

Quality Requirements for AC Uninterruptible Power Systems (UPS) (IEC)

Revision history

VERSION	DATE	PURPOSE
2.0	January 2024	Second Edition
1.0	August 2020	First Edition

Acknowledgements

This IOGP Specification was prepared by a Joint Industry Programme 33 Standardization of Equipment Specifications for Procurement organized by IOGP with support by the World Economic Forum (WEF).

Disclaimer

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, neither IOGP nor any of its Members past present or future warrants its accuracy or will, regardless of its or their negligence, assume liability for any foreseeable or unforeseeable use made thereof, which liability is hereby excluded. Consequently, such use is at the recipient's own risk on the basis that any use by the recipient constitutes agreement to the terms of this disclaimer. The recipient is obliged to inform any subsequent recipient of such terms.

Please note that this publication is provided for informational purposes and adoption of any of its recommendations is at the discretion of the user. Except as explicitly stated otherwise, this publication must not be considered as a substitute for government policies or decisions or reference to the relevant legislation relating to information contained in it.

Where the publication contains a statement that it is to be used as an industry standard, IOGP and its Members past, present, and future expressly disclaim all liability in respect of all claims, losses or damages arising from the use or application of the information contained in this publication in any industrial application.

Any reference to third party names is for appropriate acknowledgement of their ownership and does not constitute a sponsorship or endorsement.

Copyright notice

The contents of these pages are © International Association of Oil & Gas Producers. Permission is given to reproduce this report in whole or in part provided (i) that the copyright of IOGP and (ii) the sources are acknowledged. All other rights are reserved. Any other use requires the prior written permission of IOGP.

These Terms and Conditions shall be governed by and construed in accordance with the laws of England and Wales. Disputes arising here from shall be exclusively subject to the jurisdiction of the courts of England and Wales.

Foreword

This specification was prepared under Joint Industry Programme 33 (JIP33) "Standardization of Equipment Specifications for Procurement" organized by the International Oil & Gas Producers Association (IOGP) with the support from the World Economic Forum (WEF). Companies from the IOGP membership participated in developing this specification to leverage and improve industry level standardization globally in the oil and gas sector. The work has developed a minimized set of supplementary requirements for procurement, with life cycle cost in mind, resulting in a common and jointly agreed specification, building on recognized industry and international standards.

Recent trends in oil and gas projects have demonstrated substantial budget and schedule overruns. The Oil and Gas Community within the World Economic Forum (WEF) has implemented a Capital Project Complexity (CPC) initiative which seeks to drive a structural reduction in upstream project costs with a focus on industry-wide, non-competitive collaboration and standardization. The CPC vision is to standardize specifications for global procurement for equipment and packages. JIP33 provides the oil and gas sector with the opportunity to move from internally to externally focused standardization initiatives and provide step change benefits in the sector's capital projects performance.

This specification has been developed in consultation with a broad user and supplier base to realize benefits from standardization and achieve significant project and schedule cost reductions.

The JIP33 work groups performed their activities in accordance with IOGP's Competition Law Guidelines (November 2020).

This second edition cancels and replaces the first edition published in August 2020.

Due to technical writing requirements leading to extensive changes, this second edition should be treated as a new document

Table of contents

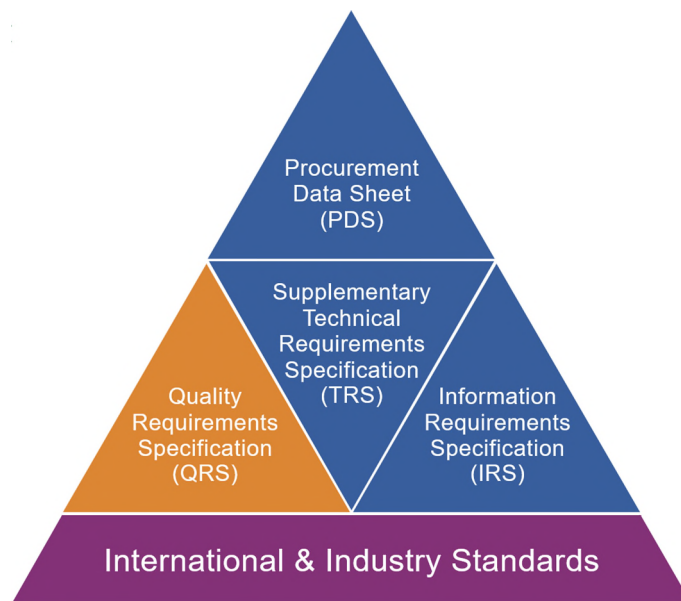
Foreword.....	1
Introduction	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Symbols and abbreviations	5
5 Quality requirements	5
5.1 Quality management system.....	5
5.2 Conformity assessment system (CAS)	5
6 Certification and traceability	6
7 Evidence — conformance records	6
Annex A (normative) Purchaser conformity assessment requirements	7

Introduction

The purpose of this quality requirements specification (QRS) is to specify quality management requirements and the proposed extent of purchaser intervention activities for the procurement of AC uninterruptible power systems (UPSs) in accordance with IOGP S-701 for application in the petroleum and natural gas industries.

Purchaser intervention activities are identified through the selection of one of four conformity assessment system (CAS) levels based on a risk and criticality assessment. The applicable CAS level is specified by the purchaser in the procurement data sheet or purchase order.

This QRS shall be used in conjunction with the specification (IOGP S-701), the procurement data sheet (IOGP S-701D) and the information requirements specification (IOGP S-701L) which together comprise the full set of specification documents. The introduction section in the specification provides further information on the purpose of each of these documents and the order of precedence for their use.



JIP33 Specification for Procurement Documents Quality Requirements Specification (QRS)

1 Scope

To specify quality management requirements for the supply of AC UPSs to IOGP S-701 including:

- a) supplier quality management system requirements;
- b) purchaser conformity assessment (surveillance and inspection) activities;
- c) traceability requirements.

2 Normative references

For the purpose of this document, the documents referenced in IOGP S-701 and those listed below, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification Q1, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

IEC 60721-2-6, *Classification of environmental conditions – Part 2: Environmental conditions appearing in nature – Earthquake vibration and shock*

IOGP S-701, *Supplementary Specification to IEC 62040-3 for AC Uninterruptible Power Systems (UPS)*

ISO 9001, *Quality management systems — Requirements*

ISO 29001, *Petroleum, petrochemical and natural gas industries — Sector-specific quality management systems — Requirements for product and service supply organizations*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IOGP S-701 and ISO 9000 (normative to ISO 9001), and the following shall apply.

3.1

conformity assessment

demonstration that specified requirements are fulfilled

Note 1 to entry: Conformity assessment (or assessment) includes but is not limited to review, inspection, verification and validation activities.

Note 2 to entry: Assessment activities may be undertaken at a supplier/sub-supplier's premises, virtually by video link, desktop sharing, etc. or by review of information.

3.2

conformity assessment system

CAS

system that provides different levels of purchaser interventions to assess and verify supplier conformance to specified requirements

Note 1 to entry: CAS A applies to the highest risk and associated extent of verification. CAS D is the lowest.

3.3 hold point H

<conformity assessment> point in the chain of activities beyond which an activity shall not proceed without the approval of the purchaser or purchaser's representative

3.4 witness point W

<conformity assessment> point in the chain of activities that the supplier shall notify the purchaser or purchaser's representative before proceeding

Note 1 to entry: The operation or process may proceed without witness if the purchaser does not attend after the agreed notice period.

3.5 surveillance S

<conformity assessment> observation, monitoring or review by the purchaser or purchaser's representative of an activity, operation, process, product or associated information

3.6 review R

<conformity assessment> review of the supplier's information to verify conformance to requirements

4 Symbols and abbreviations

For purposes of this document, the following symbols and abbreviations apply.

CAS	conformity assessment system
IRS	information requirements specification
QMS	quality management system
QRS	quality requirements specification (this document)
UPS	uninterruptible power system

5 Quality requirements

5.1 Quality management system

The supplier shall operate and maintain a quality management system (QMS) that conforms with ISO 9001, ISO 29001, API Specification Q1 or an equivalent quality management system standard.

5.2 Conformity assessment system (CAS)

5.2.1

The conformity assessment system (CAS) provides different levels of assessment of the supplier control activities. The CAS level is defined by the purchaser, using a risk-based approach, and included in the purchase order/contract. The defined CAS level may be adjusted by the purchaser during manufacture based on supplier performance and re-assessment of risk.

NOTE For industrial proven solutions, CAS level D is specified unless risk assessment indicates that a more stringent CAS level is required.

5.2.2

Quality plans and inspection and test plans shall include provision for purchaser intervention activities based on the CAS level selected in the procurement data sheet or purchase order. See Annex A.

5.2.3

Supplier performance in meeting the requirements may be routinely assessed during execution of the scope and where appropriate, corrective action requested and conformity assessment activities increased or decreased consistent with criticality and risk.

6 Certification and traceability

Material certification and traceability shall be maintained in accordance with IEC 62040-3 and IOGP S-701.

7 Evidence — conformance records

Documents and information shall be provided for in accordance with the associated IRS.

Annex A (normative)

Purchaser conformity assessment requirements

This annex defines four conformity assessment systems (CAS) or levels of purchaser assessment.

	PURCHASER ASSESSMENT ACTIVITIES	CAS			
		A	B	C	D
1	Operational planning and control activities				
1.1	Quality plan	H	H	R	-
1.2	Inspection and test plan (ISO 9001, 8.1 and ISO 10005) (IOGP S-701, 6.3)	H	H	R	R
1.3	Pre-assessment/inspection planning	H	H	R	-
2	Design and development activities				
2.1	Type tests as per IOGP S-701, 6.4, 6.5 and Table 5. Type tests may be performed if type test certificates are not available for review. (IOGP S-701, 6.1.1, 6.1.5, 6.1.6, 6.4.1, 6.4.2, 6.4.3, 6.5.1, 6.5.2, 6.5.3, 6.5.4, I.3, Table 5)	H	H	H	H
3	Control of external supply				
3.1	External supply scope, risk assessment and controls (ISO 9001, 8.4)	H	W	S	-
3.2	Nominated sub-suppliers of sub-assemblies, components and accessories	H	W	S	-
4	Production and service provision				
4.1	Verification of incoming materials (type, condition/integrity, environmental compliance, quantity and certification) (IOGP S-701, 7.1.1)	H	S	-	-
4.2	Verification of assembly (including review of process records) (IOGP S-701, 7.1.4, 7.2.2, 7.3.2, 7.3.4, 7.5.1, 7.5.2, 7.5.3, 7.6.1, 7.6.2, 7.6.3, 7.6.4, 7.7.1, 7.7.2, 7.7.3, 7.7.4)	W	S	-	-
4.3	Verification of the design performance characteristics as per data sheet during factory acceptance testing (IOGP S-701, 5.1.4, 5.1.6.1, 5.1.6.2, 5.6, 5.1.1, 5.2.2, 5.2.3, 5.3.2, 5.3.3, 5.3.4, 5.4.2, 6.2.2, 6.4.1, 6.4.2, 6.4.3, 6.5.4, 7.4.10, 8.2.2, I.3)	H	H	W	R
4.4	Verification of equipment layout design (general arrangement drawings) during factory acceptance testing (IOGP S-701, 5.1.2, 7.1.1, 7.1.4, 7.2.1, 7.2.3, 7.2.4, 7.3.1, 7.3.2, 7.3.3, 7.3.5, 7.4.1, 7.4.9, 7.5.3, 7.6.1, 7.6.2, 7.6.3, 7.6.4, 7.7.1, 7.7.3, 7.9.1, 7.9.3, Table 8)	H	H	W	R
4.5	Verification of equipment functional design (wiring and interface schematics) during factory acceptance testing (IOGP S-701, 6.2.2, 7.5.1, 7.5.2, 7.7.2, 7.7.4, 8.1.1.3, 8.1.1.5, 8.1.2.11, 8.1.2.12, 8.1.2.2, 8.1.2.4, 8.1.2.5, 8.1.2.6, 8.1.2.7, 8.1.2.8, 8.1.2.9, 8.2.1, 8.2.4, 8.2.5, 8.2.6, 8.3.5, 8.4.1.1, 8.4.1.2, 8.4.1.3, 8.4.1.4, 8.4.1.5, 8.4.1.6, 8.4.1.7, 8.4.1.8, 8.4.1.9, 8.4.2, 8.4.3.1, 8.4.3.2, 8.4.4.2, Figure 6)	H	H	W	R
4.6	Verification of component selection (bill of materials) during factory acceptance testing (IOGP S-701, 7.4.3, 7.4.4, 7.4.5, 7.4.8, 7.9.4, 8.1.1.1, 8.1.1.2, 8.3.1)	H	H	W	R

	PURCHASER ASSESSMENT ACTIVITIES <i>(continued)</i>	CAS			
		A	B	C	D
4.7	Routine test				
4.7.1	Routine test as per IOGP S-701, 6.2 and Table 5 (IOGP S-701, 6.1.1, 6.1.2, 6.1.4, 6.1.6, 6.2.2, Table 5)	H	H	W	W
4.7.2	Additional tests				
4.7.2.1	Full load rated burn-in NOTE If any component fails during this test, replace the component first and repeat the test from the beginning after replacement. Mutually agree to test duration with the supplier. (IOGP S-701, 6.1.1.1, 6.1.4, 6.2.2.5, Table 5)	H	H	W	W
4.7.2.2	Verification of communications (media and protocol) as per data sheet selections Verification of correct interface(s) as per data sheet selections Verification of functionality of the selected interface(s) (IOGP S-701, 5.6, 6.1.1.1, 6.1.2, 6.1.4, Figure 6, Table 5)	H	H	R	R
4.7.2.3	Equal load sharing of parallel UPS system, performed in addition to the test specified in IOGP S-701, 6.4.2.6 (IOGP S-701, 6.1.1.1, 6.1.2, 6.1.4, 6.4.2.6, Table 5)	H	H	W	W
4.7.2.4	Charger float/equalize functionality (IOGP S-701, 6.1.1.1, 6.1.2, 6.1.4, 8.1.2.4, 8.1.2.5, 8.1.2.8, Table 5)	H	H	W	W
5	Release of product or service				
5.1	Verification of conformance to purchase order including as applicable				
5.1.1	Inspection of loose ship items, spares, special tools, as applicable	W	W	S	-
5.1.2	Handling, preservation and packaging	W	W	S	-
5.2	Release of equipment	H	H	H	H
6	Integration testing (as applicable)				
6.1	Site test as applicable, if this is requested as part of purchase order (IOGP S-701, 6.1.3, 6.3)	W	W	W	W
Key H: Hold point W: Witness point R: Review S: Surveillance					

Registered Office

City Tower
Level 14
40 Basinghall Street
London EC2V 5DE
United Kingdom
T +44 (0)20 3763 9700
reception@iogp.org

Brussels Office

Avenue de Tervuren 188A
B-1150 Brussels
Belgium
T +32 (0)2 790 7762
reception-europe@iogp.org

Houston Office

15377 Memorial Drive
Suite 250
Houston, TX 77079
USA
T +1 (713) 261 0411
reception-america@iogp.org

www.iogp.org

