

Ref No.: 0016-IM-EM-PP

Ngày : 10/02/2026

INTERMEMO

Tới: Nhóm Thương Mại

Fax Số.:

Att: Mr. Nguyễn Ninh Anh Vũ – Quản lý bộ phận thương mại

CC.:

CC.:

Tiêu đề: IC-0006_ TRD cho vật tư điều khiển (Junction Box, Cable, tray/ladder, bulk material,...)

Đính kèm là Tài liệu Yêu cầu kỹ thuật về gói TRD cho vật tư điều khiển (Junction Box, Cable, tray/ladder, bulk material,...). Vui lòng xem xét và xử lý bước tiếp theo. Nếu có bất kỳ thắc mắc nào, vui lòng liên hệ với chúng tôi Ông Nguyễn Văn Nhân (Email: nhannv01@ptsc.com.vn; Điện thoại: 0935525117) để làm rõ.

Lưu ý: Vui lòng xem tập đính kèm sau:

H3PO4-PTSC-IN-TRD-0006_ A_ TRD cho vat tu dieu khien

Cảm ơn sự phối hợp của bạn.

Phân loại gói:

Ưu tiên hàng đầu ☐

Khẩn ☐

Bình thường ☒

Chuẩn bị bởi:



Nguyễn Văn Nhân
Kỹ sư thiết kế Điều khiển

Kiểm tra bởi:



Trần Đình Hùng
Chủ nhiệm Thiết kế

Chấp thuận bởi:



Nguyễn Khắc Dũng
Phó Trưởng Ban dự án

	TỔNG CÔNG TY PHÂN BÓN VÀ HÓA CHẤT DẦU KHÍ - CTCP					
DỰ ÁN	ĐẦU TƯ BỒN ACID H3PO4 TẠI XUỐNG NPK					
CHỦ ĐẦU TƯ	TỔNG CÔNG TY PHÂN BÓN VÀ HÓA CHẤT DẦU KHÍ – CTCP (PVFCCo)					
ĐẠI DIỆN CĐT	CHI NHÁNH QUẢN LÝ VÀ PHÁT TRIỂN DỰ ÁN (CN QLPTDA)					
NHÀ THẦU	TỔNG CÔNG TY CỔ PHẦN DỊCH VỤ KỸ THUẬT DẦU KHÍ VIỆT NAM (PTSC)					
GIAI ĐOẠN	THIẾT KẾ, CUNG CẤP VẬT TƯ THIẾT BỊ VÀ THI CÔNG XÂY DỰNG CÔNG TRÌNH (EPC) BỒN ACID H3PO4 TẠI XUỐNG NPK					
TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)					ĐẠI DIỆN CHỦ ĐẦU TƯ	
					PTSC	
						
A	10/02/26	Ban hành cho xem xét	BTPhông	NVNhân	TDHùng	NKDũng
LXB	Ngày XB	Mô tả	Thực hiện	Chủ trì Bộ môn	Chủ nhiệm Thiết kế	Giám đốc Dự án
TỔNG CÔNG TY CỔ PHẦN DỊCH VỤ KỸ THUẬT DẦU KHÍ VIỆT NAM (PTSC)					Số Tài Liệu:	
					H3PO4-PTSC-IN-TRD-0006	
					Số trang: 10 (Bao gồm cả trang này)	

	ĐẦU TƯ BÓN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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LỊCH SỬ PHIÊN BẢN

Phiên bản	Trang	Ngày	Nội dung	Ghi chú
A	Tất cả	10/02/26	Ban hành cho xem xét	

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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1. PURPOSE OF DOCUMENT

This document is to specify minimum requirements for the Fire Alarm Package which shall be applied for H₃PO₄ acid storage tank at NPK Plant.

2. DEFINITIONS AND ABBREVIATIONS

2.1. Definitions

This document uses the following definitions and abbreviations:

PROJECT	Investment Axit Photphoric storage tank at NPK Plant
OWNER	Petrovietnam Fertilizer and Chemicals Corporation (PVFCCo)
COMPANY/OWNER'S REPRESENTATIVE	Petrovietnam Fertilizer and Chemicals Corporation (PVFCCo)- Project Management and Development Branch
CONTRACTOR	Petrovietnam Technical Service Corporation (PTSC)
SUB-CONTRACTOR	Other entities hired by the CONTRACTOR to perform a portion of the PROJECT work
VENDOR	Party responsible for manufacturing and/or packaging of equipment
SUB-VENDOR	Other entities hired by the VENDOR to perform work and/or provide equipment

2.2. Abbreviations

PVFCCo	Petrovietnam Fertilizer and Chemicals Corporation
PTSC	Petrovietnam Technical Service Corporation
ISO	International Organization for Standardization
MTO	Material Take Off

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PO	Purchase Order
TPI	Third Party Inspector
TRD	Technical Requisition Document
QA/QC	Quality Assurance / Quality Control

3. LANGUAGE AND UNITS

3.1. Language

All documents and drawings to be submitted shall be lettered in English language.

3.2. Units of Measurement

Glossary	Units
Temperature	°C (Degree)
Pressure	kPa (psi for flange rating) mH ₂ O/ Barg
Flow Rate	Kg/Hr, MT/Hr, Nm ³ /Hr, m ³ /Hr (bbl/d), MMSCMD
Velocity	m/sec
Length	mm (inch for nominal pipe size)
Weight	Kg, Ton (metric ton)
Power	W (KW)
Density	Kg/m ³
Electrical Voltage	V
Electrical Current	A
Revolution	RPM
Energy	KJ, MJ
Frequency	Hz

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4. ITEMS AND QUANTITIES

Refer to Appendix No. 4: Material Take Off (MTO).

5. SCOPE OF WORK AND SUPPLY

5.1. Scope of Supply

This document shall be read in conjunction with applicable MTO, Datasheets and Specifications.

No.	Q'Ty	Description
1.	1 Lot	Instrument Cable, Cable Gland
2.	1 Lot	Instrument Junction Box
3.	1 Lot	Cable tray/ladder
4.	1 Lot	Bulk Material
5.	1 Lot	Inspection, Certification and Testing as per project specifications and datasheets
6.	1 Lot	Export Packing, Preservation for Long Term Storage and Preparation for Shipment
7.	1 Lot	Transporting from manufacturing location to the point of delivery as stipulated in purchase contract document

5.2. Out of Scope

The following are excluded from VENDOR's scope of work:

- Installation.

6. CONFLICTING REQUIREMENT

VENDOR shall notify PURCHASER of any conflicts between this TRD, specifications, the related data sheets, the Codes and Standards and any other specifications noted herein. Resolutions and/or interpretation precedence shall be obtained from PURCHASER in writing before proceeding with the design/manufacture.

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7. DEVIATION LIST

Vendor's quotation shall be in full conformity with Purchaser's requirements. Unless exceptions, deviations or alternatives are clearly defined and listed on the attached Purchaser's form "Deviation List" and submitted with Vendor's quotation, the requirements and conditions of this Requisition shall be deemed to be accepted by the Vendor.

8. GENERAL REQUIREMENT

8.1. General

The material supply shall be strictly in accordance with data sheets, drawings, specifications, codes, and standards specified.

All VENDOR offered pumps shall be of proven hydraulic design and mechanical construction with at least two (2) units having completed a minimum of two (2) years of satisfactory operating experience in similar operating and site conditions at Vietnam.

Compliance by VENDOR with the provision of this requisition does not relieve him of his responsibility to furnish material and accessories of a proper design to meet the specified duty and / or local codes governing health and safety.

All applicable documents mentioned below are attached to the request for inquiry. However, if the VENDOR is not in possession of any of the listed or referenced PURCHASER documents, it shall be VENDOR's sole responsibility to obtain them from the PURCHASER. Otherwise, it shall be assumed that the VENDOR has received, read and understood the total contents of the documents.

All materials and parts shall be new, unused and free from defects and imperfections that would adversely affect the life or performance of the facility.

VENDOR data shall include detailed design drawings (if any) and updated data sheets of each material and appurtenances.

No production would commence until PURCHASER has approved related Vendor Data.

PURCHASER's approval on Vendor Data does not relieve VENDOR of compliance with applicable codes, specifications, safety design, or meeting the requirements of governmental agencies.

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Any work and documentation related to facilitating design appraisal approvals and inspection from Purchaser appointed Certification Authority (CA) and QA/QC Inspector (TPI) shall also be included in Vendor 's scope of supply.

8.2. Design Life, Availability and Reliability

The design life of the facility and all associated material and components is minimum 20 years.

8.3. Preparation for Shipment

Material shall be prepared for export shipment and shall be provided with maximum protection during shipment and extended outdoor storage.

The VENDOR shall submit loading instructions and diagrams for PURCHASER or its authorized representative, approval for all pipes shipped by rail, truck or vessel. However, approval of these documents shall not relieve the VENDOR of its responsibility for damage during shipment.

8.4. Guarantee and Warranty

The VENDOR shall have final and total responsibility for the design and performance of all material supplied under this requisition.

The VENDOR shall replace and install without cost to the PURCHASER any materials and supplies which fail due to defects in material or workmanship if the defect is observed and/or such failure occurs within the guarantee/warranty period. Acceptance of this order will signify acceptance of all conditions of this guarantee.

The guarantee period starts from delivery of the Goods and ending after the first twenty-five (25) months of in-service use of the Goods (such a period not to exceed 36 (thirty-six) months from the date of delivery of the Goods to Buyer)

8.5. Spare Parts

8.5.1. Start-up and Commissioning Spares

The Vendor shall include, as part of his bid, a detailed, price list of start-up and commissioning spares which shall be supplied as part of the original purchase package.

8.5.2. Two Year Spares

The Vendor shall include, as part of his bid, a detailed, list of recommended spare parts for two years continuous operation. These spares shall be costed for separate purchases.

9. INSPECTION AND TEST

Inspection and tests shall be made by the VENDOR in accordance with:

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☒ Test & Inspection should be carried out according to the applicable project documents and applicable codes and standards

☒ Manufacturer's standard plan & procedure as approved by PURCHASER

☒ Local regulation, if any

The COMPANY and/or PURCHASER inspector shall hold a right to be present at any manufacturing stage of materials.

The VENDOR shall state the inspection method, acceptance criteria and the inspection items with "Witness" or "Not witness" in his inspection and test procedure.

10. COORDINATION MEETING

After the purchase order is placed, VENDOR shall, upon receipt of PURCHASER's notice, send a sufficient number of qualified personnel at VENDOR's cost to hold the meetings according to the following schedule:

☒ Kick-off meeting	Two (2) week(s) after the order	☐ Vendor office	☒ Purchaser's office
☒ Coordination meeting	Note 1 month(s) after the order	☐ Vendor office	☒ Purchaser's office
☐ Design review meeting	month(s) after the order	☐ Vendor office	☐ Purchaser's office
☒ Pre-inspection meeting	01 month(s) before Fab. start	☒ Vendor office	☐ Purchaser's office

** Note 1: The time period for the same to be agreed at kick-off meeting*

11. APPLICABLE DOCUMENT

Documents listed below shall make an integral part of this material requisition:

Document No.	Rev.	Document Title	Remark
H3PO4-PTSC-IN-SPC-0001	A	Đặc tính kỹ thuật thiết bị điều khiển và báo cháy	
H3PO4-PTSC-IN-DRD-0001	A	Bản vẽ bố trí thiết bị báo cháy và tuyến cáp	
H3PO4-PTSC-IN-MTO-0001	A	Bảng thống kê vật tư đo lường, điều khiển và báo cháy	

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Document No.	Rev.	Document Title	Remark
H3PO4-PTSC-IN-DRD-0003	A	Bản vẽ lắp đặt thiết bị điều khiển và báo cháy (Installation Details)	
H3PO4-PTSC-IN-DRD-0004	A	Bản vẽ lắp đặt khí điều khiển (Hook-up)	

12. VENDOR DATA REQUIREMENT

The VENDOR shall submit the completed documents and drawings, in accordance with the “Vendor Data Requirement List” Appendix No. 1.

13. DOCUMENT REQUIREMENTS

- All documents and technical data shall be in the English language. The submission shall be made under cover of a transmittal, marked for the attention of Supplier/ Vendor Data control and referencing the Company Purchase Order.
- Documents shall be full size A1, A2, A3 and A4. A0 size is not acceptable. Legible drawings at A3 size are preferred for review. Full size drawings (A1 or A2) should be submitted as final copies.
- Drawing prints larger than A4 shall be folded to A4 size, with the title block visible at the bottom right hand corner. Originals and transparencies shall be supplied rolled up and adequately protected. Documents larger than A3 to be included in manuals shall be inserted in pre-punched plastic sleeves.
- Photocopy quality ensures that legibility and clarity of documents is maintained.
- Manuals shall be supplied in loose-leaf hard cover binders.

14. ATTACHMENTS

Appendix No. 1: Vendor Data Requirement List

Appendix No. 2: Purchaser format

Appendix No. 3: Typical Inspection and Test Plan

Appendix No. 4: Material Take Off (MTO)

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APPENDIX No. 1
VENDOR DATA REQUIREMENT LIST
(07 pages, including this page)

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VENDOR DATA REQUIREMENT LIST

Legend:

1* : E

E : Electronic file

C : Copy

PO + XXD: XX days after PO date

IFI: Issued for Information

*2 : 1OR + 6C + E + 2CD

OR : Original

CD : CD-ROM/ USB Thumb Drive

DE – YYD: YY days before delivery date

IFA: Issued for Approval

IFC: Issued for Construction

Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
	1	COMMERCIAL/CONTRACTUAL						
1	C01	VENDOR Data Index & Schedule	Y	PO+14D	IFA	1*	IFC	*2
2	C02	Engineering, Procurement, Manufacturing and Test Schedule		PO+14D	IFI	1*	IFI	*2
3	C03	Sub Contract Work Proposal						
4	C04	Delivery, Handling and Packing Proposals		PO+14D	IFI	1*	IFI	*2
5	C05	Exception and Non-Conformity Form						
6	C06	VENDOR's Sub-Orders (Un-Priced copy)						
7	C07	Warranty/Guarantee Confirmation					IFA	*2
8	C08	VENDOR/SUB-VENDOR List						
9	C09	Project Management Organisation						
10	C10	Progress Reports (Weekly and Monthly)		Weekly	IFI	1*	IFI	*2
11	C11	Proven Design and Manufacturing Experience List	Y	PO+14D	IFI	1*	IFI	*2
12	C12	Schedule of Pricing						
	2	PROCESS/MECHANICAL/PIPING/STRUCTURAL						
13	M01	Foundation Load and Anchor Bolt Location						
14	M02	Drive Assembly Details						
15	M03	Equipment Design Calculations including Transportation						
16	M04	Structural Design Calculations						
17	M05	Pipe Stress Calculations						
18	M06	Process Flow Diagrams including Heat and Mass Balance						
19	M07	Piping and Instrument Diagrams						
20	M08	Process / Torque Sizing Calculations						
21	M09	Exchanger Thermal Rating Calculations						
22	M10	Hydraulic Calculations						
23	M11	Thermal Growth Calculations						
24	M12	Utility Calculations						
25	M13	Flare/Relief System Calculations						
26	M14	Flare Dispersion Calculations						

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Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
27	M15	Reliability/Availability Data and Calculations						
28	M16	Lube and Seal Oil System Sizing Calculations						
29	M17	Anti Surge Valve Sizing Calculations						
30	M18	Line List						
31	M19	Equipment Data Sheet including specialty items						
32	M20	Prime Mover Data Sheets (Motor/ Diesel engine/ Gas Engine/ Turbine)						
33	M21	Weight Datasheet						
34	M22	Noise Level Data Sheets						
35	M23	General Arrangement Drawings						
36	M24	Detail / Assembly / Fabrication Drawings	Y	PO+56D	IFA	1*	IFC	*2
37	M25	Cross Section Drawing / Exploded View Drawings						
38	M26	Internals Drawings / Miscellaneous Drawings						
39	M27	Mechanical Seal Drawings						
40	M28	Shaft Alignment Drawings						
41	M29	Bill of Material						
42	M30	Centre of Gravity Sketch						
43	M31	Installation & Dismantling Drawings / Procedures (As Applicable)						
44	M32	Lifting / Transportation Drawings	Y	PO+56D	IFI	1*	IFI	*2
45	M33	Name Plate Drawings						
46	M34	HVAC Schematic and Flow Diagrams						
47	M35	Skid/Module GA and Detail Drawings						
48	M36	Lifting Lug Details/ Calculations						
49	M37	Allowable Nozzle Load Calculations						
50	M38	Weight and Centre of Gravity Calculations						
51	M39	Lifting Equipment Calculations						
52	M40	Lateral Critical Speed Calculations						
53	M41	Torsional Critical Speed Calculations						
54	M42	Bearing Life Calculations						
55	M43	Thrust Bearing sizing Calculations						
56	M44	Pulsation Dampener Design Calculations						
57	M45	Rotor/Shaft system Unbalanced Response Analysis						
58	M46	Coupling Selection Calculations						
59	M47	Dynamic Characteristics: Lateral & Torsional Analysis						
60	M48	Foundation Load Calculations						
61	M49	HVAC Calculations						
62	M50	Vibration Calculations						
63	M51	Miscellaneous Calculations						
64	M52	Skid Piping GA Drawings						
65	M53	Pipe Work Support Details						
66	M54	Valve List						
67	M55	Piping Isometrics						



ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK



TÀI LIỆU:

**TRD CHO VẬT TƯ ĐIỀU KHIỂN
(JUNCTION BOX, CABLE, TRAY/LADDER, BULK
MATERIAL,...)**

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Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
68	M56	Non-Actuated Valve Torque Calculations						
69	M57	Tie-in Schedule						
70	M58	Pulsation Analysis						
71	M59	Relief Valves Calculations and Sizing						
72	M60	Lifting Lug / Trunnion Calculations						
73	M61	Structural Skid / Support Calculations						
74	M62	Tank Tress Calculation						
	3	INSTRUMENT/ELECTRICAL						
75	J01	Package Electrical Termination Drawings						
76	J02	Panel Layout and Details						
77	J03	JB/Panel Wiring Diagrams						
78	J04	Instrument / Fire and Gas Location Plans / Cable Layouts						
79	J05	Instrument / Fire and Gas Installation Details / Hook-ups						
80	J06	Loop Diagrams						
81	J07	Cause & Effect Charts						
82	J08	Alarm / Trip Set Point List						
83	J09	Electrical Wiring Diagrams						
84	J10	Electrical Schematic Diagrams						
85	J11	Electrical Single Line Diagrams						
86	J12	Sequence and Logic Diagrams, Cause and Effect Diagrams						
87	J13	Instrument/Electrical [ISA] Data Sheets						
88	J14	Instrument schematics and control diagram						
89	J15	Functional Design Specifications						
90	J16	Cable block diagram, SR Data link Address & Screen Graphics						
91	J17	Instrument Calculations including Safety Valves, Control Valves, Instrument Calculations including Safety Valves, Control Valves,						
92	J18	Instrument Index						
93	J19	I/O Schedules						
94	J20	VDU Screen Display Graphics						
95	J21	Control and Shutdown Philosophy						
96	J22	Cable schedule						
97	J23	Junction Box - Specification and Drawings						
98	J24	Electronic Cable detail						
99	J25	Panel Test Procedure						
100	J26	Type Test Procedure						
101	J27	Tie-in Schedule						
102	J28	Shutdown and Control Function Charts, Safe Charts, logic diagrams						
103	J29	Instrument/Fire & Gas/ Electrical Data Sheets						
104	J30	Control system architecture						
105	J31	Serial Link Mapping List						

TÀI LIỆU:
**TRD CHO VẬT TƯ ĐIỀU KHIỂN
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Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
106	J32	Earthing Diagram						
107	J33	Load Calculation						
108	J34	Junction box schedule						
109	J35	Reliability & Availability Data						
	4	GENERAL						
110	G01	Descriptive Literature and Catalogue Information	Y	PO+14D	IFI	1*	IFI	*2
111	G02	Sub Vendor Data Sheets / Manuals						
112	G03	Recommended Spare Parts For 2 Year Operation, Priced						
113	G04	Recommended Spare parts for Start-up & Commissioning, Priced						
114	G05	List of Special Tools, where applicable						
115	G06	Utility Requirements – Power / Air / Water / Other						
116	G07	Consumables list including lubrication						
117	G08	Loading, Transport and Unloading Details		PO+56D	IFA	1*	IFC	*2
118	G09	Preservation and Storage Procedure		PO+56D	IFA	1*	IFC	*2
119	G10	Hazardous Area Dossier						
120	G11	Hardware Standard Software Documentation						
121	G12	Material Safety Data Sheet						
122	G13	Packing List		DE-14D	IFI	1*	IFI	*2
123	G14	Not used						
124	G15	Preparation for Shipment Procedure		DE-14D	IFI	1*	IFI	*2
	5	PERFORMANCE						
125	P01	Performance and Test Procedure		PO+56D	IFA	1*	IFC	*2
126	P02	Performance Curves and Data (Pump, Compressor, Gas Turbine, Motor, Engine, Fan, Vessel Internals, etc.)						
127	P03	Speed/Torque Curves, Gas Turbine/Gear/Generator vs. Starting Motor						
128	P04	Trial Assembly Report						
129	P05	Performance Test Reports		PO+56D	IFA	1*	IFC	*2
130	P06	Noise Reports						
131	P07	FAT Reports						
132	P08	Commissioning and Site Acceptance Test Results						
133	P09	Vibration Reports						
134	P10	Acoustic Analysis						
135	P11	Crane Failure Mode Analysis						
136	P12	Heat Emission Calculations						
137	P13	Battery Charge/Discharge Curves						
138	P14	Electrical Relay Characteristics						
139	P15	Pulsation Study						
	6	QA/CERTIFICATION/REPORT						
140	Q01	QA Accreditation Certification		PO+56D	IFA	1*	IFC	*2

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
		LXB: A

Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
141	Q02	Contract Quality Plan/ Project Quality Plan		PO+56D	IFA	1*	IFC	*2
142	Q03	Welding Procedures & Qualification Test Reports						
143	Q04	Inspection and Test Plan		PO+56D	IFA	1*	IFC	*2
144	Q05	Inspection and Test Reports (Cable continuity & Resistance Test Report, ...)						
145	Q06	Calibration Procedures & Results						
146	Q07	Hydro Test/Pneumatic Test Procedures						
147	Q08	Hydro Test/Pneumatic Test Reports						
148	Q09	Material Mil Test Certification						
149	Q10	Electrical Type Test Certificates						
150	Q11	Approval cert. of Relevant Authorities (for Flame Retardant cable and Fire-Resistant cable)						
151	Q12	Statement of Code Compliance	Y	PO+56D	IFA	1*	IFC	*2
152	Q13	Hazardous Area Certification, IP Certification						
153	Q14	Heat Treatment Records, where applicable						
154	Q15	Charpy Impact Tests, where applicable						
155	Q16	Vendor Concession (Deviation) Request						
156	Q17	Surface Preparation and Paint Procedure and Report						
157	Q18	NDE Procedure & NDE Location Plan						
158	Q19	Manufacturing Procedures including Heat Treatment						
159	Q20	Pre-Commissioning/ Commissioning/Site Acceptance Test Procedure and Report						
160	Q21	Factory Acceptance Test Procedure and Report						
161	Q22	Weighing Procedure						
162	Q23	Post Weld Heat Treatment Procedures						
163	Q24	Non-Conformance Report (NCR) Procedure						
164	Q25	Erection & Installation Procedure						
165	Q26	Weld Location Plans						
166	Q27	Repair Procedures						
167	Q28	Weight Certificate (equipment > 50 kg)						
168	Q29	Lifting Equipment Certification						
169	Q30	Dimensional Control Report						
170	Q31	Welder Performance Qualification Records/Certificates						
171	Q32	NDE Operator Qualifications & Certificates						
172	Q33	Production Test Results (Including welding)						
173	Q34	NDE/NDT Reports						
174	Q35	Material Traceability Records (Location Drawing)						



ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK



TÀI LIỆU:

**TRD CHO VẬT TƯ ĐIỀU KHIỂN
(JUNCTION BOX, CABLE, TRAY/LADDER, BULK
MATERIAL,...)**

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Item no.	VP Code	Description	With Bid (Y/N)	First Issue			Final Issue	
				Issue Date	Purp.	Quantity / Type	Purp.	Quantity / Type
175	Q36	Certificate of Compliance						
176	Q37	Painting/Insulation Inspection Reports						
177	Q38	Inspection Release Certificate						
178	Q39	Photographs/Videos						
179	Q40	Weld Overlay/Cladding Procedures, where applicable						
180	Q41	Cleaning and Flushing Procedures						
181	Q42	PMI Procedures and PMI Location Plan						
182	Q43	Pickling and Passivation Procedures						
183	Q44	Tube to Tube sheet Joint Mock-Up Test Procedure						
184	Q45	Tube to Tube sheet Mock-Up Test Results						
185	Q46	Pitting and Crevice Corrosion Resistance Test Procedure (ASTM G48)						
186	Q47	Intergranular Corrosion Test Procedure (ASTM 262)						
187	Q48	Coupon Test Procedure						
188	Q49	Continuity Test Procedure and Results required for all internal Coatings						
189	Q50	Weld Repair Report (if applicable)						
190	Q51	P.M.I Test Certificate for WO Cladding						
191	Q52	Hardness Test Procedure						
192	Q53	Hardness Test Certificate						
193	Q54	Impact Test Record						
194	Q55	NPSH / Acceleration head Test Procedure						
195	Q56	NPSH / Acceleration head Test Report						
196	Q57	Shipping, Unpacking & Storage Procedure						
197	Q58	Certificate of Origin						
198	Q59	Certificate of Quantity & Quality						
	7	MANUAL AND INDICES						
199	R01	Installation, Operation and Maintenance Manual (IOM)		PO+86D	IFA	1*	IFC	*2
200	R02	Manufacturer's Data Record (MDR)		PO+86D	IFA	1*	IFC	*2
201	R03	Training Manuals (Operation and Maintenance)						
202	R04	Not used						
203	R05	Manufacturer's Data Book (MDB) Index		PO+86D	IFA	1*	IFC	*2
	8	MISCELLANEOUS						
204	TBA	TBA						

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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APPENDIX No. 2
PURCHASER FORMAT
(09 pages, including this page)

Deviation from Purchaser's Specification	Project	ĐẦU TƯ BÓN ACID H3PO4 TẠI XƯỜNG NPK	Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

Spec. No.	Paragraph No.	Deviation	Reason for Deviation	Conclusion	Remarks	Cost Effect When Deviation is Applied

SPECIAL TOOL LIST	Project	ĐẦU TƯ BÓN ACID H3PO4 TẠI XƯỜNG NPK	Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

No.	Tool name	Q'ty	Sketch	Unit price	Total price

ELECTRIC LOAD LIST	Project	ĐẦU TƯ BỒN ACID H3PO4 TẠI XUỞNG NPK	Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

[illegible]

UTILITY CONSUMPTION LIST	Project	ĐẦU TƯ BỒN ACID H3PO4 TẠI XƯỞNG NPK	Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

[illegible]

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XƯỞNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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APPENDIX No. 3
TYPICAL INSEPECTION AND TEST PLAN
(03 pages, including this page)

	ĐẦU TƯ BÓN ACID H₃PO₄ TẠI XƯỞNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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TYPICAL INSPECTION AND TEST PLAN

No.	Inspection Item	Inspection Involvement		
		PURCHASER	COMPANY	3 rd Party Inspection
1	Visual Check	R	R	R
2	Dimensional Check	R	R	R
3	Material certificates	R	R	R
4	Material identification	R	R	R
5	Chemical analysis			
6	NDT/ NDE (100%)			
7	Pressure test			
8	Hydro test / Seat Leakage Test			
9	Fire Test to API-RP-6FA and API-RP-607			
10	Function test			
11	Actuator cycling & fail condition tests			
12	Factory Acceptance Tests (FAT)	R	R	R
13	Sustained Performance Test			
14	Surface Preparation and Paint			
15	Final Inspection & Inspection Release Certificates	R	R	R
16	Final Documentation as per VDRL and Specifications	R	R	R
17	Shipping Inspection & Shipping Release Notice	R	R	R

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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Note:

1. R: Review Documents; RI: Random Inspection; W: Witness; M: Monitoring; H: Hold Point; D: Document provided; V: Verify
2. The inspection points specified in this Inspection and Testing Requirements (ITR) shall be the minimum required. The PURCHASER has the right to request additional inspection points where it is deemed required.

	ĐẦU TƯ BÓN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD CHO VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)	H3PO4-PTSC-IN-TRD-0006
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APPENDIX No. 4
MATERIAL TAKE OF (MTO)
(3 pages, including this page)

		BẢNG THỐNG KÊ VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)					 A member of PETROVIETNAM		
							H3PO4-PTSC-IN-TRD-0006		
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STT	TÊN THIẾT BỊ	MÔ TẢ	VẬT LIỆU	NHÀ CUNG CẤP	ĐƠN VỊ	SỐ LƯỢNG	DỰ PHÒNG	TỔNG CỘNG	GHI CHÚ
I. CÁP ĐIỀU KHIỂN VÀ BẢO CHÁY									
1	Cable	1 Pr x 1.5mm2, 300/500V, Cu/XLPE/ISOS/LSZH/SWA/PVC-Flame retardant, Black Colour	VTA	VTA	M	240	12	252	
2	Cable	10 Pr x 1.5mm2, 300/500V, Cu/XLPE/ISOS/LSZH/SWA/PVC-Flame retardant, Black Colour	VTA	VTA	M	400	20	420	
3	Cable	2 C x 2.5mm2, 300/500V, Cu/XLPE/LSZH/SWA/PVC-Flame retardant, Black Colour	VTA	VTA	M	400	20	420	
4	Cable	24 C x 1.5mm2, 300/500V, Cu/XLPE/LSZH/SWA/PVC-Flame retardant, Black Colour	VTA	VTA	M	760	38	798	
5	Cable	2 C x 1.5mm2, 300/500V, Cu/MICA/XLPE/LSZH/SWB/PVC-Fire Resistance, Red Colour	VTA	VTA	M	700	35	735	
6	Cable	2 C x 2.5mm2, 300/500V, Cu/MICA/XLPE/LSZH/SWB/PVC-Fire Resistance, Black Colour	VTA	VTA	M	192	10	202	
7	Cable	1C x 4mm2, 150/250V, Cu/PVC, Green / Yellow Colour	VTA	VTA	M	100	5	105	
II. JUNCTION BOX									
1	Junction Box	Analog, Digital Signal Junction Box: 32 Terminals + 1 for OS Material SS316, Ex "d", IIA, T3, IP-66 Code EN50014, EN50019, EN50020, NEC	VTA	VTA	Bộ	1		1	
III. CABLE GLAND									
1	Cable Gland	1/2" NPTF, and accessories. Using SWA cable	VTA	VTA	Set	16	1	17	
2	Cable Gland	1/2" NPTF, and accessories. Using SWB cable	VTA	VTA	Set	10	1	11	
3	Cable Gland	1" NPTF, and accessories. Using SWA cable	VTA	VTA	Set	3	1	4	
IV. Instrument Tubing, Fitting									
1	Male Connector	Male Connector 1/2" NPTM x 3/8" O.D - Compression Type	SS316	VTA	EA	1	1	2	
2	Male Connector	Male Connector 1/4" NPTM x 3/8" O.D - Compression Type	SS316	VTA	EA	1	1	2	
3	Union Connector	Tube Union Connector 3/8" O.D - Wall Thickness 0.049"	SS316	VTA	EA	1	0	1	
4	Tube	Tube 3/8" O.D - Wall Thickness 0.049"	SS316	VTA	m	3	1	4	
5	Accessories	Tubing Clamp and other accessories	VTA	VTA	Lot	1	0	1	
V. MÀNG VÀ HÀO CÁP									
1	Cable Tray	Cable Tray W150 x H100mm, with cover	FRP	FRP	Mét	200	10	210	
2	Cable Tray	Cable Tray W100 x H100mm, with cover	FRP	FRP	Mét	136	7	143	
3	Cable Tray	Cable Tray W50 x H50mm, with cover	FRP	FRP	Mét	20	1	21	
4	Riser	Outside Riser W50 x H50mm, with cover	FRP	FRP	Mét	1	0	1	
5	Riser	Inside Riser W50 x H50mm, with cover	FRP	FRP	Mét	1	0	1	
6	Tee	Tee W150 x H100mm	FRP	VTA	Cái	1	0	1	
7	Elbow	Elbow 90° W150 x H100mm, with cover	FRP	VTA	Cái	1	0	1	
8	Elbow	Elbow 90° W100 x H100mm, with cover	FRP	VTA	Cái	2	0	2	
9	Riser	Inside Riser W150 x H100mm, with cover	FRP	VTA	Cái	4	0	4	
10	Riser	Outside Riser W150 x H100mm, with cover	FRP	VTA	Cái	4	0	4	
11	Reducer	One side Reducer W1 150 x W2 100 x H100mm	FRP	VTA	Cái	1	0	1	
12	Hào cáp	Hào cáp 300(W1) x 500 (W2) x 600 (H)	VTA	VTA	Mét	82	4	86	
13	Accessories	Cable Tray and Conduit Fitting, Cable marker, and Accessories	VTA	VTA	Gói	1	0	1	
VI. Mounting Support and other accessories									
1	Steel plate	THÉP TẤM 200(W)x200(L), DÀY 6mm	HDG	VTA	Tấm	3	0	3	
2	Steel plate	THÉP TẤM 70(L)x50(W), DÀY 6mm	HDG	VTA	Tấm	3	0	3	
3	Steel plate	THÉP TẤM 250x250x10mm	HDG	VTA	Tấm	3	0	3	
4	Steel plate	THÉP TẤM 210x75x6mm	HDG	VTA	Tấm	10	1	11	
5	Steel plate	THÉP TẤM 100(L)x50(W), DÀY 6mm	HDG	VTA	Tấm	5	0	5	
6	Tube 2" OD,	ỐNG THÉP 2" SCH40, CAO 1500mm	HDG	VTA	Cái	1	0	1	
7	Tube 2" OD,	ỐNG THÉP 2" SCH40, CAO 2500mm	HDG	VTA	Cái	2	0	2	
8	Bolts & Nuts	BU LÔNG NEO, ĐAI ỐC VÀ MIẾNG ĐỆM M14x130(L)	HDG	VTA	Bộ	12	1	13	
9	Bolts & Nuts	BU LÔNG, ĐAI ỐC VÀ MIẾNG ĐỆM M12x50(L)	HDG	VTA	Bộ	4	0	4	

		BẢNG THỐNG KÊ VẬT TƯ ĐIỀU KHIỂN (JUNCTION BOX, CABLE, TRAY/LADDER, BULK MATERIAL,...)					 A member of PETROVIETNAM		
							H3PO4-PTSC-IN-TRD-0006		
							LXB: A		
STT	TÊN THIẾT BỊ	MÔ TẢ	VẬT LIỆU	NHÀ CUNG CẤP	ĐƠN VỊ	SỐ LƯỢNG	DỰ PHỎNG	TỔNG CỘNG	GHI CHÚ
10	U-bolt	U-BU LÔNG, ĐAI ỐC VÀ MIẾNG ĐỆM DỪNG CHO ỐNG 2"	HDG	VTA	Bộ	2	0	2	
11	U-bolt	U-BU LÔNG, ĐAI ỐC VÀ MIẾNG ĐỆM DỪNG CHO ỐNG 34mm	HDG	VTA	Bộ	5	0	5	
12	Cable Conduit	ỐNG THÉP MẠ KẼM 34mm	HDG	VTA	Mét	120	6	126	
13	Trụ đỡ thiết bị	TRỤ BÊ TÔNG CỐT THÉP 350x350x500mm	HDG	VTA	Trụ	3	0	3	
14	Thép C	THÉP C 100 x 50 x 5mm	HDG	VTA	Mét	19.5	1	21	
15	Thép Góc	THÉP GÓC V50 x 50 x 6mm	HDG	VTA	Mét	11.8	1	13	
16	Vật tư phụ	vật tư đấu nối, lắp đặt thiết bị, cáp, v.v.	HDG	VTA	Gói	1	0	1	
VII. Bulk Material for EL									
1	Cable Tray	FRP Cable Tray, with cover, Size: width 200mm x height 100mm	HDG	VTA	m	252	13	265	EL3
2	Cable Tray	FRP Cable Tray, with cover, Size: width 300mm x height 100mm	HDG	VTA	m	60	3	63	EL3
3	Cable Tray	FRP Cable Tray, with cover, Size: width 100mm x height 100mm	HDG	VTA	m	72	4	76	EL3
4	Conduit	PVC Conduit, D25	PVC	VTA	m	290	15	305	EL3
5	Conduit	Hot-dip Galvanized steel Conduit, D25	HDG	VTA	m	60	3	63	EL3
6	Conduit	HDPE Conduit, D25	HDG	VTA	m	340	17	357	EL3
7	Cable Warning Tape	Cable Warning Tape, Type: 30cm width	HDG	VTA	m	220	11	231	EL3
8	Steel Support	C-channel steel 100x50mm	HDG	VTA	m	30	2	32	EL3
9	Steel Support	V-angle steel 50x50mmx6mm	HDG	VTA	m	50	3	53	EL3
10	Cable Gland	Cable gland Nickel Brass c/w locknut, earth tag, serrated washer & nylon washer Size: M20	VTA	VTA	Set	40	2	42	EL3
11	Cable Gland	Cable gland Nickel Brass c/w locknut, earth tag, serrated washer & nylon washer Size: M25	VTA	VTA	Set	6	0	6	EL3
12	Cable Gland	Cable gland Nickel Brass c/w locknut, earth tag, serrated washer & nylon washer Size: M40	VTA	VTA	Set	4	0	4	EL3
13	Cable Gland	Cable gland Nickel Brass c/w locknut, earth tag, serrated washer & nylon washer Size: M50	VTA	VTA	Set	4	0	4	EL3
14	Cable Gland	Cable gland Nickel Brass c/w locknut, earth tag, serrated washer & nylon washer Size: M63	VTA	VTA	Set	4	0	4	EL3