

Ref Số.: 005 -IM-EM-PP
Ngày: 06/02/2026

INTERMEMO

Tới: Nhóm Thương mại

Fax Số.:

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

CC.:

CC.:

Tiêu đề: PI-0005_TRD For Piping Special Items

Đính kèm là Tài liệu Yêu cầu Kỹ thuật về Gói TRD for Piping Special Items. Vui lòng xem xét và xử lý bước tiếp theo. Nếu có bất kỳ thắc mắc nào, vui lòng liên hệ với chúng tôi Mr. Nguyễn Vũ Tuấn (Email: tuannguynenvu@ptsc.com.vn; Điện thoại: 0989949913) Để làm rõ.

Lưu ý: Vui lòng xem tệp đính kèm sau:

1. H₃PO₄-PTSC-PI-TRD-0005_TRD FOR PIPING SPECIAL ITEMS

Cảm ơn sự phối hợp của bạn.

Phân loại gói:

Ưu tiên hàng đầu ☐

Khẩn ☐

Bình thường ☐

Chuẩn bị bởi:



Nguyễn Vũ Tuấn
Kỹ sư Đường Ống

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 BÓN ACID H ₃ PO ₄ TẠI XƯỞNG 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) BÓN ACID H ₃ PO ₄ TẠI XƯỞNG NPK				
TRD FOR PIPING SPECIAL ITEMS						ĐẠI DIỆN CHỦ ĐẦU TƯ
						PTSC
A	04/02/2026	Ban hành cho xem xét	TVVũ	NVTuấn	TĐHùng	NKDũng
LXB	Ngày XB	Mô tả	Thực hiện	Chủ trì Thiết kế	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-PI-TRD-0005	
					Số trang: 10 (Bao gồm cả trang này)	

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỖNG NPK	
TÀI LIỆU:	TRD FOR PIPING SPECIAL ITEMS	H₃PO₄-PTSC-PI-TRD-0005 LXB: A

LỊCH SỬ PHIÊN BẢN

[illegible]

	ĐẦU TƯ BỒN ACID H₃PO₄ TẠI XUỐNG NPK	
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1. PURPOSE OF DOCUMENT

This document is to specify minimum requirements for Piping Special Items 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

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ISO International Organization for Standardization

MTO Material Take Off

PO Purchase Order

TPI Third Party Inspector

TRD Technical Requisition Document

QA/QC Quality Assurance / Quality Control

3. ITEMS AND QUANTITIES

Please refer to Document No. *H3PO4-PTSC-PI-MTO-0005*: Detail MTO of Piping Special Items.

4. SCOPE OF WORK / SUPPLY

4.1. Scope of Work

VENDOR's scope of supply shall include, but not limited to the following:

- Piping special items material **supply** as per MTO for Piping special items (Document No. *H3PO4-PTSC-PI-MTO-0005*)
- Manufacturing, inspection and testing as per project specifications and datasheets.
- Transporting from manufacturing location to the point of delivery as stipulated in purchase contract document.
- Document supply (including document, drawing & other data, where required) as per Vendor Data Requirement List listed in Appendix No. 1
- In general, the materials and data supplied by VENDOR shall comply with all the requirements set forth in the Applicable Documents in section 13.0, unless specified otherwise.

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4.2. Out of Scope

Not applicable.

5. CONFLICTING REQUIREMENTS

VENDOR shall notify CONTRACTOR 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 CONTRACTOR in writing before proceeding with the design/manufacture.

6. DEVIATION LIST

VENDOR's quotation shall be in full conformity with CONTRACTOR's requirements. Unless exceptions, deviations or alternatives are clearly defined and listed on the attached CONTRACTOR'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.

7. GENERAL REQUIREMENTS

7.1. General

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

Compliance by the 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 with 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.

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No production would commence until PURCHASER has approved the MPS & ITP.

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

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.

7.2. Design Life, Availability and Reliability

The design life of the facility and all associated equipment, components and systems is minimum 20 years.

All components which for practical, safety or cost-efficiency reasons are unable to meet the required design life shall be identified as soon as possible. Their expected service life shall be informed to CONTRACTOR and provision made in the system design for maintenance to extend component life or routine change-out.

7.3. Preparation for Shipment

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

End caps (and bevel protectors, where applicable) shall be provided unless otherwise approved by PURCHASER. The pipe shall be handled by hook and belt, this belt shall be contacted direct to pipe to prevent breaking. The VENDOR shall provide additional 5% end caps as required by pipe coating manufacturer.

Pipes shall be provided with reusable type metal bevel protectors and end caps.

All pipes shall be handled, loaded and shipped in accordance with Project requirements as defined in the Purchase Order.

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.

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7.4. Guarantee and Warranty

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

The VENDOR shall replace and install without cost to the CONTRACTOR any materials, supplies which fail under design conditions 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 with delivery of the Goods and ends after the first twenty-four (24) months of in-service use of the Goods (such period not to exceed 36 (thirty-six) months from the date of delivery of the Goods to Buyer).

7.5. Spare part

7.5.1. 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.

7.5.2. 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 purchase.

8. SPECIAL REQUIREMENT

Not applicable.

9. INSPECTION AND TEST

Inspection and tests shall be conducted by VENDOR in accordance with:

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

☒ Maker's standard plan & procedure as approved by CONTRACTOR

☒ Local regulation, if any

The OWNER and/or CONTRACTOR inspector shall A a right to be present at any manufacturing stage of the equipment and/or materials.

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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 CONTRACTOR’s notice, send a sufficient number of qualified personnel at VENDOR’s cost to A 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 11a 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	1 month(s) before Fab. start	☐ VENDOR office	☒ PURCHASER’s office

** Note 11a : The time period for the same to be agreed at kick-off meeting*

11. DOCUMENT TO BE PROVIDED WITH BID

VENDOR to provide all documents as listed below:

- Company profiles
- Catalogue, Data and drawing, MTC 3.1 sample
- Schedule of price (Unpriced)
- Letter supporting from Manufacture

12. APPLICABLE DOCUMENT

Document No.	Rev.	Document Title	Remark
H3PO4-PTSC-PI-SPC-0001	0	DTKT VẬT TƯ ĐƯỜNG ỐNG	

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Document No.	Rev.	Document Title	Remark
H3PO4-PTSC-PI-SPC-0002	0	DTKT VAN TAY VÀ PHỤ KIỆN ĐẶC BIỆT ĐƯỜNG ỐNG	
H3PO4-PTSC-PI-MTO-0005	0	BẢNG THỐNG KÊ VẬT TƯ CHO PHỤ KIỆN ĐẶC BIỆT ĐƯỜNG ỐNG	
PIN-EQS-0000-EB-007_000_01	01	TECHNICAL SPECIFICATION FOR PAINTING	
TBA	A	Vendor Data Control Procedure	

13. **VENDOR DATA REQUIREMENT**

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

14. **APPENDICES**

Attachment No. 1: VENDOR Data Requirement List (05 pages)

Attachment No. 2: Purchaser Form (08 pages)

	ĐẦU TƯ BÓN ACID H₃PO₄ TẠI XƯỞNG NPK	
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ATTACHMENT No.1
VENDOR DATA REQUIREMENT LIST
(05 pages, including this page)

VENDOR DATA REQUIREMENT LIST

Legend:

1: 3C + E

*2: 3C + E

*3: 1OR + 5C + E + 2CD

E: Electronic file

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Item No.	VP Code	Data/Document Description	Provide wit Bid	For Review	For Approval/ Construction	For Final	Remark
	1	COMMERCIAL/ CONTRACTUAL					
1	C01	Vendor Data Index & Schedule	E	*1	*2	*3	
2	C02	Engineering, Procurement, Manufacturing and Test Schedule	E	*1	*2	*3	
3	C03	Sub- Contract Work Proposal					
4	C04	Delivery, Handling and Packing Proposals		*1	*2	*3	
5	C05	Exception and Non-Conformity Form					
6	C06	Vendor's Sub-Orders (Un-Priced copy)					
7	C07	Warranty/Guarantee Confirmation					
8	C08	Vendor/Sub-Vendor List					
9	C09	Project Management Organisation					
10	C10	Progress Reports (Weekly and Monthly)			(Weekly and Monthly)		
11	C11	Proven Design and Manufacturing Experience List	E				
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 (Bouyancy calculation)					
17	M05	Pipe Stress Calculations					
18	M06	Process Flow Diagrams including Heat and Mass Balance					
19	M07	Piping and Instrument Diagrams					
20	M08	Process 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					
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 speciality items		*1	*2	*3	
32	M20	Prime Mover Data Sheets (Motor/ Diesel engine/ Gas Engine/Turbine)					
33	M21	Weight Data Sheet					
34	M22	Noise Level Data Sheets					
35	M23	General Arrangement Drawings (included M24, M25)	E	*1	*2	*3	
36	M24	Detail / Assembly / Fabrication Drawings					
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					
45	M33	Name Plate Drawings		*1	*2	*3	
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					

VENDOR DATA REQUIREMENT LIST

Legend:

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*2: 3C + E

*3: 1OR + 5C + E + 2CD

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C: Copy

CD: CD-ROM

Item No.	VP Code	Data/Document Description	Provide wit Bid	For Review	For Approval/ Construction	For Final	Remark
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		*1	*2	*3	
64	M52	Skid Piping GA Drawings					
65	M53	Pipe Work Support Details					
66	M54	Valve List					
67	M55	Piping Isometrics					
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	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		Instrument Calculations including					
92	J17	Safety Valves, Control Valves, FE's, RO's, etc.					
93	J18	Instrument Index					
94	J19	I/O Schedules					
95	J20	VDU Screen Display Graphics					
96	J21	Control and Shutdown Philosophy					
97	J22	Cable Schedule					
98	J23	Junction Box - Specification and Drawings					
99	J24	Electronic Cable detail					
100	J25	Panel Test Procedure					
101	J26	Type Test Procedure					
102	J27	Tie-in Schedule					
	4	GENERAL					
103	G01	Descriptive Literature and Catalogue Information	E			*3	
104	G02	Sub Vendor Data Sheets / Manuals					

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Item No.	VP Code	Data/Document Description	Provide wit Bid	For Review	For Approval/ Construction	For Final	Remark
105	G03	Recommended Spare Parts For 2 Year Operation, Priced					
106	G04	Recommended Spare parts for Start-up & Commissioning, Priced	E	*1	*2	*3	
107	G05	List of Special Tools, where applicable					
108	G06	Utility Requirements – Power / Air / Water / Other					
109	G07	Consumables list including lubrication					
110	G08	Loading, Transport and Unloading Details					
111	G09	Preservation and Storage Procedure					
112	G10	Hazardous Area Dossier					
113	G11	Hardware Standard Software Documentation					
114	G12	Material Safety Data Sheet					
115	G13	Packing List				*3	
116	G14	Not used					
117	G15	Preparation for Shipment Procedure			*2	*3	
	5	PERFORMANCE					
118	P01	Performance and Test Procedure		*1	*2	*3	
119	P02	Performance Curves and Data (Pump, Compressor, Gas Turbine, Motor, Engine, Fan, Vessel Internals, etc)					
120	P03	Speed/Torque Curves, Gas Turbine/Gear/Generator vs. Starting Motor					
121	P04	Trial Assembly Report					
122	P05	Performance Test Reports					
123	P06	Noise Reports					
124	P07	FAT Reports					
125	P08	Commissioning and Site Acceptance Test Results					
126	P09	Vibration Reports					
127	P10	Acoustic Analysis					
128	P11	Crane Failure Mode Analysis					
129	P12	Heat Emission Calculations					
130	P13	Battery Charge/Discharge Curves					
131	P14	Electrical Relay Characteristics					
132	P15	Pulsation Study					
	6	QA/CERTIFICATION/ REPORT					
133	Q01	QA Accreditation Certification					
134	Q02	Contract Quality Plan					
135	Q03	Welding Procedures & Qualification Test Reports					
136	Q04	Inspection and Test Plan (included Q07, Q18)	E	*1	*2	*3	
137	Q05	Inspection and Test Reports (included P05, Q08, Q34)	E	*1	*2	*3	
138	Q06	Calibration Procedures & Results					
139	Q07	Hydro Test / Pneumatic Test Procedures					
140	Q08	Hydro Test/ Pneumatic Test Reports					
141	Q09	Material Mill Test Certification			*2	*3	
142	Q10	Electrical Type Test Certificates					
143	Q11	Approval of Relevant Authorities					
144	Q12	Statement of Code Compliance					
145	Q13	Hazardous Area Certification					
146	Q14	Heat Treatment Records, where applicable					
147	Q15	Charpy Impact Tests, where applicable					
148	Q16	Vendor Concession (Deviation) Request					
149	Q17	Surface Preparation for Painting and Internal Coating Procedure		*1	*2	*3	
150	Q18	NDE Procedure & NDE Location Plan					
151	Q19	Manufacturing Procedures including Heat Treatment					
152	Q20	Pre-Commissioning / Commissioning / Site Acceptance Test Procedure					
153	Q21	Factory Acceptance Test Procedure					
154	Q22	Weighing Procedure					
155	Q23	Post Weld Heat Treatment Procedures					

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156	Q24	Non-Conformance Report (NCR) Procedure					
157	Q25	Erection & Installation Procedure					
158	Q26	Weld Location Plans					
159	Q27	Repair Procedures					
160	Q28	Weight Certificate (equipment > 50 kg)					
161	Q29	Lifting Equipment Certification					
162	Q30	Dimensional Control Report					
163	Q31	Welder Performance Qualification Records/Certificates					
164	Q32	NDE Operator Qualifications & Certificates					
165	Q33	Production Test Results (Including welding)					
166	Q34	NDE Reports					
167	Q35	Material Traceability Records (Location Drawing)					
168	Q36	Certificate of Compliance			*2	*3	
169	Q37	Painting/Insulation Inspection Reports			After check	*3	
170	Q38	Inspection Release Certificate					
171	Q39	Photographs/Videos					
172	Q40	Weld Overlay/Cladding Procedures, where applicable					
173	Q41	Cleaning and Flushing Procedures					
174	Q42	PMI Procedures and PMI Location Plan					
175	Q43	Pickling and Passivation Procedures					
176	Q44	Tube to Tube sheet Joint Mock-Up Test Procedure					
177	Q45	Tube to Tube sheet Mock-Up Test Results					
178	Q46	Pitting and Crevice Corrosion					
179		Resistance Test Procedure (ASTM G48)					
180	Q47	Intergranular Corrosion Test Procedure (ASTM 262)					
181	Q48	Coupon Test Procedure					
182	Q49	Continuity Test Procedure and Results required for all internal Coatings					
183	Q50	Weld Repair Report(if applicable)					
184	Q51	P.M.I Test Certificate		*1	*2	*3	
185	Q52	Hardness Test Procedure					
186	Q53	Hardness Test Certificate					
187	Q54	Impact Test Record					
188	Q55	NPSH / Acceleration head Test Procedure					
189	Q56	NPSH / Acceleration head Test Report					
	7	MANUAL AND INDICES					
190	R01	Installation, Operation and Maintenance Manual (IOM)		*1	*2	*3	
191	R02	Manufacturer's Data Book (MDB)		*1	*2	*3	
192	R03	Training Manuals (Operation and Maintenance)					
193	R04	Not used					
194	R05	Manufacturer's Data Book (MDB) Index		*1	*2	*3	
	8	MISCELLANEOUS					
195	[TBA]	[TBA]					

	ĐẦU TƯ BÓN ACID H₃PO₄ TẠI XUỐNG NPK	
TÀI LIỆU:	TRD FOR PIPING SPECIAL ITEMS	H₃PO₄-PTSC-PI-TRD-0005
		LXB: A

ATTACHMENT No.2
PURCHASER’S FORMAT
(08 pages, including this page)

Deviation from Purchaser's Specification	Project		Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

Spec. No.	Paragraph No.	Deviation	PTSC Justification	Client Conclusion	Remarks	Cost Effect When Deviation is Applied

SPECIAL TOOL LIST	Project		Vendor	
	PTSC Project No.		Vendor Project No.	
	Item No.		Contract No.	
	Service			

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

