

	TECHNICAL SPECIFICATION		NO:	ET-2000.00-1170-618-P4W-001						
	PROGRAM:	WELLS					FOLHA:	1 of 3		
	AREA:	WELL STRUCTURE - SUBSEA WELLHEAD SYSTEMS (SCPS)								
POCOS/SPO/PEP/ PROJ-PERF	TITLE:	RELIABILITY AND TECHNICAL COMPLIANCE REQUIREMENTS FOR SCPS				PUBLIC				
						NO SCALE				
REVIEW INDEX										
REV.	DESCRIPTION AND/OR LEAVES AFFECTED									
0	Original Issue.									
A	Creation of Items 3.3.1.1, 3.3.1.2, 3.3.1.3, 3.3.1.4 and Amendment of Items 3.8 and 3.8.1									
B	Review of the Reliability Working Group									
	REV. 0	REV. A	REV. B	REV. C	RE	REV. E	REV. F	REV. G	REV. H	
DATE	11/04/2019	25/04/2019	01/10/2020							
EXECUTION	UPFY	UPFY	UPFY							
CHECK			U43V, HXG6, CFQ9							
APPROVAL	JGCP	JGCP	DRDK							
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1 INTRODUCTION

This document establishes the reliability and technical compliance requirements for SCPS (Subsea Wellhead System) installation services and forms part of the Technical Annexes to this contract. It must be complied with without prejudice to the technical and quality requirements already demanded in other technical specifications.

2 TECHNICAL REFERENCE STANDARDS

- *API SPEC 8C:2012 - Drilling and Production Hoisting Equipment.*
- *API RP 8B:2014 - Recommended Practice for Procedures for Inspections, Maintenance, Repair, and Remanufacture of Hoisting Equipment.*
- *API SPEC 7K: 2015 - Drilling and Well Servicing Equipment.*
- *ISO 14224:2016 - Petroleum, Petrochemical and Natural Gas Industries - Collection and Exchange of Reliability and Maintenance Data for Equipment.*
- *ISO 55000:2014 - Asset Management - Overview, Principles and Terminology.*

3 RELIABILITY AND TECHNICAL COMPLIANCE REQUIREMENTS

- 3.1 The CONTRACTOR must have its maintenance centered on reliability for the equipment that is defined as critical by PETROBRAS, and this must be an item for verification in the technical audit at the start of the contract.
- 3.2 The CONTRACTOR must present a certificate s of conformity for all equipment, in accordance with API Spec 6A - Annex F and API Spec 17D 2ndEd standards.
- The delivery of the equipment is subject to the delivery of the certificates.
- 3.3 The CONTRACTOR must present a failure or risk analysis for the equipment and tools used, for example, FMEA (*Failure Mode and Effect Analysis*), FTA (*Fault Tree Analysis*) or QRA (*Qualitative Risk Analysis*).
- 3.3.1 The supply of the equipment is conditional on the delivery of this analysis.
- 3.3.2 The presentation of the documents will be confidential, in accordance with the confidentiality clause of the contract attached to this document.



TITLE:

**RELIABILITY AND TECHNICAL COMPLIANCE
REQUIREMENTS FOR SCPS**

3.4 By evaluating item 3.3 PETROBRAS could convene a group to carry out the FMECA (*Failures Modes, Effects and Critically Analysis*). The CONTRACTOR shall make available, not necessarily in person, a technical manager to assist in this analysis.

3.5 At the request of PETROBRAS' supervision, the CONTRACTOR must provide technical documentation on the equipment and qualified professionals with knowledge of the equipment's design and operation.

3.6 The CONTRACTOR shall have a reliability team, to be formally designated to PETROBRAS' supervision.

4 QUALIFICATION OF OPERATIONAL PROCEDURES AND PROGRAMS

4.1 The CONTRACTOR shall submit to the contract supervisor:

4.1.1 All operational procedures, including contingency procedures, that are part of the scope of this contract.

4.1.2 The contingency plan(s) must define:

- The procedures, methods and work instructions to be applied with regard to the contingency identified in the plan.
- List of supplies and spare parts identified and needed for contingency operations.

4.1.3 Checklists to be used to assess the operability of equipment and tools in the pre-shipment, pre-operation and post-operation phases;

4.1.4 Waste disposal procedures;

4.1.5 Maintenance and inspection plans for the main components of the equipment;