintain an updated and traceable list of its technical staff acting as Responsible for Manufacturing Inspection (RMI).

9. MANUFACTURING INSPECTION PLANNING

9.1. Inspection and Testing Plan - ITP

9.1.1. Inspection and Testing Plans (ITP) shall be issued by the Supplier or Manufacturer and shall comply with the Quality Requirements and other documents defined in the contract and/or purchase order, including all the production processes, installation and services associated with the supply. Annex I presents a Guidelines for the preparation of the ITP in order to assist in its preparation.

9.1.2. Inspection and Testing Plans shall be prepared to meet the following guidelines:

a) Description of inspection and monitoring events throughout the manufacturing process, including those performed by subsuppliers, indicating the checks to be carried out, critical items, the type and extent of examinations, tests, and records generated;

b) Identification of the type of participation (document verification, monitoring point, observation points, and waiting points) of the Supplier / Manufacturer and the Responsible for Manufacturing Inspection throughout the manufacturing cycle;

c) Indication of reference procedures, technical specifications, and applicable standards for each activity;

d) Indication of the applicable acceptance criteria for all characteristics and quality requirements for each activity, as established in the procedures, technical specifications, and applicable standards;

e) Indication of equipment categorization and classification according to design standards, Regulatory Standard (NR), and contractual documentation. Examples of equipment with special requirements include services involving H2, H2S, lethal, toxic, clad, stress relief heat treatment, toughness control etc;

f) Certification, qualification, and/or approval of the good or its components, with Petrobras and Supplier approval.

NOTE 9: The RMI should evaluate its participation during manufacturing, considering the complexity of the item and the manufacturing process and the regulatory requirements of the item.

9.1.3. The Inspection and Testing Plan shall be approved by the RMI. Approval may be evidenced by:

a) Issuance of an Inspection Report (IR);
b) Identification and signature on the document;
c) Electronic systems that ensure traceability and reliability.

9.1.3.1. ITPs approved in previous evaluations by the same RMI and the same manufacturer can be used for new supplies as long as they have the same requirements and contractual documents in the same revisions. The Supplier shall record this scope and knowlefge of the RMI.

9.2. Execution, Inspection, and Testing Procedures

9.2.1. The Responsible for Manufacturing Inspection (RMI) shall ensure that the procedures referenced in the ITP comply with Quality Requirements and other contractual technical requirements and have been approved by qualified professionals. The RMI shall record this activity in a document analysis report (IR).

9.2.2. Petrobras Quality Department can request, at any time, the submission of procedures considered critical.

9.2.3. Shall be adopted procedures for handling, processing and storage of materials, such as: stainless steel, nickel alloys, titanium and their alloys, to avoid the risk of contamination.

9.2.4. The manufacturer's procedures regarding receiving inspection, dimensional inspection, non-destructive testing, welding, testing, painting/coating, and preservation/packaging activities shall be documented.

9.3. Procedure Qualification

Welding, Non-Destructive Testing, and Painting procedures for critical items shall be approved by a certified professional according to NI-2941.

9.4. Inspeção por Amostragem

9.4.1. When not specified in the applicable Complementary Quality Requirement, technical specifications, or applicable standards, according to *ABNT NBR 5426* or ISO 2859-1, Sampling Inspection shall be defined in advance by the RMI during the PIM meeting and described in the inspection records.

9.4.2. . Sampling Manufacturing Inspection shall identify in a component or good, for the same batch or manufacturing heat, compliance with the acceptance criteria by Supplier Procedure.

9.5. Pre-Inspection Meeting (PIM)

9.5.1. The Pre-Inspection Meeting (PIM) shall be held with the participation of the Supplier and the Accredited Inspection Body or the Responsible for Manufacturing Inspection, when the Supplier is exempt from contracting an AIB, before the first event specified in the ITP.

NOTE 10: It is recommended that the PIM be performed before manufacture begins.

NOTE 11: The PIM can be held for one or more purchase orders or contracts.

NOTE 12: A new PIM shall be performed in case of a change in the AIB.

9.5.1.1. The Supplier is exempt from conducting a PIM for new purchase orders when specifying the same material type (same FM), having the same requirements and contractual documents, in the same revisions, as purchase orders addressed in previous PIMs, considering the same RMI and the same manufacturing facility. This exemption from PIM shall be acknowledged by the RMI and communicated to Petrobras via CSE, including the traceability of the previous PIM.

9.5.2. Petrobras Quality -Department shall be notified via CSE, with a minimum of 7 calendar days in advance, attaching a draft of the minutes and the ITP for any comments. Participation will be at Petrobras' discretion, and the Supplier will be informed about Petrobras attendance.

9.5.2.1. The signed meeting minutes and their annexes shall be sent to Petrobras Quality Department (qualidadedebens@petrobras.com.br). In case of Petrobras participation, the attendees shall be copied. The failure to send the meeting minutes constitutes a contractual non-compliance and

is subject to administrative sanctions as specified in the Petrobras Consequences System.

9.5.3. The Petrobras participation in the PIM does not imply approval of the manufacturing documentation presented at the meeting.

9.5.4. The PIM minutes shall include, at a minimum, the following agenda:

a) Presentation of the list of Responsible(s) for Manufacturing Inspection;

b) Ratification of the scope of supply and applicable technical requirements;

c) Clarification of doubts about manufacturing technical requirements and possible deviations from technical documentation;

d) Planning/Expected dates for manufacturing inspection events witnessed by the RMI, including sub-suppliers;

e) Presentation of the approved Inspection and Testing Plan (ITP);

f) Presentation of critical procedures to be analyzed -for compliance with contractual requirements;

g) System for recording and handling Non-Conformities;

h) Clarification of regulatory, statutory Regulatory Standards (NR), and Supplier/Manufacturer compliance requirements;

i) Presentation of HSE guidelines adopted at the facility;

j) Presentation of all documents and records evidencing the deviations acceptance from technical requirements and concessions signed between the Petrobras Contract Manager and the Supplier, from the tender fase;

k) Sampling manufacturing inspection definition, if applicable;

l) Definition of inspection method (in-person or remote inspection) according to IOGP REPORT 609, when approved by Petrobras Quality Department.

NOTE 13: Petrobras can, at its discretion, specify inspection events that will be monitored during the manufacturing process in the ITP.

10. MINIMUM MANUFACTURING INSPECTION ACTIVITIES

10.1. The minimum activities, to be carried out by the Responsible for Manufacturing Inspection, are defined below:

a) Analysis and approval of the Inspection and Testing Plan;

b) Conformity assessment of manufacturing documents as provided in the contractual and technical requirements;

c) Verification of raw material certificates and quality records;

d) Verification of methods and processes, controls, and intermediate tests;

e) Witnessing of hydrostatic and/or pneumatic, functional and/or performance tests, when applicable;
f) Visual inspection execution and final dimensional examination witnessing including standardized dimensions according to construction standards, manufacturer's design and when specified by the client;
g) Verification of the data book, including certification, qualification, and/or approval documents for the item and/or components;
h) Issuance of Inspection Records;
i) Identification, preservation, and packaging, according to the contractual requirements.

10.1.1. The models presented in Annex III cover the minimum inspection activities that shall be met for the manufacturing of Pumps, Reciprocating Compressors, Centrifugal Compressors, Screw Compressors, Gearboxes, and Steam Turbines.

10.1.2. For the supply of industrial valves and piping materials, the minimum inspection activities -, and the requirements of N-215 shall be met.

10.2. When approving the ITP, the RMI shall detail its participation in the manufacturing activities in order to ensure compliance with contractual documentation.

NOTE 14: The RMI can be exempt of witnessing manufacturing inspection events (Hold Point) for goods that require witnessing and approval from a Certification and/or Classification Society, as long as the supplier keep the records of this approval.

11. MANUFACTURING INSPECTION EXECUTION

11.1. Inspection

11.1.1. All Manufacturing Inspection activities required in the approved IPT shall be carried out and indicated in Inspection Records issued by the RMI.

11.1.2. Petrobras can, at its discretion, perform monitoring inspection during the manufacturing process, as per NOTE 13;

11.1.3. For remote inspections, the Supplier shall obtain approval from Petrobras Quality Department through the CSE.

11.1.3.1. The Supplier shall attach evidence of compliance with IOGP REPORT 609.

11.2. Nonconformity Treatment

11.2.1. The RMI, when issuing *RI-RNC* or *CRM*, shall indicate the degree of deviation as Light, Medium, High, or Severe, accordance to the criteria estavlished in Table 1.

Table 1: Matrix to indicate the degree of the detected deviation.

Deviation Degree	**Nonconformity Characteristic**
Low	Non-conformity related to the Supplier's / Manufacturer's Quality Management System, with no impact on equipment or goods performance.
Medium	Non-conformity in the equipment or goods, with the possibility of correction outlined in the contract document/standard and replacement within the contract period.
High	Non-conformity in the equipment or goods, with the possibility of correction provided for in a document or contractual standard, affecting delivery within the contract term and requiring Petrobras' concession to deliver the asset; or Non-conformity in the equipment or goods, with compromised performance, with no possibility of correction provided for in a document or contractual standard and which requires a concession from Petrobras' for delivery.
Severe	Non-conformity related to fraud in documents or specification of components or goods.

11.2.2. The Supplier, after receiving an *RI-RNC* or *CRM*, shall issue its own NCR, according to the Implanted Quality System, to address deviations pointed .

11.2.3. All *IR-NCRs* and *CRMs* issued by the RMI and classified as High or Severe shall be immediately submitted to Petrobras Quality Department through CSE.

11.2.4. The Supplier shall send to Petrobras Quality Department the internal NCR, as indicated in item 11.2.2, with the corrective actions regarding to IR-NCRs and CRMs within 5 business days of issuance and further results of corrective actions- for Petrobras Quality - Department analysis and approval.

11.3. Technical Manufacturing Documentation - Data Book

11.3.1. The Supplier shall issue a data book containing all quality and inspection records and certificates provided in the ITP, as well as manufacturing non-conformities and the *MRN, IR, IR-NCR,* and *CRM* issued by the RMI.

11.3.1.1. These records shall include the identification of the instruments/equipment used and their respective calibration certificates.

11.3.2. All documents that make up the data book shall have the -approval of the Supplier, evidenced by identification and signature or through electronic systems ensuring traceability and reliability.

11.3.3. The data book shall be verified and approved, as a Hold Point in the ITP, by the Responsible for Manufacturing Inspection before shipment of the equipment. The Responsible for Manufacturing Inspection shall certify the quality documents reviewed through identification and signature or electronic systems that guarantee the traceability and reliability.

11.3.4. Throughout the manufacturing process, the Supplier or Manufacturer shall keep available for the Responsible for Manufacturing Inspection all quality and inspections records performed in previous steps as required in the Inspection and Test Plans.

11.3.5. The raw material certificates shall be that of origin (factory, forge, foundry, etc.). Certificates from resellers and distributors will be accepted if they are with origin certificates. If these certificates are not available or illegible, material qualification tests are acceptable upon the witness of the Responsible for the Manufacture Inspection and issuance of a technical report of compatibility of the material by the Supplier/Manufacturer.

11.3.5.1. In the case of sampling for material confirmation/certification, the RMI shall witness the sample withdrawal; however, witness of the test can be waived if it's conducted in an accredited laboratory, according to item 7 of this document.

11.3.5.2. For Electrical/Instrumentation spare parts, quality/compliance certifications issued by the manufacturer or certifying entities, in compliance with standards or regulations, will be accepted alternatively to item 11.3.5.

11.4. Access of the Inspector to Scope of Supply Material

11.4.1. The Supplier / Manufacturer shall ensure free access of the Responsible for Manufacturing Inspection to all components and manufacturing facilities related to the supply of the good upon request.

11.4.2. The Responsible for Manufacturing Inspection shall be authorized to obtain a photographic record of the inspected goods. In case of restriction of the use of cameras, by third parties, in the manufacturing facilities, the Supplier / Manufacturer shall provide the required photographic record to the RMI.

12. RECORDS OF MANUFACTURING INSPECTION

12.1. The Records of Manufacturing Inspection shall issue inspection records (*IR, IR-NCR, MRN,* or *CRM*) for all the events with its participation, as indicated in the ITP, according to the type of intervention defined (HP, WP, RD, and MP), within a maximum period of 7 calendar days.

12.1.1. Suppliers not required to hire an AIB may substitute the inspection records mentioned above with internal quality records, evidenced by identification and signature, or through electronic systems ensuring traceability and reliability, except for the *MRN*, which shall be issued in accordance with item 12.3.

12.2. Once all the steps of the Manufacturing Inspection have been completed with satisfactory results, the RMI shall issue the MRN attesting the conformity of the equipment with the contractual technical documentation. A MRN model is presented in Annex II.

12.3. Inspection Records (*IR, IR-NCR, CRM, MRN*) shall contain at least the following information:

a) Report number;
b) Petrobras purchase order or order number;
c) Purchase order or order item;
d) Quantity inspected;
e) Date or period; of the inspection event;
f) Identification of the Supplier and Manufacturer, in case of Subsupplier;
g) Purpose;
h) Description, identification, and traceability of the property and its inspected components (tag, serial number, etc.);
i) Reference documents used in the inspection;
j) List of annexes;

k) Activity(ies) of ITP (for *MRN* see note 15);
l) Description of the activities developed, and parameters evaluated;
m) Process stage (before, during, or after manufacturing);
n) Result of the inspection: satisfactory or unsatisfactory;
o) Identification of the Responsible Manufacturing Inspection, including signature, certification body registration number, certification level and scope;
p) Identification of the person responsible for Supplier's Quality, including signature, attesting to the receipt of the issued registration;
q) Distribution list of report;
r) Location of the activity;
s) Nonconformity degree of deviation, according to the criteria established in Table 1 (only for IR-NCR and CRM);
t) Photographic records of visual inspection activities.

NOTE 15: The MRN shall include at least the items "c", "e", "f", "g" and "i" in section 10.1 of this document.

NOTE 16: Annex II provides a Guideline for Issuance of Manufacturing Inspection records.

12.3.1. When the Manufacturing Inspection is performed by an international AIB, a copy of the ISO/IEC 17020 Type A certificate shall be added to the Inspection Record.

12.3.2. When the Manufacturing Inspection is conducted by the Supplier/Manufacturer's internal Manufacturing Inspection Responsible, a copy of the exemption letter from hiring an AIB shall be added to the Inspection Record.

12.4. The Supplier/Manufacturer shall keep the inspection records on file, either the original or electronic, for at least five years.

13. QUALITY AUDIT

13.1. General

13.1.1. Petrobras can perform on-site, partially on-site, or remote audits at the facilities of Suppliers, Manufacturers, or Sub-suppliers to verify compliance with the quality management system, manufacturing process, product, and records issued by the Supplier and Responsible for Manufacturing Inspection.

13.1.2. During on-site audits, the Supplier/Manufacturer shall provide a suitable location for the audit team to work, with climate control and data network access.

13.1.3. Petrobras reserves the right to conduct audits, inquiries, inspections, and/or event witnessing at any time, regardless of events previously approved in the ITPs.

13.1.4. The audit frequency will be determined by the Petrobras Quality Department, considering factors such as the criticality of the equipment for operation, manufacturing process complexity, Supplier and Manufacturer history, market sector, field failures, pioneering projects, and unique supply.

13.1.5. Quality Audit in Sub-suppliers or Manufacturers shall be accompanied by the Supplier's representative.

13.1.6. Audits can be conducted at the respective Manufacturer's facilities when the Supplier is not responsible for the equipment's manufacturing.

13.2. Quality Audits Responsibility

13.2.1. Petrobras Quality Department is responsible for planning and executing audits, whether on-site, partially on-site, or remote, at the Supplier, Manufacturer, or Sub-supplier, to verify compliance with the contractual and technical requirements for the equipment supply.

13.2.2. The Supplier/Manufacturer shall provide resources to facilitate remote audits, including document sharing and video conferencing for interviews and monitoring the manufacturing process at the manufacturing facility.

13.3. Quality Audit Objectives

The Quality Audit can include the following objectives:

13.3.1. Technical Qualification Parameters: verification of the technical qualification and qualification conditions required at the time of contracting.

13.3.2. Quality Management System: verification of compliance with the contractual requirements of the Supplier / Manufacturer / Sub-supplier's Quality Management System.

13.3.3. Manufacturing Process: verification of compliance with contractual requirements in the equipment manufacturing process, such as manufacturing

procedures, inspection and testing, quality meeting minutes, and inspection and testing records generated during manufacturing, among other documents required by Quality Requirements.

13.3.4. Final Product: verification of compliance with contractual and technical requirements for the equipment.

13.3.5. Responsible for Manufacturing Inspection: verification of compliance with the requirements established in this Quality Requirement and in the Supplementary Quality Requirement (when applicable), including issuing inspection records, monitoring manufacturing events, and acting independently and impartially.

13.4. Quality Audit

13.4.1. Petrobras Quality Department will notify the audit with a minimum of 20 calendar days in advance, and it can be carried out before this period, provided there is an agreement with the Supplier.

13.4.2. The Supplier shall submit the documents requested by the audit team with a minimum of 7 calendar days before the audit starts. Failure to meet this deadline without an acceptable justification can result in a decrease in the IQF score, and the audit execution period can be extended at the discretion of the audit team.

13.4.3. Petrobras Quality Department will hold an opening meeting on the first day of the audit, attended by the audit team and the Supplier's / Manufacturer's Quality representatives.

13.4.4. During the audit, the audited Supplier/Manufacturer shall designate a focal point to provide all requested documentation, monitor each verification item, and provide the resources demanded by the audit team for verifying compliance with the audit criteria.

13.4.4.1. Participation of the RMI is mandatory when requested by the audit team.

13.4.5. Petrobras Quality Department will hold a closing meeting at the end of the audit, attended by the audit team and the Supplier's / Manufacturer's Quality representatives. During this meeting, conformities, opportunities for improvement, and non-conformities recorded during the audit will be communicated and documented in a formal report.

13.4.6. At Petrobras' discretion, the audit can be conducted partially.

13.4.7. For conducting audits, the Supplier shall ensure compliance with the requirements described in the Audit Guide.

13.5. Factory Event Audit

13.5.1. Suppliers can undergo a factory event witnessed process upon prior notification to the Supplier.

13.5.2. Factory event audits is scheduled to coincide with the inspection events established in the ITP.

13.6. Self-Assessment Audit

13.6.1. At Petrobras' discretion, the audit can be carried out through self-assessment by the Supplier, by filling out a form and submitting evidence demonstrating compliance with the GQR items, contract technical specifications, and standards.

13.6.2. Supplier shall submit the completed form responses and its evidence to Petrobras within 20 calendar days from the date of notification.

13.7. Quality Audit Records

13.7.1. The audit report, containing the findings of the audit team, including the IQF, along with the respective evidence, will be sent to the Supplier within 10 calendar days after the audit's completion.

13.7.1.1. The Supplier has 5 calendar days after receiving the audit report to send to Petrobras Quality Departement, via CSE, any appeal against the audit findings.

13.7.1.2. Petrobras will evaluate and respond to the appeal within 10 calendar days.

13.8. Control and Monitoring of Nonconformities

13.8.1. The Supplier / Manufacturer shall provide Petrobras Quality Department with a Corrective Action Plan to mitigate all non-conformities identified in the audit within 20 calendar days of receiving the audit report. In case of missing the deadline, without justification accepted by Petrobras constitutes contractual

breach and is subject to sanctions outlined in the Petrobras Consequences System.

13.8.2. The Corrective Action Plan shall be developed using quality tools, including immediate corrective actions, root cause analysis, and a way to evaluate the results and effectiveness of corrective action. The CAP shall also include implementation and effectiveness analysis deadlines, as the Supplier / Manufacturer Quality focal points responsible for each proposed action. The CAP shall be according to Annex IV.

13.8.2.1. The audit team will assess and respond to the submitted Corrective Action Plan within 15 calendar days.

13.8.3. Petrobras can verify the effectiveness of the implemented Corrective Action Plan at any time.

13.9. IQF - Supplier Quality Index (*Índice de Qualidade do Fornecedor*)

13.9.1. *IQF* is an index representing the quality of the Supplier and aims to evaluate compliance with the contractual technical requirements of the manufacturing and inspection processes and products. This index is dynamic and directly affects the release condition of the AIB contract.

13.9.2. For Quality Audit, the *IQF* score ranges from 0.0% to 100.0% and is related to the material family and the Supplier's manufacturing facility being audited. It is obtained through the concept of Risk Level, which considers the Probability, Severity, and Relevance (PSR) of each verification item in the audit. *IQF* also contributes to the composition of the *IDF* scores in the Quality macro-criteria and in the Supplier Performance Concept. The *IDF* scores in the Quality macro-criteria and the Supplier Performance Concept are defined in the Petrobras Supplier channel.

14. NDO - NOTICE OF DIVERGENCE OCCURRENCE

14.1. General

14.1.1. A Petrobras Quality Department can notify its Suppliers and Manufacturers whenever technical divergences or low performance of the purchased goods are identified, and these divergences are recorded as Notification of Divergence Occurrence (NDO).

14.1.1.1. The NDO aims to eliminate these divergences and prevent their recurrence by encouraging the Supplier to improve the performance of the supplied goods, thus contributing to the continuous improvement of its projects and manufacturing processes.

14.1.1.2. The NDO can be classified as MODERATE, SEVERE, or CRITICAL, based on the Operational Impact of the Failure (*IOF*), as defined in the Petrobras Supplier Consequences System.

14.1.2. Upon receiving the NDO, the Supplier / Manufacturer shall record the divergence in its Quality Management System, according to its internal procedures.

14.1.3. The Supplier / Manufacturer shall submit an Investigation Plan for Divergence (*PID*) to Petrobras Quality Department to mitigate the reported divergence(s) within 15 calendar days of receiving the notification. Failure to meet the mentioned deadline without justifiable reasons accepted by Petrobras constitutes a contractual breach subject to penalties.

14.1.3.1. The *PID* shall include the minimum activities planned by the Supplier/Manufacturer and necessary for investigating the divergence, identifying the cause, defining a correction action plan, and a corrective action plan in the Quality Management System, as requested in the opening notification letter.

14.1.4. After completing the *PID*, a Corrective Action Plan (CAP) shall be prepared using quality tools, including corrections, root cause analysis, action determination, and results of corrective actions taken, including their effectiveness to prevent recurrence. It should also include implementation timelines and the focal points within the Supplier / Manufacturer's Quality responsible for each proposed action.

14.1.5. The CAP shall be submitted for analysis and approval by Petrobras Quality Department, which will provide a response within 30 calendar days.

14.1.6. When the CAP involves rework or manufacturing to replace the divergent goods, release and return to Petrobras are subject to inspection and approval by *RMI*. Minimum inspection activities and records shall comply with the requirements of this document and any additional quality requirements when applicable.

14.1.7. Failure to meet the deadlines defined in this section, without justifiable reasons accepted by Petrobras, constitutes a contractual breach subject to penalties, impacts on performance evaluation, and potential application of the Petrobras Supplier Consequences System.

14.1.8. The NDO may be closed after the approval of the CAP by Petrobras Quality Department and the Petrobras requesting area that identified the divergence.