



PETROBRAS

TECHNICAL SPECIFICATION

Nº: I-ET-3010.1M-5266-631-P4X-001

CLIENT: SRGE

SHEET: 1 of 7

PROJECT: REFERENCE BASIC DESIGN

1001056398 0010

UNIT: BUZIOS

DP&T-SRGE

TITLE: **OFFSHORE CRANES**

NP-1

ESUP

MICROSOFT WORD / V. 2013 / I-ET-3010.1M-1233-560-P4X-002_0.DOC

INDEX OF REVISIONS

REV.

DESCRIPTION AND/OR REVISED SHEETS

0

ORIGINAL ISSUE

PRELIMINARY

	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G	REV. H
DATE	JAN/18/19								
DESIGN	ESUP								
EXECUTION	BFRANCA								
CHECK	CINTHIA								
APPROVAL	TMCAMPOS								

THE INFORMATION CONTAINED IN THIS DOCUMENT IS PETROBRAS PROPERTY AND MAY NOT BE USED FOR PURPOSES OTHER THAN THOSE SPECIFICALLY INDICATED HEREIN. THIS FORM IS PART OF PETROBRAS N-381 REV. L.



TECHNICAL SPECIFICATION	Nº: I-ET-3010.1M-5266-631-P4X-0011	REV. 0
UNIT: BUZIOS	SHEET 2 of 7	
TITLE: OFFSHORE CRANES	NP-1	
	ESUP	

INDEX

1 INTRODUCTION..... 3

2 NORMATIVE REFERENCES AND DESIGN SPECIFICATIONS..... 3

3 DEFINITIONS AND ABBREVIATIONS..... 4

4 SCOPE OF SUPPLY 4

5 GENERAL TECHNICAL REQUIREMENTS..... 5

6 INSPECTION, TESTING AND COMMISSIONING..... 6

7 PREPARATION FOR SHIPMENT..... 6

8 MANUFACTURER RESPONSIBILITY 7

PRELIMINARY

1 INTRODUCTION

This Technical Specification covers the minimum requirements for design, engineering, materials, fabrication, inspection, testing for the offshore cranes to be attached to the pedestal of a FPSO.

2 NORMATIVE REFERENCES AND DESIGN SPECIFICATIONS

All equipment shall comply with the requirements of this technical specification and references stated below.

As a general guideline, in case of conflicting requirements between this technical specification and other cited references, the most stringent shall prevail. If necessary the MANUFACTURER may revert to PETROBRAS for clarification.

2.1 CLASSIFICATION

MANUFACTURER shall perform the work in accordance with the requirements of Classification Society. MANUFACTURER is responsible for submitting to the Classification Society all documentation in compliance with stated Rules.

2.2 CODES AND STANDARDS

The latest editions of the following codes and standards shall be used as design guidelines.

API Specification 2C: 2012	Offshore Pedestal-mounted Cranes
IOGP S-618L	Information requirements for Offshore Pedestal-mounted Cranes
IOGP S-618	Supplementary Specification to API Specification 2C Offshore Pedestal-mounted Cranes
IOGP S-618Q	Quality requirements for Offshore Pedestal-mounted Cranes

2.3 GOVERNMENTAL REGULATION

NR 10	<i>Segurança em Instalações e Serviços em Eletricidade</i> (Safety in Electrical Facilities and Services)
NR 12	<i>Segurança no trabalho em máquinas e equipamentos</i> (Safety in services in machines and equipments)
NR 13	<i>Caldeiras e Vasos de Pressão</i> (Boilers and Pressure Vessels)
NR 34	<i>Segurança de Trabalho em Construção e Reparação Naval</i> (Safety in Construction and Ship Repair)

Brazilian Government regulations are mandatory and shall prevail, if more stringent, over the requirements of this specification and other references herein.

2.4 DESIGN SPECIFICATIONS

I-ET-3A36.00-1000-941-PPC-001	METOCEAN DATA
I-RL-3010.1M-1350-960-P4X-009	MOTION ANALYSIS
I-ET-3010.1M-1200-800-P4X-005	FIELD INSTRUMENTATION
I-DE-3010.1M-1200-942-P4X-002	GENERAL ARRANGEMENT
I-DE-3010.1M-5400-94A-P4X-001	AREA CLASSIFICATION - GENERAL
I-ET-3010.1M-1200-800-P4X-014	AUTOMATION INTERFACE OF PACKAGED UNITS
I-ET-3010.00-1200-800-P4X-002	AUTOMATION, CONTROL AND INSTRUMENTATION ON PACKAGED UNITS
I-ET-3010.00-5140-700-P4X-003	ELECTRICAL REQUIMENTS FOR PACCKAGES FOR OFFSHORE UNITS

3 DEFINITIONS AND ABBREVIATIONS

3.1 DEFINITIONS

Manufacturer:	Company responsible for the fabrication of equipment or components internal to the Package.
Package:	An assembly of equipment supplied interconnected, tested and operating, requiring only the available utilities from the FPSO for full operation.
Purchaser:	The Company designated as such in the contract or purchase order.

3.2 ABBREVIATIONS

API:	The American Petroleum Institute
CS:	Classification Society
IOGP:	International Association of Oil & Gas Producers
FPSO:	Floating Production, Storage and Offloading (vessel)

4 SCOPE OF SUPPLY

MANUFACTURER scope of supply shall include the following:

- A complete engineering package including design, fabrication, inspection, testing, certification, as well as all documents and data required.
- A full 3D model of the Crane in format ISO 14306:2017 (*.jt), ACIS (*.sat) or Microstation V8 (*.dgn).
- Tagging of individual items of equipment and instruments, as described herein.
- Packing and preparation for shipment.



TECHNICAL SPECIFICATION	Nº: I-ET-3010.1M-5266-631-P4X-0011	REV. 0
UNIT: BUZIOS	SHEET 5 of 7	
TITLE: OFFSHORE CRANES	NP-1	
	ESUP	

All equipment, including sub-orders, shall be of field proven design within the PACKAGER/MANUFACTURER's experience.

5 GENERAL TECHNICAL REQUIREMENTS

5.1 DESIGN CONDITIONS

MANUFACTURER shall design the crane as specified in this document.

5.2 EQUIPMENT LOCATION AND LAYOUT CONSIDERATIONS

The offshore crane shall not exceed the pedestal dimension according to I-DE-3010.1M-1200-942-P4X-002 – GENERAL ARRANGEMENT

The specifications of the Crane equipments shall be in according to area classification plan (I-DE-3010.1M-5400-94A-P4X-001 - AREA CLASSIFICATION – GENERAL).

5.3 SUPPLEMENTARY SPECIFICATION TO API SPECIFICATION 2C OFFSHORE PEDESTAL-MOUNTED CRANES

MANUFACTURER shall consider all supplementary specification described in IOGP S-618.

MANUFACTURER shall consider the package documentation as specified in the IOGP S-618-L – Offshore Cranes IRS

5.4 PAINTING

Paint system for external coating shall be according to I-ET-3010.00-1200-956-P4X-002 – GENERAL PAINTING.

Color code shall comply with DR-ENGP-I-1.15 – COLOR CODING

5.5 NAMEPLATES, TAGGING AND SAFETY SIGNS

MANUFACTURER shall attach SS 316 nameplates on each item of equipment in an accessible location, fastened with corrosion resistant pins, and in Portuguese language.

5.6 AUTOMATION AND INSTRUMENTATION

The instrumentation and control design shall fulfill the requirements of I-ET-3010.00-1200-800-P4X-002 - AUTOMATION, CONTROL AND INSTRUMENTATION ON PACKAGED UNITS and I-ET-3010.1M-1200-800-P4X-014 - AUTOMATION INTERFACE OF PACKAGED UNITS.

The classification of the Inert Gas Generator is presented in I-ET-3010.1M-1200-800-P4X-014 - AUTOMATION INTERFACE OF PACKAGED UNITS. The Offshore Crane shall comply with all requirements of its applicable Package type.

5.7 ELETRICAL INSTALLATIONS

Electrical equipment and installation inside the package shall comply with I-ET-3010.00-5140-700-P4X-003 - ELECTRICAL REQUIMENTS FOR PACKAGES FOR OFFSHORE UNITS.

6 INSPECTION, TESTING AND COMMISSIONING

Testing and inspection throughout the manufacturing process shall be in accordance with the IOGP S-618Q – Quality requirements for Offshore Pedestal-mounted Cranes (API Spec 2C). The conformity assessment system (CAS) is letter B.

6.1 ASSEMBLY ASSISTANCE AND COMMISSIONING REQUIREMENTS

MANUFACTURER is responsible for assembly supervision of the equipment, including assembly of components delivered loose.

MANUFACTURER is responsible for pre-commissioning and commissioning supervision of the equipment/ system.

Final acceptance will be on satisfactory completion of commissioning tests as specified by PETROBRAS.

7 PREPARATION FOR SHIPMENT

7.1 MARKING

All items supplied to this specification shall be adequately marked for identification against a certificate or relevant test documentation. Marking shall be such that it will not damage or impair the component.

Items that cannot be identified shall be rejected. Rejected items may be re-certified by carrying out all relevant testing, with prior approval of PETROBRAS.

As a minimum, the following identification shall be provided:

- Project Number
- Manufacturer's name
- Purchase Order Number
- Shipping Weight
- Item Number
- CS surveyor's stamp

7.2 SHIPMENT PACKING

The equipment shall be supplied tested, and preserved. The preparation shall make the equipment suitable for 12 months outdoor storage from the time of shipment.

The equipment shall be protected from corrosion.

MANUFACTURER shall pack the equipment in accordance with the packaging requirements of the country which the equipment is being shipped to.



TECHNICAL SPECIFICATION	Nº: I-ET-3010.1M-5266-631-P4X-0011	REV. 0
UNIT: BUZIOS	SHEET 7 of 7	
TITLE: OFFSHORE CRANES	NP-1	
	ESUP	

MANUFACTURER shall provide the procedures for unpacking, handling and installation, as well as repacking and long-term storage requirements.

MANUFACTURER shall specify any limitations applicable to the transportation and installation phase.

8 MANUFACTURER RESPONSIBILITY

MANUFACTURER shall assume sole contractual and total engineering responsibility for the package equipment. MANUFACTURER responsibility shall include, but is not limited to:

- Technical responsibility for the entire scope of supply.
- Resolving all engineering questions and/ or problems relating to design and manufacturing.
- All coordination with manufacturers and collection of all details, drawings, calculations, and data to achieve optimum design and full submission of the documents requested in the specification.
- Providing details as requested of any sub-vendors relating to design and manufacturing.
- To submit to the certifying authority the documentation as described in the latest edition of their rules for equipment on offshore facilities.
- Installation at site by others (however, presence of supervision will be required).
- Pre-Commissioning, Commissioning & Training Operations.

Any exclusion and/or alternative to what is specified in this Technical Specification, including the use of the MANUFACTURER's standard and exclusive technology, shall be presented in a Deviation List, subject to PETROBRAS acceptance during the clarification phase, preceding the proposal presentation. Otherwise the requirements herein will be considered as "Agreed", and so required.

The Deviation List mentioned above shall contain, at least, for each requirement that the MANUFACTURER intends to change:

- The document description, code and section that contains the requirement;
- The MANUFACTURER proposal;
- The reason for deviation, and the costs, schedule and technical benefits/impacts of the change;