Base Load Power Hub (BLPH)

Technical Data Sheet (TDS) for 6.6kV Switchgear

Document Number: 123A90-DDL-EL-DS-20020

Document Class: 2

01	06/05/2024	Accepted For Construction (AFC)	GPA	LMA/AMA	MDO
00	27/10/2023	Issue for Review (IFR)	DSF	CB/AMA	OYFO/MDO
Rev.	Date	Description	Prepared	Reviewed	Approved

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Revision / Change Log

Rev.	Description
00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
2.	
3.	
4.	

Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

Revision history

VERSION	DATE	PURPOSE
2.0	December 2022	Second Edition
1.0	October 2018	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).

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IOGP S-620D (2.0) Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

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).

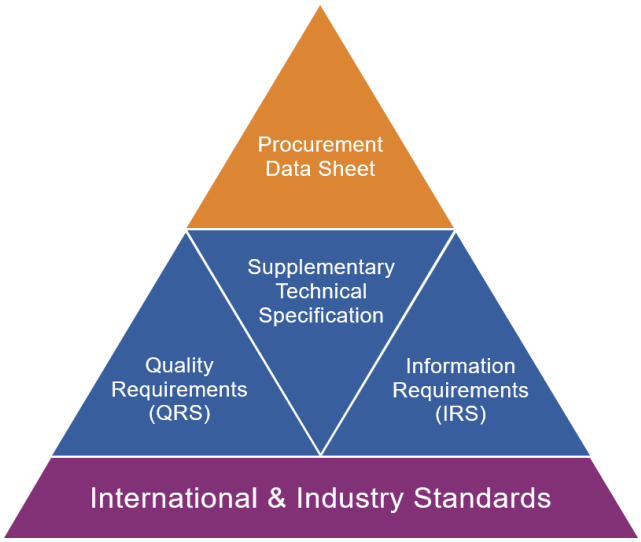
This second edition cancels and replaces the first edition published in October 2018. Due to technical writing requirements leading to extensive changes, this second edition should be treated as a new document.

IOGP S-620D (2.0) Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

Introduction

The purpose of this procurement data sheet is to define purchaser specific requirements for the procurement of high-voltage switchgear and controlgear in accordance with IOGP S-620 for application in the petroleum and natural gas industries. The procurement data sheet provides project specific requirements where the specification requires the purchaser to define an application specific requirement. It also includes information required by the purchaser for technical evaluation purposes. Additional purchaser supplied documents can be listed in the procurement data sheet to define scope and technical requirements for enquiry and purchase of the equipment.

This procurement data sheet shall be used in conjunction with the specification (IOGP S-620), information requirements specification (IOGP S-620L) and quality requirements specification (IOGP S-620Q) 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
Procurement Data Sheet

IOGP S-620D (2.0) Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
2								
3		**Identifier**						
4		Tag number :	SG-100D1		SG-100D1			01
5		Tag description :	6.6 kV Switchgear		6.6 kV Switchgear			01
6		**General information**						
7		Conformity assessment system (CAS) level :	D		D			
8		Project country :	Netherlands		Netherlands			01
9		Project region :	Netherlands		Netherlands			01
10		**Location environment**						
11	6.101,9.5	Location environment :	offshore – fixed		offshore – fixed			01
12		Ambient air temperature - upper limit :	40	°C	40	°C		
13		Ambient air temperature - daily average maximum :	35	°C	35	°C		
14		Ambient air temperature - lower limit :	-8.4	°C	-8.4	°C		01
15		Altitude :	1000	m	1000	m		
16		Humidity conditions - 24 h average relative humidity :	95	%	95	%		
17	4 paragraph 3	Site pollution severity (SPS) class :	very light		very light			
18		Seismic activity zone in accordance with IEC 60721-2-6 :	not applicable		not applicable			
19	6.101	Maximum rolling of vessel in dynamic conditions :	input data	HOLD	input data			
20	6.101	Maximum pitching of vessel in dynamic conditions :	input data	HOLD	input data			
21		**Rated voltage**						
22	5.2	Nominal and rated system voltage (U_r) :	6.6 (7.2)	kV	6.6 (7.2)	kV		01
23	9.102	Type of system earthing :	impedance earthed neutral		impedance earthed neutral			01
24		**Rated insulation level**						
25	5.3	Rated short-duration power-frequency withstand voltage (U_d) :	20 / 23	kV	20 / 23	kV		01
26	5.3	Rated lightning impulse withstand voltage (U_p) kV peak :	60 / 70	kV	60 / 70	kV		01
27		**Rated frequency**						
28	5.4	Rated frequency (f_r) :	50	Hz	50	Hz		01
29		**Rated continuous current**						
30	5.5.E.2.1	Rated continuous current (I_r) :	630	A	630	A		01
31		**Rated short-time withstand current**						
32	5.6.102,5.6.101 ,E.2.2,E.4.2	Rated short-time withstand current (I_k, I_{ke}) :	25	kA	25	kA		01
33	5.6.102	Rated short-time phase-to-earth withstand current (I_{ke}) :	87 % of Ik	kA	87 % of Ik	kA		01
34		**Rated peak withstand current**						
35	5.7.102	Rated peak phase-to-earth withstand current (I_{pe}) :	87 % of Ip	kA	87 % of Ip	kA		01
36		**Rated duration of short circuit**						
37	5.8.101,E.2.4,E .4.2	Rated duration of short-circuit (t_k) :	1	s	1	s		
38		**Rated supply voltage of closing and opening devices and of auxiliary and control circuits**						
39	5.9	Closing and tripping devices :	110 V DC		110 V DC			01
40	5.9	Indication :	110 V DC		110 V DC			01
41	5.9	Control :	110 V DC		110 V DC			01
42	6.108.2.3	Circuit breaker spring charging motors :	110 V DC		110 V DC			01
43	6.4.1.2	Auxiliary circuits (e.g. panel lighting) :	230	V AC	230	V AC		01
44		**Ratings of the internal arc classification (IAC)**						
45	6.101,5.103.2	Accessibility type :	Type A		Type A			
46		**Design and construction**						
47		Main device type withdrawal requirements :	withdrawable		withdrawable			
48		Mounting arrangement :	longitudinal channels flush with floor		longitudinal channels flush with floor			
49	6.101	Back-to-wall switchgear configuration required :	no		no			01
50		Cable termination chamber location :	rear access		rear access			01
51		**Requirements for gases in switchgear and controlgear**						
52	6.1	High-voltage compartment insulating medium :	air		air			01
53		**Earthing of the high-voltage conductive parts**						
54	5.101	Classification of earthing switches for short-circuit making :	E1		E1			
55	7.102.1	Earthing switch mechanical endurance class :	M0		M0			
56		Earthing device operator location(s) :	remote operation		front of panel operation only			01
57		Provision of earthing truck :	not required	HOLD	not required			
58		**Voltage detecting and indicating systems**						
59	6.3.107.1,6.3.1 07.2,6.3.107.3	VDIS provision:	manufacturer's standard		manufacturer's standard			01
60		**Heating elements**						
61	6.4.5.2.1,6.4.5. 2.2,6.4.5.2.3,6. 4.5.2.4,6.4.5.2. 5,6.4.5.2.6	Low-voltage auxiliary compartment space heater provision :	required		not required			01
62	6.4.5.2.1,6.4.5. 2.2,6.4.5.2.3,6. 4.5.2.4,6.4.5.2. 5,6.4.5.2.6	High-voltage connection compartment space heater provision :	required		manufacturer's standard		On the rear in the cable compartment.	01
63		Space heater rated voltage :	200-240	V AC	200-240	V AC		01
64		Space heater control method :	thermostat		thermostat			01
65		Remote motor space heater supply provision :	not required		not required			01
66		Remote motor space heater supply voltage :	not applicable	V AC	not applicable	V AC		01
67		**Low- and high-pressure interlocking and monitoring devices**						
68	6.1	Method of local gas pressure indication/alarm :	manufacturer's standard		select		Not applicable	01
69		**Gas and vacuum tightness - General**						
70	6.16	Circuit breaker switching medium :	vacuum		vacuum			01
71	6.16	Contactor switching medium :	vacuum		vacuum			01
72		**Controlled pressure systems for gas**						
73	6.103.2.3	Provision of controlled pressure systems :	N/A		not permitted			
74		**Fire hazard (flammability)**						
75		Auxiliary and control circuit cable insulation :	low smoke zero halogen		low smoke zero halogen			
76		**Enclosure - general**						
77	6.102.1,6.14.2	Minimum degree of protection by enclosure with doors closed :	IP3XW		select		IP30	01
78	6.102.1	Consideration of floor surface :	floor is not part of enclosure		floor is not part of enclosure			01
79		**Locking facilities**						
80		Low-voltage compartments :	padlockable	6 mm hasp	manufacturer's standard locking facility		hinged doors with handle key lock	01
81		Safety shutters, disconnectors and switches :	padlockable	8 mm hasp	padlockable		by key	01
82		Padlock provider :	manufacturer supplied		manufacturer supplied		No padlock for shutter are provided, however they can be padlockable.	01
83		**Partitions and shutters - general**						
84	10.2	Partition class :	manufacturer's standard		manufacturer's standard			
85		Minimum degree of protection by enclosure with doors open - partitions :	IP2X		select		IP20	01
86		Minimum degree of protection by enclosure with doors open - shutters :	IP2X		select		IP20	01
87		**Removeable parts**						
88	6.104	Facilities for remote testing of withdrawable units :	not required		not required			01
89		**Labelling and identification**						
90	6.103.3.2,6.107 .1.2,6.107.1.3	Main component, primary identification language :	English		English			
91		**Supplementary colour marking of conductors**						
92		Phase 1 :	brown		brown		Color is relevant to the bar label	01
93		Phase 2 :	black		black		Color is relevant to the bar label	01
94		Phase 3 :	grey		grey		Color is relevant to the bar label	01

IOGP S-620D (2.0) Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
2								
95		Neutral :	blue		not required		Not applicable	01
96	6.107.3	Supplementary conductor colour marking for DC circuits. :	required	(+) Red (-) White	required		Red/white as requested	01
97		**Mimic diagrams**						
98		Mimic (synoptic) diagrams :	required		required			
99		**Isolating switching devices (disconnectors)**						
100		Switch electrical endurance class :	E2		E2			01
101	7.102.1	Switch mechanical endurance class :	M1		M1			01
102		Capacitive breaking capability class of switches :	no classification		no classification			
103		**Circuit-breakers**						
104		Circuit-breaker electrical endurance class :	E2		E2			
105		Circuit-breaker restrike class :	C1		C1			
106	7.102.1	Circuit-breaker mechanical endurance class :	M1		M1			
107		Circuit-breaker system class :	S1		S1			
108		**Surge arrestors**						
109	6.111.1	Provision of metal oxide surge arresters to IEC 60099-4 :	required		required			01
110		**Voltage transformers**						
111		Incomer voltage transformer arrangement :	manufacturer's standard		manufacturer's standard			01
112		Outgoing feeder voltage transformer arrangement :	manufacturer's standard		manufacturer's standard			01
113		Motor starter voltage transformer arrangement :	select	N/A	select		Not applicable	01
114		Busbar voltage transformer arrangement :	manufacturer's standard		withdrawable			01
115	6.109.7	Energy tariff voltage transformer :	not required		not required			
116		**Digital instruments**						
117		Multi-function digital measuring device accuracy :	0,5 S		select		Measurements from multifunction protection relay	01
118		**Protection devices**						
119	6.113.1	Protection relay type :	IED - manufacturer's standard		IED - manufacturer's standard			
120		**Terminals for external conductors**						
121	6.114.1.4	Incoming (supply) unit external conductor type :	cable - bolted lugs		cable - bolted lugs			01
122		Incoming cable entry direction. :	top		top			01
123	6.114.1.4	Outgoing (load) unit external conductor type :	cable - bolted lugs		cable - bolted lugs			01
124		Outgoing cable entry direction. :	top		top			01
125		**Terminals for control and auxiliaries**						
126		Auxiliary cable entry direction :	top		top			01
127	6.114.2.7	Spare terminal provision for future use :	10 % spare		10 % spare			
128		**Condition monitoring**						
129	6.116.1	Thermal monitoring :	required		required			01
130	6.116.1	Partial discharge monitoring :	required		required			01
131	6.116.1	Circuit breaker condition monitoring :	required		required			01
132		Motor condition monitoring equipment :	not required.		not required.			
133		Additional data visualization :	not required	HOLD	not required			
134		Condition monitoring to site system interface media :	manufacturer's standard		manufacturer's standard			01
135		Condition monitoring to site system interface protocol :	select	HOLD	IEC 61850			01
136		**Interface with control systems**						
137		IED brand :	manufacturer's standard		manufacturer's standard		ABB REX640	01
138		Process control interface (ICSS/DCS) media :	manufacturer's standard		manufacturer's standard		Not applicable	01
139		Process control interface (ICSS/DCS) protocol :	IEC 61850		not required		Not applicable	01
140		Process control interface (ICSS/DCS) network redundancy :	select	HOLD	select		Not applicable	
141		Electrical control interface (ECMS) media :	not required	HOLD	ethernet (Cu)			01
142		Electrical control interface (ECMS) protocol :	IEC 61850		IEC 61850			01
143		Electrical control interface (ECMS) network redundancy :	not applicable	HOLD	parallel redundancy protocol (PRP)			01
144		IED remote configuration via the ECMS :	not applicable	HOLD	not applicable			
145		**Switchgear interlocking/intertripping interfaces**						
146		Interlocking/intertripping interface media :	manufacturer's standard	HOLD	manufacturer's standard			
147		Interlocking/intertripping interface protocol :	hardwired	HOLD	hardwired			
148		**Power management system (PMS) interfaces**						
149		IED to PMS interface media :	manufacturer's standard		other		Not applicable	01
150		IED to PMS interface protocol :	IEC 61850		other		Not applicable	01
151		IED to PMS network redundancy :	not applicable	HOLD	not applicable			
152		**Generator control panel interfaces**						
153		IED to generator control panel interface media :	not required		not required			
154		IED to generator control panel interface protocol :	not required		not required			
155		**Application of communication protocols to protective functions**						
156		Conformance class :	class c		class c			
157		Availability class :	A2		A2			
158		Network redundancy protocol :	select	HOLD	parallel redundancy protocol (PRP)			01
159		**Routine tests**						
160	7.2.10	Partial discharge measurement test :	not required		not required			01
161		ECMS simulation test :	required		required			01
162		**Cyber security**						
163	6.4.5.1	Security certification for industrial automation and control system components :	required		required		Switches and protection relays as per vendor standard data sheet.	01
164		**Internal arc fault supplementary protective measures**						
165	9.103.3	Integrated internal arc fault detection system :	required		required			01
166		**Information to be given with enquiries, tenders and orders**						
167		Language used for all provided information :	English		English			
168		**Transport, storage, installation, operation and maintenance**						
169	11.2	Transport and storage environmental conditions :	Vendor to advise		within defined site conditions			01
170		Equipment integration location :	Integration at Ship Yard priot to Sailway		Integration at Ship Yard priot to Sailway			01
171		Load certified hoist for components > 25 kg :	not required	HOLD	not required			
172		Circuit breaker trolley :	required		required			01

IOGP S-620D (2.0) Procurement Data Sheet for High-voltage Switchgear and Controlgear (IEC)

Guidance on the use of this procurement data sheet

To be used in conjunction with:
IOGP S-620 Supplementary Specification to IEC 62271-200 for High-voltage Switchgear and Controlgear.

This procurement data sheet is designed to be used in MS Excel electronic format by the purchaser and the supplier.

This procurement data sheet, completed with requested values, should be delivered back to the purchaser by using the procurement data sheet template or other mutually agreed method.

Ref. Clause provides reference back to the parent standard or the supplementary specification where relevant.

Guidance specific to an item may be provided as a note in the description. This guidance is meant to provide a better understanding of the procurement data sheet item and/or an explanation of how to complete the input.

Additional notes may be used by the purchaser or supplier to provide additional information pertinent to the specification or supply of the equipment.

Issue should be used by the purchaser for revision purposes. After the first issue, for each subsequent revision of the procurement data sheet that is issued to suppliers for enquiry or purchase, the purchaser should use this column to denote that the data on a specific row has been updated since the previous revision. This enables the supplier to easily identify where changes have been made.

Default values (if applicable) have been set according to essential minimum requirements as an integral part of this specification and should only be changed where specific justification can be provided.

The **Supplement** worksheet is provided in an open format for application of specific items not covered in the main part of the procurement data sheet. This worksheet is not intended to modify requirements defined in the specification.

Purchaser requirement and **Purchaser requirement UOM** specify the functional and early design requirements of the equipment. Specified requirements allow the supplier to provide an offer to the purchaser.

Supplier offered value and **Supplier offered UOM** are used by the supplier to declare the offered value. Where the offered product characteristic differs from the **Purchaser requirement**, the cell shading is automatically updated (by conditional formatting) to highlight the deviation from the **Purchaser requirement**.

Requirement CFIHOS ID and **Equipment CFIHOS ID** are prepopulated and hidden in columns K and L of the procurement data sheet worksheet. The purpose of the CFIHOS IDs is to enable information exchange in a data-centric manner.

Legend

select	Purchaser completed, drop-down list of pre-defined values (may be prepopulated with a default value)
input data	Purchaser completed data entry
select	Supplier completed, drop-down list of pre-defined values
input data	Supplier completed data entry
select	Either supplier or purchaser completed, drop-down list of predefined values (may be prepopulated with a default value)
input data	Either supplier or purchaser completed data entry
select	Selection of units from a pre-defined drop-down list
select	No input expected
input data	No input expected
UOM	Fixed unit of measure
UOM	Fixed unit of measure
	No unit of measure (null)

Configuration of purchaser and supplier input columns
The following table, to be read alongside the above legend, shows the possible combinations of relationships between purchaser requirement and supplier offered values.

Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	

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