СП Вьетсовпетро
Коммерческий Отдел
No.: 11150/25-HSMT-PTM/BMĐH
От: 27/08/2025

Cộng Hòa Xã Hội Chủ Nghĩa Việt Nam
Độc lập – Tự do – Hạnh phúc
****

THỎA THUẬN
"СОГЛАСОВАНО"
Phó Tổng Giám Đốc phụ trách XDCB
Зам. Генерального Директора по капитальному строительству

Signed by: Đặng Đức Phong
Date: 10/09/2025 14:33:52
Certified by: Vietsovpetro CA

Đặng Đức Phong

PHÊ DUYỆT
"УТВЕРЖДАЮ"
Tổng giám đốc Vietsovpetro
Генеральный Директор

Signed by: Vũ Mai Khanh
Date: 11/09/2025 09:34:47
Certified by: Vietsovpetro CA

Vũ Mai Khanh

THỎA THUẬN
"СОГЛАСОВАНО"
Phó Tổng giám đốc phụ trách thương mại
Зам.Ген.директора СП по коммерческой работе

Signed by: Trần Quốc Thắng
Date: 10/09/2025 16:55:19
Certified by: Vietsovpetro CA

Trần Quốc Thắng

PHÊ DUYỆT
"УТВЕРЖДАЮ"
Phó Tổng giám đốc thứ nhất
Первого Зам.Ген.Директора

Signed by: Сараев Олег Петрович
Date: 10.09.2025 18:12:21
Certified by: Vietsovpetro CA

Сараев О. П.

HỒ SƠ MỜI THẦU
ДОКУМЕНТЫ ПРИГЛАШЕНИЯ НА ТЕНДЕР

Gói thầu / пакета: **Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn BK-26 / Инструментальное оборудование и детекторы для проекта БК-26.**

Số hiệu gói thầu: **VT-2988/25-XL-DA-HMH.**

Loại gói thầu / Вид тендерного пакета: Mua sắm hàng hóa / На приобретение товаров.

Đơn hàng số / Заявка No.: **VT-2988/25-XL-DA.**

Gói thầu này áp dụng theo: "Quy chế về thể thức mua sắm hàng hóa và thuê dịch vụ phục vụ sản xuất trong Liên doanh Việt - Nga Vietsovpetro" số VSP-000-TM-222, phiên bản 03.

Тендер проводится в соответствии с "Положением о порядке приобретения товаров и услуг для хозяйственно-производственной деятельности СП «Вьетсовпетро» № VSP-000-TM-222", версия 03.

I. DANH MỤC HỒ SƠ MỜI THẦU TRÌNH PHÊ DUYỆT - TENDER DOCUMENTS:

Description of content:

Chapter IV. Bidding forms

Part 2. TECHNICAL REQUIREMENTS

Chapter V. Technical requirements

Part 3. CONDITIONS OF CONTRACT

Chapter VI. General conditions of the contract

Chapter VII. Special conditions of the contract

Part 4. CONTRACT FORMS

Part 5. APPENDIX

II. DANH MỤC ĐÍNH KÈM - ПРИЛОЖЕНИЯ:

1. Đơn hàng số: **VT-2988/25-XL-DA.**
2. KHLCNT đã được Lãnh đạo Vietsovpetro phê duyệt.

Ký tắt:

Giám Đốc XN Xây lắp Директор ПСОРОНГД	Signed by: Phạm Thanh Bình Date: 03/09/2025 14:42:47 Certified by: Vietsovpetro CA	**Phạm Thanh Bình**
Trưởng phòng XDCB Начальник ОКС СП	Signed by: Nguyễn Hồng Giang Date: 03/09/2025 13:48:52 Certified by: Vietsovpetro CA	**Nguyễn Hồng Giang**
Trưởng phòng CKNL-TĐH Начальника МЭОиА СП	Signed by: Trịnh Hoàng Linh Date: 04/09/2025 07:31:11 Certified by: Vietsovpetro CA	**Trịnh Hoàng Linh**
Chánh kế toán VSP Главный Бухгалтер СП	Signed by: Bùi Thị Cẩm Nhung Date: 04/09/2025 08:14:08 Certified by: Vietsovpetro CA	**Lương Quốc Dân**
Trưởng phòng Thương mại Начальник КО СП	Signed by: Nguyễn Thị Vân Anh Date: 03/09/2025 13:54:22 Certified by: Vietsovpetro CA	**Nguyễn Thị Vân Anh**

Tổ chuyên gia xét thầu / Руководство рабочей группы экспертов:

Tổ trưởng tổ chuyên gia Phó phòng Thương mại Руководитель рабочей группы экспертов Зам. Начальника КО СП	Signed by: Nguyễn Quốc Thành Date: 03/09/2025 11:29:19 Certified by: Vietsovpetro CA	**Nguyễn Quốc Thành**
Tổ phó TCG phụ trách kỹ thuật: Phó Giám Đốc XN Xây lắp Зам.Руководителя группы по тех.вопросам Зам. Директора ПСОРОНГД	Signed by: Nguyễn Thế Văn Date: 03/09/2025 11:01:08 Certified by: Vietsovpetro CA	**Nguyễn Thế Văn**

Thành viên Tổ chuyên gia / Члены рабочей группы:

ПСОРОНГД:	Lưu Sùng Bá	Signed by: Lưu Sùng Bá Date: 27/08/2025 16:41:55 Certified by: Vietsovpetro CA
	Mai Văn Trần Minh Quân	Signed by: Mai Văn Trần Minh Quân Date: 28/08/2025 10:04:21 Certified by: Vietsovpetro CA
ОКС СП:	Ngô Đình Minh	Signed by: Ngô Đình Minh Date: 28/08/2025 13:38:07 Certified by: Vietsovpetro CA
МЭОиА СП:	Huỳnh Lê Thiện Chinh	Signed by: Huỳnh Lê Thiện Chinh Date: 28/08/2025 17:59:14 Certified by: Vietsovpetro CA
БО СП:	Trần Sơn Tùng	Signed by: Trần Sơn Tùng Date: 29/08/2025 17:09:30 Certified by: Vietsovpetro CA
КО СП:	Hồ Mai Hương	Signed by: Hồ Mai Hương Date: 27/08/2025 15:21:02 Certified by: Vietsovpetro CA

BIDDING DOCUMENT

Package name:	**Instruments and Detectors Package (VT-2988/25-XL-DA-HMH)**
Project:	**BK26 WellHead Platform**
Issued on:	**Date: / / 2025 to 09:00 AM date / / 2025**
Bid closing time:	**09:00 AM date / / 2025**
Issued including Decision:	**ITB No.:……../25-HSMT-PTM/BMĐH approved / /2025**

CONTENTS

Brief description

BRIEF DESCRIPTION

Part 1. BIDDING PROCEDURES

Chapter I. Instructions to bidders

Information is provided on the preparation, submission, opening, and evaluation of bids and on the award of contracts. This chapter contains provisions that are to be used without modification.

Chapter II. Bid data sheet

This chapter specifies the contents of Chapter I as applied to each bid package.

Chapter III. Evaluation criteria

This chapter includes criteria for evaluating bid documents. Specifically:

- Section 1. Examining and evaluating the eligibility of bid documents;
- Section 2. Evaluation criteria for capacity and experience;
- Section 3. Evaluation criteria for technical evaluation;
- Section 4. Evaluation criteria for financial evaluation;
- Section 5. Alternative technical plans in bid documents (if any).

Chapter IV. Bidding forms

This chapter includes the forms that the Employer and the bidder will be required to complete as part of the bidding document and the bid document.

Part 2. TECHNICAL REQUIREMENTS

Chapter V. Technical requirements

This chapter provides information on technical requirements, drawings describing technical specifications of the goods and related services; it also includes the inspection and testing procedures for the goods (if any), prepared and attached to the bidding document by the Procuring entity.

Part 3. CONDITIONS OF CONTRACT

Chapter VI. General conditions of the contract

This chapter contains general clauses be applied in all contracts of different bid packages. The text of the clauses in this chapter shall not be modified.

Chapter VII. Special conditions of the contract

This chapter includes contract data and special conditions of contract. The Special conditions of contract are intended to detail, supplement but do not replace the General conditions of contract.

Part 4. CONTRACT FORMS

This chapter contains forms that, once completed, shall become a constituent part of the contract. The Contract performance guarantee (Letter of Guarantee) and the Advance payment guarantee (if any) shall be completed by the successful bidder before the contract takes effect.

Part 5. APPENDIX

This section includes documents attached to the bidding document.

ABBREVIATIONS

ITB	Instructions to Bidders
BDS	Bid data sheet
BD	Bidding document
BDB	Bid document/Bid Proposal
GCC	General conditions of contract
SCC	Special conditions of contract
VND	Vietnamese Dong
USD	US Dollars
EUR	Currency of Europe
NIB	Notices of invitation for bids
VNEPS	Vietnam E-Procurement System
EC	Engineering and construction
PC	Procurement and construction
EPC	Engineering, procurement and construction
VAT	Value Added Tax
CFR	Cost and Freight

Part 1. BIDDING PROCEDURES
Chapter I. INSTRUCTIONS TO BIDDERS

1. Scope of the bid package	1.1. The Employer/Procuring entity, as specified in the bid data sheet (**BDS),** issues this bidding document (BD) to select the bidder to perform the goods procurement according to the single-stage, one-envelope bidding process. 1.2. The name of the bid package and the project; quantity, and reference numbers of the parts under the bid package (in cases where the package is divided into independent parts) are specified in the **BDS**.
2. Explanation of terms in online bidding	2.1. The deadline for submission of bids means the last date and time for receipt of bid documents (BDBs) and it is specified in the Notice of invitation for bids (NIB). 2.2. Day means a solar calendar day, including weekends, holidays, and Tet holidays as prescribed by labor laws. 2.3. The System time and date means the time and date displayed on the System (GMT+7). 2.4. The System means the Vietnam E-Procurement System at https://muasamcong.mpi.gov.vn
3. Source of funds	The source of funds to be used for the bid package is specified in the **BDS**.
4. Prohibited practices	4.1. Offering, receiving or brokering a bribe. 4.2. Abusing one's position and power to illegally intervene in bidding process in any form. 4.3. Collusion, including the following practices: a) Reaching, with or without undue influence, an arrangement or agreement which is designed to let one or more parties to prepare bids or to withdraw submitted bids so that a party or parties involved in the bidding rigging can win the bid; b) Arranging or agreeing to refuse to supply goods, services, or sign sub-contracting agreements, or causing other difficulties to limit competition so that one party wins the bid; c) A qualified and experienced bidder has participated in the bidding and met the requirements of BDs but intentionally did not provide additional documents to prove its capacity and experience at the procuring entity's request for clarification of BDBs with the aim of facilitating one party's winning of the bid. 4.4. Frauds, including the following practices: a) Forging or falsifying information, records and documents used in bidding; b) Intentionally providing dishonest and non-objective information and documents in BDBs to distort the bidder selection results. 4.5. Obstruction, including the following practices: a) Destroying, deceiving, altering or concealing of evidence or making false statements; threatening, harassing or intimidating any party to prevent the verification or investigation into a corrupt, fraudulent or collusive practice made with a supervision, inspection or audit authority; b) Obstructing competent persons, employers, procuring entities, and

	bidders in the course of bid selection; c) Impeding competent authorities' rights of supervision, inspection or audit of bidding activities; d) Deliberately making false complaints, denunciations or petitions with the aim of impeding bidding process; đ) Violating the law on network security to intervene or impede the online bidding. 4.6. Failing to ensure fairness, and transparency, including the following practices: a) Being a bidder participating in the procurement for which it is the procuring entity, the employer or performing the tasks of the procuring entity, the employer violating the provisions of the Law on Bidding; b) Concurrently engaging in the preparation and appraisal of BDs for the same bid package; c) Simultaneously participating in the evaluation of the BDB and the appraisal of the bidder selection result for the same bid package; d) A person who is working for the procuring entity/employer directly engages in course of bidder selection, or acts as a member of the expert team or appraising team in charge of appraising the bidder selection result, or is a competent person or head of the procuring entity/employer, for a package or investment project in which his/her family relative, as defined in the Law on enterprises, directly submits the bid or acts as the legal representative of the bidder; đ) A bidder submits a bid for a goods procurement package for which the bidder is also acting as a consultant on preparation, verification and appraisal of cost estimate, technical design, building drawings and designs, front-end engineering design (FEED); preparation and appraisal of prequalification documents, or BD; evaluation of prequalification applications or BDB; inspection of goods; appraisal of the bidder selection results; supervision of contract execution; e) Being the representative of a bidder participating in the bid package under a project administered by his/her former employer within 12 months of his/her resignation; g) Specifying a specific brand name or origin of goods in BD, except for the cases specified in Point e, Clause 3, Article 10, Clause 2, Article 44 and Clause 1, Article 56 of the Law on Bidding; h) Stating conditions in BDs to limit the participation of bidders or to give advantages for one or several bidders, resulting in unfair competition or violation of Clause 3, Article 44 of the Law on Bidding; 4.7. Unauthorized disclosure of the information and documents on the bidder selection process, except the cases specified in Point b Clause 8 and Point g Clause 9 Article 77, Clause 11 Article 78, Point h Clause 1 Article 79, Clause 4 Article 80, Clause 4 Article 81, Clause 2 Article 82, Point b Clause 4 Article 93 of the Law on Bidding, including: a) Contents of BDs prior to the official issued publication; b) Contents of BDBs; the procuring entity's clarification requests and responses from bidders during the evaluation of BDBs; reports of the procuring entity or expert team, appraisal reports, reports of consultants and other relevant specialized agencies during the course of bidder selection; records or minutes of bid evaluation meetings, opinions or

	comments on each BDB before they are disclosed as prescribed; c) The bidder selection result before it is disclosed as prescribed; d) Other documents issued or obtained during the bidder selection process and certified to contain state secrets as prescribed by law. 4.8. Illegal transfer of awarded contract, including the following cases: a) The bidder transfers a portion of work of the package worth more than the maximum value of work to be subcontracted and the work to be undertaken by specialist subcontractor(s) under the signed contract; b) The bidder transfers a portion of work of the package whose value does not exceed the maximum value of work to be subcontracted under the signed contract but beyond the scope of work to be subcontracted specified in the BDB without obtaining a prior consent from the employer or supervision consultant; c) The employer, supervision consultant gives consent to the bidder's transfer of work as prescribed in Point a of this Clause; d) The employer, supervision consultant gives consent to the bidder's transfer a portion of work as prescribed in Point b of this Clause, which is worth more than the maximum value of work to be subcontracted under the signed contract.
5. Eligibility of bidders	5.1. The bidder that is an organization shall be deemed to be eligible if meeting the following requirements: a) It must keep independent accounting records - A domestic bidder must be an enterprise, cooperative, cooperative union, cooperative groups, public sector entity or foreign-invested business organization that is duly established and operating under the law of Vietnam. - A foreign bidder must be duly established and operating under the law of a foreign country. b) It is not undergoing dissolution process or subject to revocation of enterprise registration certificate, cooperative, cooperative union, artel registration certificate; is not facing insolvency as prescribed by the law on bankruptcy. c) It must ensure competitiveness in bidding as prescribed in the **BDS**. d) It is not being prohibited from participating in bidding according to the provisions of the Law on Bidding. đ) It is not liable to criminal prosecution. e) It is not being prohibited from participating in bidding according to a decision issued by a competent person, Minister, head of ministerial agency, Governmental agency or another central-government agency, or Chairperson of the provincial-level People's Committee as prescribed in Clause 3 Article 87 of the Law on Bidding. 5.2. The bidder that is a household business shall be deemed to be eligible if meeting the following requirements: a) It has a valid certificate of household business registration issued in accordance with regulations of law; b) It is not undergoing the process of operation termination or subject to revocation of certificate of household business registration; the owner of the household business is not liable to criminal prosecution;

	c) It meets the requirements as prescribed in Points c, d ITB 5.1 5.3. The bidder is individual or groups of individuals who submit bids for their innovative products in compliance with the provisions of Clause 4, Article 5 of Decree No. 24/2024/NĐ-CP detailing a number of articles of and measures to implement the Law on Bidding regarding bidder selection (hereinafter referred to as Decree No. 24/2024/NĐ-CP), is eligible to participate in bidding when meeting the following conditions: a) Having full civil capacity in accordance with the laws of the country of which the individual is a citizen; b) Meeting the requirements as prescribed in Points c, d, đ and e, ITB 5.1. 5.4. A bidder participating in the bidding must have its name on the Vietnam E-Procurement System at https://muasamcong.mpi.gov.vn before approving the of bidder selection result. 5.5. Having a Vietnamese member in the joint venture or a Vietnamese subcontractor prescribed in the **BDS**.
6. Contents of the bidding document	6.1. The bidding document consist of the NIB and Part 1, Part 2, Part 3, Part 4, Part 5 which include all the chapters indicated below, and should be read in conjunction with any addenda or clarification issued in accordance with ITB 7 (if any), including the following contents: **Part 1. Bidding procedures** - Chapter I. Instructions to bidders; - Chapter II. Bid data sheet; - Chapter III. Evaluation criteria; - Chapter IV. Bidding forms. **Part 2. Technical requirements** - Chapter V. Technical requirements. **Part 3. Conditions of contract** - Chapter VI. General conditions of the contract; - Chapter VII. Special conditions of the contract; **Part 4. Contract forms** **Part 5. Appendix** 6.2. The Employer/Procuring entity shall not be responsible for the accuracy and completeness of the BD, documents explaining and clarifying the BD or documents amending the BD as prescribed in ITB 7 if these documents are not provided by the Procuring entity on the System. The BD issued by the Procuring entity are the basis for consideration and evaluation. 6.3. The bidder is expected to examine all contents of the NIB, the BD, including amendments and clarifications, pre-bid meeting minutes (if any), and to prepare its bid as required by the BD.
7. Amendment, clarification of the bidding document, site survey	7.1. In case of amendments to the BD, the Procuring entity shall post the amendment decision along with the amended contents and the BD accordingly. Amendments to the BD shall be made at least 10 days before the deadline for submission of bids; for bid packages with a bid price not exceeding 20 billion VND, amendments to the BD shall be made at least 03 working days before the deadline for submission of

	bids, and shall ensure sufficient time for bidders to complete the BD; in case the above-mentioned time is not enough, the Procuring Entity may, at its discretion, extend the deadline for the submission of Bids. 7.2. In case of needing to clarify the BD, the Bidder shall send a request for clarification to the Procuring entity via the System no later than 05 working days prior to the deadline for submission of bids for the Procuring entity to consider and process. The Procuring entity shall receive the clarification for consideration and publish on the System its response to request for clarification no later than 02 working days prior to the deadline for submission of the bid, including a description of the inquiry but without identifying its source. Should the clarification result in amendments to the BD, the Employer shall amend the BD and the Procuring entity will publish the amendment decision following the procedure under ITB 7.1. 7.3. The Procuring entity shall be responsible for monitoring the System to promptly clarify the BD at the request of Bidders. 7.4. Bidders shall be responsible for monitoring the System to update information on amendments to the BD, extension of the deadline for submission of bids (if any) as they prepare their bids. In case of errors due to failure to monitor and update information on the System, leading to disadvantages for bidders during the bidding process, including: changes, amendments to the BD, the deadline for submission of bids, and other contents, bidders must take responsibility and suffer disadvantages during the bidding process. 7.5. If necessary, the Procuring entity shall hold a pre-bid meeting for discussion of the elements of the bidding document that are deemed unclear to the bidders according to the provisions of the BDS. The Procuring entity shall post a notice of the pre-bid meeting on the System; all interested bidders shall be allowed to attend the pre-bid meeting without prior notice to the Procuring entity. The content of the exchange between the Procuring entity and the Bidder shall be made in writing and included in the minutes of the pre-bid meeting, as part of the clarification of the BD published on the System within 02 days from the end of the pre-bid meeting. 7.6. If the BD needs to be amended as a result of the pre-bid meeting, the Procuring entity will publish an addendum in accordance with ITB 7.1. The minutes of the pre-bid meeting is not an addendum. 7.7. A bidder shall not be disqualified for failing to attend the pre-bid meeting or failing to produce documentation proving that they were there.
8. Cost of bidding	The BD shall be released on the System immediately after the Procuring entity successfully publish the NIB on the System. The Bidder shall bear all costs associated with its participation. The Bidder shall pay for the electronic copy of the bidding document when submitting the bid document as prescribed in the **BDS**. In any case, the Employer shall not be responsible for any costs associated with the bidder's participation.
9. Language in bidding	*The BD is written in English. In this case, the Bidder's BDB must be written in English.* *Supplementary documents in BDB (catalogues, etc.) may be written in other languages and accompanied by an English translation. In case of lack of translation, the Procuring entity may request the Bidder to send additional documents (if necessary).*

10. Documents comprising the bid	BD shall include the following components: 10.1. Letter of bid and documents proving the eligibility of the signatory of the bid; 10.2. Joint venture agreement (in the case of the bid being submitted by a joint venture); 10.3. Bid security as prescribed in ITB 18 **(Not applicable);** 10.4. Documentary evidence in accordance with ITB 5 establishing the bidder's eligibility to bid; 10.5. Documentary evidence in accordance with ITB 16 establishing the bidder's capacity and experience; 10.6. Technical proposal and documents as prescribed in ITB 15; 10.7. Financial proposal and tables are fully filled in as prescribed in ITB 11 and 13; 10.8. Alternative technical plan in the BDB according to the provisions of ITB 12 (if any); 10.9. Format and signing of bid - The bidder shall prepare the BDB including: 1 original BDB in accordance with ITB 10 and the number of copies of BDB as prescribed in the **BDS**. The out envelope of the documents must clearly state "ORIGINAL: BID DOCUMENTS", "COPIES: BID DOCUMENTS". The bidder wishing to modify or substitute its bid shall prepare 01 original and copies of the modification or substitution in the number specified in the BDS. The cover of the documents must clearly state "ORIGINAL: BID DOCUMENTS MODIFICATION", "COPIES: BIDDING DOCUMENT MODIFICATION", "ORIGINAL: BIDDING DOCUMENT SUBSTITUTION", "COPIES: BIDDING DOCUMENT SUBSTITUTION". If the alternative technical plan is permitted in accordance with ITB 12, the bidder shall prepare 01 original alternative technical plan and copies of the alternative technical plan in the number specified in the BDS. The out envelope of the documents must clearly state "ORIGINAL: ALTERNATIVE TECHNICAL PLAN", "COPIES: ALTERNATIVE TECHNICAL PLAN". All inner and outer envelopes must be sealed and marked: a) Name and address of the bidder; b) The recipient's name is the name of the Procuring entity at the address specified in ITB 1.1; c) Name the bid package indicated in ITB 1.2; d) A warning "not to open before the time and date for opening bid". The bidder shall be responsible for consequences or disadvantages resulting from its failure to comply with the provisions of this BD, such as misplacement or absence of bid seals during the submission to the Procuring entity, or failing to mark the envelopes as specified in ITB 1.1, 1.2 and 10.9. The Procuring entity assumes no responsibility for the confidentiality of the BDB if the bidder fails to comply with the above provisions. - The bidder shall be responsible for the consistency between the original and the copies of the BDB. In the case of inconsistency without resulting in a different ranking of bidders, the bid evaluation will be

	based on the original. In case there is a difference between the original and the copy but does not change the bidder's ranking order, the original shall be used for evaluation. In case there is a difference between the original and the copy leading to the evaluation result on the original being different from the evaluation result on the copy, changing the bidder's ranking order, the bidder's bid shall be disqualified. - The original and all copies of the BDB shall be typed or written in indelible ink and continuously numbered. The letter of bid, letter of discounts (if any), addenda, price schedules, and other forms as specified in Chapter IV – Bidding forms shall be signed by the legitimate representative (i.e. the legal representative or a person duly authorized by the legal representative) and stamped (if applicable). In the case of authorization, the bidder shall submit in its bid the power of attorney in accordance with Form No. 02 of Chapter IV - Bidding forms, or a copy of the bidder's charter, a certified branch establishment decision, or other documents establishing the authority of the authorized person. - In case the bidder is a joint venture, the bid shall be signed by the legal representative of each joint venture member or an authorized representative of the joint venture on behalf of the joint venture under the joint venture agreement. So as to be legally binding on all the members, the joint venture agreement shall be signed by their legal representative. - Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed on the same page by the person signing the bid. 10.10. Other contents as prescribed in the **BDS**.
11. Letter of bid and forms	The bidder shall fill in all the information in the Forms in Chapter IV. The bidder shall check the information in the Letter of bid and the forms to complete the BDB.
12. Proposal of alternative technical plan in the BDB	12.1. If permitted as specified in the **BDS**, alternative technical plans shall be considered. 12.2. An alternative technical plan is only considered if the bid fulfills the requirements and the bidder is ranked first. In this case, the bidder shall provide all necessary information so as for the Procuring entity to evaluate the alternative technical plan, including explanation, drawings, technical specifications, delivery schedule, costs, and other relevant information. The evaluation of alternative technical plan shall be pursuant to Section 5, Chapter III. 12.3. In case the bidder does not clearly state "ALTERNATIVE TECHNICAL PLAN" on the out envelope of the alternative technical plan documents as prescribed in ITB 10.9, and if the bidder quotes 02 technical proposals in the BD, these 02 offers shall not be considered as the alternative technical plan.
13. Bid price and discount	13.1. The bid price stated in the letter of bid and in the price schedules, along with any discounts, must comply with the provisions in this Section: a) The bid price means the price stated in the bidder's letter of bid, comprising all costs associated with the execution of the bid package (excluding any discounts offered); b) All parts (for packages divided into multiple parts) and items must be

	quoted separately in the price schedules. c) For an undivided package, if the bidder proposes a discount, the discount percentage should be stated in the letter of bid. This discount value is understood as being applied uniformly at the same rate to all items in the price schedules. d) The bidder shall submit the BDB for all the work required in the BD and specify the unit price for all the work stated in the column "List of products" and "Description of service" according to Form No. 12 and Form No. 13 Chapter IV. 13.2. In cases where the package is divided into multiple independent parts as specified in the **BDS** and it is allowed to bid for each part, the bidder may bid for one or more parts of the package. The bidder must submit BDBs for all items within the part they are bidding for. If the bidder proposes a discount, it must be done according to one of the following two methods: a) The first method: declare the discount percentage in the letter of bid (in this case, it is considered that the bidder applies the discount uniformly at the same rate to all parts they are bidding for). b) The second method: declare the discount percentage for each part. 13.3. The bidder shall be responsible for the bid price to perform, complete the work in accordance with requirements stated in the BD. In case the Bidder has an abnormally low unit price that affects the quality of the bid package, the Procuring entity may request the bidder to clarify the feasibility of such abnormally low unit price in accordance with the provisions of Clause 11, Article 131 of Decree No. 24/2024/NĐ-CP. 13.4. All taxes, fees, and charges (if applicable) payable by the bidder as of the date 28 days prior to the deadline for submission of the bid shall be included in the total bid price submitted by the bidder as prescribed. In case the bidder declares that the bid price does not include taxes, fees, and charges (if applicable), the bidder's BDB will be disqualified. 13.5. The bidder submits the bid price in accordance with the provisions of the **BDS**.
14. Currencies of bid and payment	14.1. The currency of bid and payment must be the same and in accordance with the provisions of the **BDS**. A specific item of work must be quoted using one type of currency. 14.2. Domestic costs must be paid in VND, while costs outside the territory of Vietnam shall be paid in the currency specified in ITB14.1.
15. Documents proving the conformity of the goods and related services	15.1. In order to demonstrate the conformity of the goods and related services with the requirements of the BD, the Bidder must provide documents to prove that the goods supplied by the Bidder meet the technical requirements specified in Chapter V. Such evidence is an integral part of the BDB. 15.2. The term “goods” includes machinery, equipment, raw materials, fuel, products; vehicles; consumer goods; drugs, chemicals, testing supplies, medical equipment; commercial software, etc. 15.3. The term “origin” means the country or territory where the goods have been mined, grown, cultivated, produced, manufactured, or processed; or, through manufacture, processing, or assembly, another

	commercially recognized article results that differ substantially in its basic characteristics from its components. 15.4. The term "related services" includes services such as insurance[1], installation, maintenance, repair, initial repair or provision of other after-sales services such as training, technology transfer, etc. 15.5. The bidder shall indicate the origin of the goods in Form No. 10B and Form No. 12, Chapter IV. In the event that the bidder offers multiple origins for one unit of the goods (one, one piece, etc.) while they are from the same manufacturer and correspond to the same unit price, the Procuring Entity shall seek clarification of the specific origin of the goods from the bidder. 15.6. Requirements on the origin of goods shall be implemented according to Form No. 01A, 01B, 01C, Chapter IV. In case the Employer requires origin by group of countries or territories as prescribed in Clause 2, Article 44 of the Law on Bidding, the bidder must offer goods in accordance with the requirements on origin or Vietnamese origin, even in cases where the origin by group of countries or territories that the Employer requires does not include Vietnam; bidders offering goods that do not have origin as required by the BD or are not of Vietnamese origin will be disqualified. In case the Employer requires bidders to offer goods of Vietnamese origin as prescribed in Point e, Clause 3, Article 10 of the Law on Bidding, bidders offering goods that are not of Vietnamese origin will be disqualified. 15.7. Documents proving the conformity of the goods and related services may be in the form of literature, papers, drawings, data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the goods and related services, demonstrating substantial responsiveness of the goods and related services to the BD, and if applicable, a statement of deviations and exceptions to the provisions in Chapter V. 15.8. The bidder shall furnish a list giving full particulars, including list, prices, suppliers of materials, spare parts, specialized tools, consumables... (hereinafter referred to as materials, spare parts) necessary for the proper and continuous functioning of the goods during the period specified in the **BDS** 15.9. The standards for workmanship, process, material, and equipment, as well as references to brand names or catalog numbers specified by the Procuring entity in Chapter V are intended to be descriptive only and not restrictive. The bidder may offer other standards of quality, brand names, and/or catalog numbers, provided that it demonstrates, to the Procuring entity's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Chapter V.
16. Documents proving the bidder's capacity and experience	16.1. The bidder shall declare the necessary information in the Forms in Chapter IV to provide information on capacity and experience as required in Chapter III. 16.2. The requirements of documentary evidence of the bidder's capacity to perform the contract if its bid is awarded as prescribed in the **BDS**. In case the bid package requires pre-qualification, if there is a change in the capacity and experience of the bidder when submitting the BD and when participating in pre-qualification, the bidder must update its

[1] Insurance against related services, e.g. installation insurance, repair insurance

	capacity and experience.
17. Validity period of BDB	17.1. Validity period of the BDB shall not be shorter than the period specified in the **BDS**. 17.2. In exceptional circumstances, prior to the expiry of the BDB validity, the Procuring entity may request bidders to extend the period of validity of their BDBs. If the bidder does not grant the request, its bid will be rejected, in this case. The bidder granting the request shall not be permitted to modify its BDB. The request and the responses shall be made in writing.
18. Bid security (Not applicable)	18.1. When participating in bidding, prior to the deadline for the submission of bids, the bidder shall furnish bid security in one or more forms of letter of guarantee issued by a domestic credit institution or foreign bank branch lawfully established under the law of Vietnam, or in form of certificate of surety bond insurance issued by a domestic non-life insurer or branch of a foreign non-life insurer duly established under the law of Vietnam, or in form of deposit. If the validity of the BDB is extended in accordance with ITB 17.2, the validity of the bid security must also be extended accordingly. For joint venture bidders, all members of the joint venture must use the same form of bid security: either electronic bid security or paper-based bid security. In case of a joint venture, bid security must be implemented in one of the following two ways: a) Each member of the joint venture shall submit its own bid security, ensuring that the total value shall not be lower than the requirement specified in ITB 18.2; if the bid security of a member of the joint venture is determined to be invalid, the bid of the joint venture will not be considered. If any member of the joint venture violates the laws, resulting in forfeited bid security as specified in Point b of ITB 18.5, the bid security of all members of the joint venture will not be returned; b) The members of the joint venture agree that one member shall prepare the bid security for itself and for the other members of the joint venture. In this case, the bid security of the joint venture shall be in the name of the joint venture or the assigned member, ensuring that the total value shall not be lower than the requirement specified in ITB 18.2. If any member of the joint venture violates the laws, resulting in forfeited bid security as specified in Point b of ITB 18.5, the bid security of all members of the joint venture will not be returned. 18.2. The value, currency and validity period of the bid security are specified in the **BDS**. The validity period of the bid security is calculated from the deadline for submission of bid to the last day of bid security validity (the end date of bid security validity is on the last day of bid security validity and does not necessarily have to be until the end of 24 hours of that day). 18.3. The bid security is considered invalid if it has a lower value and a shorter validity period than the requirements specified in ITB 18.2, incorrectly states the name of the beneficiary, is not the original, lacks a legitimate signature, is signed before the publication of the BD, it is accompanied by unfavorable conditions for the Employer and the Procuring entity (including failure to meet the commitments set forth in Form No. 04A, Form No. 04B, Chapter IV).

	18.4. Unsuccessful bidders' bid securities will be returned or released within the period specified in the **BDS**. The successful bidder's bid security will be returned or released upon contract entry into force. 18.5. The bid security may be forfeited: a) If a bidder withdraws its BDB after the deadline for the submission of bids and prior to the expiry date of bid validity; b) If the bidder's violation of procurement laws results in bid annulment in accordance with regulations; c) If the successful bidder fails to furnish performance security in accordance with regulations; d) If the successful bidder fails to or refuses to negotiate the contract within 20 days of the invitation for negotiation, or refuses to finalize and sign the contract, except in case of force majeure under civil laws. 18.6. In the case of a package divided into multiple independent parts, the Bidder may choose to submit bid security in one of the following two ways: a) A bid security for all the parts in which the bidder participates (the bid security value will be equal to the total of the bid security value for each part). In the event that the bid security value is less than the total value, the Procuring entity will decide for which part the bid security is used; b) A separate bid security for each part in which the bidder participates. Where the bid security is forfeited as specified in ITB 18.5 due to the bidder's violation, the forfeiture amount shall match the part of violation.
19. Deadline for submission the of bids	19.1. The deadline for submission of bids is the time specified in the **NIB**. 19.2. The Procuring entity may extend the deadline for the submission of bids by amending the NIB. When extending the deadline for submission of bids, all rights and obligations of the Procuring entity and bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
20. Submission, withdrawal, and modification of BDB	20.1. Submission of BDB: Bidders shall submit their BDB directly or send them to the address of the Procuring entity as prescribed in the NIB, ensuring its bid shall be received by the Procuring entity no later than the deadline for submission. The Procuring entity shall receive BDBs from all Bidders submitting their BDBs before the deadline for submission of bids, Bidders shall pay the Procuring entity an amount as prescribed in ITB 8 **BDS** and the BDS prior to receipt of BDBs. The Procuring entity shall not consider any BDB submitted after the deadline for submission of bids. Any BDB received by the Procuring entity after the deadline for submission of bids shall be declared as late BDB, rejected and returned unopened to the Bidder. 20.2. After submitting the BDB, the Bidder may modify, substitute or withdraw the BDB after it has been submitted by sending by sending a written notice signed by the Bidder's legal representative. In case of authorization, a power of attorney must be attached as prescribed in ITB 20.3. The corresponding substitution or modification of the bid shall accompany the respective written notice. All notices shall be: a) Prepared and submitted to the Procuring entity as prescribed, in addition, the respective envelopes shall be clearly marked "BID

	DOCUMENTS MODIFICATION" or "BID DOCUMENTS SUBTITUTION" or "BID DOCUMENTS WITHDRAWAL"; b) Received by the Procuring entity before the deadline for submission of bids as prescribed in IBT 19. 20.3. Withdrawal of BDBs: Bidders are allowed to withdraw their BDBs before the deadline for submission of bids. BDBs requested to be withdrawn as prescribed in ITB 20.2 will be returned unopened to the Bidders. 20.4. No BDB may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the bidder on the letter of bid, or any extension thereof. 20.5. Bidders may only withdraw, modify, or resubmit their BDBs before the deadline for submission of bids.
21. Opening of bids	21.1. The Procuring shall open bids and publicly announce the bid opening record within no more than 02 hours from the deadline for submission of bids. In case 01 or 02 bidders submit their BDBs, the Procuring entity shall report to the Employer for consideration and handling of the situation according to the provisions of Clause 5, Article 131 of Decree No. 24/2024/NĐ-CP; in case there is no bidders submit BDB, the Employer shall consider extending the deadline for submission of bids or re-bidding the online bidding (cancel this NIB and publish a new NIB) according to the provisions of Clause 4, Article 131 of Decree No. 24/2024/ NĐ-CP. 21.2. Except for the cases specified in IBT 20, the Procuring entity shall publicly open and read aloud and clearly the information of all BDBs received before the deadline for submission of bids. The opening of bids must be conducted publicly at the time and place specified in the NIB in the presence of bidders' designated representatives and relevant entities. The opening of bids is independent of the presence or absence of the bidder's representatives. 21.3. In case a bidder requests to withdraw or substitute the BDB, the Procuring entity will first open and read aloud and clearly the written notice of withdrawal in the envelopes marked "BDB WITHDRAWAL" and the envelope with the corresponding bid shall not be opened, but returned to the bidder. No BDB withdrawal shall be permitted unless the corresponding withdrawal notice with valid authorization to request the withdrawal and is read out at the opening of bids. Otherwise, the withdrawn BDB will be opened. Next, the Procuring entity will open and read aloud and clearly the written notice substitution in the envelope marked "BDB SUBTITUTION"; the BDB will be exchanged with the corresponding BDB being substituted and the substituted BDB shall not be opened, but returned to the bidder. No bid substitution shall be permitted unless the corresponding substitution notice with valid authorization to request the substitution and is read out at the opening of bids. Otherwise, the substituted BDB will be opened. Envelopes marked "BDB MODIFICATION" shall be opened and read out with the corresponding bid. No bid modification shall be permitted unless the corresponding modification notice with valid authorization to request the modification and is read out at the opening of bids. Only the BDBs opened and read at the opening of bids shall be considered and

	evaluated further. 21.4. The opening of bids is conducted for each BDB or substituted BDB (if any) in alphabetical order of the bidder's name and in the following sequence: a) Inspecting the seal; b) Opening the original BDB, any modifications and substitutions (if any), reading aloud and clearly at least the following information: - Information about the bid package: + Number of NIB; + Name of bid package; + Name of the Employer; + Bidder selection method; + Contract type; + Time of completion of the opening of bids; + Total number of bidders participating in the opening of bids. - Information about participating bidders: + Name of bidder; + Bidding eligibility (independent or joint venture); + Number of originals and copies; + Bid price stated in the letter of bid; + Discount value (if any); + Bid price after discount (if any); + Value and validity of bid security **(Not applicable)**; + Validity period of BDB; + Time to implement the bid package; + Other relevant information (if any) that the Procuring entity deems necessary. c) The representative of the Procuring entity attending the bid opening ceremony sign for acknowledgment on the original letter of bid, power of attorney issued by the legal representative of the bidder (if any), joint venture agreement (if any). The Procuring Entity shall not reject any bids at the bid opening, except for late bids as prescribed in ITB 20; 21.5. The Procuring entity shall prepare a bid opening record, indicating the information specified in ITB 21.4. The representatives of the Procuring entity and bidders who are present shall be requested to sign the record. The omission of a bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all bidders; shall be published on the Vietnam National E-Procurement System within 24 hours from the time of bid opening.
22. Confidentiality	22.1. Information relating to the evaluation of BDBs and recommendation of contract award shall be kept confidential, shall not be disclosed to bidders, or any other persons not officially concerned with the bidding process, until after the Procuring entity makes publicly available the bidder selection result. Under no circumstances shall the information contained in one bidder's BDB be disclosed to another, except for that being made available in the bid opening record.

	22.2. Except in the case of bid clarification and contract negotiation, from the time of bid opening to the time of contract award, the bidder shall not contact the Procuring entity on any matter related to its BDB and the bidding process.
23. Clarification of bids	23.1. After the bid opening, the bidder is responsible for clarifying its BDB at the request of the Procuring entity, including the eligibility, capacity, experience, tax declaration and payment obligations, and specific personnel documents proposed in its BDB. Regarding the eligibility, the clarification shall not affect the nature of the bidder participating in the bid. Regarding the validity of the BDBs (except for the content of eligibility), technical and financial proposals, the clarification shall not affect the nature of submitted BDBs or bid prices. 23.2. During the evaluation process, clarification of the BDBs between the Bidder and the Procuring entity shall be done in writing. 23.3. Clarifications of bids shall be exchanged only between the Procuring entity and the bidder whose BDB needs to be clarified. For clarifications that directly affect the evaluation of eligibility, capacity, experience, technical and financial requirements, the bidder fails to respect the time limit for clarification or to respond to the request to the Procuring entity's satisfaction, the Procuring entity shall base its evaluation on the BDB submitted before the deadline for submission of bids. The Procuring Entity shall give the bidder a reasonable period of time for the bidder to provide its BDB clarification. 23.4. In case after deadline for submission of bids, the bidder knowing that the BDB it has submitted falls short of documents establishing its eligibility, similar contracts, production capacity, financial reports, tax declaration and payment obligations, documents on personnel, specific equipment proposed in its BDB may provide such evidence to the Procuring entity within a period of time specified in the **BDS**. The Procuring entity shall receive, consider and evaluate the bidder's additional and clarifying documents, which shall be considered as part of the BDB. 23.5. In case of any inconsistency in the content of the BDB or unclear content, the Procuring entity shall request the Bidder to clarify in compliance with the provisions of ITB 23.1. 23.6. In case of doubt about the authenticity of documents provided by the bidder, the Employer and the Procuring entity shall verify with organizations and individuals related to the content of the documents. 23.7. In case the BD require commitments, principle contracts for equipment rental, supply of main materials, warranty, repair and maintenance but these documents are not attached, the Procuring entity shall request the Bidder to clarify the BDB, and supplement documents within a suitable period of time but not less than 03 working days as a basis for the bid evaluation.
24. Deviations, reservations, and omissions	24.1. "Deviation" is a departure from the requirements specified in the bidding document; 24.2. "Reservation" the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the BD; 24.3. "Omission" is the failure to submit part or all of the information or documentation required in the BD.
25. Determination of	25.1. The Procuring entity's determination of a BDB's responsiveness

responsiveness	is to be based on the contents of the BDB itself, as defined in ITB 10. 25.2. A substantially responsive BDB is one that meets the requirements of the BD without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that: a) If accepted, would affect in any substantial way the scope, quality, or effectiveness of the works specified in the contract; or limit in any substantial way, inconsistent with the BD, the Procuring entity's rights or the bidder's obligations under the contract; b) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive BDB. 25.3. The Procuring entity shall examine the technical aspects of the BDB submitted in accordance with ITB 15 and ITB 16 to confirm that all requirements set on the BD have been met without any material deviation or reservation, or omission. 25.4. If a BDB is not substantially responsive to the requirements of the BD, it shall be rejected by the Procuring entity, and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
26. Nonconformities	26.1. Provided that a BDB is substantially responsive, the Procuring entity, expert team may waive any nonconformities without material deviation, reservation, or omission in the BDB. 26.2. Provided that a BDB is substantially responsive, the Procuring entity and the expert team may request that the bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonconformities or nonmaterial errors in the BDB related to documentation requirements. The request for information and documents to correct these errors shall not be related to any aspect of the price of the bid. Failure of the bidder to comply with the request may result in the rejection of its BDB. 26.3. Provided that a BDB is substantially responsive, the Procuring, the expert team shall rectify quantifiable nonmaterial nonconformities related to the bid price; to this effect, the bid price shall be adjusted to reflect the price of a missing or nonconforming item or component; this adjustment is only for the purpose of comparing BDBs.
27. Subcontractor	27.1. Subcontractor means an organization or individual that signs a contract with the Bidder to participate in performing related services. 27.2. Subcontractor requirements are specified in the **BDS**. 27.3. The subcontracting will not affect the bidder's obligations. The bidder is responsible for the quantity, quality, schedule, and other responsibilities related to the work performed by the subcontractor. Subcontractors' capacity and experience will not be considered during the BDB evaluation. The bidder itself must meet the capacity and experience criteria (regardless of the capacity and experience of the subcontractor). If, in the BDB, the bidder does not propose to use a subcontractor for a specific task or does not specify tasks that will involve a subcontractor, it is understood that the bidder is responsible for performing all tasks within the scope of the contract. 27.4. The bidder shall sign contracts with subcontractors in the list of subcontractors stated in the BDB or with subcontractors approved by

	the Employer to participate in the performance of related service. 27.5. A bidder who transfers a bid as prescribed in Clause 8, Article 16 of the Law on Bidding shall be prohibited from participating in bidding activities as prescribed in Point b, Clause 1, Article 125 of Decree No. 24/2024/NĐ-CP. 27.6. The employer and the Procuring entity are not allowed subcontracting for which subcontractors participate in providing consulting services for the bidder's successful bid and these consulting works include: appraisal of prices; contract supervision, inspection; preparation and appraisal of prequalification documents and BD; evaluation of prequalification applications and BDB; appraisal of prequalification and bid selection results; project management consultancy, contract management, other consulting services whose work is directly related to the bid package.
28. Preferences in bidder selection	28.1. Principles of preferential treatment in bidder selection: a) If the bidder is entitled to preferential treatment for more than one type of preference in the evaluation of capacity and experience or in the financial evaluation, only the most advantageous preference for the bidder will be applied for each respective evaluation content. b) If all bidders are entitled to the same preference or if none of the bidders qualifies for any preference, it is unnecessary to apply preference calculations for comparison and ranking. c) The bidder must demonstrate that the bidder, as well as the goods and services offered, qualify for preferences as stipulated in Clause 1, Article 10 of the Bidding Law. d) The bidder is entitled to preferential treatment when supplying goods with a domestic production cost ratio of 30% or more. 28.2. For information technology (IT) software, the criteria for domestically produced IT software eligible for preference shall follow the regulations of the law on IT, without requiring a domestic production cost ratio as specified in ITB 28.3. 28.3. The application of preferences is conducted during the evaluation of the BDB to compare and rank BDBs: Goods are eligible for preference only if the bidder demonstrates that the goods have a domestic production cost ratio of 30% or more in the total price. The determination of goods produced in Vietnam may use either a direct formula or an indirect formula as follows: Direct formula: D (%) = G*/G x 100% Indirect formula: D (%) = (G - C)/G x 100% Where: G*: means the domestic production cost G: means the offered price of goods after taxes; for the bidder who is the manufacturer, G is the ex-works price (EXW) C: means the value of import costs, excluding taxes and fees related to imports D: It is the percentage of domestic production cost of the goods. If D ≥ 30%, the goods are eligible for preferential treatment according to the provisions in Articles 5, 6, 7, 8, 9, and 10 of Decree No. 24/2024/NĐ-CP.

	28.4. The method of calculating the preferential treatment is specified in the **BDS**. 28.5. The bidder shall disclose information regarding the kinds of items eligible for preferences according to Form 15A, 15B, and 15C in Chapter IV as the basis for considering and evaluating the preferential treatment. Without such disclosure, the bidder's goods are considered ineligible for preferential treatment. 28.6. If the goods offered by the bidders are not eligible for preferences, the determination and calculation of preferences will not be carried out.
29. Evaluation of bid documents	29.1. The Procuring entity shall use the criteria and methodologies listed in the **BDS** to evaluate the BDB. 29.2. The BDB evaluation process is as follows: a) Step 1: Examination and evaluation of the eligibility of the BDB: - The examination and evaluation of the eligibility of the BDB is specified in Section 1 of Chapter III – Evaluation criteria; - Bidders having eligible BDBs will have their capacity and experience evaluated. b) Step 2: Evaluation of capacity and experience according to regulations in Section 2, Chapter III; - Bidders that are evaluated as meeting the requirements on capacity and experience will be proceeded to technical evaluation. c) Step 3: Technical evaluation - The technical evaluation is conducted against the criteria specified in Section 3, Chapter III – Evaluation criteria; - Bidders meeting technical requirements will be considered for further price evaluation according to the provisions in Section 4, Chapter III - Evaluation criteria. d) The Evaluation of financial part will be conducted according to regulations in Section 4, Chapter III and carry out the evaluation as regulations is specified in the **BDS**; đ) Step 5: After financial evaluation, the Procuring entity shall prepare a list of ranked bidders. The ranking of bidders is implemented according to the provisions of the **BDS.** In case a bidder passes the financial evaluation step, there is no need to rank the bidder. e) The bidder ranked first will be invited to negotiate the contract. The ranking of bidders is carried out according to the provisions in the **BDS**. 29.3. Principles of BDB evaluation: a) In case the key personnel proposed by the bidder in the BDB do not meet the requirements or cannot demonstrate the ability to mobilize personnel (including cases where the personnel have been mobilized for other contracts with working time coinciding with the performance time of this package), the Procuring Entity shall allow the bidder to supplement or substitute. The bidder may only supplement or substitute once for each key personnel position within a suitable period of time, but no less than 03 working days. In the case where the bidder does not have personnel who meet the requirements of the BD, the bidder will be disqualified. In any case, if the bidder declares personnel dishonestly, the bidder will not be allowed to substitute other personnel, the bidder's BDB will be disqualified and the bidder will be considered fraudulent

	according to the provisions of Clause 4, Article 16 of the Law on Bidding and will be handled according to the provisions of Point a, Clause 1, Article 125 of Decree No. 24/2024/NĐ-CP. b) At the financial evaluation step, if the bidder does not provide the required information in the form regarding domestically produced goods for the purpose of calculating the preference, the bidder will not be eligible for the preference. In cases where the bid package is divided into multiple independent parts and it is allowed to bid for individual parts as specified in ITB 1.2, the evaluation of the BDB will be conducted according to the provisions in Section 6, Chapter III - Evaluation criteria, corresponding to the part the Bidder is bidding for.
30. Contract negotiation (if any)	30.1. The contract negotiation shall be based on the following: a) BDB evaluation report; b) The successful BDB and clarification (if any) submitted by the bidder; c) The BD and other documents (if any) clarifying and amending the BD (if any). 30.2. Principles of contract negotiation: a) Negotiating the unclear, unsuitable or inconsistent contents of the BD against those in the BDB; negotiating any inconsistency within the BDB that might result in disputes or impacts on obligations of the parties during the contract implementation; b) Negotiation is not conducted on the content proposed by the bidder that is in compliance with the requirements of the BD. 30.3. Contents of contract negotiation: a) Negotiating personnel: During the negotiation process, the bidder shall not change key personnel (including those proposed in the BDB or proposed replacement before the contract negotiation), except for cases of extended bid evaluation or force majeure where the initial proposed key personnel cannot perform the contract. In that case, the bidder is entitled to change its personnel, ensuring that the proposed replacement has relevant qualifications or characteristics that are substantially equal to or better than those proposed in the bid, and the bidder shall not change the bid price. b) Negotiating the issues arising during the bidder selection process (if any) to complete particular contents of the bid package; c) Negotiating nonconformities specified in ITB 26; d) During the contract negotiation, it is necessary to clearly define the taxes that the bidder must pay according to the provisions of the law on tax, including: taxes, fees, charges related to import, special consumption tax (if any), VAT and other issues related to tax liabilities. The tax rate and tax value that the bidder must pay must be specifically stated in the contract. đ) Negotiating other necessary contents. 30.4. During the contract negotiation, the negotiating parties shall complete the draft contract, special conditions of the contract, contract appendix that include detailed information on the detailed schedule of

	scope of supply, price schedules, and delivery schedule. 30.5. In the event of unsuccessful contract negotiation, the Procuring entity shall report to the Employer for consideration and decision on inviting the next ranked bidder to the contract negotiation; in case the contract negotiations with the next ranked bidders are not successful, the Procuring entity shall report to the employer for consideration and decision on annulling the procurement in accordance with Point a, ITB 32.1. 30.6. In the event that force majeure prevents the bidder and procuring entity from directly negotiating the terms of the contract, the procuring entity may conduct the negotiations online.
31. Considerations for contract award	A bidder shall be considered and recommended for contract award if satisfying the following conditions: 31.1. Submitting eligible BDB in accordance with Section 1, Chapter III; 31.2. Being responsive to the capacity and experience requirements in accordance Section 2, Chapter III; 31.3. Having submitted a responsive technical proposal in accordance with Section 3, Chapter III; Having deficient deviations not exceeding 10% of the bid price; 31.4. Meeting the conditions specified in the **BDS**; 31.5. Having the recommended award price (inclusive of taxes, fees, and charges, if any) not exceeding the approved estimated price for the procurement. In cases where the approved estimated cost of the bid package is lower or higher than the approved package price, the estimated cost will replace the approved package price as the basis for contract award as prescribed in the **BDS.**
32. Annulment of bids	32.1. Cases of bid annulment include: a) All BDBs fail to meet the substantial requirements of the BD; b) Modifications of the objective and scope in the approved investment decision affect the workload and evaluation criteria stated in the BD; c) Nonconformities with the Law on Bidding and other relevant legal provisions result in the selected bidder failing to meet the requirements to perform the contract; d) The successful bidder commits any prohibited practice specified in Article 16 of the Law on Bidding; đ) Organizations and individuals other than the successful bidder commit prohibited practices specified in Article 16 of the Law on Bidding, leading to incorrect bidder selection results. 32.2. Organizations and individuals that violate the law on bidding, leading to the annulment of the bidding process in accordance with Points c, d and đ, ITB 32.1 shall be liable to related parties for all the costs and expenses incurred, and be handled under the laws.
33. Notice of contract award	33.1. Within 05 working days from the date of a decision approving the bidder selection results, the Procuring entity shall publish on the System the award information, including the following: a) Information about the bid package: - Number of NIB;

	- Name of bid package; - Approved estimated price or approved estimate (if any); - Name of the Employer; - Bidder selection method; - Contract type; - Time to implement the package; b) Information about the successful bidder: - Tax code; - Name of the successful bidder; - Bid price; - Bid price after adjusting for excessive deviation (if any), discount (if any); - Score of the technical part (if any); - Recommended award price; - Time to implement the package; - Contract duration. c) For each type of goods or equipment in the bid package, the Employer must publish the following information: - Name of the goods; - Capacity; - Features, technical specifications; marks and numbers, brand label; - Origin; - Recommended award unit price. d) The list of unsuccessful bidders and a brief explanation of the reasons why the Procuring entity did not select the unsuccessful bidder's BDB. 33.2. In case of request for explanation of specific reasons for the bidder's failure to win the bid, the bidder shall send a request to the employer or meet the employer directly. The employer shall be responsible for responding to the bidder's request within 02 working days from the date of receipt of the bidder's request. 33.3. In the case of annulment specified in Point a, ITB 32.1, the notice of contract award, and the System shall explain the reasons why the bidding process is annulled.
34. Changes in the quantity of goods and services	34.1. At the time of contract award, the Employer has the right to increase or decrease the quantity of goods and services specified in Chapter IV, provided that such changes do not exceed the percentage stipulated in the **BDS** and there are no changes to the unit price or any other terms and conditions of the BDB or the BD. The increase or decrease rate in quantity should not exceed 10%. 34.2. Additional procurement options: Before the contract expires, the Employer has the right to negotiate with the bidder to purchase additional quantities of goods and services for the package beyond the quantities specified in Chapter IV, provided that the increase does not exceed the percentage specified in the **BDS** and complies with the provisions of Clause 8, Article 39 of the Law on Bidding. The additional work purchased must be similar to the work

	outlined in the signed contract and its unit price already stated. The additional quantities of goods and services cannot be used to evaluate the bidder's capacity or experience. In the case of a joint venture, the responsibility for executing the additional quantities under the additional procurement options must be divided according to the proportion stated the signed contract, unless the parties agree otherwise.
35. Notice of acceptance of bid and contract award	Upon the decision approving the bidder selection result, the Procuring entity shall publish a written notice of acceptance of the BDB and contract award, including requirements on contract performance security, time to finalize and sign the contract as prescribed in Part 4's forms to the successful bidder. The notice of acceptance of the BDB and contract award is part of the contract documents. In case the successful bidder fails to finalize, sign the contract or fails to submit the contract performance security within the time limit stated in the notice of acceptance of the BDB and contract award, the successful bidder will be disqualified and shall be handled in accordance with the bidder's commitments stated in the Application for bidding (named on the System with account being blocked within 06 months since the date that the Public Procurement Agency, Ministry of Planning and Investment receives the written request of Vietsovpetro). The time limit stated in the notice of acceptance of the BDB is calculated from the date the procuring entity sends this notice of acceptance to the successful bidder.
36. Consideration for contract signing	36.1. At the time of contract signing, the BDB of the successful bidder remains valid. 36.2. At the time of contract signing, the successful bidder shall satisfy the technical and financial requirements to implement the package as required by the BD. In the event that the bidder no longer meets the substantial requirements of technical and financial capacity as prescribed in the BD, the Employer will refuse to sign the contract. In effect, the Employer will forfeit the contract award decision and Letter of Acceptance, and invite the next ranked bidder to the contract negotiation. 36.3. The Employer must ensure conditions on advance payment, payment, implementation site and other necessary conditions to perform the bid package on schedule.
37. Performance security	37.1. Before the contract signing or the commencement of the contract, the successful bidder shall furnish performance security in accordance with SCC 5, Chapter VI. In case of applying the Performance security, the form in Part 4 or another form approved by the Employer must be used. 37.2. The performance security shall not be returned to the bidder in the following cases: a) The bidder refuses to perform the contract when the contract takes effect; b) The bidder violates agreements in the contract; c) The bidder is at fault for delayed performance but refuses to extend the validity of the performance security.
38. Handling complaints	38.1. When seeing that their legitimate rights and interests are adversely affected, bidders, agencies and organizations may be entitled to request the competent person and the employer to review the issues in the bidder

	selection process and the results of the bidder selection as prescribed in Articles 89, 90 and 91 of the Law on Bidding. 38.2. In case of petition to the Employer, bidders, agencies or organizations shall send petition directly to the Employer. In case of petition to the Competent person, bidder shall send petition to the address specified in the **BDS**.
39. Monitoring of bidding process	When detecting practices or contents that are not in accordance with the provisions of the bidding law, the bidder shall report to organizations and/or individuals charged with monitoring the bidding process as specified in the **BDS**.
40. The Employer (Vietsovpetro's) responsibility	In the event that the project is not approved by the competent authority, the Employer has the right to cancel the bidding process and shall not be responsible for any costs incurred the bidders in relation to their participation in the bidding.

Chapter II. BID DATA SHEET

ITB 1.1	Employer: **Vietsovpetro**. Procuring entity: **Vietsovpetro**. Address for receiving BDB: 105 Le Loi St., Vung Tau Ward, Ho Chi Minh City, Vietnam.
ITB 1.2	Bid package: **Instruments and Detectors Package (VT-2988/25-XL-DA-HMH)**. Project: BK26 WellHead Platform. Quantity, reference numbers of parts under the bid package: **Vietsovpetro will make evaluation and selection by Each group.** **+ Group 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge (item 1-11)** **+ Group 2: Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter (item 12-32)** **+ Group 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator (item 33-38)** **+ Group 4: Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector (item 39-55)**
ITB 3	Source of funds: Vietsovpetro's financial plan for production activities in the year 2025-2026.
ITB 5.1 (c)	Ensuring fair competition in bidding according to the following regulations: - Bidders participating in bidding do not have a shareholding or equity contribution representing more than 30% with: Vietsovpetro, 105 Le Loi St., Vung Tau Ward, Ho Chi Minh City, Vietnam, except in the case of: (i) The bidder is an affiliate or subsidiary of a state-owned corporation or group whose main production and business lines are consistent with the nature of the bid package of that state-owned corporation or group. (ii) The bidder is a parent company, subsidiary, or affiliate of a state-owned corporation or group whose main production and business lines are suitable for products and services under the bid package, and this bid package belongs to its subsidiary or affiliate. - The bidder do not either have a shareholding or equity contribution relationship with consultants or have a shareholding or equity contribution representing more than 20% of equity owned by a third party being an entity or a natural person, specifically as follows: + Consulting on preparation for technical design: Not applicable*;* + Consulting on verification of bid price: Not applicable*;* + Consulting on supervision of contract execution and inspection: Not applicable*;* + Consulting on preparation for the BD: Not applicable*;* + Consulting on appraisal of the BD: Not applicable*;* + Consulting on evaluation BDBs: Not applicable*;* + Consulting on appraisal of bidder selection results: Not applicable*;*

	+ Project management consulting, contract management, other consulting services whose work is directly related to the bid package: Not applicable*;* - The bidder does not belong to the same agency or organization directly managing the consultants (mentioned above)[1]. - Public sector entities and employers, procuring entities that have the same direct governing authority, and equity contribution when participating in bidding for each other's bid packages shall not have to satisfy the regulations on legal and financial independence between the bidder and the employer and the procuring entity. - Public sector entities and enterprises that have the same direct governing authority, and equity contribution when participating in bidding for each other's bid packages shall not have to satisfy the regulations on legal and financial independence between the bidder and the employer and the procuring entity. - The ratio of shares, equity contributions between the parties is determined at the deadline for submission of bids and according to the ratio stated in the business registration certificate, establishment decision, and other documents of equivalent value. In case the bidder participates in the bidding as a joint venture or the consultant is selected as a joint venture, the equity ownership ratio of other organizations and individuals in the joint venture is determined according to the following formula: $$\text{Ownership ratio} = \sum_{i=1}^{n} X_i \times Y_i$$ Of which: X_i: Equity ownership ratio of other organizations and individuals in the i-th joint venture member; Y_i: Percentage (%) of the work volume of the i-th joint venture member in the joint venture agreement; n: Number of members participating in the joint venture.
ITB 5.5	For foreign bidders: - When participating in bidding, foreign bidders must form a joint venture with a domestic bidder or use a domestic subcontractor, except in cases where the domestic bidder is not qualified to participate in any part of the bid package. In case of using subcontractors, in the BDB, the bidder can propose the parts of the work expected to be assigned to a Vietnamese subcontractor without having to specifically declare the name of the subcontractor; the bidder must submit a commitment attached to the BDB declaring that if it is the successful bidder, the Vietnamese subcontractor will be used to perform the part of the work proposed in the BDB. - Bidders participating in the bidding must have their names on the Vietnam National E-Procurement System before approving the bidder selection results at: https://muasamcong.mpi.gov.vn
ITB 7.5	Pre-bid meeting: No.

[1]Only evaluate this content for bidders that are public sector entities.

ITB 8	Cost of submitting the BDB: Interested bidders can buy Invitation to Bid with non-refundable cost of VND 500,000.00/set (in word: Five hundred thousand Vietnam Dong/set). Payment for Invitation to Bid shall be made by Telegraphic Transfer to the following Vietsovpetro's account: Account No.: 008.100.000001.1 Beneficiary: Vietsovpetro. Vietcombank, Vung Tau Branch. Please indicate: Bidder Name, payment for Invitation to Bid Bidding package No. VT-2988/25-XL-DA-HMH.
ITB 10.9	Number of copies of BDB: 01 original and 02 copies.
ITB 10.10	The Bidder must submit the following documents with the BDB: Scope of supply, scope and work and Technical Documentation as required TR.
ITB 12.1	Bidder is allowed to submit the alternative technical proposals. *In case only alternative technical proposals are allowed for specific parts of the bid package, the parts of the bid package for which the bidder is allowed to propose its alternative technical proposal must be clearly stated.*
ITB 13.5	Bid price: According to Form No. 12.
ITB 14.1	Bidding currency: VND, USD, and EUR. For a specific item of work, the bidder is only allowed to quote in one currency. Conversion currency is: VND. The time to determine the exchange rate is: at bid closing date. Basis for determining exchange rate: selling rate of Vietcombank. Intermediate currency: USD according to Vietcombank's selling rate at bid closing date. Conversion currency, intermediate currency are used to compare bid prices.
ITB 15.8	Expected product life (for replacement component): *Not applicable*.
ITB 16.2	Documentary requirements to demonstrate the bidder's capacity to perform the contract: *Not applicable.*
ITB 17.1	The validity of the BDB is: **≥ 90 days**, from the deadline for submission of bids.
ITB 18.2 **(Not Applicable)**	Content of bid security: - Value, currency of bid security: *[Fill in information]*. For bidders whose names are on the list of bidders with the practices specified in Clause 1, Article 18 of Decree No. 24/2024/NĐ-CP and published on the Vietnam National E-Procurement System, they must implement bid security measures with a value of 03 times the above-mentioned required value within 02 years from the last time they performed these practices. In case of joint venture, joint venture members who commit the specified practices in Clause 1, Article 18 of Decree No. 24/2024/NĐ-CP mentioned above must implement bid security measures with a value of 03 times the bid security value corresponding to the proportion of the work undertaken by that member in the joint venture within 02 years from the last

	time they performed these acts. - Validity of bid security: *[Fill in information]*. In case the bid package is divided into several independent parts, the bidder may choose to submit bid security in one of the following two ways: a) General bid security for all parts in which the bidder participates (the bid security value will be equal to the total value of the parts the bidder participates in). In case the bid security value submitted by the bidder is less than the total combined value, the Procuring entity has the right to decide which part of the bidder's bid security is used; b) Separate bid security for each part in which the bidder participates. In case of violation, leading to the bid security not being returned as prescribed in Point b ITB 18.5, the non-return of the bid security value shall be calculated on the part that the bidder violates. Vietsovpetro's account number in case of making bid security in the form of deposit/transfer: 008.100.000001.1 Beneficiary name: Vietsovpetro - at Vietcombank, Vung Tau Branch.
ITB 18.4 **(Not applicable)**	Time for returning or releasing bid security for unsuccessful bidders: 10 days from the approval of bidder selection result.
ITB 23.4	Bidders themselves can submit documents for clarification of the Bid proposal to Vietsovpetro within **05 days** from the deadline for submission of bids.
ITB 27.2	Maximum value for subcontractors: 0% bid price of the bidder.
ITB 28.4	1. Principles of preferences: a) Bidders participating in the bidding who are eligible for more than one type of preferences in the evaluation of capacity and experience or in the financial evaluation shall, when calculating preferences, only be entitled to the one type of preferences that is most beneficial to such bidders corresponding to each criterion of capacity and experience evaluation or financial evaluation. b) In the case where all bidders participating in the bidding are entitled to the same preferences or not all bidders are eligible for preferences, there is no need to calculate preferences for comparison and ranking. 2. Preferences for goods of Vietnamese origin a) Preferences for goods of Vietnamese origin with a domestic production cost ratio of less than 50% and no goods with a domestic production cost of 50% or more, it shall be determined as follows: In case of applying the least-cost method, for goods not entitled to preferences shall have its bid, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount equal to 7.5% of such bids for comparison and ranking; Bidders offering goods of Vietnamese origin with the domestic production cost ratio of less than 50% produced at its facility that has at least 50% of its employees who are disabled, war invalids, and ethnic minorities signing labor contracts with the term of 03 months or more, which are still valid at the deadline for submission of bids, shall be entitled to a preferential coefficient of 10% instead of 7.5%. b) Preferences for goods of Vietnamese origin with a domestic production cost ratio of 50% or more shall be determined as follows:

	In case of applying the least-cost method, for goods not entitled to preferences shall have its bid, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount of money equal to 10% of the bid after correcting errors, adjusting deviations, subtracting the discount value (if any) for comparison and ranking. For goods with the domestic production cost ratio of less than 50% but entitled to preferences, the bidders shall have their bids, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount of money equal to 2.5% of the bids after correcting errors, adjusting deviations, subtracting the discount value (if any) for comparison and ranking; no amount shall be added to the bid for comparison and ranking if goods of Vietnamese origin with the domestic production cost ratio of less than 50% produced at facilities that have at least 50% of employees who are disabled, war invalids, and ethnic minorities signing labor contracts with the term of 03 months or more, which are still valid at the deadline for submission of bids. Bidders offering goods of Vietnamese origin with the domestic production cost ratio of 50% or more at its facility that has 50% or more of its employees who are disabled, war invalids, and ethnic minorities signing labor contracts with the term of 03 months or more, which are still valid at the deadline for submission of bids, shall be entitled to a preferential coefficient of 12% instead of 10%. c) Innovative products that are goods of Vietnamese origin shall be entitled to the following preferences: In case of applying the least-cost method, for goods not entitled to preferences shall have its bid, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount of money equal to 15% of the bids after correcting errors, adjusting deviations, subtracting the discount value (if any) for comparison and ranking; for goods with the domestic production cost ratio of less than 50% but entitled to preferences, shall have its bid, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount of equal to 7.5% of the bid after correcting errors, adjusting deviations, subtracting the discount value (if any) for comparison and ranking; for goods with the domestic production cost ratio of 50% or more entitled to preferences, shall have its bid, after correcting errors, adjusting deviations, subtracting the discount value (if any), added with an amount of money equal to 5% of the bid after correcting errors, adjusting deviations, subtracting the discount value (if any) for comparison and ranking; For goods that are not innovative products of Vietnamese origin, in case the bidder offers goods of Vietnamese origin with a domestic production cost ratio of less than 50%, when calculating preferences, the coefficient of 15% is replaced by 7.5%; goods of Vietnamese origin with a domestic production cost ratio of 50% or more, when calculating preferences, the coefficient of 15% is replaced by 10%. d) Innovative products of Vietnamese origin are entitled to preferences in accordance with Point 3 of this Section when they meet one of the following conditions: (i) Products on the list of high-tech products of which the investment in development is prioritized or the list of high-tech products of which the development is encouraged under the Prime Minister's decision; (ii) Products resulting from scientific and technological research conducted by science and technology enterprises, in accordance with relevant law regulations on science and technology enterprises;

	(iii) Products created based on the bidders' inventions, semiconductor integrated circuit layouts, plant varieties that are granted protection titles for a term of no more than 05 years from the date of such grant, or the bidders' computer programs protected for a term of no more 05 years from the date they are granted registered copyright certificates; (iv) Products that have won the Ho Chi Minh Prize, or the State Prize for Science and Technology in accordance with the law regulations on science and technology awards; (v) New products created from the results of research and development at one of the facilities of the Vietnam National Innovation Center; (vi) New products created from the results of scientific research and technological development in accordance with law regulations on technology transfer. Innovative products specified in Point d of this Section are entitled to preferences for a period of 06 years from the first time they are produced and eligible for marketing. 3. Preferences for domestic innovative start-up businesses a) When domestic innovative start-up enterprises offer their innovative products for bidding in accordance with the provisions of Point d, Section 2, they may not meet the requirements on revenues and years of operating in the same industry within a period of 06 years from the first time they are produced and eligible for marketing Domestic innovative startups when bidding for their innovative products According to the provisions of Point d, Section 2 (Preferences for goods of Vietnamese origin) in ITB 35.3, it is not necessary to meet the requirements on turnover and number of years of operation in the same industry within 06 years from the date the product is first manufactured and is eligible for marketing. b) Innovative products specified in Point d, Section 2 (Preferences for goods of Vietnamese origin) in ITB 35.3 that are goods of domestic creative start-up enterprises participating in bidding shall be entitled to preferences according to the provisions in Point c, Section 2 (Preferences for goods of Vietnamese origin) in ITB 35.3. 4. Preferences for domestic bidders manufacturing goods of Vietnamese origin 4.1. Domestic bidders to whom technology is transferred to produce goods of Vietnamese origin in conformity with the bidding document may: a) Not meet the requirements on turnover and years of operating in the same industry within a period of 05 years from the first time they are produced and eligible for marketing; b) For transferred technologies on the list of industries entitled to investment preferences and the list of technologies of which transfer is encouraged in accordance with law regulations, in addition to the preferences specified at Point a of this Clause, it is not necessary to meet the requirements on confirmation of successful operation and defined period of time during which the products are used and confirmed by users that they meet quality requirements. In the case where the technology transferor has a commitment with the employer to take responsibility for the quality of products manufactured by the bidder at the employer's request, the bidder receiving the technology transfer may use the technology transferor's documents and test results for the transferred technology demonstrate to demonstrate the verifiability and conformity of the type of goods to be manufactured to the

	specifications transferred under the technology transfer contract or the technology transfer certificate issued by the competent authority; c) All requirements for capacity, experience, goods quality, technical requirements, and other requirements of the bid package, other than those specified at Points a and b of this Clause, shall be specified on the same evaluation basis for all participating bidders. In case of necessity, the employer may impose additional requirements on bidders entitled to preferences, including: extending the warranty period, enhancing quality control procedures during production and factory acceptance testing, providing operation, maintenance, and other services to ensure the reliability of goods during operation. 4.2. For domestic bidders manufacturing goods of Vietnamese origin in accordance with the bidding document: a) Not having to meet the requirements on turnover and years of operating in the same industry as the bid package under consideration when the bidders offer goods that are produced by such bidders for the first time and are eligible for marketing within a period of 05 years before deadline for submission of bids. Bidders established no more than 07 years by the time of bid closing shall be entitled to such preferences; b) Being entitled to preferences as prescribed in Point b, Clause 4.1, Section 4 (Preferences for domestic bidders manufacturing goods of Vietnamese origin) in ITB 35.3 for technology transfer from other units (if any). 4.3. When offering their innovative products for bidding, individuals or groups of individuals specified in Point d, Section 2 (Preferences for goods of Vietnamese origin) in ITB 35.3 may not meet the requirements on financial capacity and years of operating in the same industry within a period of 06 years from the first time the products are produced and eligible for marketing. 4.4. The basis for identifying a domestic bidder who is allowed to transfer technology or one who is allowed to transfer the technology of which transfer is encouraged to produce goods of Vietnamese origin is the certificate of technology transfer registration or the certificate of registration for encouraged transfer of technology as specified in the law regulations on technology and investment.
ITB 29.1	The method of evaluating BDB is: - Evaluation of capacity and experience: On the Pass/Fail basis. - Technical evaluation: Based on the size and nature of the bid package, as specified in Technical Evaluation Criteria stipulated in Chapter III. - Evaluation of the financial part: to apply lowest price method **for Each group** in accordance with evaluation criteria stipulated in Chapter III.
ITB 29.2(d)	Organizing the implementation: The comparison and ranking of bidders is determined on the basis of: *The BDB with the lowest bid price **for Each group** after correcting errors, adjusting deviations, subtracting the discount values (if any), converting the bid price into a single currency, adding the preferential values (if any) including all taxes, fees, charges (if any) incurred in Vietnam and excluding import duty and VAT of the value of imported goods stated on the customs declaration (Above-mentioned import duty and VAT are exempted under the Intergovernmental Agreement) is ranked first.*
ITB 29.2(e)	Bidder ranking:

	*The bid document with the lowest bid price **for Each group** after correcting errors, adjusting deviations, subtracting the discount value (if any), converting the bid price into a single currency, adding the preferential value (if any) including all taxes, fees, charges (if any) incurred in Vietnam and excluding import duty and VAT of the value of imported goods stated on the customs declaration (Import duty and VAT above are exempted under the Intergovernmental Agreement) is ranked first.*
ITB 31.4	The bidder with the lowest bid price after correcting errors, adjusting deviations, subtracting the discount value (if any)*;* For a bid package divided into multiple parts (lots), the evaluation of the BDB and approval of the successful bidder will be conducted on the basis of ensuring that the successful bid price of the entire bid package does not exceed the approved estimated price without comparing with the estimated cost of each part.
ITB 34.1	The maximum increase rate in quantity is: 0%*;* The maximum decrease rate in quantity is: 0%.
ITB 34.2	- Additional procurement options: Not applicable*;* - Maximum proportion of the additional procurement options is: 0%.
ITB 38.2	- Competent person: **Mr. Vu Mai Khanh - General Director of Vietsovpetro.** + Address: 105 Le Loi, Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam*;* + *Tel.: 84-254-3839871* + Fax: 84-254-3839857 + E-mail: vspadmin@vietsov.com.vn - Standing unit assisting the Chairman of the Advisory council in handling the petitions: + Address: 105 Le Loi, Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam*;* + E-mail: vspadmin@vietsov.com.vn.
ITB 39	Address of the organization or individual performing the monitoring task: + Address: 105 Le Loi, Vung Tau Ward, Ho Chi Minh City, S.R. Vietnam*;* + *Tel.: 84-254-3839871* + Fax: 84-254-3839857 + E-mail: vspadmin@vietsov.com.vn.

Chapter III. EVALUATION CRITERIA

Section 1. Evaluation of the eligibility of the BDB

1.1. Examining the eligibility of the BDB:

a) Examining the number of originals and copies of the BDB;

b) Examining the components of the original BDB, including: administrative and legal documents, documents proving capacity and experience, technical proposal of the bidder as required by the BD, comprising the letter of bid, the joint venture agreement (if any), the power of attorney to sign the letter of bid (if any), documents proving eligibility; documents proving capacity and experience; technical proposal; price proposal and other components of the BDB.

c) Examining the consistency in contents of the original and copies for the detailed evaluation of the BDB.

The examination of the BDB is not a reason to disqualify a bidder.

1.2. Evaluating the eligibility of the BDB:

A bidder's BDB is considered valid when it fully meets the following requirements:

a) It includes the original of BDB;

b) It includes the letter of bid signed and stamped (if any) by the legal representative of the bidder as required by the BD; the time of signing the letter of bid shall be consistent with the time of starting the bidder selection process. For joint venture, the letter of bid must be signed and stamped (if any) by the legal representative of each member of the joint venture or the member assigned to sign the letter of bid on behalf of the joint venture according to the division of responsibilities in the joint venture agreement;

c) The validity period of the BDB meets the requirements specified in IBT 17.1;

d) The bid price stated in the letter of bid must be specific, fixed in numbers and words, it is not allowed to propose different bid prices or include conditions that are disadvantageous to the Employer or the Procuring entity;

e) The bidder's name does not appear in two or more BDBs as a prime bidder (either independent bidder or member of a joint venture).

g) In case of a joint venture, the joint venture agreement shall clearly state the specific work and the corresponding estimated value of work that each member of the joint venture will perform according to Form No. 03 of Chapter IV. The arrangement of work among joint venture members shall be based solely on the items mentioned in the summary of bid prices specified in Forms Form No. 11 (11A or 11B or 11C or 11D or 11E) Chapter IV or according to the work in the production process of the items in the summary of bid prices; it is not allowed to divide the work that does not belong to these items or does not belong to the production process of these items.

h) The bidder is not currently forbidden to participate in bidding activities;

i) The bidder ensures eligibility according to the provisions in ITB 5.

k) Within 03 years prior to the deadline for submission of bids, the bidder has no personnel (signing a labor contract with the bidder at the time the personnel committed the violation) convicted by the Court of violating bidding regulations causing serious consequences according to the provisions of criminal law with the aim of allowing that bidder to be the successful bidder.

The bidder who submits an eligible BDB shall be reviewed and evaluated in terms of capacity and experience.

Section 2. Evaluation criteria for capacity and experience

2.1. Evaluation criteria for capacity and experience

The criteria for evaluating capacity and experience are specified in Table 01. The pass/fail basis is used to develop the criteria for evaluating capacity and experience, which stipulates the minimum requirements for evaluating as pass for each content of the bidder's capacity and experience, including: experience in implementing contracts for the supply of similar goods; capacity for manufacturing goods; financial capacity including net asset value, turnover, performance of tax declaration and tax payment liabilities and other necessary criteria to evaluate the financial capacity of the bidder; technical facilities, qualifications of professional staff performing related services (if required);

The determination of the specific requirements for each criterion specified in this Section is based on the requirements of each specific bid package. A bidder that is assessed to meet all the contents specified in Table 01 (for bidders who are not manufacturers of goods within the scope of the bid package) or Table 02 (for bidders who are manufacturers of goods within the scope of the bid package) will be considered as meeting the requirements on capacity and experience.

The capacity and experience of the subcontractor will not be considered when evaluating the prime bidder's BDB. The prime bidder itself must meet the evaluation criteria for capacity and experience.

In case the currency stated in similar contracts or the payment confirmation of the Employer for the performed supply of goods contracts or tax payment declarations or other related documents proving the bidder's capacity and experience differs from VND, when preparing the BDB, the bidder must convert it to VND (the intermediate currency is USD) as a basis for evaluating the BDB. The conversion is applied according to the selling rate of Vietcombank, specifically:

- For annual turnover value: apply the selling rate on the last day of that year.
- For similar contract value: apply the selling rate on the date of acceptance/contract liquidation.

In case the bidder is a parent company (for example, a Corporation) that mobilizes subsidiaries to perform part of the work of the bid package, the bidder must specifically declare the work for the subsidiaries according to Form No. 09B, Chapter IV. The evaluation of experience in performing similar contracts is based on the value and quantity of work undertaken by the parent company and subsidiaries in the bid package.

Table No. 01

EVALUATION CRITERIA FOR CAPACITY AND EXPERIENCE

Capacity and experience criteria			Compliance requirements			Submission requirements
No.	**Description**	**Requirement**	**Single Entity**	**Joint venture**		
				All members combined	**Each member**	
1	**History of non-performing contracts due to bidder default**	Non-performance of contract for supply of goods, EPC, EP, PC, turnkey did not occur as a result of bidder default (1) from **01 January, 2022** to the deadline for submission of bids.	Must meet requirement	Not applicable	Must meet requirement	Form No. 07
2	**Tax liabilities**	The tax liabilities were fulfilled(2) with respect to the most recent fiscal year prior to the deadline for submission of bids	Must meet requirement	Not applicable	Must meet requirement	Commitment in the letter of bid and provision of supporting documents
3	**Financial capacity**					
3.1	**Financial performance**	The bidder's net asset value in the most recent fiscal year as of the deadline for submission of bids shall be positive. (Net asset value = Total assets - Total liabilities)	Must meet requirement	Not applicable	Must meet requirement	Form No. 08
3.2	**Average annual turnover (excluding VAT)**	The average annual turnover (excluding VAT) of the most recent **03** fiscal years **2022-2024** (3) compared to deadline for submission of bids of the bidder has a minimum value of **USD 582,972.97 / VND 15,122,318,584.00** If bidder attends the bid for one or more than one Group, Minimum average annual turnover within the last **03 years** should be ≥ Sum of those value with respective groups:	Must meet requirement	Must meet requirement	Not applicable	Form No. 08

Capacity and experience criteria			Compliance requirements			Submission requirements
No.	**Description**	**Requirement**	**Single Entity**	**Joint venture**		
				All members combined	**Each member**	
		As stated in the Table No. 01A				
4	**Experience in implementing contracts for the supply of similar goods**	The bidder has completed at least 01 similar contract as prime bidder (independent or member of joint venture) or subcontractor (4) during the period from **01 January 2020** to the deadline for submission of bids. In which similar contracts are: - Similar nature: for supplying goods in offshore Oil and Gas industry / other industries. - Completed with minimum size (value): **As stated in the Table No. 01A**	Must meet requirement	Must meet requirement	Must meet requirement (equivalent to the work undertaken)	Form No. 05
5	**Ability to provide warranty, maintenance, upkeep, repair, spare parts-stocking or provide other after-sales services** (5)	The Bidder shall declare its ability to perform its obligations of warranty, maintenance, upkeep, repair, spare parts-stocking or provision of after-sales services in one of the following ways: - The Bidder commits to having the capacity to self-perform the obligations of warranty, maintenance, upkeep, repair, spare parts, stocking or provision of after-sales services as required by the BD. - The Bidder signs a principle contract with a unit that is capable of performing the obligations of warranty, maintenance, upkeep,	Must meet requirement	Must meet requirement	Not applicable	Bidder's commitment or principle contract

Capacity and experience criteria			Compliance requirements			Submission requirements
No.	Description	Requirement	Single Entity	Joint venture		
				All members combined	Each member	
		repair, spare parts-stocking or provision of after-sales services as required by the BD.				

Note:

(1) Non-performing contracts for the supply of goods, EPC, EP, PC, turnkey due to the bidder default include:

- The contract for supply of goods, EPC, EP, PC, turnkey is concluded by the Employer to be unfulfilled by the bidder and the bidder does not object;

- The contract for supply of goods, EPC, EP, PC, turnkey is concluded by the Employer to be unfulfilled by the bidder, not accepted by the bidder but have been concluded by arbitration or court in a direction unfavorable to the bidder.

Non-performing contracts for the supply of goods, EPC, EP, PC, turnkey include contracts for which the Employer's decision has been overruled by the dispute settlement mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the bidder have been exhausted. Contracts that are behind schedule due to the bidder's default but still completed are not considered non-performance.

For a joint venture in which only one or several members of the joint venture violate and be prohibited from participating in bidding activities as prescribed in Clause 1, Article 125 of Decree No. 24/2024/NĐ-CP, the remaining member of the joint venture shall not be considered as having failed to fulfill the contract due to the bidder default. In case one or several members of the joint venture violate the contract, are no longer capable of continuing to perform the contract, seriously affecting the progress, quality and efficiency of the bid package, only one or several members of the joint venture who violate the contract shall be considered as having failed to fulfill the contract, the remaining member shall not be considered as having failed to fulfill the contract due to the bidder default.

(2) The bidder shall provide documents proving that it has fulfilled its obligations to declare and pay corporate income tax (personal income tax for bidders who are household businesses) of the fiscal year closest to the deadline for submission of bids. The obligation to fulfilled the tax liabilities is to pay tax with the tax value corresponding to the tax rate, taxable income, and taxable turnover declared by the bidder on the Electronic tax payment services (the amount of tax paid corresponds to the amount of tax payable); in case of tax payment delay, tax exemption, or tax reduction according to State policy, this regulation shall apply. The bidder shall submit the following documents:

- Tax payment declaration (or tax authority's payment notice for household businesses) and Tax authority's confirmed payment slip printed from the Electronic tax payment services, or

- Tax payment declaration (or tax payment notice from the tax authority for household businesses) and confirmation from the tax authority on tax liabilities fulfillment.

In case deadline for submission of bids is after the end date of the bidder's fiscal year (year Y) and before or on the last day of the third month from the end date of year Y, the request has fulfilled the tax payment declaration and payment obligations applicable to the fiscal year before year Y (year Y-1).

(For example: The deadline for submission of bids is 20 March 2024, the bidder's fiscal year is 1 January - 31 December, then the bidder must prove has fulfilled the obligation to declare and pay taxes for 2022).

(3) In case the bidder has been established for less than the number of years required by the BD, the average annual turnover (excluding VAT) is calculated based on the number of years the bidder has been established. In this case, if the bidder's average annual turnover (excluding VAT) meets the value requirements of the BD, the bidder will still be evaluated without being disqualified.

In case deadline for submission of bids is after the end date of the bidder's fiscal year (year Y) and before or on the last day of the 3rd month from the end date of year Y, the requirement for submitting financial statements applies to previous years of year Y (year Y-1, Y-2...).

(For example: The deadline for submission of bids is 20 March 2024, the bidder's fiscal year is 01 January – 31 December and the BD requires the bidder to submit financial reports for the last 3 years, then the bidder must submit financial reports for the years 2020, 2021, 2022).

(4) For contracts in which the bidder has participated as a member of a joint venture or subcontractor, only the

value of the work undertaken by the bidder shall be calculated.

(5) If after-sales service is not required, cross out this evaluation criterion.

In case the bidder lacks a commitment, it will be supplemented during the evaluation of the BDB. In case the bidder does not supplement the commitment within a reasonable period of time as requested by the Employer or the Procuring entity, the bidder's BDB will be considered as not meeting the requirements on the ability to guarantee, maintain, repair, provide spare parts or provide other after-sales services and will be rejected.

Table 02

EVALUATION CRITERIA FOR CAPACITY AND EXPERIENCE

(For bidders who are manufacturers [(1)] (output of goods within the scope of the bid package)

(NOT APPLICABLE)

Table No. 01A

EVALUATION CRITERIA FOR FINANCIAL CAPACITY AND EXPERIENCE

(For goods supply packages divided into multiple parts)

No.	Number of part (lot)	Name of part (lot)	Estimated value of each part (VND)	Average annual turnover (excluding VAT)* (VND)	HS code	Similar contract size (applicable to commercial bidders)** (VND)	Production capacity of goods (applicable to manufacturers)	Warranty and maintenance capabilities
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
1	*Group 1*	*Pressure Gauge, Differential Pressure Gauge, Temperature Gauge (item 1-11)*	*USD 16,896.70 / VND 438,300,399.00*	*USD 25,345.05 / VND 657,450,599.00*		*USD 8,448.35 / VND 219,150,200.00*		
2	*Group 2*	*Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter (item 12-32)*	*USD 135,993.93 / VND 3,527,682,544.00*	*USD 203,990.90 / VND 5,291,523,816.00*		*USD 67,996.97 / VND 1,763,841,272.00*		
3	*Group 3*	*Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator (item 33-38)*	*USD 131,106.93 / VND 3,400,913,764.00*	*USD 196,660.40 / VND 5,101,370,646.00*		*USD 65,553.47 / VND 1,700,456,882.00*		
4	*Group 4*	*Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector (item 39-55)*	*USD 104,651.08 / VND 2,714,649,015.00*	*USD 156,976.62 / VND 4,071,973,523.00*		*USD 52,325.54 / VND 1,357,324,508.00*		

For contents of non-performance of contracts due to the bidder's default, performance of tax declaration and payment liability, financial performance, warranty capability, provision of spare parts or provision of other after-sales services, the provisions in Table No. 01 and Table No. 02 of this Chapter shall apply.

Note:

(*) In case the bidder participates in multiple parts, the evaluation of turnover is based on the total average turnover required for the parts in which the bidder participates. In case the bidder participates in 1 part, it only needs to meet the turnover requirement of that part.

(**) In case the bidder participates in many parts, the evaluation of similar contracts corresponds to each part that the bidder participates in. The bidder does not have to meet the total size of similar contracts for the parts that the bidder participates in.

2.2. Evaluation criteria for key personnel: (Not Applicable).

There is no requirement for mobilizing key personnel for the supply of goods. For common goods, readily available on the market, which do not require highly qualified personnel to perform related services (such as installation, training, technology transfer, etc.), there is no requirement for key personnel. Key personnel are only required for related services with specific, complex elements that require knowledgeable and experienced personnel to undertake.

In case the BD require key personnel, the bidder must demonstrate its ability to mobilize the proposed key personnel. The bidder must provide detailed information on the proposed key personnel and their experience records according to Forms No. 06A, 06B, 06C Chapter IV. Key personnel may be on the Bidder's payroll or mobilized by the Bidder. In case the key personnel declared by the bidder in the BDB do not meet the requirements or cannot demonstrate the ability to mobilize personnel (including cases where key personnel have been mobilized for other contracts with working time coinciding with the implementation time of this bid package), the Procuring entity allows the bidder to supplement or substitute. The bidder is only allowed to supplement or substitute once for each key personnel position within a suitable period of time but not less than 03 working days. In case the bidder does not have replacement key personnel that meets the requirements of the BD, the bidder will be disqualified. In any case, if the bidder declares key personnel dishonestly, the bidder will not be allowed to replace other personnel, the bidder's BDB will be disqualified and the bidder will be considered fraudulent according to the provisions of Clause 4, Article 16 of the Bidding Law and will be handled according to the provisions at Point a, Clause 1, Article 125 of Decree No. 24/2024/NĐ-CP.

The minimum number of years that a person must have worked in a similar position or the minimum number of contracts in that position is used to demonstrate experience in similar jobs. Key personnel's years of experience are calculated from the moment they start doing similar work until the deadline for submission of bids. The bidder shall provide detailed information about the proposed key personnel and their experience in Forms No. 06A, 06B and 06C of Chapter IV to demonstrate that it has sufficient personnel for key positions to meet the following requirements:

Table No. 03: Requirements for key personnel (1)

No.	Job position	Quantity	Experience in similar jobs	Certificate/Qualification (2)
1			*minimum__years or minimum___contract*	
2			*minimum__years or minimum___contract*	
3				
…				

Note:

(1) In case the bid package does not have a requirement for key personnel, the Employer shall not enter this Table.

(2) Only specified in cases where the related service requires a professional certificate.

Section 3. Criteria for technical evaluation

Using pass/fail basis or scoring to develop technical evaluation criteria.

The development of technical evaluation criteria is based on factors regarding the ability to meet requirements on quantity, quality, delivery schedule, transportation, installation, warranty, provision of after-sales services (if any), and information on the bidder's contract performance results as prescribed in Articles 17 and 18 of the Decree. No. 24/2024/NĐ-CP, the quality of similar goods is made public according to the provisions of Article 18 of Decree No. 24/2024/NĐ-CP (if any) and other requirements stated in Chapter V. Based on each specific bid package, when preparing the BD, it is necessary to specify the criteria as the basis for technical evaluation, including:

- Characteristics, technical parameters of goods, production standards, manufacturing standards and technology;

- The rationality and economic efficiency of technical solutions and measures for organizing the supply and installation of goods;

- Level of compliance with warranty and maintenance requirements: the bidder must present a plan to provide warranty and maintenance services;

- Level of meeting requirements for providing materials, replacement equipment and other related services (if any) during the entire use of the goods.

- Geographical and environmental adaptability;

- Environmental impacts and solutions;

- Sustainable bidding criteria (if any);

- Factors regarding trade conditions, delivery schedule, technology transfer training, and provision of after-sales services;

- Goods delivery progress;

- Environmentally friendly factors;

- The bidder's contract performance results for the goods supply, EPC, EP, PC, turnkey packages as prescribed in Articles 17 and 18 of Decree No. 24/2024/NĐ-CP, the quality of similar goods is made public as prescribed in Article 18 of Decree No. 24/2024/NĐ-CP (if any);

- Other necessary elements.

3.1. Evaluation using scoring method [1]:

Based on the size and nature of the bid package, the minimum and maximum scores for each general criterion shall be determined. If the scoring method is used, the minimum and maximum scores must be specified for each general criterion. Minimum scores can be specified for basic detailed criteria within a general criterion but cannot be specified for non-basic detailed criteria. The minimum required score should not be lower than 70% of the total technical score. For bid packages with high technical requirements, the minimum required technical score should be from 80% to 90% of the total maximum technical score. BDBs with a total score (as well as the scores of some general criteria) equal to or exceeding the minimum required score shall be considered technically qualified and shall be further considered financially.

[1]In case this method is applied , delete clause 3.2 Section 3 of this Chapter.

The technical score of each general criterion is calculated based on the technical scores of the detailed criteria according to the following formula:

$$S_j \equiv \sum_{i=1}^{k} t_{ji} * w_{ji}$$

Of which:

t_{ji} = technical point of detailed criteria "i" in general criterion "j",

w_{ji} = proportion of detailed criteria "i" in general criterion "j",

k = number of detailed criteria in the general criterion "j", and

$$\sum_{i=1}^{k} w_{ji} = 1$$

The total technical score is calculated according to the following formula:

$$T \equiv \sum_{j=1}^{n} S_j * W_j$$

Where:

S_j = technical scores of general criterion "j",

W_j = proportion of general criterion "j",

n = number of general criteria, and

$$\sum_{j=1}^{n} W_j = 1$$

3.2. Evaluation using pass/fail basis [2]: (Not Applicable)

Based on the size and nature of the bid package, the level of requirements for each content is determined. Basic detailed criteria within a general criterion can only be "passed" or "failed"; non-basic detailed criteria within a general criterion can be, in addition to "passed" or "failed," "acceptable," but no more than 30% of all detailed criteria within such general criterion.

A general criterion will be met if all basic detailed criteria are met and all non-basic detailed criteria are either met or acceptable.

The BDB is considered to meet technical requirements when all general criteria are assessed as pass.

Section 4. Financial evaluation criteria

4.1. Least-cost method [3]: (Applicable).

The lowest price is determined by following steps:

Step 1: Determining the bid price including all taxes, fees, charges (if any) incurred in Vietnam and excluding import duty and VAT of the value of imported goods stated on the customs declaration. The above import duty and VAT are exempted under the Intergovernmental Agreement;

[2]In case this method is applied, delete clause 3.1 Section 3 of this Chapter.

[3] In case this method is applied, delete clause 4.2 Section 4 of this Chapter.

Step 2: Correcting errors (follow the instructions in section 4.3);

Step 3: Adjusting deviations (follow the regulations in section 4.3);

Step 4: Determining the bid prices after correcting errors, adjusting deviations, subtracting the discount values (if any);

Step 5: Converting the bid price to a single currency (if applicable);

Step 6: Determine the preferential values (if any) according to the provisions of ITB 28;

Step 7: Ranking bidders: The bid document with the lowest bid price ***for Each group*** *after correcting errors, adjusting deviations, subtracting the discount values (if any), converting the bid price into a single currency, adding the preferential values (if any) including all taxes, fees, charges (if any) incurred in Vietnam and excluding import duty and VAT of the value of imported goods stated on the customs declaration (Import duty and VAT above are exempted under the Intergovernmental Agreement) is ranked first.*

4.2. Evaluated-price method [4]: (Not Applicable).

The evaluated-price is determined by following steps:

Step 1. Determining the bid price after correcting errors, adjusting deviations, subtracting the discount values (if any) according to Section 4.1.

Step 2. Determining the evaluated-price:

The determination of the evaluated-price is conducted according to the following formula:

$$G_{ĐG} = G \pm \Delta_G + \Delta_{ƯĐ}$$

In there:

- G means the bid price determined in Step 1 of this clause;

- $\Delta_{ƯĐ}$ means the value that must be added for subjects that are not entitled to preferences according to the provisions of ITB 28.

- Δ_G means the value of the factors converted to a common level for the entire life cycle of the goods. Accordingly, when developing the evaluated-price standard, the Employer and the Procuring entity may consider quantifying one or more factors other than the bid price. Those factors may include:

a) Delivery schedule:

The goods must be delivered within the time period specified in the BD. A Bidder proposing a delivery date earlier than the earliest delivery date will not be given priority. A Bidder proposing a delivery date later than this time period will have its BDB rejected.

In case the Employer or the Procuring entity can quantify the advantage of 01 day of putting the goods into use early (within the time according to the delivery schedule) will save A (VND), then use this factor to include in the formula to determine the evaluated-price. In case the bidder delivers the goods later than the earliest delivery date is X days (but still within the delivery schedule) will be added an amount of: A x X (VND) to the bid price of this bidder for comparison and ranking of bidders.

b) Payment schedule:

[4] In case this method is applied, delete clause 4.1 Section 4 of this Chapter.

The Bidder must quote according to the payment schedule specified in the SCC. The BDB will be compared on the basis of the quoted price according to the payment schedule as prescribed. However, along with the payment schedule specified in the SCC, the Bidder is allowed to propose another payment schedule and propose a price reduction according to this payment schedule. After the successful bidder is selected based on the comparison of the bid price according to the original payment schedule, the Employer may consider the alternative payment schedule and discount of this bidder.

c) Costs for materials and spare parts in the initial period: ___ *[The Employer and the Procuring entity choose one of the following two ways:*

The Bidder shall be responsible for listing and quoting the cost of materials and spare parts during the initial operating period specified in ***BDS*** *15.8. The offered prices of these materials and spare parts will be added to the bidder's bid price to serve as a basis for comparing the BDB and ranking the bidders. The bidder is responsible for complying with the commitment to the proposed price at this point during use.*

or

The Employer and the Procuring entity shall make a list of materials, Spare parts with high frequency of use and value during the initial operation period specified in ***BDS*** *15.8. The Bidder must quote the unit price and total amount for these materials and spare parts. The bid price of these goods will be added to the bid price to serve as a basis for comparing the BDB and ranking the Bidders. The Bidder is responsible for fulfilling its commitment to the proposed price during the usage period.*

d) Ability to readily provide materials, spare parts and after-sales services for goods offered in the BDB at the project location:

For the purpose of comparing the Bidding Documents and ranking the bidders, the Bid Price will be added an amount equivalent to the cost incurred by the Employer to establish the minimum service facilities and to store the materials and spare parts if these items are offered separately.

đ) Life cycle cost:

Life cycle cost should be used when the operating and maintenance costs over the life of the item are significant compared to the purchase cost and may vary between bids. Life cycle costing will be assessed on a net present value basis. If life cycle costing is used, the following factors may be considered for the purpose of comparison and ranking of bidders:

+ Number of years for calculating life cycle costs: ___ [write the number of years];

+ Discount rate for calculating net present value for operating and maintenance costs: ___ [insert discount rate];

+ Annual operating and maintenance costs throughout the life of the goods are determined in the following method: ____ [insert method of determination];

+ Liquidation value;

+ Other factors as required by the Employer and the Procuring entity;

+ The Bidder must provide the following information: _____[list the information the Bidder must provide (if required)].

e) Equipment performance and capacity:

In order to compare the BDB and rank the bidders, the bid price will be deducted an amount corresponding to the difference in capacity and performance between the bidder's proposal and the minimum requirement in the BD. Specifically as follows: _____*[write the adjustment formula]*. For example: 01% or 01 unit difference between the performance and capacity of the equipment that the BDB offer is superior to the minimum requirement in the BD is considered equivalent to _____*[write the amount that the Employer can benefit from due to higher performance and capacity]*.

g) Goods certified with eco-labels, energy labels and equivalents (if any): _____*[In case of applying this criterion, the employer and the procuring entity need to quantify in money the difference of one unit of goods certified with eco-labels, energy labels and equivalents... compared to the minimum required level]*.

h) Sustainable bidding (if any): _____*[In case of applying this criterion, the employer and the procuring entity need to quantify into money a unit of difference in environmental and social parameters and indicators... compared to the minimum required level. In case of prioritizing products and services certified with eco-labels, energy labels and equivalents, specific regulations need to be specified]*.

i) Bidder's contract performance results as prescribed in Articles 17 and 18 of Decree No. 24/2024/NĐ-CP;

k) Similar quality of goods has been used publicly as prescribed in Article 18 of Decree No. 24/2024/NĐ-CP (if any), including consideration of origin.

l) Other standards:

- In case the scope of supply includes requirements for sustainable bidding such as requirements on emissions, fuel consumption, recycled materials, reuse, etc., the Employer and the Procuring entity can use the pass/fail basis or, together with the pass/fail basis, quantify these factors into money if they exceed the minimum requirements.

Step 3. Ranking bidders: The BDB with the lowest evaluated price is ranked first.

4.3. Correction of errors and adjustment of deviations are implemented as follows:

1. Correction of errors means the correction of errors in bid documents, including arithmetic errors and other errors, on the following basis:

a) Arithmetic errors include those caused by incorrect addition, subtraction, multiplication, or division calculations when calculating bid prices. In respect of the fixed unit price contract, adjustable unit price contract, time-based contract, cost plus fee contract, performance-based contract, percentage-based contract, if there is a discrepancy between the unit price and the line item total, the unit price shall prevail; if there is a misplacement of the decimal point in the unit price that leads to an abnormal price (tenfold, 100 folds, 1,000 folds), the line item total as quoted shall govern;

b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected;

c)) If there is a discrepancy between words and figures, the amount in words shall prevail unless the amount expressed in words is meaningless; in cases where the amount expressed in words is related to an arithmetic error, the amount in figures after correction (if any) shall prevail subject to Point a and Point b of this Clause;

d) When the amount column is filled in without a corresponding unit price, the unit price shall be determined by dividing that total sum by the quantity; when the unit price is available but the amount column is left blank, the amount shall be determined by multiplying the quantity by the unit price; for a specific item, when both unit price and amount are available but the quantity column is left blank, that quantity shall be determined by dividing the amount by the unit price of that item. When the determined quantity differs from that mentioned in the bidding document, it shall be regarded as a scope of supply error and be adjusted according to the provisions in Clause 2 of this Article, except for construction packages applying a lump sum contract;

đ) Unit errors: Be adjusted according to the requirements of the bidding document.

2. Adjustment of deviations in scope of supply:

a) In case of deviation in the scope of supply compared to the Invitation to Bid, what is deficient shall be added, and what is redundant shall be subtracted according to respective unit price in the Bid proposal of bidder that has deviation;

In case of deficient deviation (lack of items of work in comparison with the scope of supply, lack of inland transportation cost to Vietsovpetro warehouse / Vietsovpetro port in case Bidder does not offer delivery term to Vietsovpetro warehouse / Vietsovpetro port), if there is no respective unit price in the Bid proposal with deficient deviation, the adjustment of deviation will be as follows:

- **Lack of items of work in comparison with the scope of supply:**

The highest unit price offered for such item of Bid proposals which pass the Technical evaluation shall be used as legal basis for adjustment of deviation. In case the Bid proposals passed the Technical evaluation has no unit price, unit price in the value of bidding package shall be used as legal basis for adjustment of deviation. In case not having value of bidding package, unit price for calculating price of the bidding package shall be used as legal basis for adjustment of deviation.

In case only one bidder passes the Technical evaluation, adjustment of deviation shall be made based on respective unit price in the Bid proposal of this bidder; In case this Bid proposal has no respective unit price, unit price in value of bidding package shall be used. In case not having value of bidding package, unit price for calculating price of the bidding package shall be used as legal basis for adjustment of deviation.

Lack of inland transportation cost to Vietsovpetro warehouse / Vietsovpetro port:

In case Bidder offers delivery term to ports in Vietnam other than to Vietsovpetro warehouse / Vietsovpetro port and does not provide value / unit price for inland transportation cost from such port to Vietsovpetro warehouse / Vietsovpetro port, unit price in the value of bidding package shall be used as the legal basis for adjustment of deviation. If no such unit price is available in the value of bidding package, the following rates shall be used as the legal basis for adjustment of deviation: *The inland transportation cost = 0.25% x Total proposed bid price*.

b) Adjustment of excessive and deficient deviations in supply scope:

In the case where the bidder's bid document lacks one or more item(s) as specified at Point a of this Clause and no unit price(s) for such item(s), the highest unit price(s) of such item(s) offered in other bid documents which has passed the technical evaluation shall be used for deviation adjustment. In the case where there is no unit price in bid documents of bidders that have passed the technical evaluation, the unit price in the approved estimate of the bid package shall be used for deviation adjustment. In the case where there is no cost estimate for the bid package, the unit price forming the bid package's price shall be used for deviation

adjustment and serve as the basis for bidder comparison and ranking. The adjustment of deficient deviations is only for the purpose of comparing and ranking bid documents.

In the case where the bidder's bid document offers deficient volume compared to that required in the bidding document, the deficient value shall be added at the respective unit price in the bid document.

In the case where the bidder's bid document offers excessive volume compared to that required in the bidding document, the excessive value shall be subtracted at the respective unit price in the bid document.

3. For a bidder with a letter of discount, the error correction and deviation adjustment shall be based on the bid price not yet minus the value of discounts. The percentage (%) of deficient deviation shall be determined based on comparison with the bid price stated in the letter of bid.

4. Applying unit price for the deficient deviation to the first ranked bidder:

In the case where the bidder's bid document contains any deficient deviation after the deviation adjustment as specified at Point c, Clause 2 of this Article, the bidder shall still be ranked first. If such bidder's bid document does not state the unit price for the deficient deviation, the recommended award unit price of such deficient deviation shall be determined in the following order of priority: the lowest unit price of the same among the bid document that pass the technical evaluation, the unit price in the approved estimated price, the unit price forming the bid package's price (in the case where there is no bid package estimate).

5. After error correction and deviation adjustment and application of unit price(s) to the deficient deviation in accordance with Clauses 1, 2, 3, and 4 of this Article, the Procuring entity shall send a written notice of the error correction and deviation adjustment, and application of unit price(s) to such bidder's bid document. The bidder shall be requested to accept the error correction, deviation adjustment, and unit price application in writing within 03 working days from the date of receipt of the notice of the Procuring entity. Failure to accept the error correction or deviation adjustment, or unit price application shall result in the rejection of the bid unless the error correction or deviation adjustment, or unit price application by the Procuring entity is inappropriate or inaccurate.

Section 5. Alternative technical plan in the BDB (If any)

In case the bidder is allowed to propose an alternative technical plan as prescribed in ITB 12, the BDB will be evaluated as follows: as stipulated in Technical Requirement and Technical Evaluation Criteria.

Section 6. In case the bid package is divided into several independent parts (Applicable)

In case the bid package is divided into many independent parts, the BD must clearly state the criteria and evaluation methods for each part or parts so that bidders can calculate the bidding plan according to their capabilities. The evaluation of the BDB and approval of the successful bidder will be carried out on the basis of ensuring that the recommended award price of the bid package is the lowest (for bid packages applying the least-cost method); the total evaluated price of the bid package is the lowest (for bid packages applying the evaluated-price method) and the recommended award price of the entire bid package does not exceed the approved estimated price without comparing with the estimated cost of each part.

Chapter IV. BIDDING FORMS

No.	Form	Responsibility for implementation	
		Employer	**Bidder**
1	Form No. 01A. Scope of goods supply (for lump sum contracts)	X	
2	Form No. 01B. Scope of goods supply (for unit price contracts)		
3	Form No. 01C. Scope of goods supply (for mixed contracts)		
4	Form No. 01D. Related Services		
5	Form No. 01E. Materials and spare parts	X	
6	Form No. 02A. Letter of bid (for bidders who are organizations)		X
7	Form No. 02B. Letter of bid (for bidders who are individuals or groups of individuals manufacturing innovative product)		
8	Form No. 02C. Agreement text (for groups of individuals manufacturing innovative products)		
9	Form No. 03. Joint Venture Agreement		X
10	Form No. 04A. Bid security (for independent bidders) **(Not Applicable)**		X
11	Form No. 04B. Bid security (for joint ventures) **(Not Applicable)**		X
12	Form No. 04C. Bid Security *(Deposit / Transfer to Vietsovpetro's account)* **(Not Applicable)**		X
13	Form No. 05. Bidder information and similar contracts performed by the bidder (for commercial bidders) and Production capacity of the bidder (for bidders that are manufacturers)		X
14	Form No. 06A. List of proposed key personnel		
15	Form No. 06B. Resume of proposed key personnel		
16	Form No. 06C. Work experience of proposed key personnel		
17	Form No. 07. History of non-performing contracts for supply of goods, EPC, EC, PC, turnkey		X
18	Form No. 08. Financial performance		X

19	Form No. 09A. Scope of work to be performed by subcontractor		
20	Form No. 09B. List of subsidiaries and affiliates undertaking the work of the bid package		
21	Form No. 10A. Delivery schedule		X
22	Form No. 10B. Schedule for goods		X
23	Form No. 11. Summary of bid price		X
24	Form No. 12. Price schedule for goods		X
25	Form No. 13A. Price schedule for related services (for lump sum contracts and unit price contracts)		
26	Form No. 13B. Price schedule for related services (for mixed contracts)		
27	Form No. 14A. Price schedule for materials and spare parts (for bidders' proposals)		X
28	Form No. 14B. Price schedule for materials and spare parts (*for Employers' requests*)		X
29	Form No. 15A. Goods schedule for preferential treatment		X
30	Form No. 15B. Domestic production cost schedule for preferential treatment (for imported costs)		X
31	Form No. 15C. Domestic production cost schedule for preferential treatment (for production costs in Vietnam)		X

Form No. 01A

SCOPE OF GOODS SUPPLY

(for lump sum contracts)

No.	List of products	Unit of measure	Quantity	Description of product [1]	Requirements on origin of goods (if any)	Project location	Delivery date [2]	
							Earliest delivery date	Latest delivery date
Group 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge					as stipulated in Technical requirement and Technical Evaluation Criteria see Attachment of Part IV.			
1	Goods 1	set						
…	……..	….						
Group 2: Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter								
12	Goods 12	set						
….	…….	….						
Group 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator								
33	Goods 33	set						
……	……..	…..						
Group 4: Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector								
39	Goods 39	set						
….	…….	….						

Note:

(1) Refer to the corresponding content specified in Chapter V.
(2) Delivery date shall comply with the technical requirements specified in Chapter V.

Form No. 01B

(Not Applicable)

SCOPE OF GOODS SUPPLY

(for unit price contracts)

The employer shall list in detail the list of goods required to be supplied. The list of goods with quantity, required types and detailed descriptions and explanations (if necessary) must be clearly stated.

No.	**List of products**	**Unit of measure**	**Quantity**	**Description of product** [1]	**Requirements on origin of goods (if any)** [2]	**Project location**	**Delivery date** [3]	
							Earliest delivery date *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*	**Latest delivery date** *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*
1								
2								
…								
	Contingency costs		a%					

Note:

(1) Refer to the corresponding content specified in Chapter V.

(2) Applicable in the following cases:

- The employer requires origin by group of countries and territories as prescribed in Clause 2, Article 44 of the Law on Bidding. In this case, the bidder must offer goods in accordance with the requirements on origin or Vietnamese origin, even in cases where the origin by group of countries and territories that the employer requires does not include Vietnam. Bidders offering goods that do not have the origin required by the Bidding Documents or are not of Vietnamese origin will be disqualified.

Examples of groups of countries and territories: Europe, Asia, America...; European Union (EU), Association of Asian Nations, Organization for Economic Cooperation and Development (OECD), groups of major economies G20, G8, G7...

- The employer decides to require bidders to offer domestically originated goods when the goods procurement package meets the provisions in Point e, Clause 3, Article 10 of the Law on Bidding. In this case, bidders must offer Vietnamese-originated goods; bidders offering goods not of Vietnamese origin will be disqualified.

If the Employer does not require origin, leave this content blank.

(3) Delivery date shall comply with the technical requirements specified in Chapter V.

In case the bid package is divided into parts (lots), the Employer must clearly fill in the name of each part (lot) and the goods as in this Form.

Form No. 01C

(Not Applicable)

SCOPE OF GOODS SUPPLY

(for mixed contracts)

The employer shall list in detail the list of goods required to be supplied. The list of goods with quantity, required types and detailed descriptions and explanations (if necessary) must be clearly stated.

I. List of goods for lump sum contract

No.	List of products	Unit of measure	Quantity	Description of product [1]	Requirements on origin of goods (if any) [2]	Project location	Delivery date [3]	
							Earliest delivery date *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*	**Latest delivery date** *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*
1								
2								
…								

II. List of goods for unit price contracts

No.	List of products	Unit of measure	Quantity	Description of product (1)	Requirements on origin of goods (if any) (2)	Project location	Delivery date (3)	
							Earliest delivery date *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*	**Latest delivery date** *[write the number of days: from the effective date of the contract or from the date the employer requests delivery in case of multiple deliveries]*
1								
2								
…								
	Contingency costs		a%					

Note:

(1) Refer to the corresponding content specified in Chapter V.

(2) Applicable in the following cases:

- The employer requires origin by group of countries and territories as prescribed in Clause 2, Article 44 of the Law on Bidding. In this case, the bidder must offer goods in accordance with the requirements on origin or Vietnamese origin, even in cases where the origin by group of countries and territories that the employer requires does not include Vietnam. Bidders offering goods that do not have the origin required by the Bidding Documents or are not of Vietnamese origin will be disqualified.

Examples of groups of countries and territories: Europe, Asia, America...; European Union (EU), Association of Asian Nations, Organization for Economic Cooperation and Development (OECD), groups of major economies G20, G8, G7...

- The employer decides to require bidders to offer domestically-originated goods when the goods procurement package meets the provisions in Point e, Clause 3, Article 10 of the Law on Bidding. In this case, bidders must offer Vietnamese-originated goods; bidders offering goods not of Vietnamese origin will be disqualified.

If the Employer does not require origin, leave this content blank.

(3) Delivery date shall comply with the technical requirements specified in Chapter V.

In case the bid package is divided into parts (lots), the Employer must clearly fill in the name of each part (lot) and the goods as in this Form.

Form No. 01D

(Not Applicable)

RELATED SERVICES [(1)]

The employer lists the list of related services to implement the bid package according to the following table:

No.	Description of service	Quantity	Unit of measure	Service location	Completion date [(2)]
1	*Insert service content 1*				
2	*Insert service content 2*				
..					
n	*Insert service content*				

Note:

(1) In case the bid package does not require related services, the Employer shall not enter this Form.

(2) "Service Completion Date" must be reasonable and consistent with "Delivery Date" in Form No. 01A, 01B, 01C.

Form No. 01E

MATERIALS AND SPARE PARTS

(Only applicable in case the Employer has specific requirements for materials and spare parts)

No.	List	Unit of measure	Quantity
(1)	(2)	(3)	(4)

Note:

The Employer fills in columns (1), (2), (3), (4) in accordance with the requirements in ITB 15.8 and Section 4 of Chapter III.

Form No. 02A

LETTER OF BID [(1)]

(for bidders who are organizations)

Day: ___

Name of bid package: ___

To: ___

After studying the Bidding document (BD), we:

Bidder: ___, Tax code: ___ hereby pledge ourselves to perform the bid package ____ NIB number: ___ *in* accordance with the requirements stated in the Bidding document with the bid price (total amount) of ____ along with the attached summary of bid price.

In addition, we voluntarily reduce our bid price by a discount percentage of____ *[Insert discount percentage, if any]*.

The bid price after deducting the discount value is: _____ (including all taxes, fees, charges (if any)).

Validity of the Bid document/Bid Proposal (BDB) ____ *[write the validity period from the deadline for submission of bids in accordance with the BDS]* days, from the deadline for submission of bids.

We hereby declare that:

1. We are not in the process of carrying out dissolution procedures or having its business registration certificate, cooperative registration certificate, cooperative union registration certificate, or cooperative group registration certificate revoked, not in a case of insolvency according to the provisions of the law on bankruptcy (not in the process of ceasing operations or having its business household registration certificate revoked for Bidders that are household businesses).

2. We do not violate regulations on ensuring fair competition in bidding.

3. We have fulfilled the tax liabilities of the most recent fiscal year prior to the deadline for submission of bids.

4. We are not being under suspension from participating in bidding according to the provisions of the law on bidding.

5. We are not being prosecuted for criminal liability (the household owner is not being prosecuted for criminal liability in case the bidder is a business household).

6. We do not proceed any practices of corruption, bribe, collusion, obstruction and other violated provisions of the law on procurement when participating this package.

7. Within 03 years prior to deadline for submission of bids, the bidder has no personnel (who signed a labor contract with the bidder at the time the personnel committed the violation) convicted by a court of violating bidding regulations causing serious consequences according to the provisions of criminal law with the aim of allowing the bidder to win the bid.

8. The information declared in the bid is truthful.

9. In case of winning the bid, the BDB and clarification, supplemental documents of the BDB

constitute the agreement of responsibilities between the two parties until the contract is signed.

10. If our bid is accepted, we shall furnish a performance security as specified in IBT 37.1 of the Bidding document.

11. In case we have the following behaviors, we will be assessed as not having credibility when participating in bidding according to the provisions of Clause 2, Article 18 of Decree No. 24/2024/ND-CP, our name will be listed on the System and our account will be locked within 06 months from the date the Bidding Management Department, Ministry of Planning and Investment receives the Employer's request:

- After the deadline for submission of bids and during the validity period of the BDB, the Bidder has a written document withdrawing the BDB or refusing to perform one or more of the proposed work in the BDB as required by the BD;

- The Bidder commits a violation of the provisions of Article 16 of the Law on Bidding or violates the law on bidding, resulting in bid annulment as prescribed in Point d and Point đ, Clause 1, Article 17 of the Law on Bidding;

- The Bidder fails to provide the performance security in accordance with Article 68 of the Law on Bidding;

- The Bidder fails to or refuses to negotiate the contract (if any) within 5 working days of for international bidding from the date of receipt of the invitation for negotiation, or has negotiated the contract but refuses to finalize and sign the contract negotiation record, except in case of force majeure;

- The Bidder fails to conduct or refuses to finalize the contract within 20 days from the date of receipt of the notice of winning the bid from the Procuring entity, except in cases of force majeure;

- The Bidder fails to conduct or refuses to sign the contract within 20 days from the date of contract finalization, except in cases of force majeure.

Legal representative of the bidder (2)
[insert name, title, signature and stamp (3)]

Note:

(1) The letter of bid is signed and sealed by the bidder's legal representative when the bidder submits the bid.

(3) In case the legal representative of the bidder authorizes a subordinate to sign the letter of bid, a Power of Attorney according to Form No. 16 of this Chapter must be attached; in case the company charter or other relevant documents assign responsibility to a subordinate to sign the letter of bid, these documents must be attached (preparation of a Power of Attorney according to Form No. 02 of this Chapter is not required). In case the bidder is a joint venture, it must be signed by the legal representative of each member of the joint venture, except in cases where the joint venture agreement stipulates that the members of the joint venture agree to let the lead member of the joint venture sign the letter of bid. In case each member of the joint venture does authorization, the same shall apply as for an independent bidder. If the bidder wins the bid, before signing the contract, the bidder must submit to the Employer a certified copy of these documents. In case the initial declaration information is found to be inaccurate, the bidder shall be considered to have violated ITB 4.

(3) In case a foreign bidder does not have a stamp, it must provide confirmation from a

competent organization that the signature in the letter of bid and other documents in the BDB belongs to the bidder's legal representative.

Form No. 02B

(Not Applicable)

LETTER OF BID [(1)]

(for bidders who are individuals or groups of individuals manufacturing innovative product)

Day: ___

Name of bid package: ___

To: ___

After studying the BD, we:

Bidder: ___ *[For individual bidders, insert the individual's name and tax code; for group bidders, insert the names of the members and tax codes according to Form No. 02C]* hereby pledge ourselves to perform the bid package ____ *[Fill in information]* NIB number: ___ *[Fill in information]* in accordance with the requirements stated in the Bidding document with the bid price (total amount) of ____ *[Fill in information]* along with the attached summary of bid prices.

In addition, we voluntarily reduce our bid price by a discount percentage of ____ *[Insert discount percentage, if any]*.

The bid price after deducting the discount value is: _____ *[Enter information] (including all taxes, fees, charges (if any)).*

Validity of the BDB ____ *[write the validity period from the deadline for submission of bids in accordance with the BDS]* days, from the deadline for submission of bids.

We hereby declare that:

1. We have full civil act capacity;

2. We do not violate regulations on ensuring fair competition in bidding.

3. We have fulfilled the tax liabilities of the most recent fiscal year prior to the deadline for submission of bids;

4. We are not being under suspension from participating in bidding according to the provisions of the law on bidding.

5. We are not being prosecuted for criminal liability;

6. We do not proceed any practices of corruption, bribe, collusion, obstruction and other violated provisions of the law on procurement when participating this package;

7. Within 03 years prior to deadline for submission of bids, the bidder has no personnel (who signed a labor contract with the bidder at the time the personnel committed the violation) convicted by a court of violating bidding regulations causing serious consequences according to the provisions of criminal law with the aim of allowing the bidder to win the bid [(2);]

8. The information declared in the BDB is truthful;

9. In case of winning the bid, the BDB and clarification, supplemental documents of the BDB constitute the agreement of responsibilities between the two parties until the contract is signed.

10. If our Bidding Documents are accepted, we will provide performance security as specified

in ITB 37.1;

11. In case we have the following behaviors, we will be assessed as not having credibility when participating in bidding according to the provisions of Clause 2, Article 18 of Decree No. 24/2024/ND-CP, our name will be listed on the System and our account will be locked within 06 months from the date the Bidding Management Department, Ministry of Planning and Investment receives the Employer's request:

- After the deadline for submission of bids and during the validity period of the BDB, the Bidder has a written document withdrawing the BDB or refusing to perform one or more of the proposed work in the BDB as required by the BD;

- The Bidder commits a violation of the provisions of Article 16 of the Law on Bidding or violates the law on bidding, resulting in bid annulment as prescribed in Point d and Point đ, Clause 1, Article 17 of the Law on Bidding;

- The Bidder fails to provide the performance security in accordance with Article 68 of the Law on Bidding;

- The Bidder fails to or refuses to negotiate the contract (if any) within 5 working days of for international bidding from the date of receipt of the invitation for negotiation, or has negotiated the contract but refuses to finalize and sign the contract negotiation record, except in case of force majeure;

- The Bidder fails to conduct or refuses to finalize the contract within 20 days from the date of receipt of the notice of winning the bid from the Procuring entity, except in cases of force majeure;

- The Bidder fails to conduct or refuses to sign the contract within 20 days from the date of contract finalization, except in cases of force majeure.

LEAD MEMBER OF THE GROUP OF INDIVIDUALS *[signature, full name]*

MEMBERS OF THE GROUP OF INDIVIDUALS *[signature, full name]*

Note:

(1) The bid form is signed with the digital signature of the individual bidder (or a member assigned by a group of individuals according to the agreement) when the bidder submits the BDB.

(2) BD shall not require bidders to submit criminal records of personnel to prove the content of this assessment.

Form No. 02C
(Not Applicable)
AGREEMENT TEXT

(for groups of individuals manufacturing innovative products)

Date: ___ month___year___

Pursuant to the BD of the bid package: _____ *[name of the bid package]* with NIB number*: __ [insert number of the notice of invitation for bid]*

We include:

First member:

Full name:_____

ID card/Passport number:_____Date of issue:_____Place of issue:_

Tax code:_____

Address:_____

Phone:_____

Second member:

Full name:_____

ID card/Passport number:_____Date of issue:_____Place of issue:_

Tax code:_____

Address:_____

Phone:_____

...

Member n:

Full name:_____

ID card/Passport number:_____Date of issue:_____Place of issue:_

Tax code:_____

Address:_____

Phone:_____

The parties (hereinafter referred to as members) agree to sign the individual group agreement with the following contents:

Article 1. General principles

1. All the members volunteer to take shape the individual groups to participate in bidding process for package____ *[insert package name]* under ____ *[insert project name]* organized by ____ *[insert employer name]*.

2. Members commit that no member shall participate independently or in a joint venture with another individual to participate in this bid package. In case of winning the bid, all members shall sign the contract together and no member shall have the right to refuse to perform the

responsibilities and obligations stipulated in the contract. In case a member of the group refuses to fulfill his/her responsibilities and obligations, that member shall be handled as follows:

- *Compensating for all the loss of parties in the group;*

- *Compensating for all the loss of the Employer according to the regulations in the contract;*

- *Other form of treatment ____ [specify other form of treatment]*.

Article 2. Task Assignment

The members are absolutely together on assigning the tasks for executing ____ *[insert package name]* under ____ *[insert project name]* as follows:

Assigning ____ *[insert individual name]* as the lead member, to be the representative of group to perform the following tasks:

- Using personal account and digital certificate to submit BDB for the whole group.

[- Signing documents and papers for correspondence with the Employer, the Procuring entity during the bidding process, documents explaining and clarifying the BDB or documents requesting the withdrawal of the BDB;

- *Participating in the process of negotiating and completing the contract;*

- *Signing the petition in case the bidder has a petition;*

- *Performing other tasks except for the signing of the contract___ [specify other tasks (if any)]*

Article 3. Effectiveness of the agreement

1. The agreement text is effective from the date of signing.

2. The agreement text expires in the following cases:

- All the parties have fulfilled their responsibilities and obligations and liquidate the contract;

- The agreement is unanimously terminated by all parties;

- The individual groups is not awarded the contract;

- Annulment of bid package ____ *[insert the name of the bid package]* under ____ *[write the name of the project]* according to the announcement of the employer, the procuring entity.

The agreement text is made with the approval of all members.

LEAD MEMBER OF THE GROUP OF INDIVIDUALS *[signature, full name]*

MEMBERS OF THE GROUP OF INDIVIDUALS *[signature, full name]*

Form No. 03

JOINT VENTURE AGREEMENT [1]

Day: ___

Bid Package:

Project:

Pursuant to [2]_

Pursuant to [2]_

Pursuant to BD: with NIB number*:* __

We, representing the parties signing the joint venture agreement, include:

Name of first joint venture member: ____

Tax code: ___;

Representative is Mr./Ms.:_____

Position:_____

Address:_____

Phone:_____

Name of the second joint venture member: ____

Tax code: ___;

Representative is Mr./Ms.:_____

Position:_____

Address:_____

Phone:_____

...

Name of the nth joint venture member: ____

Tax code: ___;

Representative is Mr./Ms.:_____

Position:_____

Address:_____

Phone:_____

The parties (hereinafter referred to as members) agree to sign the joint venture agreement with the following contents:

Article 1. General principles

1. All the members volunteer to take shape the joint venture to participate in the bidding process for__ under ___.

2. The joint venture members are unanimous in the name of the joint venture for all the transaction relating to this package being: ____ *[Insert name of the joint venture as agreed]*.

3. The joint venture members commit that no member shall arbitrarily participate independently or in a joint venture with another bidder to participate in this bid package. In case of winning the bid, none of the joint venture member has the right to refuse to execute all the responsibilities and obligations as regulated in the contract. In case that the joint venture member refuses to complete his responsibilities as agreed, that joint venture member shall be dealt as follows:

[- Compensating for all the loss of parties in the joint venture;

- Compensating for all the loss of the Employer according to the regulations in the contract;

- Other forms of treatment ____ [specify other forms of treatment].

Article 2. Task Assignment

The joint venture members are absolutely together on assigning the tasks for executing under ___ *to* each member as follows:

1. The lead member of the joint venture

Parties unanimously authorize _____to be the lead member of the joint venture, to be the representative of the joint venture to perform the following tasks [(3)]:

[- Signing the letter of bid;

- Signing all letters, documents for correspondence with the procuring entity during the bidding process, including documents requesting clarification of the BD and documents explaining and clarifying the BDB, or the documents requesting amendment, substitution, withdrawal of the BDB;

- Participating in the process of negotiating and completing the contract;

- Signing the petition in case the bidder has a petition;

- Performing other tasks except for the signing of the contract___ [specify other tasks (if any)].

2. All joint venture members agree assigning responsibility for each member as in the table below [(4)]:

No.	Name of members	Description of work's scope	Proportion of value undertaken to total bid price	Proportion of total bid price
1	Name of lead member	- ___ - ___	- ___% - ___%	___
2	Name of 2nd member	- ___ - ___	- ___% - ___%	___
....	....	....	.....	___
Total		**All of work for contract performance**	**100%**	___

Article 3. Effectiveness of the Joint Venture Agreement

1. The joint venture agreement is effective from the signing date.

2. The joint venture agreement expires in the following cases:

- All the parties have fulfilled their responsibilities and obligations and liquidate the contract;

- The agreement is unanimously terminated by all parties;

- The joint venture is not awarded the contract;

- Annulment of bid package_____ under _____according to the announcement of the employer, the procuring entity.

The joint venture agreement is made with the approval of all members.

LEGAL REPRESENTATIVE OF THE LEAD MEMBER OF THE JOINT VENTURE

[insert name, title, signature and seal]

LEGAL REPRESENTATIVE OF THE JOINT VENTURE MEMBER

[insert name, title, signature and seal]

Note:

(1) In case the bid package is divided into many independent parts, the joint venture agreement must clearly state the names and numbers of the parts for which the joint venture participates, clearly stating the common and separate responsibilities of each member of the joint venture for the bidding part.

(2) Legal documents according to current regulations.

(3) The assignment of responsibilities includes one or more tasks as stated.

(4) The Bidder must clearly state the specific work content and the corresponding estimated value that each member of the joint venture will perform, the common responsibilities, the individual responsibilities of each member, including the lead member of the joint venture. The division of work in the joint venture must be based on the items listed in the bid price list according to Form No. 12, Form No. 13 (13A or 13B) of this Chapter or according to the work in the production process of the items in the bid price list. It is not allowed to divide work that does not belong to these items or does not belong to the production process of these items.

Form No. 04A

BID SECURITY [(1)]

(for independent bidder)

(NOT APPLICABLE)

Beneficiary (Guarantee): **VIETSOVPETRO**

105 LE LOI STR, VUNGTAU CITY, S.R. VIETNAM.

Issue date of Guarantee: ___ *[insert date of issue]*

BID SECURITY No: ___ *[insert guarantee reference number]*

Guarantor: ___ *[insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that the Guaranteed party is_____ *[name of the bidder]* (hereinafter referred to as "the Bidder") will participate in the bidding for the implementation of the package_____ *[name of the package]* of the project ____ *[name of the project]* according to the Invitation to bid/NIB No.____ *[reference number of the Invitation to bid/NIB]*.

We are committed to the Beneficiary that we agree unconditionally, irrevocably, guarantee to the Bidder participating in this package an amount of _____ *[specify the value in figures, in words and currency]*.

This guarantee shall take effect within ___ [(2)] days, from the date____ month___ year___ [(3)].

At the request of the Bidder, we, as the Guarantor, agree unconditionally, irrevocably, to undertake to [(4)] pay the Beneficiary an amount of ____ *[specify the value in figures, in words and currency]* upon receipt of a written notice from the Beneficiary about the Bidder's breach in the following cases:

1. After the deadline for submission of bids and during the validity period of the BDB, the Bidder has a written document withdrawing the BDB or refusing to perform one or more of the proposed work in the BDB as required by the BD;

2. The Bidder commits a violation of the provisions of Article 16 of the Law on Bidding or violates the law on bidding, resulting in bid annulment as prescribed in Point d and Point đ, Clause 1, Article 17 of the Law on Bidding;

3. The Bidder fails to provide the performance security in accordance with Article 68 of the Law on Bidding;

4. The Bidder fails to or refuses to negotiate the contract (if any) within 5 working days of for international bidding from the date of receipt of the invitation for negotiation, or has negotiated the contract but refuses to finalize and sign the contract negotiation record, except in case of force majeure;

5. The Bidder fails to conduct or refuses to finalize the contract within 20 days from the date of receipt of the notice of winning the bid from the Procuring entity, except in cases of force majeure;

6. The Bidder fails to conduct or refuses to sign the contract within 20 days from the date of contract finalization, except in cases of force majeure.

If the Bidder is the successful Bidder, this guarantee will expire immediately after the Bidder signs the contract and submits the contract performance guarantee to the Beneficiary as agreed in that contract.

If the Bidder is not the successful Bidder, this guarantee will expire immediately upon our receipt of a copy of the Beneficiary's notification to the bidder of the results of the bidding process or within 30 days from the expiry date of the BDB, whichever comes first.

Any claim under this guarantee must be submitted to our office before or on the last day of validity of this guarantee.

Legal representative of the bank

[insert name, title, signature and seal]

Note:

(1) In case the bid security violates one of the following provisions: has a lower value, a shorter validity period than the requirements specified in the **BDS** 18.2, has the wrong name of the beneficiary, is not an original, does not have a valid signature, is signed before the Employer issues the BD, or is accompanied by conditions that are disadvantageous to the Employer or the Procuring entity, the bid security is considered invalid. This bid security is an irrevocable bid security. If necessary, for large-size bid packages, to ensure the rights of the Employer or the Procuring entity in confiscating the bid security value when the bidder violates the provisions stated in the bid security, the Employer or the Procuring entity may request the bidder to provide documents to prove that the bid security submitted in the BDB is an irrevocable bid security.

(2) Insert according to the provisions on effective period in the **BDS** 18.2.

(3) Insert the deadline for submission of bids as prescribed in the **ITB** 19.1. The validity period of the bid security is calculated from the deadline for submission of bids to the last effective date of the bid security (the end date of the bid security is on the last effective date of the bid security and does not necessarily have to be until the end of 24 hours of that day).

(4) In case the bid security lacks one or more of the above commitment contents, it will be considered a disadvantageous condition for the Employer and the Procuring entity according to the provisions of **ITB** 18.3 and the letter of guarantee will be considered invalid.

Form No. 04B

BID SECURITY [(1)]

(for joint ventures)

(NOT APPLICABLE)

Beneficiary (Guarantee): **VIETSOVPETRO**

105 LE LOI STR, VUNGTAU CITY, S.R. VIETNAM.

Issue date of Guarantee: ___ *[insert date of issue]*

BID SECURITY No: ___ *[insert guarantee reference number]*

Guarantor: ___ *[insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that the Guaranteed party is_____ *[name of the bidder]* (hereinafter referred to as "the Bidder") will participate in the bidding for the implementation of the package_____ *[name of the package]* of the project ____ *[name of the project]* according to the Invitation to bid/NIB No.____ *[reference number of the Invitation to bid/NIB]*.

We are committed to the Beneficiary that we agree unconditionally, irrevocably, guarantee to the Bidder participating in this package an amount of _____ *[specify the value in figures, in words and currency]*.

This guarantee shall take effect within ___ [(2)] days, from the date____ month___ year___ [(3)].

At the request of the Bidder, we, as the Guarantor, agree unconditionally, irrevocably, to undertake to [(4)] pay the Beneficiary an amount of ____ *[specify the value in figures, in words and currency]* upon receipt of a written notice from the Beneficiary about the Bidder's breach in the following cases:

1. After the deadline for submission of bids and during the validity period of the BDB, the Bidder has a written document withdrawing the BDB or refusing to perform one or more of the proposed work in the BDB as required by the BD;

2. The Bidder commits a violation of the provisions of Article 16 of the Law on Bidding or violates the law on bidding, resulting in bid annulment as prescribed in Point d and Point đ, Clause 1, Article 17 of the Law on Bidding;

3. The Bidder fails to provide the performance security in accordance with Article 68 of the Law on Bidding;

4. The Bidder fails to or refuses to negotiate the contract (if any) within 5 working days of for international bidding from the date of receipt of the invitation for negotiation, or has negotiated the contract but refuses to finalize and sign the contract negotiation record, except in case of force majeure;

5. The Bidder fails to conduct or refuses to finalize the contract within 20 days from the date of receipt of the notice of winning the bid from the Procuring entity, except in cases of force majeure;

6. The Bidder fails to conduct or refuses to sign the contract within 20 days from the date of contract finalization, except in cases of force majeure.

7. If any member of the joint venture _____ *[insert complete name of the joint venture]* violates the laws resulting in forfeiture of the bid security in accordance with ITB 18.5, then bid securities of all joint venture members shall be forfeited.

If the Bidder is the successful Bidder, this guarantee will expire immediately after the Bidder signs the contract and submits the contract performance guarantee to the Beneficiary as agreed in that contract.

If the Bidder is not the successful Bidder, this guarantee will expire immediately upon our receipt of a copy of the Beneficiary's notification to the bidder of the results of the bidding process or within 30 days from the expiry date of the BDB, whichever comes first.

Any claim under this guarantee must be submitted to our office before or on the last day of validity of this guarantee.

Legal representative of the bank
[insert name, title, signature and seal]

Note:

(1) In case the bid security violates one of the following provisions: has a lower value, a shorter validity period than the requirements specified in the BDS 18.2, does not have the correct beneficiary name, is not an original, does not have a valid signature, is signed before the Employer issues the BD, or is accompanied by conditions that are disadvantageous to the Employer or the Procuring entity, the bid security is considered invalid. This bid security is an irrevocable bid security. If necessary, for large-scale bid packages, to ensure the rights of the Employer or the Procuring entity in confiscating the bid security value when the bidder violates the provisions stated in the bid security, the Employer or the Procuring entity may request the bidder to provide documents to prove that the bid security submitted in the BDB is an irrevocable bid security.

(2) The bidder's name may be one of the following:

- Name of the joint venture, for example, joint venture A + B participating in the bidding, the bidder name is written as "Joint venture A + B";

- Name of the member responsible for performing the bid security for the entire joint venture or for another member in the joint venture, for example, joint venture bidder A + B + C participates in the bidding, in case the joint venture agreement assigns bidder A to perform the bid security for the entire joint venture, the bidder's name is specified as "bidder A (on behalf of joint venture bidder A + B + C)", in case the joint venture agreement assigns bidder B to perform the bid security for bidders B and C, the bidder's name is specified as "bidder B (on behalf of bidders B and C)";

- Name of the joint venture member separately performing the bid security.

(3) Insert according to the provisions on effective period in the BDS 18.2.

(4) Insert the deadline for submission of bids as prescribed in the ITB 19.1. The validity period of the bid security is calculated from the deadline for submission of bids to the last effective date of the bid security (the end date of the bid security is on the last effective date of the bid security and does not necessarily have to be until the end of 24 hours of that day).

(5) In case the bid security lacks one or more commitments in the above-mentioned commitments, it is considered to have conditions that are disadvantageous to the Employer and the Procuring entity according to the provisions of ITB 18.3 and the letter of guarantee is considered invalid.

Form No. 04C
BID SECURITY

(Deposit / Transfer to Vietsovpetro account)

(NOT APPLICABLE)

Date: ……. (*Date of signing the bidding document)*

Name of bid package: …….. (*Package name according to bidding document)*

Name of project: …… (*Project name)*

Bidding document No: VT/DV-….……

To: _____ (*full name and address of representative)*

Pursuant to the above bid package, we *[name of bidder*] hereby confirm as follows:

1. Instead of submitting the Bid security issued by the bank, *[insert name of the bidder*] shall provide the bid security for [*name of the bid package*] by transferring to Vietsovpetro's bank account a deposit equivalent to the Bid security amount specified in the BD, which is [*specify in numbers, in words and in currency*]
2. In case we violate the regulations resulting in the confiscation of the bid security, we accept that we will not be returned the above amount. Cases of confiscation of bid security include:

   - After the deadline for submission of bids and during the validity period of the BDB, the Bidder has a written document withdrawing the BDB or refusing to perform one or more of the proposed work in the BDB as required by the BD;
   - The Bidder commits a violation of the provisions of Article 16 of the Law on Bidding or violates the law on bidding, resulting in bid annulment as prescribed in Point d and Point đ, Clause 1, Article 17 of the Law on Bidding;
   - The Bidder fails to provide the performance security in accordance with Article 68 of the Law on Bidding;
   - The Bidder does not conduct or refuses to conduct contract negotiations within 5 working days from the date of receipt of the invitation to negotiate the contract from the Procuring entity; or the Bidder conducts contract negotiations but withdraws the commitments in the BDB, leading to unsuccessful contract negotiations, except in cases of force majeure;
   - The bidder fails to conduct or refuses to finalize the contract within 20 days from the date of receipt of the bid winning notice from the Procuring entity, except in cases of force majeure;
   - The Bidder fails to execute or refuses to sign the contract within 20 days from the date of contract completion, except in cases of force majeure.
   - If any member of the joint venture ____ *[full name of the joint venture bidder]* violates the provisions of law leading to non-return of bid security as prescribed in ITB 18.5, the bid security of all members of the joint venture will not be returned.

3. Vietsovpetro will transfer the above deposit amount to the account *of [insert name of bidder*] within 14 days from the date of approval of the bidder selection result. In case we are the successful Bidder, Vietsovpetro will transfer the above deposit amount to the account *of [insert name of bidder* when the contract comes into effect. [*insert name of bidder*] will be responsible for paying all bank fees related to this transfer.

4. Vietsovpetro bank account:
   Beneficiary Name:

   Beneficiary Bank:

   Account number:

   Transfer amount:

Legal representative of the bidder

[insert name, title, signature and seal]

Note:

The Bidder attaches the Payment order or document proving the transfer to Vietsovpetro's account.

Form No. 05

BIDDER INFORMATION AND SIMILAR CONTRACTS PERFORMED BY THE BIDDER, PRODUCTION CAPACITY OF THE BIDDER

I. Bidder information:

In case the bidder participates as an independent bidder, please declare according to the following table:

Bidder name: *[insert name of bidder]*
In case of joint venture, insert name of each member
Location where the bidder is registered for establishment: ___ *[fill in the name of the province/city of registration, operation]*
Year of establishment:____ *[write the year of establishment of the company]*
Legal address of the bidder___ *[at the place of registration]:*
Information about the bidder's legal representative Name: _____ Address: _____ Phone/Fax: _____ Email address: _____
1. Attached is a copy of one of the following documents: Certificate of business registration, Certificate of investment, Decision on establishment or an equivalent document issued by a competent authority in the country in which the bidder is operating... 2. Included is the organizational chart of the bidder.

In case the bidder participates as a joint venture, the declaration must be made according to the following form (each member of the joint venture must fill out the form):

Joint venture bidder's name:
Joint venture member's name:
Country where joint venture member is registered for establishment:
Joint venture member's year of establishment:
Joint venture member's legal address in place of registration:
Joint venture member's legal representative information Name: _____ Address: _____ Phone/Fax Number: _____ Email address: _____

1. Attached is a copy of one of the following documents: Certificate of business registration, Certificate of investment, Decision on establishment or an equivalent document issued by a competent authority in the country in which the bidder is operating...

2. Included is the organizational chart of the joint venture member.

II. Similar contracts (for bidders who are commercial bidders)

Bidder Name: _____ *[insert full name of bidder]* (1).

Information about each contract, fill up one form per contract, as follows:

Name and contract number	*[insert full name and reference number of contract]*		
Contract signing date	*[insert day, month, year]*		
Completion date	*[insert day, month, year]*		
Total contract amount (3)	[insert the signed amount and currency]		Equivalent to ____ VND
In case of joint venture member or subcontractor, specify the summary of the work undertaken in the joint venture and the proportion of total contract amount	*[insert the summary of the work undertaken in the joint venture]*	*[insert percent of total contract amount performed, insert the signed amount and currency]*	*Equivalent to ____ VND*
Project name/ purchase estimate:	*[insert full name of project/purchase estimate with contract being declared]*		
Employer Name:	*[insert full name of the Employer in the contract being declared]*		
Address: Phone/Fax: E-mail:	*[write full current address of the Employer]* *[insert phone number, fax number including country code, area code]* *[insert email address]*		
Description of the similarity in accordance with Section 2.1 Chapter III (2)			
1. Type of goods	*[insert information in contract]*		
2. On the value of the performed contract (3)	*[insert the actual contract value performed based on the acceptance and contract liquidation value]*		
3. On the size of implementation	*[insert information in contract]*		
4. Other features	*[insert other information (if any)]*		

Note:

The Bidder shall carefully study the DB and propose different similar contracts to ensure meeting the requirements of the BD.

(1) In case of a joint venture, the form shall be filled in for each joint venture member. In case the bidder has many similar contracts, the form shall be filled in for each contract.

(2) The Bidder shall only declare content similar to the requirements of the bid package.

(3) In case the contract amount is not calculated in VND, it shall be converted to VND at the exchange rate specified in Section 2.1, Chapter III as a basis for evaluation.

III. Production capacity (for bidders who are manufacturing bidders)

Bidder: _____ *[insert full name of bidder]*.

Number of factories and production facilities (collectively referred to as factories): ____ *[Enter the number of factories]*

For each factory, the bidder shall declare the following information:

Factory name:	*[Enter factory name]*
Address:	*[Enter factory address]*
Total investment:	*[Enter total investment]*
Design capacity:	*[Enter design capacity]*
Real capacity:	*[Record actual capacity in most recent year]*
Production standards:	*[Insert applicable manufacturing standards, if any]*
Number of employees working:	*[Enter the total number of employees working at the factory]*

Note:

In case of a joint venture, each member of the joint venture shall declare according to this Form.

Form No. 06A

(Not Applicable)

LIST OF PROPOSED KEY PERSONNEL

The Bidder must declare the key personnel as prescribed in Point a, Section 2.2, Chapter III and must demonstrate the ability to mobilize these key personnel to participate in the implementation of the bid package. Key personnel may be on the bidder's payroll or mobilized by the bidder. In case the key personnel declared by the bidder in the BDB do not meet the requirements or cannot demonstrate the ability to mobilize personnel (including cases where key personnel have been mobilized for other contracts with working time coinciding with the implementation time of this bid package), the Procuring entity shall allow the bidder to supplement or replace. The Bidder is only allowed to supplement or replace once for each key personnel position within a suitable period of time but not less than 03 working days. In case the Bidder does not have replacement personnel meeting the requirements of the BD, the Bidder shall be disqualified. In any case, if the bidder declares key personnel dishonestly, the bidder will not be allowed to replace other personnel, the bidder's BDB will be disqualified and the bidder will be considered fraudulent according to the provisions of Clause 4, Article 16 of the Law on Bidding and will be handled according to the provisions of Point a, Clause 1, Article 125 of Decree No. 24/2024/NĐ-CP.

No.	Full Name	Job position
1	*[Bidder selects key personnel from its database on the System]*	*[Specify the job position in the bid package]*
2		
…		

Form No. 06B
(Not Applicable)

RESUME OF PROPOSED KEY PERSONNEL

Information of personnel						Present occupation					
No.	**Name**	**ID/Passport**	**Location**	**Date of birth**	**Certifications / Qualifications**	**Name of employer**	**Address of employer**	**Title**	**Number of years working for current employer**	**Contact person (Manager/ personnel officer)**	**Phone/ Fax/ Email**
1	[insert name of key personnel 1]										
2	[insert name of key personnel 2]										
…											
n	[insert name of key personnel]										

The bidder must provide all required information and prepare supporting documents (certified copies of relevant degrees and certificates).

Form No. 06C
(Not Applicable)

WORK EXPERIENCE OF PROPOSED KEY PERSONNEL

No.	Name of key personnel	From…	To…	Company/Project/Procurement estimate/Title/ Relevant professional and management experience
1	[insert name of key personnel 1]	…	…	…
2				
…	…			

The bidder must prepare documents to prove the declared contents.

Form No. 07

HISTORY OF NON-PERFORMING CONTRACTS FOR SUPPLY OF GOODS, EPC, EC, PC, TURNKEY (1)

Name of bidder: _____
Date: _____
Name of members of joint venture (if any):_____

Non-performing contracts for supply of goods, EPC, EP, PC, turnkey as a result of bidder default in the past according to Section 2.1 Chapter III			
☐ Non-performance of the contract for supply of goods, EPC, EP, PC, turnkey did not occur as a result of bidder default since 1 January__*[insert year]* as prescribed in evaluation criterion 1 in the Evaluation criteria table on capacity and experience in Section 2.1, Chapter III. ☐ Non-performance of the contract for supply of goods, EPC, EP, PC, turnkey occurred as a result of bidder default since 1 January ___ *[insert year]* as prescribed in evaluation criterion 1 in the Evaluation criteria table on capacity and experience in Section 2.1, Chapter III			
Year	**Non-performance of work's scope**	**Contract description**	**Total contract value** (value, currency, exchange rate, equivalent value in VND)
		Contract Description: _____ Employer Name: _____ Address: _____ Reason for non-performance of the contract: _____	

Note:

(1) The Bidder shall declare accurately and truthfully history of non-performing construction, EPC, EC, PC contracts; in case the Procuring entity detects that the bidder does not declare any past non-performing contract, the bidder shall be considered to have committed fraudulent practice and bidder's BDB shall be rejected accordingly. In case of a joint venture, the form shall be filled in for each joint venture member.

Form No. 08

FINANCIAL PERFORMANCE [(1)]

Bidder name: _____
Date: _____
Name of members of joint venture bidder (if any):_____

	Bidder's fiscal year is from ___ month ___ to ___ month ____		
	Financial data for the most recent years as required by BD		
	Year 1: 2022	**Year 2: 2023**	**Year 3: 2024**
Total assets			
Total liability			
Net asset value			
Annual turnover (excluding VAT)			
Average annual turnover (excluding VAT) [(2)]	*[Bidder calculation]*		
Profit before tax			
Profit after tax			

Note:

(1) In case of joint venture bidders, each member of the joint venture must declare according to this Form.

(2) To determine the average annual turnover (excluding VAT), the bidder divides the total turnover of the years (excluding VAT) by the number of years based on the information provided.

Annual turnover is calculated by total turnover in the financial report of that year (excluding VAT).

Average annual turnover (excluding VAT) = total annual turnover (excluding VAT) as required by BD/number of years.

In case a newly established bidder does not have enough years as required by BD, the average annual turnover (excluding VAT) is calculated based on the number of years for which the bidder has financial data.

The bidder must submit the following documents:

Certified copies of financial statements (balance sheets including all relevant notes, and income statements) for the years as set out above, subject to the following conditions:

1. Reflecting the financial situation of the bidder or joint venture member (if it is a joint

venture bidder) and not the financial situation of an affiliated entity such as a parent company affiliated with a subsidiary or an affiliated company with the bidder or joint venture member.

2. Financial reports must be complete and contain full content according to regulations.

3. Financial statements must correspond to completed accounting periods accompanied by certified copies of one of the following documents:

- Minutes of tax finalization;

- Self-declaration of tax finalization (value added tax and corporate income tax) with confirmation from the tax authority of the time of declaration submission;

- Documents proving that the bidder has declared electronic tax finalization;

- Confirmation document from the tax authority (confirming the amount paid for the whole year) on the fulfillment of tax payment liabilities;

- Audit report (if any);

- Other documents.

Form No. 09A
(Not Applicable)

SCOPE OF WORK TO BE PERFORMED BY SUBCONTRACTOR [1]

(applicable to related services only)

No.	Name of subcontract [2]	Scope of work [3]	Quantity [4]	Estimated value % [5]	Contract or agreement with subcontractor (if any) [6]
1					
2					
3					
4					
…					

Note:

(1) In case of using subcontractors to perform related services, the declaration shall be made according to this Form.

(2) The bidder shall specify the name of the subcontractors. In case names of subcontractors are not determined, this column may be left blank and only the column "Scope of work" is filled. Later on, if the bidder is selected, their mobilized subcontractors for performing declared work shall be approved by the Employer.

(3) The bidder clearly states the work items to be performed by subcontractors.

(4) The Bidder clearly states the quantities to be performed by subcontractors.

(5) The Bidder clearly states the percentage (%) of value undertaken by the subcontractors compared to the bid price.

(6) The Bidder shall specifically enter the contract number or agreement and attach a scan of these documents in the BDB.

Form No. 09B

(Not Applicable)

LIST OF SUBSIDIARIES AND AFFILIATES UNDERTAKING THE WORK OF THE BID PACKAGE [(1)]

No.	Name of subsidiary, affiliate [(2)]	Work undertaken in the package [(3)]	Percent of value (%) compared to the bid price [(4)]	Note
1				
2				
…				

Note:

(1) In case the bidder participating in the bid is the parent company (for example, a Corporation) that mobilizes its subsidiaries or affiliates to undertake the work of the package, it shall be specified in this Form. The evaluation of experience and capacity of the Bidder is based on the value and quantity performed by the parent company, subsidiaries and affiliates undertaken in the package. In case the participating Bidder is not the parent company, this Form shall not be applicable.

(2) Specify the name of subsidiaries and affiliates.

(3) Specify the part of the work undertaken by the subsidiaries and affiliates.

(4) Specify the percent of work undertaken by subsidiaries and affiliates compared to the bid price.

Form No. 10A
DELIVERY SCHEDULE (*)

The Bidder proposes a delivery schedule in accordance with the employer's requirements.

No.	List of products	Unit of measure	Quantity	Location	Delivery date		Delivery date proposed by bidder
					Earliest delivery date	Latest delivery date	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Group 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge							
1	Goods 1	set	11	Vietsovpetro warehouse, Ho Chi Minh City	-	135 calendar days after LOI / LOA	
…	…	…	…		-		
Group 2: Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter							
12	Goods 12	set	1	Vietsovpetro warehouse, Ho Chi Minh City	-	135 calendar days after LOI / LOA	
…	…	…	…		-		
Group 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator							
33	Goods 33	set	1	Vietsovpetro warehouse, Ho Chi Minh City	-	135 calendar days after LOI / LOA	
…	…	…	…		-		
Group 4: Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector							
39	Goods 39	set	10	Vietsovpetro warehouse, Ho Chi Minh City	-	135 calendar days after LOI / LOA	
…	…	…	…		-		

Note: Column (8): Bidder fills in

(*) Goods must be delivered within the time period specified in the BDB. Bidders proposing a delivery schedule earlier than the earliest delivery date will not be given priority and will not be disqualified. Bidders proposing a delivery schedule later than this time period will have their BDB disqualified.

Form No. 10B
SCHEDULE FOR GOODS

No.	List of products	Marks and numbers	Brand	Year of manufacture	Origin (country, region of manufacture)	Manufacturer	Configuration, basic technical features	Unit of measure	Quantity	HS Code
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*	*(10)*	*(11)*
Group 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge										
1	*Goods 1*							*set*	*11*	
...	*....*									
Group 2: Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter										
12	*Goods 12*							*set*	*1*	
...	*...*									
Group 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator										
33	*Goods 33*							*set*	*1*	
...	*...*									
Group 4: Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector										
39	*Goods 39*							*set*	*10*	
...	*...*									

Note:

- Columns (3), (4), (5), (6), (7), (8): Bidders fill in themselves. In case the bidder does not specifically propose the marks and numbers, brand, origin, and manufacturer, the bidder's BDB will not be considered or evaluated.

- Column (11): Bidder fills in (if any). In case this column is left blank and the bidder knows the HS code of the goods, the bidder shall list it.

- The bidder's proposal in this Form is inserted in Form 12.

Form No. 11

SUMMARY OF BID PRICE

No.	Content	Bid price
1	Goods manufactured and processed outside Vietnam	*(M1)*
2	Goods produced or processed domestically or goods produced or processed outside Vietnam but imported into Vietnam	*(M2)*
3	Related services (Not applicable)	*(I)*
4	Contingency costs (*)	*(C)=a% x ((M1)+(M2)+(I))*
	Total bid price *(Carried over to the letter of bid)*	***(M1) + (M2) + (I) + (C)***

Note:

(*): a%: In case of applying the unit price contract type, the employer and the procuring entity shall specify the value of a(%) in this Form for the bidder to use as a basis for quoting contingency costs.

If applying a lump sum contract, remove this content.

In case of mixed contract type, a% only applies to the unit price of the contract part.

Form No. 12

PRICE SCHEDULE FOR GOODS

I. Goods manufactured and processed outside Vietnam

1	2	3	4	5	6	7	8	9
No.	*List of products*	*Product code*	*Manufacturer*	*Origin*	*Unit of measure*	*Quantity*	*Unit price*	*Total amount* **(7x8)**
1	.....							
2	.....							
	.....							
*	*The total bid price includes all taxes, fees, and charges (if any) incurred in Vietnam and does not include import duty and VAT on the value of imported goods stated on the customs declaration. The above import duty and VAT are exempted under the Intergovernmental Agreement.* *(Carried over to SUMMARY OF BID PRICE)* *Note:* *- Please provide a full description of the work and Goods required in the Scope of Supply stated in the Technical requirements (attached).* *- Request for detailed quotation for each item and for all items in the Scope of supply.*							**M1**

Legal representative of the bidder
(Specify name, title, sign and stamp)

Note:

Columns (1), (2), (6), (7): According to the List of goods specified in Part 2 - Scope of supply;

Column (3) (4) (5) (8) (9): Fill in by bidder;

For Vietnamese Bidders: Bidders quote prices when delivering goods to **Vietsovpetro warehouse,** Ho Chi Minh City, Vietnam includes taxes, fees, charges (if any) incurred in Vietnam and does not include VAT and import duty of the value of imported goods stated on the customs declaration. The above VAT and import duty are exempted under the Intergovernmental Agreement.

For foreign bidders: Bidders quote prices according to delivery schedule: CFR Vietsovpetro Port, Ho Chi Minh City, Vietnam, Incoterm 2020. Bidders must clearly state in the bid price as follows:

- The bidder intends to use inland transport to deliver goods from any unloading port in Vietnam to Vietsovpetro port: Yes/No

- If the bidder intends to use domestic means of transport to transport goods from the unloading port in Vietnam to Vietsovpetro port, Vietsovpetro will calculate and add FCWT to the bid price for comparison and evaluation.

- If the bidder declares that it does NOT use domestic means of transport to transport goods to Vietsovpetro port or does not declare on this issue, Vietsovpetro will not calculate and add FCWT to the bid price for comparison and evaluation. The bidder must acknowledge that, if using any domestic means of transport during the performance of the Contract (if the Bidder is awarded

the contract), the bidder will be subject to FCWT according to the current regulations of the Socialist Republic of Vietnam. The FCWT incurred will be deducted from the payment by Vietsovpetro.

When participating in bidding, bidders are responsible for researching, calculating and quoting all taxes, fees and charges (if any) applied according to tax rates, fees and charges at 28 days prior to the deadline for submission of bids as prescribed.

In case the bidder announces the bid price excluding taxes, fees and charges, the bidder's BDB will be rejected.

II. Goods produced or processed domestically or goods produced or processed outside Vietnam but imported into Vietnam

1	2	3	4	5	6	7	8
No.	*List of products*	*Unit of measure*	*Quantity*	*Origin, Product Code*	*Unit price*	*Total amount* **(4x6)**	*Taxes, fees, charges (if any)*
1	*Goods 1*					A1	T1
2	*Goods 2*					A2	T2
n	*Goods n*					An	Tn
Total bid price does not include taxes, fees, charges (if any)						**A=A1+A2+...+An**	
Total taxes, fees, charges (if any)							**T=T1+T2+...+Tn**
Total bid price includes taxes, fees, charges (if any) (Carried over to SUMMARY OF BID PRICE)						**M_2 =A+T**	

Note:

Details of T1, T2, Tn (type of taxes, calculation method).

Columns (1), (2), (3), (4): According to the List of goods specified in Part 2 - Scope of supply.

The bidder fills in columns (5) (6) (7) (8). The bidder offers the unit price in column (6), including the necessary costs to provide the goods as required by Vietsovpetro, excluding taxes, fees, and charges (if any) offered in column (8).

Column (8) includes all taxes, fees, and charges (if any). When participating in the bidding, bidders are responsible for researching, calculating, and quoting all taxes, fees, and charges (if any) applied according to the tax rates, fees, and charges at 28 days prior to the deadline for submission of bids as prescribed. In case the bidder declares a bid price that does not include taxes, fees, and charges, the bidder's bid will be rejected.

Form No. 13A

(Not Applicable)

PRICE SCHEDULE FOR RELATED SERVICES

(for lump sum contracts and unit price contracts)

No.	Description of services	Quantity	Unit of measure	Service location	Service completion date	Unit price	Total price per service (Column 3x7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
..							
Total bid price for related services includes taxes, fees, charges (if any)							**(I)**

Note:

- Columns (1) to (4): According to the List specified in Part 2 - Scope of supply ;

- Column (5), (6): Bidder fills in

- Column (7) (8): Bidder offers (including all taxes, fees, charges) and calculates.

- Total amount (I) – column (8) includes taxes, fees, charges (if any) as the basis for comparing and ranking bidders.

- For foreign bidders, the bid price must clearly state whether the bid price includes or excludes Foreign contractors withholding tax (FCWT) according to Circular 103/2014/TT-BTC, clearly stating the tax value if included. In case it is not included, Vietsovpetro will calculate for comparison and ranking.

- The recommended award price and contract price for the service must include the value of taxes, fees and charges for domestic bidders; including taxes, fees and charges incurred outside of Vietnam, personal income tax in Vietnam for foreign bidders, Vietsovpetro will declare and pay Foreign contractors withholding tax according to regulations.

Form No. 13B

(Not Applicable)

PRICE SCHEDULE FOR RELATED SERVICES

(for mixed contracts)

I. Related services under lump sum contracts

No.	Description of services	Quantity	Unit of measure	Service location	Service completion date	Unit price	Total price per service (Column 3x7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
..							
Total bid price for related services includes taxes, fees, charges (if any)							**(I1)**

II. Related services for unit price contracts

No.	Description of services	Quantity	Unit of measure	Service location	Service completion date	Bid price	Total price per service (Column 3x7)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
..							
Total bid price for related services includes taxes, fees, charges (if any)							**(I2)**

Note:

- Columns (1) to (4): According to the List specified in Part 2 - Scope of supply;
- Column (5), (6): Bidder fills in
- Column (7) (8): Bidder offers (including all taxes, fees, charges) and calculates.
- Total amount (I) – column (8) includes taxes, fees, charges (if any) as the basis for comparing and ranking bidders.
- For foreign bidders, the bid price must clearly state whether the bid price includes or excludes Foreign contractors withholding tax (FCWT) according to Circular 103/2014/TT-BTC, clearly stating the tax value if included. In case it is not included, Vietsovpetro will calculate for comparison and ranking.
- The recommended award price and contract price for the service must include the value of taxes, fees and charges for domestic bidders; including taxes, fees and charges incurred outside of Vietnam, personal income tax in Vietnam for foreign bidders, Vietsovpetro will declare and pay Foreign contractors withholding tax according to regulations.

Form No. 14A

PRICE SCHEDUL FOR MATERIALS AND SPARE PARTS

(for bidders' proposals)

No.	**Description of materials, spare parts**	**Unit of measure**	**Quantity**	**Marks and signs, brand, manufacturer, origin**	**Supplier**	**Unit price**	**Total amount (tax included)** (4x7 column)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total *(Do not carry over the values in this table to the summary of bid price)*							

Form No. 14B

PRICE SCHEDUL FOR MATERIALS AND SPARE PARTS

(for Employers' requests)

No.	**Description of materials, spare parts**	**Unit of measure**	**Quantity**	**Marks and signs, brand, manufacturer, origin**	**Supplier**	**Unit price**	**Total amount (tax included)** (4x7 column)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Total *(Do not carry over the values in this table to the summary bid price)*							

Form No. 15A

GOODS SCHEDULE FOR PREFERENTIAL TREATMENT [(1)]

The bidder is only entitled to preferences for the contents that the bidder declares according to the table below. In case the bidder does not select, he will not be entitled to preferences for this content.

No.	Product name	Origin *[insert name of country, territory, code, brand, manufacturer]*	Goods with domestic production costs of 30% or more		Goods of production facilities with 50% or more of employees being disabled people, war invalids, ethnic minorities with a 03 month or more valid labor contract at the deadline for submission of bids	Goods are innovative products as prescribed in Clause 4, Article 5 of Decree No. 24/2024/NĐ-CP, which are first produced and eligible for marketing within the last 6 years.	Domestic production costs	
			Domestic production cost ratio below 50 %	Domestic production cost ratio over 50 %			According to Form 15B	According to Form 15C
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	*Goods 1*		□	□	□	□	□	□
2	*Goods 2*		□	□	□	□	□	□
...	*...*							
n	*Goods n*		□	□	□	□	□	□

Note:

(7), (8): For goods with domestic production costs of 30% or more, bidders can choose to declare domestic production costs according to Form No. 15B (in case of declaring import costs) or Form No. 15C (in case of declaring production costs in Vietnam).

Form No. 15B

DOMESTIC PRODUCTION COST SCHEDULE FOR PREFERENTIAL TREATMENT

(for imported costs)

No.	List of products	Bid price of goods in BDB	Tax value of all kinds	Imported costs	Domestic production costs	Proportion of domestic production costs
		(I)	**(II)**	**(III)**	**G* = (I) – (II) – (III)**	**D(%)=G*/G Of which, G = (I) – (II)**
	(1)	(2)	(3)	(4)	(5)	(6)
1	*Goods 1*					
2	*Goods 2*					
...	*...*					
n	*Goods n*					

Form No. 15C

DOMESTIC PRODUCTION COST SCHEDULE FOR PREFERENTIAL TREATMENT [1]

(for production costs in Vietnam)

No.	List of products	Commercial bidder		Manufacturer bidder	Domestic production costs	Proportion of domestic production costs	
						Commercial bidder	Manufacturer bidder
		Bid price of goods (I)	Tax value of all kinds [2] (II)	Ex-works price (EXW) of goods (G)	G*	D(%)=G*/G Of which, G = (I) – (II)	D(%)=G*/G
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	*Goods 1*						
2	*Goods 2*						
...	*...*						
n	*Goods n*						

Note:

In case the bidder is a trader, the bidder shall list the bid price of the goods, domestic production costs and tax values of all kinds.

In case the bidder is a manufacturer, the bidder shall list the factory price and domestic production costs.

Part 2. TECHNICAL REQUIREMENTS

Chapter V. TECHNICAL REQUIREMENTS

Section 1. Technical requirements (Attached)

Part 3A. CONTRACT CONDITIONS

Chapter VI. GENERAL CONDITIONS OF THE CONTRACT

1. Definition	In this contract, the following words and expressions shall have the meanings hereby assigned to them: 1.1. "Employer" means the entity as specified in the Special Conditions of the Contract **(SCC);** 1.2. "Contract" means the written agreement entered into between the Employer and the Bidder, including all appendices, and all documents incorporated by reference therein; 1.3. "Bidder" means the successful bidder (which may be an independent bidder or a joint venture) and is specified in **SCC;** 1.4. "Subcontractor" means an organization or individual that signs a contract with a bidder to participate in performing related services; 1.5. "Contract documents" means the documents listed in SCC, including any amendments or supplements to SCC; 1.6. "Contract price" means the total amount stated in the contract for the provision of goods and related services. The contract price includes all costs of taxes, fees, charges (if any); 1.7. "Day" means solar calendar day; "year" means 365 days; 1.8. "Goods" include machinery, equipment, raw materials, fuels, materials, supplies, spare parts; products; vehicles; consumer goods; drugs, chemicals, testing supplies, medical equipment; commercial software.; 1.9. "Related services" include services such as installation, maintenance, repair, initial repair, installation insurance, repair insurance or providing other after-sales services such as training, technology transfer, etc.; 1.10. "Completion" means the bidder's fulfillment of the related services in accordance with the terms and conditions set out in SCC; 1.11. "Project location" means the location specified in **SCC.** 1.12. "Contract duration" means the period from the effective date of the contract until the parties have completed their obligations under the signed contract.
2. Contract documents and order of precedence	2.1. All documents specified in Clause 2.2 of the General Conditions of the Contract (GCC) (and all parts thereof) shall constitute the contract to form a unified, mutually supportive, complementary and mutually interpretable entity. 2.2. All documents forming the Contract are subject to the order of precedence as follows: a) Contract Agreement, accompanied by appendices; b) Minutes of contract negotiation and finalization;

	c) Letter of acceptance of BDB and contract award; d) Decision approving bidder selection results; đ) SCC; e) GCC; g) BDB and clarifications; h) BD and addenda (if any); i) Other documents specified in **SCC.**
3. Governing law and language	The law governing the contract is Vietnamese law, the language of the contract is Vietnamese.
4. Notices	4.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address specified in the **SCC.** The term "in writing" means communicated in written form with proof of receipt. 4.2. A notice by a party shall be deemed to be effective upon receipt by the other party or upon the effective date stated in the notice, whichever is later.
5. Contract performance security	5.1. The contract performance security must be submitted to the Employer no later than the date specified in the Letter of Acceptance of the BDB and contract award. The contract performance security shall be provided in one or more of the following forms: a) Deposit by Certified Check for contract performance security with value under 50 million VND and the validity period of the Certified Check is consistent with the performance period of the bid package; b) Submit a letter of guarantee from a domestic credit institution or foreign bank branch established under Vietnamese law; c) Submit a certificate of surety bond insurance from a domestic non-life insurance company or a branch of a foreign non-life insurance company established under Vietnamese law. The contract performance security as prescribed in Points b and c of this Clause is an unconditional guarantee (paid on demand), in the form prescribed in Part 4 or another form approved by the Employer. 5.2. Contract performance security has the value and effect specified in **SCC.** 5.3. The performance security shall be payable to the Employer to compensate for any loss arising from the Bidder's failure to fulfill its contractual obligations. 5.4. The term for returning the contract performance security is as prescribed in **SCC.**
6. Subcontracting	6.1. The Bidder is allowed to sign contracts with subcontractors in the list of subcontractors specified in **SCC** to perform the related services

	stated in the BDB. The subcontracting will not affect the Bidder's obligations. The Bidder is responsible for the quantity, quality, schedule and other responsibilities related to the work undertaken by the subcontractor. The replacement or addition of subcontractors in the list of subcontractors stated in the BDB or the change of subcontractor content stated in the BDB shall only be carried out with the approval of the employer; the use of subcontractors must be consistent with the bidder's needs in performing the contract, and subcontractors must meet the bidder's requirements in terms of capacity and experience. 6.2. The bidder shall be responsible for making full and timely payments to the subcontractor in accordance with the terms agreed between the Bidder and the subcontractor.
7. Handling disputes	7.1. The Employer and the bidder shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them. 7.2. If the parties have failed to resolve their dispute or difference by such mutual consultation within the period specified in the **SCC**, then either the Employer or the bidder may give notice to the other party of its intention to apply the dispute settlement mechanism specified in the **SCC**.
8. Scope of supply	Goods and related services must be provided in accordance with the provisions of Chapter V.
9. Delivery schedule, completion schedule of related services (if any) and supporting documents	The delivery schedule and completion schedule of related services (if any) must be implemented in accordance with the provisions of Form No. 01A (for lump sum contracts) or Form No. 01B (for unit price contracts) or Form No. 01C (for mixed contracts) and Form No. 01D Chapter IV. The bidder must provide invoices and other documents as prescribed in **SCC.**
10. Bidder's responsibilities	The bidder shall supply all goods and related services (if any) within the scope of supply specified in SCC Clause 8 and in accordance with the delivery schedule and fulfillment schedule of related services specified in SCC Clause 9.
11. Contract type and contract price	11.1. Contract type: as prescribed in **SCC.** 11.2. The contract price specified in **SCC** includes all costs and expenses incurred to supply of goods and related services of the bid package stated in contract Price list on the basis of ensuring progress and quality in accordance with the requirements of the bid package.
12. Taxes, fees, charges	12.1. The bidder shall be responsible for all costs of taxes, fees and charges incurred until the goods are delivered to the Employer. 12.2. In case the bidder is eligible for tax, fee and charge exemption

	or reduction, the Employer shall use its best efforts to enable the Bidder to apply tax, fee and charge exemption or reduction policies. 12.3. Tax adjustment is made according to the provisions of **SCC.**
13. Advance payment **(Not Applicable)**	13.1. The Employer must provide the bidder with an advance payment as prescribed in **SCC,** after the bidder submits an Advance payment guarantee in amounts equivalent to the advance payment. The Advance payment guarantee shall be issued by a domestic credit institution, a branch of a foreign bank established under the applicable laws of Vietnam. 13.2. The bidder shall only use the advance payment for the performance of the contract. The bidder shall demonstrate that the advance payment has been used for the correct purpose and to the correct recipient by submitting copies of invoices, vouchers or related documents to the employer.
14. Terms of payment	14.1. The bidder's request for payment must be sent to the Employer in writing, accompanied by an invoice describing the delivered goods and related services performed, together with the documents submitted as prescribed in GCC Clause 9, and the request for payment must be sent upon fulfillment of other obligations specified in the contract. 14.2. Payment shall be made in accordance with the provisions of **SCC.** 14.3. Payment currency is VND.
15. Copyright	Copyright in all drawings, documents and records containing information and data submitted by the Bidder to the Employer remains vested in the bidder. Where such drawings, documents and records are provided to the Employer directly or through the bidder by a third party, copyright in such drawings, documents and records shall remain vested in that third party.
16. Use of documents and information related to the contract	16.1. The employer and the bidder shall keep confidential any documents, data or other information relating to the contract provided directly or indirectly by one party to the other party, and shall not disclose such documents, data or information to a third party without the prior written consent of the other party, whether such documents, data or information are provided before, during or after the fulfillment or termination of the contract. The bidder may transfer to a subcontractor appropriate documents, data and information provided by the Employer for the subcontractor to perform its work under the contract; in this case, the subcontractor shall have an undertaking to the bidder to keep such documents, data or information confidential. 16.2. The employer shall not use the documents, data and other information received from the bidder for any purpose other than the contract. The bidder shall not use the documents, data and other

	information received from the Employer for any purpose other than the performance of the contract. 16.3. The obligations of the Employer and the bidder specified in under GCC Sub-Clauses 16.1 and 16.2 shall not apply to information that: a) Information that the Employer or bidder needs to provide to the competent authority; b) Information that has been or will be published through no fault of the Employer or bidder; c) Information owned by one party at the time of publication and not previously provided directly or indirectly by the other party; d) Information that a party lawfully receives from a third party that is not under an obligation to keep the information confidential. 16.4. The provisions of GCC Clause 16 shall not in any way modify any confidentiality commitments made by a party prior to the date of signing the contract relating to the provision of goods and services. 16.5. The provisions of GCC Clause 16 shall continue in effect after fulfillment or termination of the contract for any reason.
17. Specifications and standards	The goods and related services supplied under the contract shall comply with the technical specifications and standards specified in Chapter V; if Chapter V does not specify any applicable specifications or standards, the standard shall be equivalent or superior to the official standards whose application is appropriate to the goods' country of origin.
18. Packing	18.1. The bidder shall properly package the goods to avoid damage during transportation to the project location as specified in the contract. During transportation, the packaging of the goods must be strong enough to withstand strong impacts, extreme high or low temperatures, salt water, rainwater and outdoors. The size and weight of each package must take into account transportation conditions such as distance, means of transportation, infrastructure conditions... from the place of shipment to the project location. 18.2. The packaging, marking of goods, documents inside and outside the package must comply with specific requirements in the contract, including requirements (if any) specified in **SCC** and other instructions of the Employer.
19. Insurance	Unless otherwise provided in **SCC,** the goods supplied under the contract shall be fully insured against loss or damage, which may occur during manufacture or during receipt, transportation, storage and delivery as provided in **SCC.**
20. Transportation and additional services	20.1. Requirements for transportation of goods and other requirements specified in **SCC.** 20.2. The Employer may request the bidder to provide one or more

	of the following services, including the services (if any) as prescribed in **SCC:** a) Performance or supervision of on-site assembly and/or start-up of goods; b) Furnishing of tools required for assembly and/or maintenance of goods; c) Furnishing of detailed operations and maintenance manual for each appropriate unit of goods; d) Performance or supervision or maintenance and/or repair of goods, for a period of time agreed by the parties, provided that this service shall not relieve the bidder of any warranty obligations under this contract; d) Training of the Employer's personnel, at the bidder's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of goods. 20.3. In case of services arising outside the contract, the Employer and the bidder shall negotiate the cost of performing the service, ensuring that it does not exceed the price that the bidder applies to similar services in other contracts.
21. Inspection and test	21.1. The bidder shall conduct all inspections, tests of the goods and related services as specified in **SCC** and shall bear all costs of inspection and test. 21.2. Inspections and tests may be carried out at the Bidder's premises or other premises at the place of delivery, and/or the project location or at any other location as specified in **SCC.** Subject to the provisions of SCC Sub-Clause 21.3, where inspection is carried out at the bidder's premises or other premises, the inspector shall be provided with all necessary facilities and assistance, including access to drawings and manufacturing data; the Employer shall not incur any costs for such facilities and assistance. 21.3. The Employer or the employer's representative shall be entitled to attend the test and inspection sessions specified in SCC Sub-Clause 21.2, provided that the employer bears all costs incurred in connection with the attendance, including travel and accommodation costs. 21.4. Before conducting inspection, test, the bidder shall give a reasonable advance notice to the Employer, including the location and time of inspection, test. In case the Employer needs to have the approval of a third party or the manufacturer to participate in the inspection, test, the Bidder must have the written consent of these relevant parties. 21.5. The Employer may require the bidder to conduct tests and inspections outside the contract but necessary to confirm that the goods have technical characteristics and performance meeting the requirements of the contract, provided that the reasonable costs of conducting such tests, inspections are added to the contract price. In case the tests, inspections delay the production progress and/or the

	progress of the bidder's performance of other obligations under the contract, the Employer shall consider adjusting the delivery date, the fulfillment date of related services and other obligations affected. 21.6. The bidder shall submit to the Employer a report of the results of all inspections, tests. 21.7. The employer has the right to reject any goods or parts of goods that do not meet the requirements during the inspection, test or do not comply with the technical specifications under the contract. The bidder must replace them with other goods or parts of goods or make necessary adjustments to comply with the technical specifications under the contract and must bear all costs related to such replacement or adjustment. The bidder must then re-inspect and test and bear all costs incurred, and notify the Employer as prescribed in SCC Sub-Clause 21.4. 21.8. The bidder's performance of inspection, test of goods and parts of goods, the Employer's or the employer's representative's attendance at testing and inspection sessions, or the reporting of testing and inspection results pursuant to SCC Sub-Clause 21.6, does not exempt the Bidder from warranty obligations or other obligations under the contract.
22. Penalties and liquidated damages	Penalties for breach of contract and compensation for damages as prescribed in **SCC.**
23. Warranty	23.1. The bidder warrants that all goods are new and unused as offered. 23.2. The bidder warrants that goods shall be free from defects arising from any act or omission of the Bidder or arising from design, materials, and workmanship, under normal use in the conditions prevailing in Vietnam. 23.3. The warranty's duration and geographic scope are specified in the **SCC**. 23.4. The Employer shall give notice to the bidder stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Employer shall afford all reasonable opportunity for the bidder to inspect such defects. 23.5. Upon receipt of such notice, the bidder shall, within the period specified in the **SCC**, expeditiously repair or replace the defective goods or parts thereof, at no cost to the Employer. 23.6. If having been notified, the bidder fails to remedy the defect within the period specified in the **SCC**, the Employer may proceed to take within a reasonable period such remedial action as may be necessary, at the bidder's risk and expense and without prejudice to any other rights, which the Employer may have against the bidder under the contract.
24. Patent indemnity	24.1. The bidder shall, subject to the Employer's compliance with GCC Sub-Clause 24.2, indemnify and hold harmless the Employer and its employees and officers from and against any and all suits,

	actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Employer may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the contract by reason of: a) The installation of goods by the bidder or the use of goods in Vietnam; b) The sale of the products produced by goods. Such indemnity shall not cover any use of goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the contract, neither any infringement resulting from the use of goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the bidder, pursuant to the contract. 24.2. If any proceedings are brought or any claim is made against the Employer arising out of the matters referred to in GCC Sub-Clause 24.1, the Employer shall promptly give the Bidder a notice thereof, and the Bidder may at its own expense and in the Employer's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim. 24.3. If the bidder fails to notify the Employer within 28 days after receipt of such notice, that it intends to conduct any such proceedings or claim, then the Employer shall be free to conduct the same on its own behalf. 24.4. The Employer shall, at the bidder's request, afford all available assistance to the bidder in conducting such proceedings or claim, and shall be reimbursed by the bidder for all reasonable expenses incurred in so doing. 24.5. The Employer shall indemnify and hold harmless the bidder and its employees, officers, and subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the bidder may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Employer.
25. Change in laws and regulations	Unless otherwise specified in the contract, if after the date of 28 days prior to deadline for submission of bids, any law or regulation is promulgated, abrogated, or changed Vietnam that subsequently affects the Delivery Date and/or the contract Price, then such Delivery Date and/or Contract Price shall be correspondingly

	increased or decreased, to the extent that the Bidder has thereby been affected in the performance of any of its obligations under the contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 11.
26. Force Majeure	26.1. The bidder shall not be liable for forfeiture of its performance security, liquidated damages, or termination for default if and to the extent that its delay in performance or another failure to perform its obligations under the contract is the result of an event of force majeure 26.2. The failure of a party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this contract insofar as such inability arises from an event of force majeure, provided that the party affected by such an event (a) has taken all reasonable precautions, due care, and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this contract, and (b) shall continue to perform its obligations under the contract as far as is reasonably practical. 26.3. For purposes of this contract, force majeure means an event or situation beyond the control of the bidder that is not foreseeable, is unavoidable, makes a party's performance of its obligations hereunder impossible, and its origin is not due to negligence or lack of care on the part of the bidder. Such events may include, but not be limited to, acts of the Employer in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, state policies, and freight embargoes. 26.4. If a force majeure situation arises, the bidder shall, in any case not later than fourteen (14) calendar days following the occurrence of such event, promptly notify the Employer in writing of such condition and the cause thereof that is verified in writing by a competent body operating in the place where the force majeure arises. Unless otherwise directed by the Employer in writing, the Bidder shall continue to perform its obligations under the contract as far as is reasonably practical and shall seek all reasonable alternative means for performance not prevented by the force majeure event. 26.5. Any period within which a party shall, pursuant to this contract, complete any action or task, shall be extended for a period equal to the time during which such party was unable to perform such action as a result of force majeure.
27. Contract amendments	27.1. The Employer may order the bidder to make changes within the general scope of the contract in any one or more of the following: a) Drawings, designs, or specifications, where Goods to be furnished under the contract are to be specifically manufactured for the

	Employer; b) The method of shipment or packing; c) The place of delivery; d) The related services; đ) Adjust the contract performance schedule as prescribed in GCC 28. 27.2. If any such change specified in GCC Sub-Clause 27.1 causes an increase or decrease in the cost of, or the time required for, the Bidder's performance of any provisions under the contract, an equitable adjustment shall be made in the contract price or in the delivery/completion schedule, or both, and the contract shall accordingly be amended. Any claims by the Bidder for adjustment under this Clause shall be asserted within 28 days from the date of the bidder's receipt of the Employer's change order. 27.3. If goods to be supplied by the Bidder are new versions of the same origin and from the same manufacturer, having technical specifications, configurations, parameters, etc. equivalent to or superior to that offered by the bidder in its bid, and meeting the requirements of the Employer, the bidder shall notify the Employer in writing for consideration. The Employer may accept the bidder's proposal on condition that the unit price and other conditions of the contract remain unchanged. 27.4. In case it is necessary to perform related services not mentioned in the contract, the Employer and the Bidder shall negotiate to ensure that the unit price is consistent with market prices. 27.5. The Employer and the bidder will conduct negotiations to sign an addendum in the case of contract amendments. 27.6. During the performance of the contract, the bidder may propose cost-saving solutions including at least the following contents: a) The proposed change(s), and a description of the difference to the existing contract requirements; b) A full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Employer may incur in implementing the value Bidder's proposal; c) A description of any effect(s) of the change on performance/functionality. 27.7. The Employer may accept the bidder's proposal if it declares one of the following benefits without affecting the essential functions of the goods: a) Accelerates the delivery period; b) Reduces the contract price or the life cycle costs to the employer; c) Improves the quality, efficiency, or sustainability of goods; d) Yields any other benefits to the Employer

	If the value bidder's proposal is approved by the Employer and results in a reduction of the contract price, the amount to be paid to the Bidder shall be the percentage specified in the **SCC** of the reduction in the contract price. If the value bidder's proposal is approved by the Employer and results in an increase in the contract price, but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the bidder shall be the full increase in the contract price.
28. Extensions of time	28.1. If at any time during the performance of the contract, the bidder or its subcontractors should encounter conditions impeding timely delivery of goods or completion of related services pursuant to GCC Clause 9, the bidder shall promptly notify the Employer in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the bidder's notice, the Employer shall evaluate the situation and may at its discretion extend the bidder's time for performance, in which case the extension shall be ratified by the parties by amendment of the contract. 28.2. Except in the case of force majeure, as provided under GCC Clause 26, a delay by the Bidder in the performance of its delivery and completion obligations shall render the bidder liable to the imposition of liquidated damages pursuant to GCC Clause 22
29. Termination	29.1. Termination for default a) The Employer, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Bidder, may terminate the contract in whole or in part: (i) If the Bidder fails to deliver any or all of goods within the period specified in the contract, or within any extension thereof granted by the Employer pursuant to GCC Clause 28; (ii) If the Bidder fails to perform any other obligation under the contract; (iii) If the Bidder, in the judgment of the Employer has engaged in prohibited practices as stipulated in Article 16 of the Law on Bidding in competing for or in executing the contract; b) In case the Employer terminates the contract in part or in whole under point a of this clause, the Employer may purchase related goods and services similar to those not yet performed under appropriate terms and methods. The Bidder shall be responsible for compensating the Employer for any additional costs incurred from the purchase of such similar goods and services. However, the Bidder shall continue to perform the part of the contract that is not terminated. 29.2. Termination for insolvency The Employer may at any time terminate the contract by giving notice to the Bidder if the Bidder becomes bankrupt or otherwise

	insolvent. In such event, the termination will be without compensation to the Bidder, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Employer.
30. Export restriction	Any export restrictions which arise from trade regulations from a country supplying the goods or services, and which substantially impede the Bidder from meeting its obligations under the contract, shall release the Bidder from the obligation to provide deliveries or services, provided that the Bidder can declare to the satisfaction of the Employer that it has completed all formalities in a timely manner, including applying for permits, authorizations, and licenses necessary for the export of the goods or services under the terms of the contract. Termination of the contract on this basis shall be for the Employer's convenience.

Chapter VII. SPECIFIC CONDITIONS OF THE CONTRACT

GCC 1.1	Employer: ___ *[insert name, address, account number, tax code, telephone, fax, email of the employer and authorized representative (if any)]*.
GCC 1.3	Bidder: ___ *[insert name, address, account number, tax code, telephone, fax, email of Bidder]*.
GCC 1.11	Project location: ___ *[insert name and location details]*.
GCC 2.2 (i)	The following documents also form part of the contract: ___ *[list documents]*.
GCC 4.1	Notices must be sent to the Employer at the address below: - Recipient: ___ *[write full name of recipient, if any]*. - Address: ___ *[write full address]*. - Phone: ___ *[insert phone number, including country code and city code]*. - Fax: ___ *[insert fax number, including country and city code]*. - Email address: ___ *[write email address (if any)]*.
GCC 5.2	- Contract performance security value: **08% of the contract price**. - Validity of contract performance security: The contract performance security is valid from the effective date of the contract to the date of last shipment/goods to be fully delivered plus 02 months (or 60 days).
GCC 5.4	Time for Contract performance security release: ___ *[specify the contract performance security release period after the Bidder completes its contractual obligations, based on the nature and requirements of the bid package]*.
GCC 6.1	List of subcontractors: __ *[insert list of subcontractors consistent with the list of subcontractors stated in the BDB]*.
GCC 7.2	Time to conduct reconciliation: ___ *[insert the maximum number of days to conduct reconciliation]*. Dispute settlement: ___ *[specify the time and mechanism for handling disputes based on the size and nature of the bid package. It is necessary to clearly state the time for submitting a request for dispute settlement, the organization for dispute settlement (court, arbitration), costs for dispute settlement...]*.
GCC 9	The Bidder shall provide the following information and documents:___ *[insert name of required documents, e.g. VAT invoice, transport documents, warranty certificate of the Bidder or manufacturer, inspection certificate of the inspection agency, list of packaged goods, certificate of origin, quality certificate, etc.]*. The employer must receive the above information and documents before the goods arrive at the specified location, otherwise the Bidder shall bear all related costs incurred.
GCC 11.1	Contract type: ___ *[write contract type according to approved bidder*

	selection plan].
GCC 11.2	Contract price: ___ *[write "*Fixed*" for lump sum contracts, fixed unit price contracts or "*Adjustable*" for adjustable unit price contracts in accordance with the type of contract specified in SCC Sub-Clause 11.1]*. In case the contract has provisions on inflation, inflation adjustment is performed by adjusting the unit price or calculating inflation as follows: - Unit price adjustment is made from the time when factors causing price changes arise and only applies to quantity performed according to the schedule stated in the contract or the schedule adjusted according to the provisions in **GCC** Clause 28. Do not adjust the unit price for the work volumes in the contract corresponding to the amount of contract advance payment; - The contract price will be adjusted for inflation during the contract duration to reflect changes in labor and material costs. The inflation adjustment will be made according to the specific formula_____ *[specify the adjustment formula]*. *[Example of inflation adjustment formula:* $P_1 = P_0 [a + \underline{bL_1} + \underline{cM_1}] - P_0$ $L_0 \quad M_0$ $a+b+c = 1$ *Of which:* P_1 *= Price payable to bidder after inflation adjustment* P_0 *= Contract price (base price)* *a = Fixed factor representing profit and general management fees included in the contract price, typically between 5% and 15%.* *b = Estimated proportion of labor costs in the contract price* *c = Estimated proportion of material costs in the contract price* L_0, L_1 *= Labor cost price index applied to the manufacturing industry in the country of origin of the goods on the base date and the inflation date, respectively* M_0, M_1 *= Material price index on base date and inflation date in the country of origin of the goods, respectively* *In the BDB, the Bidder must clearly state the reference of the indices, the reference of the exchange rate information (if appropriate) and the value of the indices on the base date.* *The coefficients a, b, and c will be determined by the Employer as follows:* *a = [enter coefficient value]* *b= [enter coefficient value]* *c= [enter coefficient value]* *Base date = 28 days before deadline for submission of bids.* *Inflation date = [insert number of weeks] weeks before the shipment*

	(usually corresponding to the time point when the production process is half completed). *Conditions for implementing inflation adjustment:* *(i) No inflation adjustment shall be allowed beyond the original delivery date. Normally, inflation adjustment shall not apply to any delay for which the Bidder is fully responsible.* *(ii) If the currency in which the contract price P_0 is expressed is not the currency in which the labor and material price index is expressed, a conversion factor will be applied to avoid errors in calculating the contract inflation adjustment. The conversion factor is calculated as follows:* *$Z = Z_0/Z_1$* *Of which:* *Z_0 = Number of units of the currency in which those indices are quoted that are equivalent to one currency representing the contract price P_0 on the base date;* *Z_1 = Number of units of the currency in which those indices are quoted equivalent to one currency representing the contract price P_0 on the date of the inflation adjustment.* *(iii) The amount corresponding to the advance payment to the Bidder shall not be subject to inflation adjustment.*
GCC 12.3	Tax adjustment: ___ *[write* "Allowed *"or* "Not allowed". *In case tax adjustment is allowed, write: "*During the contract performance, if at the time of payment, if the tax policy changes (increases or decreases) and the contract has provisions for tax adjustment, and the bidder presents documents clearly identifying the tax amount incurred, the difference in tax policy will be adjusted according to the provisions in the contract"].
GCC 13.1	Advance payment: ____ *[write the advance payment amount, documents for advance payment, advance payment method... in accordance with the provisions of law. The Bidder shall present an advance payment guarantee according to Form No. 20 Part 4 or another form approved by the Employer. For the production of valuable components and semi-finished products, some materials must be stored seasonally, the contract must clearly state the advance payment plan and the advance payment amount to ensure the progress of the contract]*.
GCC 14.2	Payment method: ___ *[based on the nature and requirements of the bid package, specify this content. Payment to the Bidder may be stipulated by bank transfer, the number of payments may be multiple times during the performance process or a one-time payment upon fulfillment of the contract. The payment term may stipulate immediate payment or within no more than a certain number of days from the date the Bidder presents all required documents. At the same time, it is necessary to specify payment documents in accordance with the provisions of law]*. *The Bidder shall be paid the full contract price upon fulfillment of all contractual obligations. In case the workload undertaken is less than the*

	workload specified in the contract, the two parties shall sign an additional contract appendix, clearly stating the new contract price corresponding to the actual workload].
GCC 18.2	Packaging, marking of goods, documents inside and outside the package: ____ *[write specific requirements on packaging method, notes on packaging and necessary documents]*.
GCC 19	Insurance coverage: ____ *[write specific insurance terms, including coverage, currency and amount of insurance]*.
GCC 20.1	Responsibility for transporting goods is implemented as follows: *[the Employer either writes* "According to the contract, the Bidder must transport goods to the project location. The transport of goods to the project location, including insurance and storage as stipulated in the contract, is performed by the Bidder; related costs are included in the contract price"; *or stipulates other commercial terms agreed by both parties (including provisions on the respective responsibilities of the Employer and the Bidder)]*.
GCC 20.2	Services include: _____ *[describe specific services]*.
GCC 21.1	Inspection and tests of goods:___ *[based on the size and nature of the bid package, specify the inspection and testing of the Bidder in accordance with the requirements specified in Chapter V. Inspection and tests can be specified in stages such as: before delivery, upon arrival of goods... The regulations on inspection and tests need to state basic contents such as: time, location, method of performance, cost of inspection and tests... as well as regulations on how to handle goods that do not meet the requirements after inspection and testing]*.
GCC 21.2	The inspection and tests of goods is implemented at: ___ *[insert location]*.
GCC 22	*Depending on the size, nature and requirements of the bid package, this content is specified in one of the following ways:* *- Only apply penalties for breach of contract;* *- Only damages apply;* *- Apply both penalties for breach of contract and damages.* 1. Penalty for breach of contract: ___ *[write "*Applicable" *or "*Not applicable"]. *In case of applying penalty for breach of contract, the provisions are as follows:* Except in cases of force majeure as stipulated in GCC Clause 26, if the Bidder is unable to deliver goods or provide related services within the time limit stated in the contract, the Employer may deduct from the contract price a penalty amount corresponding to: _____%/week *(or day, month...) [specify the deduction amount as a percentage of the value of the late delivery of goods or the late fulfillment of related services]* until the work is performed. The

	Employer shall deduct up to ____ % *[specify the maximum penalty level]*. When the maximum penalty level is reached, the Employer may consider terminating the contract as stipulated in GCC Clause 29. 2. Compensation for damages: ___ *[write "*Applicable" *or "*Not applicable"*]*. *In case of applying compensation for damages, the provisions on compensation for damages shall be in one of the following ways:* *- Compensation for damages based on the total actual damage;* *- Compensation for damages based on a fixed amount. In this case, clearly state the amount of compensation, method of compensation... in accordance with civil law.*
GCC 23.3	The warranty period is: _____ days *[insert number of days]*. The location for warranty coverage is: ____ *[name one or more locations]*.
GCC 23.5 **GCC 23.6**	The repair and replacement period is: _____ days *[write the number of days]*.
GCC 27.7 (d)	In case the proposed cost saving solution is accepted by the Employer and helps reduce the contract price, the Employer shall pay the Bidder ____ % *[state the payment rate, usually not more than 50%]* of the contract price reduction.

Part 4. CONTRACT FORMS

This section contains forms that, after they have been filled out completely, will constitute a part of the contract. Following the contract award, the successful bidder shall fill out the Performance Security Form and the Advance payment guarantee Form.

Form No. 16

LETTER OF ACCEPTANCE AND CONTRACT AWARD

____, date ____ month ____ year ____

To: *[name and address of the successful Bidder],* (hereinafter referred to as "the Contractor")

Subject: *Notice of BDB acceptance and contract award*

Pursuant to Decision No._____ dated_____ of_____*[insert the Employer's name]* (hereinafter referred to as the "Employer") regarding the approval of bidder selection result for the package ___ *[insert name and identification number of the package],* the Procuring Entity_____*[insert the Procuring Entity's name]* (hereinafter referred to as the "Procuring Entity") hereby notifies that: the Employer has accepted your BDB and agreed to award to you a contract for the implementation of the bid package_____*[insert name and identification number of the package. In case the package is divided into many parts, insert the name, number of the part for which the Bidder is recognized as the successful bidder]* for the accepted contract amount of_____ *[insert the accepted contract amount as stated in the decision on approval of bidder selection result]* and the contract duration of_____ *[insert the contract duration as stated in the decision on approval of bidder selection result]*.

The legitimate representative of the Contractor is requested to finalize and sign the contract with the Employer, the Procuring entity as follows:

- Time for contract finalization: ____ *[insert time for contract finalization]*, at_____ *[insert venue for contract finalization]*;

- Time for contract signing: ____ *[insert time for contract signing]*, at_____ *[insert venue for contract signing]*, draft contract is enclosed;

The Contractor is requested to implement the contract performance security measure according to Form No. 18, Part 4 of the BD with the amount of ___ and the effective period of ___ *[insert the corresponding amount and effective period as prescribed in Section 5.2, Chapter VII of the BD]*.

This letter forms an integral part of the contract documents. After receiving this letter, the Contractor is required to obtain written approval for the finalization and signing of the contract as well as for the furnishing of the performance security as requested above, in which the Contractor shall undertake that the Contractor's current qualifications meet the requirements set out by the BD. The Employer will refuse to finalize or sign the contract with the Contractor if it is found out that the Contractor's current qualifications fail to meet the requirements for the implementation of the bid package.

If as of ___month___year___(1), the Contractor fails or refuses to finalize or sign the contract, or fails to furnish the performance security as required, the Contractor will be rejected and shall be handled in accordance with the bidder's commitments stated in the Application for bidding (named on the System with account being blocked within 06 months since the date that the Public Procurement Agency, Ministry of Planning and Investment receives the written request of Vietsovpetro).

Legal representative of the Procuring entity
[insert name, title, signature and seal]

Note:

(1) Insert the time in accordance with the time specified in the Letter of Bid Form.

Form No. 17

CONTRACT AGREEMENT
(For international contractor)

SOCIALIST REPUBLIC OF VIETNAM

Independence - Freedom – Happiness

****

Ho Chi Minh City, date ……/……/.....

PURCHASE ORDER

No.: ...../25/N-N3/XL-.....

FOR PROVISION OF INSTRUMENTS AND DETECTORS PACKAGE
(Package No. VT-2988/25-XL-DA-HMH)

BETWEEN

VIETSOVPETRO

AND

.....

Ho Chi Minh City, 2025

GENERAL CONDITIONS OF CONTRACT (GCC)

1. Definitions.

As used in this Contract:

1.1 Company means Vietsovpetro, as specified in the Purchase Order;

1.2 "Purchase Order" means the documented Agreement between the Company and the Contractor, including all attached appendices and documents; herein called PO.

1.3 "Contractor" means the bidder who has been awarded PO by the Company (either Independent or Consortium Contractor) and is specified in the PO;

1.4 "Subcontractor" means a person, or entity, Contractor whose name is proposed in the list of subcontractors by the Contractor in the Proposal or who carries out any part of work proposed by the Contractor in the Bid Proposal. Subcontractor enters into the PO with the Contractor to perform part of work, as specified in the Proposal and accepted by the Company;

1.5 "PO Documents" means the documents listed in the PO, including any amendments, addendums thereto;

1.6 "PO Price" means the total price as specified in the PO for supplying Goods (and Related Services). PO Price include all taxes, fees and charges (if any).

1.7 "Date" means calendar day; "Year" means 365 days;

1.8 "Goods" means all of the machinery, equipment, commodities, spare parts, raw materials, consumer goods, medical material used at medical facilities;

1.9 "Related Services" means the services such as warranty, maintenance, overhaul, repair, supply of spare parts and/or other after-sale services including training, technology transfer;

1.10 "Completion" means the fulfillment of the Related Services by the Contractor in accordance with the terms and conditions set forth in the Contract;

1.11 "The Project Site" means the place named in the PO.

2. Order of precedence

The documents forming the Contract is arranged in the following order of precedence:

2.1 PO, including all Appendix;

2.2 Letter of Proposal Acceptance and Contract Award;

2.3 Bidding Result Approval;

2.4 General Conditions of Contract (GCC);

2.5 Proposal and Clarifications (if any);

2.6 Invitation for Bid and Bulletins (if any);

2.7 Any other document listed in the PO.

3. Governing law and Language

The Contract shall be governed by and interpreted in accordance with the laws of the Socialist Republic of Vietnam. The Contract shall be written in English.

4. Notice

4.1 Any notice from one Party to another relating to the Contract shall be conducted in writing, to addresses specified in the PO.

4.2 A notice from one Party shall be considered as effective from the date the other Party receives it or from the effective date as specified in the notice, whichever comes later.

5. Performance Bond

5.1 Performance Bond shall be submitted to the Company no later than the date specified in Letter of Proposal Acceptance and Contract Award. Performance Bond shall be issued in one of following forms:

a) Submit a performance bond issued by a legally domestic bank or foreign bank's branch established under Vietnamese law;

b) Submit the certificate of guarantee insurance from a domestic non-life insurance enterprise or a branch of a foreign non-life insurance enterprise established under Vietnamese law.

The Performance Bond specified in Point a and b of this Clause is an unconditional guarantee (paid upon request), according to the form specified in the PO.

5.2 Validity and formality is specified in the PO.

5.3. The Performance Bond will be paid to the Company to compensate for any loss arising from the Contractor's failure to fulfill their contractual obligations.

5.4 The return of Performance Bond is specified in the PO.

6. Subcontractor

6.1 The Contractor is allowed to sign contracts with Subcontractors in the List of proposed subcontractors specified in the Contract to perform part of work stated in the Proposal. The use of subcontractors shall not relieve the Contractor from any of his obligations. The Contractor shall take full responsibilities for work load, quality, progress and other responsibilities for work performed by Subcontractors.

The changing, supplement of subcontractors onto List of subcontractors shall be only conducted with reasonable grounds and Company's approval.

6.2 Contractor is not allowed to use subcontractors for other work which are not stated in the Bid Proposal.

6.3 Other requirements for subcontractor are specified in the PO.

7. Settlement of Disputes

7.1 The Company and the Contractor shall make every effort to resolve amicably by negotiation any disagreement or dispute arising between them.

7.2 If the dispute has not been resolved by such mutual negotiation within the specified duration in the PO from the date on which dispute arose, then either party may ask to commence arbitration under the dispute resolution mechanism, as specified in the PO.

8. Scope of Supply

Goods (and Related Services) shall be supplied as specified in Appendix No. 01 – Scope of Supply, which is considered as an integral part of this PO, including types of goods (and Related Services) supplied by the Contractor and their unit prices.

9. Delivery Schedule of Goods, Completion Date of Related Services (if any) and Documentations

Delivery Schedule of Goods, Completion Date of Related Services (if any) must be performed according to the provisions of the PO. The Contractor must provide invoice and other documents as described in the PO.

10. Contractor's Responsibilities

Contractor shall supply all Goods (and Related Services) (if any) in accordance with the Scope of Supply in accordance with GCC Clause 9, and follow the Delivery Schedule of Goods (and Completion Date of Related Services), as per GCC Clause 10.

11. Type of Contract and Contract Price

Type of contract: is specified in the PO.

Contract Price specified in the PO covers all expenses for complete supplying Goods (and Related Services) stated in the Price schedule of the PO.

12. Tax Adjustment

Tax adjustment are carried out in accordance with the PO.

13. Advance Payment

13.1 The Company shall make advance payment to the Contractor with an amount stated in the Contract upon provision of Advance Payment Guarantee by the Contractor, with the value equal to the advance payment. The Advance Payment Guarantee shall be issued by a bank or credit organizations legally operating in Vietnam and shall remain effective until the advance payment has been repaid; the value of the Advance Payment Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be applied on the advance payment.

13.2 The Contractor is to use the advance payment only for the purpose of executing the Contract. The Contractor has to prove that advance payment has been used for the right purpose by providing copies of invoices or other relevant documents to the Company. The Contractor shall be deprived of advance payment if advance payment is not used correctly.

14. Payment

14.1 Payments are made in accordance with the PO.

14.2 The payment currency shall be VND/USD/EUR in accordance with the PO.

15. Copyright

Contractor shall take full responsibility for all damages arising from a third party's appeal against copyright violation of intellectual property relating to Goods supplied by Contractor to Company.

16. Use of documentations and information relating to Contract

16.1 Without Company's prior permission in writing, Contractor is not allowed to disclose Contract content, as well as technical specification, drawings, types and information of Goods provided by Company or Company's representatives to any people who is not related to the Contract performance. The provision of information shall be undertaken confidentially and within necessary scope for contract performance.

16.2 Without Company's prior permission in writing, Contractor shall not use any documents, data, and other information stated in GCC Clause 17.1 for any purposes unrelated to the contract.

16.3 Documents stated in GCC Clause 17.1 belong to Company's ownership. Against request from Company, Contractor shall return these documents (including copies) to Company after accomplishing his obligations.

17. Technical Specifications and Standards

Goods (and Related Services) supplied under this Contract shall conform to the technical specifications and standards mentioned in Appendix No. 01 - Scope of Supply; and when no applicable specification or standard is mentioned, the applicable specification or standard shall be equivalent or superior to the official standards currently applied in the Goods' country of origin.

18. Packing

The Contractor shall provide such packing of the Goods as is required in the PO and is suitable with each type of transportation means during transit to their final destination. The packing shall be sufficient to prevent the Goods from damage or deterioration due to rough handling and other environmental impacts. Packing case size and weights shall take into consideration the conditions of transportation such as distance, type of transport mean, infrastructure, etc. from origin to specified destination.

19. Insurance

Goods supplied in the Contract shall be fully insured to cover losses or damages occurred in production process, transportation, stocking and delivery as described in the PO.

20. Transportation and Incidental Services

Conditions about Transportation and Incidental Services are specified in the PO.

21. Goods Inspections and Testing

The Contractor must test and take inspection of Goods and related services relevant to the provisions of the Contract and bear all testing and inspection costs according to the provisions of the Contract.

22. Damages

Damages are specified in the PO.

23. Warranty

The Contractor warrants that all the Goods supplied under Contract are new, unused, and the quality is in accordance with manufacture standard, unless otherwise provided in the Contract. The Contractor further warrants that the Goods shall be free from defects that cause problems under normal use.

Warranty period and place for the Goods is specified in Article 9 of the PO.

24. Force Majeure

24.1 For purposes of this Clause, "Force Majeure" means events beyond the control and foreseeability of the parties, such as wars, revolutions, fires, natural disaster, floods, epidemics, quarantine restrictions.

If a Force Majeure situation arises, the affected party shall promptly notify the other party in writing of such condition and the cause thereof. The affected party also has to give given by authorised organisation in the place of event.

During the Force Majeure, Contractor shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event. In this case, the Company shall consider reimbursing the Contractor necessary and reasonable additional and necessary costs beared by the Contractor.

24.2 Neither the party shall be liable for forfeiture of its Performance, liquidated damages, or if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

In case dispute arising due to Force Majeure shall be resolved according to GCC Clause 7.

25. Amendment, Addendum of Contract

25.1 Amendments to the Contract shall be applied in the following cases:

(a) Changes in drawings, designs, or technical requirements, where Goods to be furnished under the Contract are to be specifically manufactured for the Company;

(b) Changes in method of goods transportation or packing;

(c) The place of delivery;

d) Changes of related services;

(e) The schedule of delivery.

25.2. In case the amendment, addendum to the work content of the contract specified in Clause 25.1 GCC change the cost or implement time of any terms in the contract, price or delivery time and the completion date of the relevant service must be make corresponding adjustments and the two parties will amend the contract. The Contractor's request to adjust the contract's price, delivery time or completion date must be made within 28 days from the date the Contractor receives the Company's request to amend the scope of work.

25.3. In case the Contractor provides goods with a new version of the same manufacturer, the same origin, with technical requirements, configuration, parameters... equivalent or better than the version that the Contractor proposed in their proposals, the Contractor must notify the Company in writing for the Company's consideration. In this case, based on usage needs, the Company could accept the Contractor's proposal provided that the unit price and other terms and conditions of the contract remain unchanged.

25.4. In case of performing related services that has not stated in the contract, the Company and Contractor will negotiate to ensure the unit price is consistent with the market price.

25.5. The Company and the Contractor will negotiate to sign a contract's amendment in case of amendments. All transactions during the implementation of the Contract are made in writing by the Parties and sent by post or by fax number to the registered address or fax number of each Party specified in the Contract and email to the email address according to the form in Appendix 4 (A, B) attached.

In case the Contractor's proposal is accepted by the Company and it makes the reduce of the contract price, the Company shall pay the Contractor with the rate that specified in the Contract to the price reduction value. And if it makes the increase of the contract price, the Company shall pay the Contractor the arising value.

26. Amendment in Delivery Schedule

26.1. During the contract implementation time, in case of unfavorable conditions arise that prevents the Contractor or subcontractor from providing goods and performing related services as prescribed in Clause 8 GCC, The Contractor must promptly notify the Company in writing about the delay, reason, and duration of delay. Based on the Contractor's notice, the Company must quickly consider the situation and extend the contract. In case the Company agrees to extend the contract, the two parties will negotiate to sign amendments, supplement the contract.

26.2. Except the force majeure specified in Clause 24 GCC, if the Contractor delivers the Goods or completes related services lately, he is obliged to compensate the Company as prescribed in Clause 22 GCC.

27. Contract Termination

27.1. Contract Termination due to faults:

a) The Company may terminate partial or all of the Contract without prejudice to other remedies for breach of contract by informing the Contractor by letter about the breachs in the contract in the following cases:

(i) The Contractor cannot deliver the goods or part of the goods within the shipment time as specified in the contract, or within the extension period as specified in Clause 26 GCC;

(ii) The Contractor does not perform any other obligations under the contract;

(iii) The Company show that the Contractor violated one of the prohibited acts specified in Article 16 of the Bidding Law during the bidding process or contract implementation;

b) In case the Company terminates partial or all of the contract according to Point a of this Clause, the Company may purchase similar goods and related services that have not been performed according to the terms and conditions and methods. The Contractor shall be responsible for compensating the Company for arising costs from purchasing of such similar goods and services. However, the Contractor must continue to perform the part of the contract that was not terminated.

27.2. Contract Termination due to insolvency

In case the Contractor goes bankruptcy or becomes insolvency, the Company may terminate the contract at any time by sending notice to the Contractor. In such case, the Contract shall terminate and the Contractor shall not be entitled to compensation provided that termination shall not fact or prejudice any rights of action or remedy of the Company at any time.

28. Patent Breach Compensation

The Contractor warrants, represents and covenants that the Goods and the sale and use thereof do not infringe directly or indirectly any valid patent and Contractor agrees, at its cost and expense, to indemnify and hold Company free and harmless from and against any and all costs, expense, liabilities or damages, including attorneys' fees, arising out of alleged or actual patent, infringement resulting from the sale or use of the Goods.

CONTRACT

_____, day ___ month ___ year ____

To:

Fax:

Attn.:

Subj.: PURCHASE ORDER No.....

Supply of Instruments and Detectors Package - Block 09-1 (ITB No. VT-2988/25-XL-DA-HMH)
Total number of pages inclusive of this one: ...

Dear Sirs,

Thank you for your offer No. … dated …. for supply "**Instruments and Detectors Package"** - Block 09.1 under the Bid package №. VT-2988/25-XL-DA-HMH, we are pleased to confirm this Purchase Order on the terms and conditions as follows:

This transaction is made between:

VIETSOVPETRO

105 Le Loi Street, Ho Chi Minh City, Vietnam

Hereinafter referred to as the Buyer.
AND

.....

Hereinafter referred to as the Seller.

ARTICLE 1: OBJECT

The Seller agrees to sell and the Buyer agrees to buy "**Instruments and Detectors Package"** - Block 09.1 hereinafter referred to as "Goods", with the quantity, specification, scope of supply as described in Appendix No. 01 (in.....pages), which is considered as an integral part of this Purchase Order.

ARTICLE 2: PRICE AND TOTAL VALUE

2.1 The unit prices for the Goods are specified in the Appendix No. 01 of this Purchase Order.

2.2 The total value of this Purchase Order is USD …, CFR Vietsovpetro Port, S.R Vietnam (In words: US Dollars ….)

2.3 The price as mentioned above is understood CFR Vietsovpetro Port not subject to any alteration and includes value of the Goods, packing, marking, painting, assembling, testing, inspection, manufacturer's certificates, freight, export license if necessary, guarantee services if any etc… in accordance with terms and conditions of this Purchase Order as well as all duties, levied in connection with the performance of this Purchase Order outside the Buyer's country. FCWT (if any) shall be at Buyer's account.

ARTICLE 3: DELIVERY

3.1 Delivery time: not later than **135 calendar days** from the date of LOI / LOA to the date that the Goods arrival at Vietsovpetro's port (included navigation and transportation time).

Earlier shipment is allowed.

Partial shipment is allowed: max ….. shipments.

Transshipment and multimodal transport are allowed at Seller's care and account.

3.2 Shipment to be made from .....port to Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam on the term CFR Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam – Incoterms 2010, except the otherwise stated in this Purchase Order.

For the mode of transport by sea or by air, in case the first import border gate (which is the port of discharge stated on the bill of lading or the customs declaration) is not Vietsovpetro port, Vungtau City, S.R. Vietnam (the port specified in the contract) incurring insland transportation to the port specified, the Seller will be subject to Foreign contractor with holding tax (FCWT) according to the current regulations of S.R Vietnam. Any extra transport, warehouse expenses, other charges and FCWT incurred will be deducted from payment by the Buyer.

3.3 The Delivery Date is understood as: The date that Goods arrival at Vietsovpetro port (included navigation and transportation time).

The date of arrival mention here will following the date of arrival of the Goods at Vietsovpetro port that indicated in "Arrival Notice" of Vessel Agent.

3.4. The carrying vessel must have ISM certificate.

ARTICLE 4: NOTICE OF SHIPMENT AND DOCUMENTATION

4.1 The Seller shall notify the Buyer by fax/cable/telex as soon as possible, but not later than 05 working days from the Bill of Lading date the following information regarding the shipment:

- Purchase Order number
- Name of Goods, quantity and value
- Number of cases, gross weight, measurement
- Bill of Lading number and date.
- Name of vessel, nationality, IMO number.
- Port of exit and destination, ETD/ETA
- Address, telephone, fax of the shipping agent in Vietnam.
- Any other special instructions which should call to the Buyer's attention.

The Seller shall be responsible for any losses, expenses which may be occurred due to incorrect information from the Seller to the Buyer.

4.2 Required shipping document for purchased goods.

4.2.1. By T/T:

Immediately but not later than 05 working days from the Bill of lading date the Seller shall send by Express courier or FEDEX or DHL at the Seller's expenses to "Vietsovpetro" - 105 Le Loi, Ho Chi Minh City, SR Vietnam the following shipment documents:

1. *03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port ..... with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.

4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements):* 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License* or *Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via *email: xndvcang.sd@vietsov.com.vn*.
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

4.2.2. By L/C:

Immediately but not later than 05 working days from the Bill of lading date the Seller shall send by Express courier or FEDEX at the Seller's expenses to Vietsovpetro - 105 Le Loi Str., Ho Chi Minh City, S.R. Vietnam the following shipment documents unless otherwise stated:

1. *02 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port ..... with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank details and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements):* 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License* or *Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (Invoice value, Bill of lading/Airway Bill's number and date) to Vietsovpetro: 01 copy and via *email: xndvcang.sd@vietsov.com.vn*.
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed): 01 copy.

All the copies of the documents shall be legible; otherwise the photocopy of the original shall be furnished.

4.3 Any storage demurrage or other charges due to non, late receipt of shipping advice and/or shipping documents by the Buyer from the Seller or the Seller's agent as well as due to incorrect shipping documents shall be at the Seller's account.

4.4 If shipment to be made through a FIATA Freight Forwarder, under Through or Combined Transport Bill of Lading, the Seller shall have to send the Buyer by fax the copy of the Local Bill of Lading of the last distance and inform the Buyer the name, contract address of the Transportation Agent in Vietnam.

4.5 From the date of Letter of Award (LOA), The Seller must provide the Buyer with a regular report once a month on the first day of the month, showing the process of manufacturing, manufacturing, testing and supplying the Goods.

This report please send to email: .....@vietsov.com.vn; .....@vietsov.com.vn; and c/c: ……..hq@vietsov.com.vn.

The Seller must immediately report to Buyer the content of the report at least includes the following contents:

a) Description of the work completed in the implementation stage;

b) Highlighting delays or delays that are likely to occur and the causes of delays affecting production progress and providing measures to ensure progress;

c) Change progress if any. During the implementation of the contract, all contacts of Seller send an official letter for VSP leader and send a copy by email: .....@vietsov.com.vn; .....@vietsov.com.vn; and c/c: …….hq@vietsov.com.vn.

Party B must ensure to provide all necessary documents as required in Article 4.2 of this Contract when delivering goods to Party A. In case Party B delivers goods to Party A's warehouse in Ho Chi Minh City but does not have all the required documents, Party A agrees to allow Party B to temporarily store the goods at the warehouse to wait for the complete collection of documents at no extra charge for first 5 calendar days. From the 6th day onwards, Party B will have to pay Party A the storage cost of the shipment according to the current storage unit price of Party A that is applied to Party A's customers. This storage cost that will be deducted directly from the invoice for this Contract or from any other payments of the Contract that duly signed by both parties.

ARTICLE 5: PACKING

5.1 Goods supplied under this Purchase Order shall be packed in accordance with international standard for export packing to ensure safety of Goods from damages and corrosion during transportation and suitable for crane operations and handling.

5.2 Before packing, all metal parts of Goods must be preserved with proper grease and wrapped in waterproof strong paper to ensure protection from any damage and corrosion during their transportation and storage in Buyer's country within the guarantee period.

5.3 The Seller shall provide for each package a detailed packing list in English indicating the Purchase Order number, description of items, gross and net weight. One copy of the packing list in a waterproof envelope shall be put into each case with the Goods, the other copy should be fastened to the outer side of the wooden case and shall be covered with a metal plate nailed to the case. For steel cases, both copies of the packing list should be put into the cases.

5.4 The Seller shall be fully responsible for loss, damage of breakage of the Goods and/or rusting/corrosion resulting from defective or inadequate packing.

ARTICLE 6: MARKING

6.1 Marking shall be done in three sides of each case containing Goods, on the two opposite sides and on the top and contain the following information in the English language: SHIPPED: (SELLER'S NAME)

CONSIGNEE : VIETSOVPETRO
105 LE LOI STREET, HO CHI MINH CITY,S.R.VIETNAM
PURCHASE ORDER NUMBER No.
CASE No. /
DIMENSIONS: Length x Width x Height in cm
GROSS WEIGHT (KGS); NET WEIGHT (KGS)
AIRPORT/PORT OF DESTINATION

6.2 The marking must be clearly done by indelible paint and not less than 5 (five) cm high, unless restricted by the size of the case. Where necessary, the Seller shall conspicuously mark on the side of the case appropriate international marks according to the different characteristic, the special marking "Top", "Bottom", "Handle with care", handling places for reloading.

6.3 For the oversized cases (more than 10M long), as well as for the case weighing 500 kgs and more, or if the height of the case exceeds one meter, the center of gravity shall be clearly shown with bright indelible paint with sign (+) on the end and side faces of the cases.

6.4 The case number shall be indicated by a fraction, the numerator shows the ordinal number of the cases, and the denominator indicates the overall quantity of the cases into which completely delivered Goods are packed.

6.5 The Seller shall be responsible for any kind of losses and/or damages of the Goods during loading and unloading as well as for its transportation as a consequence of improper or insufficient marking, as well as for any extra transportation and warehouse expenses, losses connected with misaddressed delivery of the Goods due to incomplete marking.

ARTICLE 7: PAYMENT CONDITIONS

By T/T:

7.1 One hundred percent (100%) of shipment value shall be paid by Telegraphic Transfer within thirty (30) days from the date of the Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse after receipt of the Goods and a full sets of documents above mentioned in Articles 4.2.

7.2 Transfer fee shall be on the Buyer's account.

7.3 All the banking fees, including bank commission and other charges associated with the advising and corresponding bank shall be on the Seller's account.

7.4 All charges in connection with the change of payment form / conditions (whether occurred inside or outside S.R.Vietnam), due to Seller's / Buyer's request, shall be at the Seller's / Buyer's account.

7.5 The Seller provides Seller's bank account number.

By L/C:

7.6 As soon as possible, but not later than fifteen (15) days after the date of Seller's reconfirmation the Buyer will open through the Bank for Foreign Trade of Vietnam, Vung Tau Branch, (Vietcombank Vung Tau) or other bank in Vietnam the Irrevocable and Unconfirmed Letter of Credit in favour of the Seller covering the total Purchase Order

value with the content as per Appendix 1 which is to be considered as an integral part of this Purchase Order.

The validity of the Letter of Credit shall cover the Delivery Date plus 21 days.

7.7. Payment under this Letter of Credit shall be made for shipment and in the following installments to the Seller:

7.7.1. First Installment: 90% (Ninety percent) of the shipment value shall be made upon presentation of the following documents in English language by the Seller to the Bank:

1. *01/03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port ..... with destination Vietsovpetro Port, Ho Chi Minh City, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".
2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.
3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements):* 02 originals and 01 copy.
7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery or 12 months after the goods have been put into service whichever comes first: 01 original.
8. *Export License* or *Letter of the Seller* stating that Export License is not necessary for export: 01 original.
9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via *email:* *xndvcang.sd@vietsov.com.vn*.
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 10 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

All the documents presented by the Seller to the Bank shall be duly certified by the Seller as correct, due and payable under the terms and conditions of the Letter of credit.

Payment for incomplete delivery will not be allowed.

7.7.2. Second Installment: Ten percent (10%) of shipment value shall be payable against confirmation of the Buyer to the Bank within 30 days after the date of the Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse and Invoice.

7.8 The Letter of Credit shall be subject to the Uniform Customs and Practice for Documentary credit of International Chamber of Commerce (UCP No. 600), 2007 revision.

7.9 All the banking fees, including bank commission charges and other charges associated with the opening bank shall be on the Buyer's account.

7.10 All the banking fees, including bank commission charges and other charges associated with the advising and corresponding bank shall be on the Seller's account.

7.11 All charges in connection with the amendments of the Letter of Credit (whether occurred inside or outside S.R. Vietnam), due to Seller's/Buyer's request, shall be at the Seller's/ Buyer's account.

7.12 All charges associated with any extension of the Letter of credit arising due to delay in delivery as stated in Article 3 of this Purchase Order shall be at the Seller's account.

7.13 The Letter of Credit is to be automatically cancelled within 15 days from the date of opening, if the Buyer does not receive the original Performance Bond in favour of the Buyer with the content as stated in Appendix 2 of this Purchase Order.

ARTICLE 8: GOODS'S SURVEY

8.1 The survey at Buyer's warehouse of the received Goods shall be made by Independent Inspection Company with issuing a Certificate of Quantity and Condition.

8.2 The Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse for the Goods supplied under this Purchase Order shall be legal document for Buyer to make claim to the Seller.

ARTICLE 9: GUARRANTEE

9.1 The Seller guarantees that the Goods supplied under this Purchase Order shall be of the highest quality and designed standard as set in Manufacture's country for that type of Goods and shall meet current technological achievements as required, and shall be suitable for normal operation in tropical area condition regarding environment temperature up to 45 Deg. C, sea water temperature 25-30 Deg. C, humidity up to 100% and years of Production of the Goods in year 2025 or later.

9.2 Proper material of high quality shall be used for manufacturing the Goods to be supplied under this Purchase Order, and the Seller guarantees that the Goods and its quality, quantity shall be fully in compliance with the technical specifications and scope of supply as mentioned in Appendix No. 01 to this Purchase Order.

9.3 The Seller guarantees normal operation of all Goods to be supplied under this Purchase Order 18 months from the delivery date or 12 months after the Good have been put into service whichever comes first

9.4 Should the Buyer reveal any defect within the guarantee period or if the quality of Goods supplied under this Purchase Order is not in compliance with terms and conditions of this Purchase Order and its appendixes, the Buyer shall notify the Seller by telex/ fax of such defect. To substantiate the claims the Buyer shall submit to the Seller the official survey report issued by Independent Inspection Company. The survey report issued by Independent Inspection Company shall be legal document for Buyer to make claim to the Seller.

Any claim relating to defects or non-conformity, which occurred during the guarantee period of the Goods with the technical conditions as stated in the Appendix No. 01 shall be submitted to the Seller not later than three months after expiration of the guarantee period.

9.5 The Seller shall inform the Buyer about the results of consideration of claim not later than 10 days after receipt of the Buyer's claim telex/fax and the Seller shall eliminate the revealed defects, at his own expenses, at the Buyer's first request without any delay, but not later than 15 days after receipt of the Buyer's claim telex/fax and/or replace the defective parts or the missing parts by the new ones of good quality on the condition .....-Vietsovpetro port, Ho Chi Minh City, (or .....- Tan Son Nhat airport), S.R.Vietnam. All charges associated with return of the defective Goods to the Seller and delivery the new one to Buyer shall be at the Seller's account.

9.6 Should the Seller fail to eliminate the defects as claimed, or fail to deliver new Goods within the stipulated time in Article 9.5, the Buyer shall charge to the Seller the agreed and liquidated damages at the rate as per Article 10, the period of the above penalty shall be counted from the date of which the Seller receives the Buyer's official claim to the date of elimination of the defects or to the delivery date of the new replacement Goods minus 15 days or the Buyer shall have the right to eliminate such defects at the Seller's expenses without prejudice to its right in respect of the guarantee, and the Seller undertakes to defray at fist Buyer's request all actual expenses incurred in respect of such elimination and the agreed and liquidated damages at the rate 08% value of non used Goods due to defect found. Small defects not requiring the Seller's participation and/or permitting no delay will be eliminated by the Buyer and charged at normal costs to the Seller.

9.7 The guarantee period for replaced part shall be equal to that indicated in Article 9.3 and the guarantee period for Goods will be extended by the time during which it was not used due to defect found.

9.8 When the elimination and/or replacement is made and all related costs, expenses are settled, the claim is to be considered as finally settled.

All the claim amount, for which the Seller is to be responsible to the Buyer under this Purchase Order may be deducted by the Buyer from the payment of the Purchase Order value or may be covered by act of law or otherwise from the Seller to be agreed by both parties.

ARTICLE 10: AGREED AND LIQUIDATED DAMAGES

10.1. The Seller must deliver goods as specified in Appendix 01 and by the date as stipulated in the Purchase Order. If delayed in delivery the Seller shall pay to the Buyer the agreed and liquidated damages as follows:

- Delay in the first four weeks: 1.00% of breached contract value per week.

- Delay in each following week: 1.50% of breached contract value per week.

When calculating the amount of the agreed and liquidated damages: One week is to be defined as 07 days with 04 days or more than 04 days to be considered as one week, 03 days and less will not be counted. The agreed and liquidated damages calculated on the value of the whole contract having delayed items until the total amount of agreed and liquidated damages for delay shall not exceed 08% of breached contract value.

10.2. If The Seller does not deliver the sufficient quantity and types of goods as prescribed in Appendix 01 of this Contract, in that case:

- The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

If The Seller does not deliver enough quantity and type of goods for the contract (as specified in Appendix 01 of this Contract):

- The Buyer has the right to refuse the entire contract. The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

Or;

- The Buyer has the right to receive the rest of the contract, then, the Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the contract.

10.3. If the number of shipments exceeds the ones prescribed in Article 3, then the Seller is responsible for paying the extra costs for the exceeded shipments according to the prevailing prices which are applied by the Buyer to the current customers.

10.4. If the supplied goods do not conform to the quality as specified in Article 2 of the Purchase Order, the Buyer shall be entitled to refuse those Goods and payment of the

Purchase Order, the Seller shall pay to the Buyer the agreed and liquidated damages as stipulated in Article.10.2. The Buyer shall be entitled to accept / not accept that the Seller will provide new goods to replace the defective ones.

10.5. Delay in delivery / insufficient quantity:

10.5.1. If delay in delivery exceeds 60 days against the stipulated date as in Article 3.1 of this Purchase Order, except the Force majeure circumstances, the Buyer shall be entitled to:

a) Appoint a third party capable of providing goods/ goods with services. In that case, The Seller is responsible for signing a contract with that appointed party to continue performing the work.

Or;

b) Directly enter into contract with that third party buying goods / goods and services to continue performing the contract work. In that case, The Seller must pay the difference amount and other related costs and charges (if any).

Or;

c) Unilaterally terminate the Purchase Order and in this case The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the breached Purchase Order value.

10.5.2. If the Seller delayed in delivery of one portion more than 60 calendar days as specified in Article 3.1 of this Purchase Order except the Force majeure circumstances, the Buyer shall be entitled to:

a) Appoint a third party capable of providing goods / goods with services. In that case, The Seller is responsible for signing a contract with the designated party to continue performing the work.

Or;

b) Directly enter into contract with the third party buying goods / goods and services to continue performing the contract work. In that case, The Seller must pay the difference amount and other related costs and charges (if any).

c) Unilaterally terminate the Purchase Order and in this case The Seller shall pay to the Buyer the agreed and liquidated damages an amount equal to 08% of the breached PurchaseOrder value.

10.6. The total amount of the agreed and liquidated damages should not exceed 08% the Purchase Order value.

10.7. The amount of the agreed and liquidated damages stated in Article 10 of this Purchase Order is exclusive of VAT and import tax.

10.8. The Buyer shall be entitled to:

1) Deduct the amount of agreed and liquidated damages from the payment for this Purchase Order or from any payment for other Purchase Order (if any) between both sides.

2) Request the Seller's issuing Bank to pay the amount equal to the Performance Bond's value;

3) The Buyer shall make a written request to the Seller for the amount of agreed and liquidated damages payment. In all cases, The Seller should have to make commitment to the Buyer for the agreed and liquidated damages payment.

10.9 Any compensation for damage (if any) shall be made in accordance with the law of Vietnam.

ARTICLE 11: PERFORMANCE BOND

11.1 As soon as possible but not later than 07 days from the date of the Seller's reconfirmation of this Purchase Order, the Seller shall inform the Buyer by fax/telex of the issuance of the Performance Bond covering **eight percents (08%)** of the Purchase Order amount, **issued by the banks / branches legally operated in Vietnam,** acceptable to the Buyer, informing the number, date of issue and full content. In case the Performance Bond issued by the banks/branches legally operated in Vietnam, the Seller shall ensure that the issuing Bank will send to the Buyer the original Performance Bond through Vietcombank, Vung Tau Branch.

The content of the Performance Bond shall be in conformity with the Appendix 02 of this Purchase Order.

All costs relating to the Performance Bond shall be at Seller's account.

11.2 Should the Buyer not receive the valid, satisfactory Performance Bond within 30 days fromthe Purchase Order signing date, the Buyer has the right to cancel the Purchase Order any time and withdraw the Bid Bond without recourse to the law court or to arbitration.

11.3 Should the validity of the Performance Bond be required to be extended (due to delay or extension of Delivery Date of Goods), Seller shall immediately instruct the Issuing Bank to make amendment to the Performance Bond and submit to the Buyer the amended Performance Bond (original) at least 07 working days before the current Performance Bond expires.

11.4 Should the Buyer make use of Performance Bond, it will immediately send to the Seller copy of declaration to the bank.

ARTICLE 12: FORCE-MAJEURE

12.1 A force majeure event is an event that occurs objectively, which cannot be foreseen and cannot be overcome despite all necessary measures and permissible abilities such as war, riot, and Armed conflicts, embargoes, natural disasters (floods, hurricanes, tornadoes, earthquakes, tsunamis), fires, epidemics (Epidemic, Pandemic) announced by WHO / Country, Area / National lock down imposed by the host Government ....

12.2. The party that encounters a force majeure event that results in the failure to perform its obligations under the contract directly affected by the force majeure event is obliged to immediately notify the other party, including providing information and explanations about the direct impact of the force majeure event on the contract performance violation, accompanied by evidence to support, measures have been taken to overcome the problem and minimize the loss. The delay in notification, provision of information and explanation if it is more than 10 calendar days after the force majeure event occurred will make the party meeting the force majeure to lose the right of exemption later due to force majeure.

12.3. The written certification of the Vietnam Chamber of Commerce and Industry or the competent agency in the place where the force majeure event occurred is sufficient evidence to prove the event and the time of the force majeure.

12.4. In case, as a result of force majeure events, one Party in the Contract cannot perform all or a part of its obligations under this contract, the contract performance period will be extended accordingly by the time. that force majeure event took place.

12.5. If the force majeure event lasts more than 02 months, each party has the right to terminate this contract without having to compensate any amount of money for the other party.

12.6. The difficulties in production such as lack of materials, electricity, labor, strike ... are not considered force majeure and do not exempt Party B from the obligation of delivery

or late delivery; Information from newspapers, the network and other media is for reference only.

ARTICLE 13: ARBITRATION

13.1 This Purchase order is governed by Vietnamese laws.

13.2 Any disputes or discrepancies which may arise out of this Purchase Order shall be settled smoothly, amicably, basing on mutual benefit and mutual understanding.

13.3 Any disputes or discrepancies in connection with this Purchase Order, which can not be settled amicably, shall be referred for final decision and settlement to the Vietnam International Arbitration Centre at the Chamber of Commerce and Industry of Vietnam, Hanoi, S.R.Vietnam under the Rules of this Centre.

13.4 The number of arbitrators shall be one.

13.5 Decision of the arbitration shall be final and binding upon both parties.

ARTICLE 14: OTHER CONDITIONS:

14.1. Any alternations or amendment to this Purchase Order must be made in writing and signedby both parties and sent by post or by Fax to the registered address or Fax number specifiedclearly in the Purchase Order and emailed to the email addresses as stated in Appendix No.4 (A, B) attached.

14.2. Neither party shall be entitled to transfer its rights and obligations under this Purchase Orderto any third party without the prior consent of the other party.

14.3. All taxes, duties, custom fees in connection with the execution of this Purchase Order levied inside S.R. Vietnam but exception of Seller's personnel income tax shall be at Buyer's account.

All taxes, duties, custom fees in connection with the execution of this Purchase Order levied outside S.R. Vietnam to be at Seller's account.

14.4. This Purchase Order shall come into force from the date of Seller's reconfirmation, which should be received by the Buyer within 07 days of this Purchase Order date and the Purchaseorder will be terminated upon fulfillment by both parties all their obligations as stipulated inthis Purchase Order.

14.5. This Purchase Order is made in English and consists of_____pages, including Appendixes No. 1, 2, 3, 4 which are considered as integral parts of this Purchase Order (Appendix No. 01: Scope of supply, Appendix No. 02: Performance Bond, Appendix No. 03: Form Letter of Credit Specimen, Appendix No. 04 (A,B): Sample letter of transaction performance contract.

14.6. This Purchase Order is made in 05 originals of the same value, two of which retained by the Seller and three are retained by the Buyer.

14.7. Components of Purchase Order and legal order of precedence are as follows:

- Purchase Order (together with the Scope of Supply, Price schedule and other Appendices);
- Letter of Proposal Acceptance and Contract Award;
- Record of negotiation and finalization of the Contract;
- Decision on approving bidding results;
- Bid Proposal and Clarifications (if any);
- Invitation for Bid and Bulletins (if any);
- Other attached documents (if any).

We confirm that all of above mentioned terms and conditions of this Purchase Order are considered as terms and conditions of a Contract signed by and between two our Companies.

This is an operative instrument, no mail/airmail will be followed.

Best Regards,

FOR VIETSOVPETRO

Appendix No. 01 to the Purchase order No…….

(Attachment to Contract No.____, day __month __year__)

This appendix is based on requirements stated in the Invitation for Bid, Bid Proposal and agreements achieved during negotiations and finalizing contract including price (extended price) for each item and scope of supply. Price (extended price) for each item and scope of supply has included all tax, fees and charges (if any) in accordance with tax rate, fee and charge at the time of 28 days prior to deadline for submission of bid proposal.

PRICE SCHEDULE

No.	Content	Extended Price
1	Goods Price	(M)
Total Price of Contract		(M)

GOODS PRICE TALBE

1	2	3	4	5.1	5.2	6	7
No.	Description + P/N	Unit	Qty	MNF	CO	Unit Price	Extended Price (Column 4x6)
1	*Item 1*						*M1*
2	*Item 2*						*M2*
	....						…
n	*Item n*						*Mn*
Total price CFR VSP Port							*M=M1+M2+...+Mn*

Appendix No. 02 to the Purchase Order No. …….

Dated _____

PERFORMANCE BOND

TO: **VIETSOVPETRO**
105 Le Loi Str, Ho Chi Minh City, S.R. Vietnam
ATTN: **Mr. Vu Mai Khanh - General Director**
Dear Sir,

We, the undersigned (legal name and address of the Bank) have made due to note of Purchase Order No._____**/24/N-N3/XL-……..** dated _____(hereinafter referred to as the Purchase Order), concluded by yourselves **Vietsovpetro** (Hereinafter referred to as the Buyer) and **……..** (hereinafter referred to as the "Seller"), for **Provision of …….. – Block 09-1** as described in Appendix No. 01 of the Purchase Order with the Purchase Order amount **……..** In accordance with the term of the Purchase Order, the Seller is obliged to execute and perform the Purchase Order as agreed.

Taking into consideration of the above mentioned, we (legal name and address of the issuing Bank) hereby **irrevocably and unconditionally** undertake to pay you any amount stated hereunder on your simple demand accompanied by the written declaration that the Seller has failed to fulfill the Purchase Order as per terms and condition agreed.

Simple declaration from the Buyer shall be accepted by us conclusive evidence that the amount claimed is due to the Buyer.

The claim, if any, must be made by fax message or registered letter to reach us not later than the expiry date of this Performance Bond.

The limit of our liabilities under this Performance Bond shall not exceed the amount of ____ USD (08%) eight percent of Purchase Order value.

Partial drawing under this Performance Bond is acceptable, provided that all claims should reach us not later than the expiry date of this Performance Bond. After each partial drawing, the amount of this Performance Bond will be deducted accordingly, and this Performance Bond remains in force up to its expiration of total amount under this Performance Bond is drawn.

The payment under this Performance Bond shall be made by ourselves without deductions for any fees of any taxes, imports, levies or duties present or future of any nature inside of S.R. Vietnam.

It is further guaranteed by us, that the payment under this Performance Bond shall be made by us within seven (07) days from the receipt of your written demand marking reference to this Performance Bond.

The Performance Bond comes into force and becomes valid from the date of issuance.

The validity of this Performance Bond shall cover the delivery period of the last shipment as stated in Article 3 of the above-mentioned Purchase Order plus 60 days i.e _____.

When expired or implemented in full, this Performance Bond turns to be null and void.

Upon expiration of this Performance Bond, or on the settlement of all claims, this Performance Bond shall be returned to us without any request on our part.

Yours faithfully,

Authorized signature of the Bank

Appendix No. 03 to the Purchase Order No……

LETTER OF CREDIT SPECIMEN

SUBJECT:

KIND OF L/C: IRREVOCABLE UNCONFIRMED L/C, AT SIGHT.

APPLICANT: VIETSOVPETRO
(THE BUYER) 105 Le Loi Str., Ho Chi Minh City, S.R. Vietnam

BENEFICIARY:

(THE SELLER)

ADVISING BANK:

AMOUNT: _____ USD

(In words: United State Dollars _____) - CFR - Vietsovpetro port, Ho Chi Minh City, S.R. Vietnam.

VALIDITY: The validity of the Letter of Credit shall cover the Delivery Date plus 21 days.

PAYMENT CONDITIONS:

Payment under this Letter of Credit shall be made for shipment and in the following installments:
I. First Installment: 90% (Ninety percent) of the shipment value shall be made upon presentation of the following documents in English language by the Seller to the Bank:

1. *01/03 originals and 02 (two) copies of clean on board Bill of Lading* evidencing shipment from port ..... with destination Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam, consignee: Vietsovpetro, No.105 Le Loi Street, Ho Chi Minh City, S.R Vietnam, marked "Freight Prepaid".

2. *Detailed Packing List* showing the content of each case or lot, gross and net weight: covering Goods as specified in Appendix No. 1 to this Purchase Order: 03 originals.

3. *Signed Commercial Invoice* issued by the Seller for the respective shipment value indicating term of delivery (for example: CFR Vietsovpetro Port, Ho Chi Minh city, S.R.Vietnam) with itemized and total prices, stating the Seller's bank detail and account number: 03 originals and 01 copy.
4. *Certificate of Quality, Quantity* issued by the Manufacturer: 02 originals / Electronics with link to verify.
5. *Certificate of Origin* issued by the Competent authority of Manufacturer's / Exporter's country: 02 originals / Electronics with link to verify.
6. *Other certificates (as Technical Requirements):* 02 originals and 01 copy.

7. *Certificates of Guarantee* issued by the Seller for the quality of Goods for 18 months from delivery or 12 months after the goods have been put into service whichever comes first: 01 original.

8. *Export License* or *Letter of the Seller* stating that Export License is not necessary for export: 01 original.

9. *Seller's telex, fax* advising the shipment details (all documents in 4.2.1) to Vietsovpetro: 01 copy and via *email: xndvcang.sd@vietsov.com.vn*
10. *Beneficiary's certificate* certifying that one set of the above mentioned documents (from 1 to 9 including one original of AWB / Bill of Lading) have been sent to the Buyer's address: 105 Le Loi Street, Ho Chi Minh City, S.R Vietnam within 03 working days

from the Delivery Date by Courier's (courier's receipt must be enclosed thereto for negotiation): 01 originals and 02 copies.

II. Second Installment: Ten percent (10%) of shipment value shall be payable against confirmation of the Buyer to the Bank within 30 days after the date of the Certificate of quantity and condition issued by Independent Inspection Company at Buyer's warehouse.

The Letter of Credit shall be subject to the Uniform Customs and Practice for Documentary credit of International Chamber of Commerce (UCP No. 600), 2007 revision.

All the banking fees, including bank commission charges and other charges associated with the opening bank shall be on the Buyer's account.

All the banking fees, including bank commission charges and other charges associated with the advising and corresponding bank shall be on the Seller's account.

All charges in connection with the amendments of the Letter of Credit (whether occurred inside or outside S.R. Vietnam), due to Seller's/Buyer's request, shall be at the Seller's / Buyer's account.

All charges associated with any extension of the Letter of credit arising due to delay in delivery as stated in Article 3 of this Contract shall be at the Seller's account.

COVERING:

Scope of supply, specifications, Quantity and Prices are in accordance to Appendix No. 01 of Purchase Order No. _____

SHIPMENT:

Shipment to be made from _____ Port to Vietsovpetro Port, Ho Chi Minh City, S.R. Vietnam on the terms of ..... - Incoterms 2010.

Delivery Date: not later than 135 calendar days from the date of LOI / LOA to the date that the Goods arrival at Vietsovpetro's port (included navigation and transportation time). The date of arrival mentioned here will follow the date of arrival of the Goods at Vietsovpetro port that indicated in "Arrival Notice" of Vessel Agent (included navigation period and transportation time).

Earlier shipment is allowed

Partial shipment is allowed.

Total max: …… shipments.

Transshipment is allowed at Seller's care and account

The Delivery Date is understood as the date arrival Vietsovpetro Port, Ho Chi Minh City, S.R. Vietnam.

PACKING AND MARKING: As per Purchase Order No. __ dated _____

SPECIAL CONDITIONS:

Agreed and liquidated damages for delay of delivery:

Shipment after above stated delivery date is allowed but not exceeds two months. For Bill of Lading dated after delivery date, Buyer's Bank is authorized to deduct the agreed and liquidated damages amount following Group have item be delay as follows:

- Delay in the first four weeks: 1.00% of breached contract value per week.
- Delay in each following week: 1.50% of breached contract value per week.

One week is to be defined as 07 days, 04 days or more than 04 days to be considered as one week, 03 days and less will not be counted.

Total agreed and liquidated damage amount does not exceed 8% of breached contract value.

The Letter of Credit is to be automatically cancelled within 15 days from the date of opening, if the Buyer does not receive the original Performance Bond in favour of the Buyer with the content as stated in Appendix No. 02 of this Purchase Order.

APPENDIX No. 4 (A)

FORM OF CONTRACT PERFORMANCE TRANSACTION

Day month year 20..

To: Vietsovpetro

105 Le Loi St., Thang Nhi Ward, Ho Chi Minh City, Vietnam.

Fax: 84-254-3839 857

Recipient: Mr. Tran Quoc Thang – Deputy General Director

Copy: Ms. Nguyen Thi Van Anh – Manager of Commercial Department

Email: vspadmin@vietsov.com.vn

thanhnq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Insert the transaction content, including: Change of Goods/ Services, schedule, use of quota, contents regarding contract value, payment, etc.)

REPRESENTATIVE OF PARTY ….
(Signature and stamp)

APPENDIX No. 4 (B)

CORRESPONDENCE FORM FOR CONTRACT PERFORMANCE

Day month year 20..

To: Vietsovpetro

105 Le Loi St., Thang Nhi Ward, Ho Chi Minh City, Vietnam.

Fax: 84-254-3839 857

Recipient: Vietsovpetro Commercial Department/Vietsovpetro port & Logistics Division/ Offshore Contruction Division

Email: vspadmin@vietsov.com.vn

thanhnq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Insert the transaction content, including: *Delivery notice, Delivery of goods documents, notification of commencement of service/ construction, information on personnel/ equipment conducting service/ construction, etc.*)

REPRESENTATIVE OF PARTY ….
(Signature and stamp)

Form No. 17

CONTRACT[1]
(For Vietnamese contractor)

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc
****

Thành phố Hồ Chí Minh, ngày ……/……/.....

HỢP ĐỒNG

SỐ: ……../25/T-N3/XL-……

V/v: CUNG CẤP THIẾT BỊ HỆ THỐNG ĐIỀU KHIỂN VÀ THIẾT BỊ BÁO KHÍ, BÁO CHÁY CHO GIÀN BK-26
(GÓI THẦU SỐ VT-2988/25-XL-DA-HMH)

GIỮA
LIÊN DOANH VIỆT – NGA VIETSOVPETRO

VÀ

CÔNG TY .....

Thành phố Hồ Chí Minh, 2025

ĐIỀU KIỆN CHUNG CỦA HỢP ĐỒNG (ĐKC)

1. Định nghĩa

Trong hợp đồng này, các từ ngữ dưới đây được hiểu như sau:

1.1. "Chủ đầu tư" là Liên doanh Việt – Nga Vietsovpetro được quy định tại **Hợp đồng**;

1.2. "Hợp đồng" là thỏa thuận giữa Chủ đầu tư và Nhà thầu, thể hiện bằng văn bản, được hai bên ký kết, bao gồm cả phụ lục và tài liệu kèm theo;

1.3. "Nhà thầu" là nhà thầu trúng thầu (có thể là nhà thầu độc lập hoặc liên danh) và được quy định tại **Hợp đồng**;

1.4. "Nhà thầu phụ" là nhà thầu có tên trong danh sách các nhà thầu phụ do Nhà thầu đề xuất trong HSDT và được Nhà thầu ký hợp đồng để thực hiện dịch vụ liên quan;

1.5. "Tài liệu hợp đồng" là các tài liệu được liệt kê trong Hợp đồng, bao gồm bất kỳ bản sửa đổi, bổ sung nào của Hợp đồng;

1.6. "Giá hợp đồng" là tổng số tiền ghi trong hợp đồng cho việc cung cấp hàng hoá và dịch vụ liên quan. Giá hợp đồng đã bao gồm tất cả các chi phí về thuế, phí, lệ phí (nếu có);

1.7. "Ngày" là ngày dương lịch; "năm" là 365 ngày;

1.8. "Hàng hóa" bao gồm máy móc, thiết bị, nguyên liệu, nhiên liệu, vật liệu, vật tư, phụ tùng; hàng tiêu dùng; trang thiết bị y tế dùng cho các cơ sở y tế;

1.9. "Dịch vụ liên quan" bao gồm các dịch vụ như lắp đặt, duy tu, bảo dưỡng, sửa chữa ban đầu, bảo hiểm lắp đặt, bảo hiểm sửa chữa hoặc cung cấp các dịch vụ sau bán hàng khác như đào tạo, chuyển giao công nghệ…;

1.10. "Hoàn thành" là việc Nhà thầu hoàn tất các dịch vụ liên quan theo các điều khoản và điều kiện quy định tại Hợp đồng;

1.11. "Địa điểm dự án" là địa điểm được quy định tại **Hợp đồng**.

2. Tài liệu hợp đồng và thứ tự ưu tiên

2.1. Tất cả các tài liệu nêu tại Mục 2.2 ĐKC (bao gồm cả các phần của tài liệu) sẽ cấu thành Hợp đồng để tạo thành thể thống nhất, có tính tương hỗ, bổ sung và giải thích cho nhau.

2.2. Hợp đồng, các tài liệu và thứ tự ưu tiên pháp lý như sau:

a) Hợp đồng (kèm theo các Phụ lục hợp đồng);

b) Biên bản thương thảo, hoàn thiện hợp đồng;

c) Báo cáo phê duyệt kết quả lựa chọn nhà thầu;

d) Điều kiện chung của hợp đồng;

e) Hồ sơ dự thầu của Nhà thầu trúng thầu;

f) Hồ sơ mời thầu và các tài liệu sửa đổi hồ sơ mời thầu.

3. Luật và ngôn ngữ

Luật điều chỉnh hợp đồng là luật Việt Nam, ngôn ngữ của hợp đồng là tiếng Việt.

4. Thông báo

4.1. Bất cứ thông báo nào của một bên gửi cho bên kia liên quan đến hợp đồng phải được thể hiện bằng văn bản, theo địa chỉ quy định tại **Hợp đồng**. Thuật ngữ "bằng văn bản" có nghĩa là hình thức truyền đạt thông tin dưới dạng viết và có bằng chứng về việc tiếp nhận thông tin.

4.2. Thông báo của một bên sẽ được coi là có hiệu lực kể từ ngày bên kia nhận được hoặc theo ngày hiệu lực nêu trong thông báo, tùy theo ngày nào đến muộn hơn.

5. Bảo đảm thực hiện hợp đồng

5.1. Bảo đảm thực hiện hợp đồng phải được nộp lên Chủ đầu tư không muộn hơn ngày quy định tại Thư chấp thuận HSDT và trao hợp đồng. Bảo đảm thực hiện hợp đồng được thực hiện bằng một trong các hình thức sau:

a) Nộp thư bảo lãnh của tổ chức tín dụng trong nước, chi nhánh ngân hàng nước ngoài được thành lập theo pháp luật Việt Nam;

b) Nộp giấy chứng nhận bảo hiểm bảo lãnh của doanh nghiệp bảo hiểm phi nhân thọ trong nước, chi nhánh doanh nghiệp bảo hiểm phi nhân thọ nước ngoài được thành lập theo pháp luật Việt Nam.

Bảo đảm thực hiện hợp đồng theo quy định tại điểm a và điểm b khoản này là bảo đảm không có điều kiện (trả tiền khi có yêu cầu), theo mẫu quy định tại Phần 4 hoặc một mẫu khác được Chủ đầu tư chấp thuận.

c) Hình thức khác được Chủ đầu tư chấp thuận quy định tại **Hợp đồng.**

5.2. Bảo đảm thực hiện hợp đồng có giá trị và hiệu lực quy định tại **Hợp đồng**.

5.3. Bảo đảm thực hiện hợp đồng sẽ được trả cho Chủ đầu tư để bồi thường cho bất kỳ tổn thất nào phát sinh do Nhà thầu không hoàn thành các nghĩa vụ hợp đồng.

5.4. Thời hạn hoàn trả bảo đảm thực hiện hợp đồng theo quy định tại **Hợp đồng**.

6. Ký hợp đồng thầu phụ

6.1. Nhà thầu được ký kết hợp đồng với các nhà thầu phụ trong danh sách các nhà thầu phụ quy định tại **Hợp đồng** để thực hiện dịch vụ liên quan nêu trong HSDT. Việc sử dụng nhà thầu phụ sẽ không làm thay đổi các nghĩa vụ của nhà thầu. Nhà thầu phải chịu trách nhiệm trước Chủ đầu tư về khối lượng, chất lượng, tiến độ và các nghĩa vụ khác đối với phần việc do nhà thầu phụ thực hiện.

Việc thay thế, bổ sung nhà thầu phụ trong danh sách các nhà thầu phụ nêu trong HSDT hoặc thay đổi nội dung thầu phụ nêu trong HSDT chỉ được thực hiện khi được chủ đầu tư chấp thuận; việc sử dụng nhà thầu phụ phải phù hợp với nhu cầu của nhà thầu trong thực hiện hợp đồng, nhà thầu phụ phải đáp ứng về năng lực, kinh nghiệm theo yêu cầu của nhà thầu.

6.2. Nhà thầu có trách nhiệm thanh toán đầy đủ và đúng hạn cho nhà thầu phụ theo các điều khoản thỏa thuận giữa Nhà thầu và nhà thầu phụ.

7. Giải quyết tranh chấp

7.1. Chủ đầu tư và Nhà thầu có trách nhiệm giải quyết các tranh chấp phát sinh giữa hai bên thông qua thương lượng, hòa giải.

7.2. Nếu tranh chấp không thể giải quyết được bằng thương lượng, hòa giải trong thời gian quy định tại **Hợp đồng** kể từ ngày phát sinh tranh chấp thì bất kỳ bên nào cũng đều có thể yêu cầu đưa việc tranh chấp ra giải quyết theo cơ chế được quy định tại Hợp đồng.

8. Phạm vi cung cấp

Hàng hóa và dịch vụ liên quan phải được cung cấp theo quy định tại **Hợp đồng.**

9. <u>Tiến độ giao hàng, lịch hoàn thành các dịch vụ liên quan (nếu có) và tài liệu chứng từ</u>

Tiến độ giao hàng và lịch hoàn thành các dịch vụ liên quan (nếu có) phải được thực hiện theo theo quy định tại **Hợp đồng**. Nhà thầu phải cung cấp các hoá đơn, chứng từ tài liệu khác theo quy định tại **Hợp đồng**.

10. <u>Trách nhiệm của Nhà thầu</u>

Nhà thầu phải cung cấp toàn bộ hàng hóa và dịch vụ liên quan (nếu có) trong phạm vi cung cấp quy định tại Mục 8 ĐKC và theo tiến độ giao hàng, lịch hoàn thành các dịch vụ liên quan quy định tại Mục 9 ĐKC.

11. <u>Loại hợp đồng và giá hợp đồng</u>

11.1. Loại hợp đồng: theo quy định tại **Hợp đồng**.

11.2. Giá hợp đồng quy định tại **Hợp đồng** là toàn bộ chi phí để hoàn thành việc cung cấp hàng hoá và dịch vụ liên quan của gói thầu nêu trong Bảng giá hợp đồng trên cơ sở bảo đảm tiến độ, chất lượng theo đúng yêu cầu của gói thầu.

12. <u>Thuế, phí, lệ phí</u>

12.1. Nhà thầu chịu trách nhiệm đối với toàn bộ chi phí về thuế, phí, lệ phí phát sinh cho đến khi hàng hóa được giao cho Chủ đầu tư.

12.2. Trường hợp Nhà thầu thuộc đối tượng được miễn, giảm thuế, phí, lệ phí, Chủ đầu tư tạo điều kiện tối đa cho Nhà thầu áp dụng các chính sách miễn, giảm thuế, phí, lệ phí và được quy định tại **Hợp đồng**.

12.3. Việc điều chỉnh thuế thực hiện theo quy định tại **Hợp đồng**.

13. <u>Tạm ứng</u>

13.1. Chủ đầu tư phải cấp cho Nhà thầu khoản tiền tạm ứng theo quy định tại **Hợp đồng**, sau khi Nhà thầu nộp Bảo lãnh tạm ứng tương đương với khoản tiền tạm ứng. Bảo lãnh tạm ứng phải được phát hành bởi một tổ chức tín dụng hoặc chi nhánh ngân hàng nước ngoài được thành lập theo pháp luật Việt Nam.

13.2. Nhà thầu chỉ được sử dụng tiền tạm ứng cho việc thực hiện Hợp đồng. Nhà thầu phải chứng minh rằng khoản tiền tạm ứng đã được sử dụng đúng mục đích, đúng đối tượng bằng cách nộp bản sao các hóa đơn chứng từ hoặc tài liệu liên quan cho Chủ đầu tư.

14. <u>Thanh toán</u>

14.1. Yêu cầu thanh toán của Nhà thầu phải được gửi cho Chủ đầu tư bằng văn bản, kèm theo hóa đơn mô tả hàng hóa đã bàn giao và các dịch vụ liên quan đã thực hiện, cùng với chứng từ nộp theo quy định tại Điều 9 ĐKC và gửi yêu cầu thanh toán khi đã hoàn thành các nghĩa vụ khác quy định trong hợp đồng.

14.2. Việc thanh toán thực hiện theo quy định tại **Hợp đồng**.

14.3. Đồng tiền thanh toán là VND.

15. <u>Quyền tác giả</u>

Quyền tác giả đối với tất cả các bản vẽ, tài liệu và hồ sơ chứa đựng thông tin và dữ liệu mà Nhà thầu đã nộp cho Chủ đầu tư vẫn thuộc về Nhà thầu. Trường hợp các bản vẽ, tài liệu và hồ sơ đó được cung cấp cho Chủ đầu tư một cách trực tiếp hoặc thông qua Nhà thầu bởi một bên thứ ba thì quyền tác giả đối với các bản vẽ, tài liệu và hồ sơ thuộc về bên thứ ba đó.

16. <u>Sử dụng các tài liệu và thông tin liên quan đến hợp đồng</u>

16.1. Chủ đầu tư và Nhà thầu phải bảo mật bất kỳ tài liệu, dữ liệu hoặc thông tin nào khác liên quan đến hợp đồng do một bên cung cấp trực tiếp hoặc gián tiếp cho bên kia, không được tiết lộ tài liệu, dữ liệu hoặc thông tin đó cho bên thứ ba nếu không có văn bản đồng ý của bên kia cho dù tài liệu, dữ liệu hoặc thông tin đó được cung cấp trước, trong hoặc sau khi hoàn thành hoặc chấm dứt hợp đồng. Nhà thầu có thể chuyển cho nhà thầu phụ các tài liệu, dữ liệu và thông tin phù hợp do Chủ đầu tư cung cấp để nhà thầu phụ thực hiện công việc của mình theo hợp đồng; trong trường hợp này, nhà thầu phụ phải có cam kết với Nhà thầu về việc bảo mật các tài liệu, dữ liệu hoặc thông tin đó.

16.2. Chủ đầu tư không được sử dụng các tài liệu, dữ liệu và thông tin khác nhận được từ Nhà thầu cho bất kỳ mục đích nào khác không liên quan đến hợp đồng. Nhà thầu không được sử dụng các tài liệu, dữ liệu và thông tin khác nhận được từ Chủ đầu tư cho bất kỳ mục đích nào khác không liên quan đến việc thực hiện hợp đồng.

16.3. Nghĩa vụ của Chủ đầu tư và Nhà thầu quy định tại Mục 16.1 và Mục 16.2 ĐKC không áp dụng đối với các thông tin sau đây:

a) Thông tin mà Chủ đầu tư hoặc Nhà thầu cần cung cấp cho cấp có thẩm quyền;

b) Thông tin đã hoặc sẽ được công bố mà không phải do lỗi của Chủ đầu tư hoặc Nhà thầu;

c) Thông tin thuộc sở hữu của một bên vào thời điểm công bố và trước đó không phải do bên kia cung cấp trực tiếp hoặc gián tiếp;

d) Thông tin mà một bên nhận được một cách hợp pháp từ một bên thứ ba không có nghĩa vụ bảo mật thông tin.

16.4. Các quy định tại Mục 16 ĐKC không làm thay đổi bất kỳ cam kết bảo mật nào do một bên đưa ra trước ngày ký hợp đồng liên quan đến việc cung cấp hàng hóa, dịch vụ.

16.5. Các quy định tại Mục 16 ĐKC tiếp tục có hiệu lực sau khi hoàn thành hoặc chấm dứt hợp đồng vì bất cứ lý do gì.

17. <u>Thông số kỹ thuật và tiêu chuẩn</u>

Hàng hóa và các dịch vụ liên quan được cung cấp theo hợp đồng sẽ phải tuân theo các thông số kỹ thuật và tiêu chuẩn quy định tại Chương V; nếu tại Chương V không quy định đến một thông số hay tiêu chuẩn nào có thể áp dụng thì phải tuân thủ theo thông số và tiêu chuẩn tương đương hoặc cao hơn tiêu chuẩn hiện hành tại quốc gia hoặc vùng lãnh thổ mà hàng hóa có xuất xứ.

18. <u>Đóng gói hàng hoá</u>

18.1. Nhà thầu phải đóng gói hàng hóa đúng yêu cầu nhằm tránh hư hỏng trong quá trình vận chuyển đến địa điểm dự án theo quy định trong hợp đồng. Trong quá trình vận chuyển, bao gói hàng hóa phải đủ chắc chắn để chịu được những va chạm mạnh, nhiệt độ quá cao hoặc quá thấp, trong nước mặn, nước mưa và ở ngoài trời. Kích thước và trọng lượng của mỗi kiện hàng phải tính đến điều kiện vận chuyển như khoảng cách, phương tiện vận chuyển, điều kiện cơ sở hạ tầng... từ nơi xuất hàng đến địa điểm dự án.

18.2. Việc đóng gói, ghi chú đối với hàng hóa, các giấy tờ bên trong và bên ngoài kiện hàng phải tuân thủ các yêu cầu cụ thể trong hợp đồng, bao gồm cả các yêu cầu (nếu có) quy định ở **Hợp đồng** và các chỉ dẫn khác của Chủ đầu tư.

19. <u>Bảo hiểm</u>

Trừ trường hợp có quy định khác tại **Hợp đồng**, hàng hóa cung cấp theo hợp đồng phải được bảo hiểm đầy đủ cho các tổn thất, hư hại có thể xảy ra trong quá trình sản xuất hoặc tiếp nhận, vận chuyển, lưu kho và giao hàng theo quy định tại **Hợp đồng**.

20. <u>Vận chuyển và các dịch vụ phát sinh</u>

20.1. Yêu cầu về vận chuyển hàng hóa và các yêu cầu khác quy định tại **Hợp đồng**.

20.2. Chủ đầu tư có thể yêu cầu Nhà thầu cung cấp một hoặc một số dịch vụ sau đây, bao gồm cả các dịch vụ (nếu có) theo quy định tại **Hợp đồng**:

a) Thực hiện việc lắp đặt hoặc giám sát việc lắp đặt tại hiện trường, chạy thử hàng hóa;

b) Cung cấp các dụng cụ cần thiết để lắp ráp, bảo dưỡng hàng hóa;

c) Cung cấp tài liệu chi tiết hướng dẫn vận hành và bảo dưỡng cho từng loại hàng hóa;

d) Vận hành hoặc giám sát hoặc bảo dưỡng, sửa chữa hàng hóa trong khoảng thời gian đã được các bên thỏa thuận, với điều kiện là dịch vụ này sẽ không miễn trừ cho Nhà thầu khỏi bất kỳ nghĩa vụ bảo hành nào theo hợp đồng này;

đ) Hướng dẫn nhân sự của Chủ đầu tư về cách lắp đặt, chạy thử, vận hành, bảo dưỡng, sửa chữa hàng hóa.

20.3. Trường hợp phát sinh dịch vụ ngoài hợp đồng, Chủ đầu tư và Nhà thầu thương thảo về chi phí thực hiện dịch vụ, bảo đảm không vượt quá mức giá mà Nhà thầu áp dụng cho dịch vụ tương tự trong các hợp đồng khác.

21. <u>Kiểm tra và thử nghiệm hàng hóa</u>

Nhà thầu phải tiến hành tất cả các thử nghiệm, kiểm tra đối với hàng hóa và dịch vụ liên quan theo quy định tại **Hợp đồng** và chịu toàn bộ chi phí thử nghiệm, kiểm tra theo quy định của Hợp đồng.

22. <u>Phạt và bồi thường thiệt hại</u>

Phạt vi phạm hợp đồng và bồi thường thiệt hại theo quy định tại **Hợp đồng**.

23. <u>Bảo hành</u>

23.1. Nhà thầu bảo đảm cung cấp hàng hóa mới, chưa qua sử dụng theo đúng đề xuất đã nêu.

23.2. Nhà thầu bảo đảm hàng hóa không phát sinh khiếm khuyết do bất kỳ hành động hay sơ suất nào từ phía Nhà thầu hoặc do thiết kế, vật liệu hoặc kỹ thuật chế tạo khi hàng hóa được sử dụng bình thường trong các điều kiện phổ biến tại Việt Nam.

23.3. Thời hạn bảo hành và địa điểm áp dụng bảo hành quy định tại **Hợp đồng**.

23.4. Trường hợp phát hiện khiếm khuyết của hàng hóa, Chủ đầu tư kịp thời thông báo cho Nhà thầu, kèm theo tài liệu chứng minh. Chủ đầu tư tạo điều kiện cho Nhà thầu tiến hành kiểm tra các khiếm khuyết đó.

23.5. Sau khi nhận được thông báo của Chủ đầu tư về việc hàng hóa có khiếm khuyết, Nhà thầu phải kịp thời sửa chữa hoặc thay thế hàng hóa có khiếm khuyết trong thời hạn quy định tại **Hợp đồng** và chịu toàn bộ chi phí sửa chữa, thay thế.

23.6. Trường hợp đã được thông báo nhưng Nhà thầu không tiến hành sửa chữa khiếm khuyết của hàng hóa trong thời hạn quy định tại **Hợp đồng**, Chủ đầu tư có thể tự sửa chữa (nếu cần thiết). Nhà thầu phải chịu tất cả rủi ro và chi phí liên quan. Việc Chủ đầu tư tự sửa chữa khiếm khuyết của hàng hóa không ảnh hưởng đến các quyền khác của Chủ đầu tư đối với Nhà thầu theo hợp đồng.

24. <u>Bồi thường vi phạm sáng chế</u>

24.1. Với điều kiện là Chủ đầu tư tuân thủ Mục 24.2 ĐKC, Nhà thầu có nghĩa vụ bồi thường, bảo đảm Chủ đầu tư và nhân sự của Chủ đầu tư không bị tổn hại bởi bất kỳ vụ kiện tụng, thủ

tục hành chính, khiếu nại, yêu cầu, tổn thất, thiệt hại, chi phí nào, bao gồm cả chi phí thuê luật sư vì có vi phạm hoặc cáo buộc vi phạm sáng chế, mẫu hữu ích, kiểu dáng công nghiệp, nhãn hiệu, quyền tác giả hoặc các quyền sở hữu trí tuệ khác đã đăng ký hoặc tồn tại vào ngày ký hợp đồng mà các vi phạm hoặc cáo buộc vi phạm đó liên quan tới:

a) Việc lắp đặt hàng hóa do Nhà thầu thực hiện hoặc việc sử dụng hàng hóa tại Việt Nam;

b) Việc bán các sản phẩm được sản xuất từ hàng hóa.

Việc bồi thường nêu trên không áp dụng đối với các trường hợp sau: sử dụng hàng hóa hoặc bất kỳ phần nào của hàng hóa ngoài mục đích nêu trong hợp đồng hoặc phát sinh hợp lý từ hợp đồng; có hành vi vi phạm do sử dụng hàng hóa hoặc bất kỳ phần nào của hàng hóa, hay bất kỳ sản phẩm nào được sản xuất từ hàng hóa có sự kết hợp các thiết bị, nhà xưởng hoặc vật tư khác không phải do Nhà thầu cung cấp theo hợp đồng.

24.2. Trường hợp xảy ra kiện tụng hoặc khiếu nại đối với Chủ đầu tư liên quan tới các vấn đề quy định tại Mục 24.1 ĐKC, Chủ đầu tư có nghĩa vụ thông báo kịp thời cho Nhà thầu. Nhà thầu có thể nhân danh Chủ đầu tư giải quyết kiện tụng hoặc khiếu nại đó hoặc thương thảo để giải quyết kiện tụng hoặc khiếu nại đó và chịu trách nhiệm đối với các chi phí liên quan.

24.3. Trong vòng 28 ngày kể từ khi nhận được thông báo của Chủ đầu tư, trường hợp Nhà thầu không thông báo cho Chủ đầu tư về ý định giải quyết kiện tụng hay khiếu nại đó, Chủ đầu tư sẽ tự giải quyết.

24.4. Trường hợp được yêu cầu, Chủ đầu tư hỗ trợ Nhà thầu giải quyết vụ kiện tụng hay khiếu nại đó và sẽ được Nhà thầu hoàn trả mọi chi phí hợp lý phát sinh.

24.5. Chủ đầu tư có nghĩa vụ bồi thường, đảm bảo Nhà thầu, nhà thầu phụ, nhân sự của Nhà thầu không bị tổn hại bởi bất kỳ vụ kiện tụng, thủ tục hành chính, khiếu nại, yêu cầu, tổn thất, thiệt hại, chi phí nào, bao gồm cả chi phí thuê luật sư vì có vi phạm hoặc cáo buộc vi phạm sáng chế, mẫu hữu ích, kiểu dáng công nghiệp, nhãn hiệu, quyền tác giả hoặc các quyền sở hữu trí tuệ khác đã đăng ký hoặc tồn tại vào ngày ký hợp đồng mà các vi phạm hoặc cáo buộc vi phạm đó phát sinh từ hoặc liên quan đến bất kỳ thiết kế, dữ liệu, bản vẽ, thông số kỹ thuật hoặc các tài liệu và hồ sơ nào được cung cấp hoặc thiết kế bởi Chủ đầu tư hoặc thay mặt Chủ đầu tư.

25. <u>Thay đổi liên quan đến pháp lý</u>

Trừ trường hợp có quy định khác tại hợp đồng, kể từ 28 ngày trước ngày có thời điểm đóng thầu trở về sau, nếu có bất kỳ chính sách nào được ban hành, thay thế, sửa đổi hoặc tuyên bố hết hiệu lực tại Việt Nam gây ảnh hưởng đến ngày giao hàng và/hoặc giá hợp đồng thì ngày giao hàng hoặc giá hợp đồng phải được điều chỉnh tương ứng với mức độ ảnh hưởng của nhà thầu khi thực hiện các nghĩa vụ theo hợp đồng. Phần tăng hoặc giảm giá hợp đồng không được thanh toán riêng hay ghi nhận khoản phải trả riêng nếu việc tăng hoặc giảm giá hợp đồng này đã được quy định tại Mục 11 ĐKC.

26. <u>Bất khả kháng</u>

26.1. Nhà thầu không bị tịch thu bảo lãnh thực hiện hợp đồng, không phải chịu trách nhiệm bồi thường thiệt hại hay bị phạt hoặc bị chấm dứt hợp đồng nếu rơi vào các sự kiện bất khả kháng gây cản trở tiến độ thực hiện hợp đồng hoặc không thể thực hiện nghĩa vụ hợp đồng.

26.2. Khi xảy ra sự việc bất khả kháng, việc một bên không thực hiện được bất kỳ một nghĩa vụ nào của mình sẽ không bị coi là vi phạm hay phá vỡ Hợp đồng, với điều kiện nhà thầu bị ảnh hưởng bởi vụ việc này: (a) đã tiến hành những biện pháp ngăn ngừa hợp lý, cẩn trọng và các biện pháp thay thế cần thiết, tất cả với mục đích thực hiện được những điều khoản và điều kiện của Hợp đồng này, và (b) phải tiếp tục thực hiện các nghĩa vụ của mình trong phạm vi Hợp đồng chừng nào việc thực hiện này còn hợp lý và thực tế.

26.3. Trong hợp đồng này, bất khả kháng được hiểu là các sự kiện nằm ngoài tầm kiểm soát của các bên và không thể lường trước, không thể tránh được và khiến cho việc thực hiện hợp đồng là không khả thi mà nguyên nhân không phải do sơ suất hoặc thiếu chú ý của các bên. Sự kiện bất khả kháng có thể bao gồm nhưng không giới hạn bởi chiến tranh, bạo loạn, đình công, hỏa hoạn, lũ lụt, dịch bệnh, cách ly do kiểm dịch hoặc các chính sách, quy định của Nhà nước.

26.4. Khi xảy ra sự kiện bất khả kháng, nhà thầu bị ảnh hưởng bởi sự kiện bất khả kháng phải kịp thời thông báo bằng văn bản cho bên kia về sự kiện đó và nguyên nhân gây ra sự kiện trong vòng 14 ngày kể từ ngày xảy ra sự kiện bất khả kháng. Đồng thời, chuyển cho bên kia giấy xác nhận về sự kiện bất khả kháng đó được cấp bởi một tổ chức có thẩm quyền tại nơi xảy ra sự kiện bất khả kháng.

Nhà thầu bị ảnh hưởng bởi sự kiện bất khả kháng phải tiếp tục thực hiện các nghĩa vụ hợp đồng theo hoàn cảnh thực tế cho phép và phải tìm mọi biện pháp hợp lý để hạn chế hậu quả của sự việc bất khả kháng.

26.5. Thời hạn mà một bên phải hoàn thành một công việc theo Hợp đồng này được gia hạn thêm một khoảng thời gian bằng đúng thời gian bên đó không thể thực hiện được công việc do sự kiện bất khả kháng gây ra.

27. <u>Sửa đổi hợp đồng</u>

27.1. Chủ đầu tư có thể yêu cầu Nhà thầu sửa đổi, bổ sung các nội dung sau đây trong phạm vi công việc của hợp đồng:

a) Thay đổi bản vẽ, thiết kế công nghệ hoặc yêu cầu kỹ thuật đối với trường hợp hàng hóa cung cấp theo hợp đồng được đặt hàng sản xuất cho riêng Chủ đầu tư;

b) Thay đổi phương thức vận chuyển hoặc đóng gói;

c) Thay đổi địa điểm giao hàng;

d) Thay đổi dịch vụ liên quan.

đ) Điều chỉnh tiến độ thực hiện hợp đồng theo quy định tại Mục 28 ĐKC.

27.2. Trường hợp việc sửa đổi, bổ sung các nội dung trong phạm vi công việc của hợp đồng quy định tại Mục 27.1 ĐKC làm thay đổi chi phí hoặc thời gian thực hiện bất kỳ điều khoản nào trong hợp đồng, giá hợp đồng hoặc ngày giao hàng, ngày hoàn thành dịch vụ liên quan phải được điều chỉnh tương ứng và hai bên tiến hành sửa đổi hợp đồng. Yêu cầu của Nhà thầu về việc điều chỉnh giá hợp đồng, ngày giao hàng hoặc ngày hoàn thành phải được tiến hành trong vòng 28 ngày, kể từ ngày Nhà thầu nhận được yêu cầu của Chủ đầu tư về việc sửa đổi, bổ sung nội dung công việc của hợp đồng.

27.3. Trường hợp Nhà thầu cung cấp hàng hóa với phiên bản mới của cùng hãng sản xuất, có cùng xuất xứ, có tính năng kỹ thuật, cấu hình, thông số… tương đương hoặc tốt hơn phiên bản hàng hóa Nhà thầu đề xuất trong HSDT và đáp ứng yêu cầu HSMT thì Nhà thầu phải thông báo trước bằng văn bản cho Chủ đầu tư để Chủ đầu tư xem xét. Trong trường hợp này, căn cứ nhu cầu sử dụng, Chủ đầu tư có thể chấp thuận đề xuất của Nhà thầu với điều kiện là đơn giá và các điều kiện khác của hợp đồng không thay đổi.

27.4. Trường hợp cần thực hiện các dịch vụ liên quan chưa nêu trong hợp đồng, Chủ đầu tư và Nhà thầu tiến hành thương thảo, bảo đảm đơn giá phù hợp giá cả thị trường.

27.5. Chủ đầu tư và Nhà thầu sẽ tiến hành thương thảo để làm cơ sở ký kết văn bản sửa đổi hợp đồng trong trường hợp sửa đổi hợp đồng. Mọi giao dịch trong quá trình thực hiện hợp đồng được các Bên thực hiện bằng văn bản và gửi theo đường bưu chính hoặc theo số Fax tới địa chỉ đăng ký hoặc số Fax của mỗi Bên ghi trong hợp đồng và email đến địa chỉ email theo mẫu quy định tại **Hợp đồng**.

27.6. Trong thời gian thực hiện hợp đồng, nhà thầu có thể đề xuất giải pháp tiết kiệm chi phí bao gồm ít nhất các nội dung sau đây:

a) Nội dung giải pháp, giải thích sự khác biệt so với các yêu cầu theo hợp đồng đã ký kết;

b) Phân tích toàn diện chi phí và lợi ích của giải pháp bao gồm mô tả và ước tính các chi phí (bao gồm cả chi phí vòng đời) có thể phát sinh cho Chủ đầu tư trong trường hợp chấp thuận đề xuất của Nhà thầu;

c) Tác động của giải pháp đối với hiệu quả thực hiện hợp đồng.

27.7. Chủ đầu tư có thể chấp thuận đề xuất của Nhà thầu nếu đề xuất này chứng minh được một trong các lợi ích dưới đây mà không làm ảnh hưởng đến các chức năng cần thiết của hàng hóa:

a) Rút ngắn thời gian giao hàng;

b) Giảm giá hợp đồng hoặc chi phí vòng đời cho Chủ đầu tư;

c) Nâng cao chất lượng, hiệu quả hoặc tính bền vững của hàng hóa trong hợp đồng;

d) Bất kỳ lợi ích nào khác cho Chủ đầu tư.

Trường hợp đề xuất của Nhà thầu được Chủ đầu tư chấp thuận và làm giảm giá hợp đồng, Chủ đầu tư thanh toán cho Nhà thầu theo tỷ lệ quy định tại **Hợp đồng** đối với phần giá trị giảm giá hợp đồng.

Trường hợp đề xuất của Nhà thầu được Chủ đầu tư chấp thuận và làm tăng giá hợp đồng nhưng giảm chi phí vòng đời do tác động của các yếu tố quy định tại các điểm a, b, c và d khoản này, Chủ đầu tư thanh toán cho Nhà thầu theo phần giá trị tăng giá hợp đồng.

28. Điều chỉnh tiến độ thực hiện hợp đồng

28.1. Trong quá trình thực hiện hợp đồng, trường hợp phát sinh các điều kiện bất lợi, cản trở Nhà thầu hoặc nhà thầu phụ trong việc cung cấp hàng hóa và lịch thực hiện các dịch vụ liên quan quy định tại Mục 9 ĐKC, Nhà thầu phải kịp thời thông báo bằng văn bản cho Chủ đầu tư về việc chậm tiến độ, nguyên nhân, khoảng thời gian chậm tiến độ. Trên cơ sở thông báo của Nhà thầu, Chủ đầu tư phải nhanh chóng đánh giá tình hình và có thể xem xét gia hạn hợp đồng. Trường hợp Chủ đầu tư đồng ý gia hạn, các bên tiến hành thương thảo để làm cơ sở ký kết phụ lục sửa đổi, bổ sung hợp đồng.

28.2. Trừ trường hợp bất khả kháng quy định tại Mục 26 ĐKC, Nhà thầu giao hàng chậm hoặc hoàn thành dịch vụ liên quan chậm có nghĩa vụ bồi thường thiệt hại cho Chủ đầu tư theo quy định tại Mục 22 ĐKC.

29. Chấm dứt hợp đồng

29.1. Chấm dứt hợp đồng do sai phạm

a) Chủ đầu tư có thể chấm dứt một phần hoặc toàn bộ hợp đồng mà không gây tổn hại đến các biện pháp khắc phục vi phạm hợp đồng khác bằng cách thông báo bằng văn bản cho Nhà thầu về sai phạm trong hợp đồng trong các trường hợp sau:

(i) Nhà thầu không thể bàn giao hàng hóa hoặc một phần hàng hóa trong thời hạn quy định theo hợp đồng, hoặc trong thời gian gia hạn theo quy định tại Mục 28 ĐKC;

(ii) Nhà thầu không thực hiện bất kỳ nghĩa vụ nào khác theo hợp đồng;

(iii) Chủ đầu tư xác định Nhà thầu vi phạm một trong các hành vi bị cấm quy định tại HSMT trong quá trình đấu thầu hoặc thực hiện hợp đồng;

b) Trường hợp Chủ đầu tư chấm dứt một phần hoặc toàn bộ hợp đồng theo điểm a khoản này, Chủ đầu tư có thể mua sắm hàng hóa và dịch vụ liên quan tương tự như các hàng hóa và dịch vụ chưa được thực hiện theo các điều khoản và phương thức phù hợp. Nhà thầu phải chịu trách nhiệm bồi thường cho Chủ đầu tư các chi phí phụ trội phát sinh từ việc mua hàng hóa và dịch vụ tương tự đó. Tuy nhiên, Nhà thầu vẫn phải tiếp tục thực hiện phần hợp đồng không bị chấm dứt.

29.2. Chấm dứt hợp đồng do mất khả năng thanh toán

Trường hợp Nhà thầu phá sản hoặc mất khả năng thanh toán, Chủ đầu tư có thể chấm dứt hợp đồng vào bất kỳ thời điểm nào bằng cách gửi thông báo cho Nhà thầu. Trong trường hợp đó, hợp đồng sẽ chấm dứt và Nhà thầu không được bồi thường với điều kiện là việc chấm dứt hợp đồng không gây tổn hại hoặc ảnh hưởng đến bất kỳ quyền khởi kiện hoặc biện pháp khắc phục của Chủ đầu tư trước đó hoặc sau đó.

30. <u>Hạn chế xuất khẩu</u>

Trường hợp quốc gia, vùng lãnh thổ cung cấp hàng hóa, dịch vụ có các quy định thương mại dẫn tới việc hạn chế xuất khẩu, gây khó khăn cho Nhà thầu trong việc thực hiện các nghĩa vụ hợp đồng, Nhà thầu không bắt buộc phải hoàn thành nghĩa vụ giao hàng, thực hiện dịch vụ với điều kiện là Nhà thầu cung cấp cho Chủ đầu tư các tài liệu chứng minh việc đã hoàn thành tất cả các thủ tục xuất khẩu cần thiết, bao gồm cả xin giấy phép hoặc ủy quyền để xuất khẩu hàng hóa, dịch vụ theo hợp đồng. Trong trường hợp này, Chủ đầu tư có thể chấm dứt hợp đồng với Nhà thầu.

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM

Độc lập - Tự do - Hạnh phúc

****

HỢP ĐỒNG SỐ: .....

V/v: Mua Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn BK-26, Lô 09-1

(Gói thầu số VT-2988/25-XL-DA-HMH)

Căn cứ vào nhu cầu của Liên doanh Việt - Nga Vietsovpetro và khả năng cung cấp của Công ty...,

Hôm nay, ngày _____ tháng____ năm ____, các bên gồm

BÊN A: LIÊN DOANH VIỆT - NGA VIETSOVPETRO

Địa chỉ: 105 Lê Lợi, phường Vũng Tàu, Tp. Hồ Chí Minh, Việt Nam

Điện thoại: 0254 839 871, Fax: 0254 839 857

Tài khoản số: ..... tại Ngân hàng Ngoại thương VN, CN Vũng Tàu

Mã số thuế: .....

Đại diện: Ông Trần Quốc Thắng – Phó Tổng Giám Đốc Thương mại
(Theo giấy ủy quyền số 77/UQ-PL ngày 18/03/2025)

BÊN B: CÔNG TY ……..

Địa chỉ: ……

Điện thoại: …….

Fax: ……

Tài khoản: ……

Mã số thuế: ……..

Đại diện: Ông ……., Giám đốc

Hai Bên thỏa thuận ký kết hợp đồng với các điều khoản như sau:

***Điều 1:* Đối tượng hợp đồng**

Bên A đồng ý mua và Bên B đồng ý bán **Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn BK-26 (Lô 09.1)** (sau đây gọi tắt là "Hàng hóa") với chủng loại, số lượng, đặc điểm kỹ thuật, đơn giá, giá trị hàng hóa theo Phụ lục 01 của hợp đồng và là một phần thống nhất và không tách rời của hợp đồng này.

Hàng hóa của hợp đồng được Vietsovpetro sử dụng cho hoạt động dầu khí tại Lô 09.1.

***Điều 2:* Giá trị hợp đồng**

2.1 Giá trị hợp đồng là: _____ VNĐ *(bằng chữ:_____)*

Giá trị hợp đồng trên không bao gồm thuế nhập khẩu, không bao gồm thuế GTGT của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan nhưng đã bao gồm các loại thuế, phí, lệ phí phát sinh trong lãnh thổ Việt Nam. Thuế nhập khẩu và thuế GTGT trên được miễn theo Hiệp định liên Chính phủ cho hàng hóa Lô 09.1. Bên B được sử dụng Hạn mức nhập khẩu Lô 09.1 của Bên A để làm thủ tục nhập khẩu hàng hóa và miễn thuế theo Hiệp định.

2.2 Giá trị hợp đồng nêu trên được tính trên cơ sở giao hàng tại kho Vietsovpetro tại thành phố Thành phố Hồ Chí Minh, bao gồm giá trị hàng hóa và các loại chi phí do Bên B chi trả như

phí vận chuyển, đóng gói, bốc xếp lên phương tiện vận chuyển và các chi phí khác liên quan đến việc thực hiện hợp đồng này. Giá trị hợp đồng là giá cố định và không thay đổi trong suốt thời gian hợp đồng có hiệu lực.

Điều 3: Quy cách, số lượng, chất lượng hàng hóa

3.1 Quy cách, số lượng, chất lượng, chủng loại, ký mã hiệu, hãng sản xuất, nước sản xuất, năm sản xuất và những thông số khác của hàng hóa do Bên B cung cấp phải phù hợp với quy định nêu trong Phụ lục số 01 của Hợp đồng này. Hàng hóa mới 100%, chưa qua sử dụng và trong tình trạng sử dụng tốt.

Năm sản xuất: sản xuất năm 2025 hoặc muộn hơn.

3.2 Hồ sơ kèm theo hàng hóa gồm:

- 02 Hóa đơn thuế GTGT (bản gốc);
- Chứng chỉ xuất xứ (CO) do cơ quan có thẩm quyền của nước sản xuất hoặc nước xuất khẩu cấp (bản gốc / bản điện tử có kèm đường link để kiểm tra);
- Chứng chỉ chất lượng và số lượng (CQQ) do nhà sản xuất cấp (bản gốc);
- Các Chứng chỉ khác (Theo YCKT của HSMT) (bản gốc);
- Chứng chỉ bảo hành của Bên B bảo hành 18 tháng kể từ ngày giao hàng hoặc 12 tháng kể từ ngày đưa hàng hóa vào vận hành tùy điều kiện nào đến trước (bản gốc);
- Tờ khai hải quan hàng hóa nhập khẩu (bản copy);
- Tài liệu kỹ thuật của hàng hóa (nếu có).

Hồ sơ mời thầu của Bên A và Hồ sơ dự thầu của Bên B cho gói thầu VT-2988/25-XL-DA-HMH là tài liệu tham chiếu về kỹ thuật cho hàng hóa của hợp đồng này.

Điều 4: Giao nhận và kiểm tra, giám định hàng hóa

4.1 Hàng hóa được giao phải phù hợp với yêu cầu quy định tại Điều 1 và Điều 3 của hợp đồng này trong thời hạn là: **không muộn hơn 135 ngày lịch kể từ ngày Vietsovpetro gửi thông báo trúng thầu (LOI / LOA)** đến ngày giao hàng tại kho của Bên A.

Ngày giao hàng của hợp đồng này được ghi trong Biên bản giao nhận hàng do đại diện hai bên ký như quy định tại mục 4.8 dưới đây.

4.2 Bên B tự chịu trách nhiệm làm thủ tục hải quan cho hàng hóa nhập khẩu. Bên A cho phép Bên B được sử dụng hạn mức nhập khẩu của Bên A đã đăng ký tại Hải quan Vũng Tàu để làm thủ tục nhập khẩu và hỗ trợ Bên B về mặt giấy tờ trong việc sử dụng hạn mức nhập khẩu của Bên A cho lô hàng nhập khẩu của Hợp đồng này để Bên B xin miễn thuế nhập khẩu và thuế giá trị gia tăng của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan theo quy định cho Liên doanh Việt – Nga Vietsovpetro.

4.3 Để thuận tiện cho việc thông quan, làm các thủ tục miễn thuế nhập khẩu và miễn thuế giá trị gia tăng của giá trị hàng hóa nhập khẩu ghi trên Tờ khai Hải quan, hàng hóa Bên B nên nhập về cảng ….. Tp. Hồ Chí Minh. Bên A không chịu trách nhiệm trả tiền thuế cho Bên B trong trường hợp nếu Bên B nhập hàng hóa về cảng khác mà không làm được thủ tục miễn thuế hoặc Bên B không sử dụng hạn mức nhập khẩu của Bên A.

4.4 Hàng hóa được giao **…….. lần** vào kho của Bên A tại thành phố Hồ Chí Minh. Bên B cam kết giao hàng đúng số lần quy định. Trường hợp số lần giao hàng thực tế vượt quá số lần qui định tại Điều này, Bên A có thể đồng ý nhận hàng và Bên B phải chịu trách nhiệm thanh toán cho Bên A toàn bộ chi phí phát sinh từ việc Bên A tổ chức nhận hàng của các lần giao hàng vượt quá qui định trong Hợp đồng theo đơn giá hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A.

4.5 Dỡ hàng từ phương tiện của Bên B do Bên A đảm nhận bằng phương tiện, nhân lực và chi phí của mình.

4.6 Trong vòng 02 ngày trước khi giao hàng, Bên B phải thông báo bằng văn bản cho Bên A biết về số lượng, quy cách đóng gói hàng hóa để Bên A bố trí nhân lực và phương tiện bốc

dỡ.

4.7 Người của Bên B đến giao hàng phải có giấy giới thiệu của người đại diện ký Hợp đồng của Bên B.

4.8 Đại diện của Liên Doanh Việt - Nga Vietsovpetro (là Xí nghiệp Dịch vụ và Đơn vị đặt hàng) và đại diện của Bên B tham gia giao nhận, kiểm tra hàng hóa của hợp đồng này và lập Biên bản giao nhận hàng (theo Phụ lục số 02 của hợp đồng này) sẽ ghi rõ số lượng, tình trạng, các hồ sơ giao kèm theo hàng hóa kể cả tờ khai Hải quan (nếu hàng hóa đó là hàng nhập khẩu). Biên bản giao nhận hàng phải được Lãnh đạo Xínghiệp Dịch vụ và Lãnh đạo Đơn vị đặt hàng phê duyệt. Biên bản giao nhận hàng là căn cứ để Bên A thanh toán cho Bên B.

4.9 Trong trường hợp cần thiết, bằng chi phí của mình, Bên A (giao cho Xí nghiệp Dịch vụ) có quyền trưng cầu cơ quan giám định độc lập tham gia giám định hàng hóa. Trong vòng 03 ngày làm việc kể từ khi kết thúc giám định, cơ quan giám định độc lập cung cấp Chứng thư giám định tình trạng và số lượng hàng hóa. Chứng thư giám định hàng hóa là căn cứ pháp lý để Bên A khiếu nại Bên B.

4.10 Bên B phải đảm bảo khi giao Hàng hóa cho Bên A phải có kèm theo đầy đủ các chứng từ như quy định tại Điều 3 của Hợp đồng này. Trong trường hợp Bên B giao hàng tới kho của Bên A tại Thành phố Hồ Chí Minh nhưng chưa có đầy đủ các chứng từ theo quy định thì Bên A đồng ý cho Bên B tạm gửi hàng tại kho để chờ tập hợp đầy đủ các chứng từ cho việc giao nhận Hàng hóa chính thức.

Bên A đồng ý miễn phí lưu kho đối với lô Hàng tạm gửi này của Bên B trong 05 ngày lịch đầu tiên. Kể từ ngày thứ 06 trở đi, Bên B sẽ phải trả cho Bên A chi phí lưu kho của lô Hàng theo mức đơn giá lưu kho hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A. Chi phí lưu kho này sẽ được Bên A khấu trừ thẳng vào giá trị mà Bên A thanh toán cho Bên B theo quy định của Hợp đồng này hoặc những khoản thanh toán ở những Hợp đồng khác đã ký giữa Hai bên.

4.11 Bên A có quyền từ chối nhận Hàng nếu Hàng hoá khi giao không đảm bảo chất lượng, như đã quy định ở Điều 1, Phụ lục số 1 cũng như không có đầy đủ bộ chứng từ đi kèm như quy định tại Điều 3 của Hợp đồng này.

4.12 Kể từ ngày thông báo trúng thầu, Bên B phải cung cấp cho Bên A báo cáo thường xuyên 01 tháng/lần vào ngày làm việc đầu tiên của tháng, thể hiện tiến trình sản xuất, chế tạo, kiểm tra và cung cấp Hàng hóa của Bên B. Báo cáo này được gửi cho XN Xây lắp của Bên A bằng email theo địa chỉ: .....@vietsov.com.vn; .....@vietsov.com.vn; và c/c: .....hq@vietsov.com.vn.

Tại các thời điểm khẩn cấp hoặc có sự chậm trễ trong quá trình chế tạo, Bên B phải báo cáo ngay cho Bên A. Nội dung báo cáo tối thiểu bao gồm các nội dung sau:

a) Mô tả các công việc đã hoàn thành trong giai đoạn thực hiện;

b) Nêu bật những chậm trễ hoặc những chậm trễ có khả năng xảy ra và những nguyên nhân gây ra chậm trễ ảnh hưởng đến tiến độ sản xuất và đưa ra các biện pháp bảo đảm tiến độ;

c) Thay đổi tiến độ nếu có. Trong quá trình thực hiện Hợp đồng, mọi liên hệ Bên B gửi công văn chính thức cho Lãnh đạo Liên doanh Việt-Nga Vietsovpetro, sao gửi cho Xí nghiệp Xây Lắp của Bên A và qua email bản scan công văn theo địa chỉ: .....@vietsov.com.vn; .....@vietsov.com.vn; và c/c: …….hq@vietsov.com.vn.

<u>Điều 5:</u> Bao bì, Đóng gói và Ký mã hiệu:

5.1 Hàng hoá giao theo Hợp đồng này sẽ được đóng trong bao bì thích hợp theo tiêu chuẩn xuất khẩu, bảo đảm cho hàng hoá không bị hư hại, ăn mòn trong quá trình vận chuyển và thuận tiện cho bốc xếp, bốc dỡ.

5.2 Bên B hoàn toàn chịu trách nhiệm trong trường hợp hàng hoá bị mất mát, hư hỏng do

thiếu sót trong việc đóng gói Hàng hoá.

5.3 Hàng hoá có thể được ghi rõ ràng bằng sơn không xóa được trên bề mặt hoặc in trên tấm ghi nhãn đính trên từng kiện với các thông tin sau bằng tiếng Anh hay tiếng Việt:
- Tên nhà sản xuất.
- Tên Hàng.
- Khối lượng (nếu có).
- Số Hợp đồng (nếu có).

5.4 Bên B chịu toàn bộ phí tổn đối với mọi mất mát/ hư hại của Hàng hoá trong qúa trình bốc xếp, bốc dỡ, vận chuyển do ghi ký mã hiệu không đúng, không đầy đủ cũng như chịu mọi chi phí vận chuyển, bảo quản, mất mát phát sinh thêm do Hàng hóa bị gửi nhầm địa chỉ do ghi ký mã hiệu sai.

<u>Điều 6:</u> Trách nhiệm do vi phạm hợp đồng

6.1. Bên B phải giao hàng đầy đủ cho Bên A được quy định tại Phụ lục số 01 và theo thời hạn quy định của hợp đồng. Nếu Bên B giao hàng bị chậm thì Bên B phải chịu phạt 0,2%/ngày cho 10 ngày lịch chậm đầu tiên; phạt 0,3%/ngày cho những ngày lịch tiếp theo tính trên giá trị của phần hợp đồng bị vi phạm cho đến mức tổng số tiền phạt không quá 08% phần giá trị hợp đồng bị vi phạm.

Nếu Bên B giao Hàng hoá quy định tại Phụ lục số 01 của hợp đồng này theo nhiều lần giao hàng thì thời gian giao nhận hàng của hợp đồng được tính là thời gian giao hàng theo lần giao cuối cùng. Hàng hoá của những lần giao trước chỉ được ghi nhận lưu kho tại kho của Bên A cho đến khi Bên B giao nhận đủ số hàng của cả hợp đồng.

6.2. Nếu Bên B không giao đủ số lượng, chủng loại hàng hóa (như quy định tại Phụ lục số 01 của hợp đồng này) thì:

- Bên B vi phạm nghĩa vụ giao hàng theo hợp đồng này và phải chịu phạt một khoản tiền bằng 08% giá trị của cả hợp đồng.
- Nếu Bên B không giao đủ số lượng, chủng loại hàng hóa theo hợp đồng (như quy định tại Phụ lục số 01 của hợp đồng này) thì:
- Bên A có quyền từ chối nhận hợp đồng đó. Bên B vi phạm nghĩa vụ giao hàng theo hợp đồng này và phải chịu phạt một khoản tiền bằng 08% giá trị của cả hợp đồng.

6.3. Nếu Bên B giao hàng hoá vượt số lần giao nhận như quy định tại Điều 4 của hợp đồng này thì:

- Bên B đã vi phạm điều kiện giao nhận hàng và phải chịu trách nhiệm thanh toán các chi phí liên quan tới giao nhận hàng hoá cho lần giao hàng vượt quá số lần giao hàng theo hợp đồng này theo mức đơn giá hiện hành của Bên A đang áp dụng cho các khách hàng của Bên A.

6.4. Nếu Bên B giao hàng không đảm bảo chất lượng như qui định tại Điều 2 của hợp đồng thì Bên A sẽ không nhận hàng và phạt Bên B theo mức phạt không giao đủ hàng như quy định tại mục 6.2 của hợp đồng này. Bên A có quyền chấp nhận/không chấp nhận việc Bên B sẽ cung cấp hàng mới thay thế cho hàng không đảm bảo chất lượng trên.

6.5 Vi phạm do cung cấp chậm/cung cấp không đủ hàng hoá:

6.5.1. Nếu Bên B giao hàng chậm quá 60 ngày lịch so với thời gian quy định tại mục 4.1 của hợp đồng này, ngoại trừ trường hợp bất khả kháng, thì Bên A có quyền:

a) Chỉ định bên thứ 3 có khả năng cung cấp hàng hóa/hàng hoá kèm dịch vụ. Trong trường hợp đó Bên B có trách nhiệm ký hợp đồng với bên được chỉ định để tiếp tục thực hiện công việc cung cấp cho bên A.

Hoặc;

b) Trực tiếp ký hợp đồng mua hàng/hàng hoá kèm dịch vụ của Bên thứ 3 để tiếp tục thực hiện công việc của hợp đồng. Trong trường hợp đó Bên B phải trả khoản tiền chênh lệch và các chi phí liên quan nếu có.

Hoặc;

c) Đơn phương chấm dứt thực hiện hợp đồng và trong trường hợp này Bên B phải chịu phạt một khoản tiền bằng 08% giá trị của hợp đồng.

6.5.2. Nếu Bên B giao hàng chậm (một phần hàng hoá) quá 60 ngày lịch so với thời gian quy định tại mục 4.1 của hợp đồng này, ngoại trừ trường hợp bất khả kháng, thì Bên A có quyền:

a) Chỉ định bên thứ 3 có khả năng cung cấp hàng hóa/hàng hoá kèm dịch vụ. Trong trường hợp đó Bên B có trách nhiệm ký hợp đồng với bên được chỉ định để tiếp tục thực hiện công việc cung cấp cho bên A.

Hoặc;

b) Trực tiếp ký hợp đồng mua hàng/hàng hoá kèm dịch vụ của Bên thứ 3 để tiếp tục thực hiện công việc của hợp đồng. Trong trường hợp đó Bên B phải trả khoản tiền chênh lệch và các chi phí liên quan nếu có.

c) Đơn phương chấm dứt thực hiện tiếp hợp đồng và trong trường hợp này Bên B phải chịu phạt một khoản tiền bằng 08% giá trị của phần hợp đồng.

6.6 Tổng các loại phạt không vượt quá 08% giá trị hợp đồng.

6.7 Giá trị hợp đồng bị vi phạm ghi ở Điều 6 của hợp đồng này là giá trị không có thuế GTGT và không bao gồm thuế nhập khẩu.

6.8 Do hàng hóa của hợp đồng này được lựa chọn trọn gói, nên trong trường hợp Bên B không giao bất kỳ một mục hàng hóa nào của hợp đồng thì:

- Bên A có quyền từ chối nhận các mục còn lại của hợp đồng đó và Bên B chịu phạt mức tối đa 08% giá trị hàng hóa của cả hợp đồng; hoặc:

- Bên A có thể vẫn nhận các mục hàng hóa còn lại của hợp đồng nhưng khi đó Bên B sẽ chịu phạt với mức phạt tối đa 08% giá trị hàng hóa của cả hợp đồng đó.

6.9 Nếu Bên B giao hàng chậm bất kỳ một mục hàng hóa nào của hợp đồng thì Bên A có quyền áp dụng mức phạt giao hàng chậm tương ứng đối với giá trị hàng hóa của cả hợp đồng.

6.10 Để thu hồi khoản tiền phạt vi phạm, Bên A sẽ toàn quyền: 1) khấu trừ khoản tiền phạt vi phạm từ các khoản tiền mà Bên A sẽ thanh toán cho Bên B tại Hợp đồng này hoặc theo các hợp đồng khác được ký kết giữa hai bên; 2) Yêu cầu Ngân hàng cấp Bảo đảm thực hiện hợp đồng thanh toán ngay khoản tiền Bên B mở bảo lãnh cho Bên A; 3) Bằng văn bản, yêu cầu Bên B thanh toán. Trong mọi trường hợp, Bên B cam kết nghiêm túc thực hiện nghĩa vụ thanh toán của mình cho Bên A.

6.11 Việc bồi thường thiệt hại (nếu có) được thực hiện theo quy định của pháp luật Việt Nam.

<u>Điều 7:</u> Bảo hành

7.1 Bên B chịu trách nhiệm bảo hành chất lượng của hàng hóa trong thời hạn 18 tháng kể từ ngày giao hàng hoặc 12 tháng kể từ ngày đưa hàng hóa vào vận hành tùy điều kiện nào đến trước. Điều kiện bảo hành theo đúng tiêu chuẩn bảo hành của nhà sản xuất.

7.2 Trong thời gian bảo hành nếu Bên A phát hiện có hư hỏng, sai sót về chất lượng hàng hóa thì Bên A sẽ thông báo kịp thời bằng fax/email cho Bên B biết để cùng nhau xác minh. Việc xác minh sai sót về chất lượng phải được Bên B tiến hành không chậm quá 15 ngày lịch kể từ ngày Bên B nhận được thông báo. Việc xác minh phải được lập thành biên bản, trong đó ghi rõ kết luận về nguyên nhân gây ra hư hỏng, xác định trách nhiệm thay thế cái mới/sửa chữa các hư hỏng đó thuộc về bên nào và thời hạn thay thế/sửa chữa làm căn cứ pháp lý trong thực hiện hợp đồng này.

7.3 Tùy mức độ hư hỏng, nhưng không quá 15 ngày lịch kể từ ngày có kết luận về nguyên nhân hư hỏng, sai sót về chất lượng hàng hóa do lỗi của Bên B thì Bên B phải tiến hành sửa chữa các sai sót về chất lượng hoặc đổi lại hàng mới cho Bên A.

7.4 Trong thời hạn 07 ngày lịch kể từ ngày nhận được thông báo của Bên A, nếu Bên B không trả lời thì coi như đã chấp nhận có sai sót về chất lượng hàng do lỗi của mình và có trách nhiệm phải sửa chữa các sai sót đó hoặc đổi lại hàng mới ngay trong vòng 15 ngày kể từ ngày nhận được thông báo của Bên A.

7.5 Nếu Bên B tiến hành sửa chữa hoặc đổi lại hàng mới bị chậm so với thời hạn qui định ở mục 7.3 và 7.4 của hợp đồng này thì Bên B phải chịu phạt theo mức phạt giao hàng chậm như qui định ở mục 6.1 của hợp đồng này.

7.6 Trong thời hạn quy định trên tại điều 7 của hợp đồng này, nếu Bên B không tiến hành khắc phục (sửa chữa các sai sót về chất lượng do lỗi của mình hoặc đổi lại hàng mới) thì Bên A có quyền tiến hành khắc phục (sửa chữa và/hoặc thay mới) và Bên B phải hoàn trảlại cho Bên A toàn bộ chi phí khắc phục, đồng thời phải chịu phạt 8% giá trị của mặt hàngnày. Cách thức Bên A thu hồi tiền phạt từ Bên B quy định tại điều 6.10 của hợp đồng này.

7.7 Hàng hóa sau khi được Bên B sửa chữa và thay thế trong thời kỳ bảo hành sẽ được Bên B bảo hành lại 12 tháng kể từ ngày bàn giao (có biên bản giao nhận hàng như quy định tại Phụ lục 02 của hợp đồng này).

<u>Điều 8:</u> Thanh Toán

8.1 Bên A thanh toán cho Bên B 100% giá trị hóa đơn hàng đã giao bằng phương thức chuyển khoản qua ngân hàng trong vòng 30 ngày làm việc kể từ ngày nhận được bộ chứng từ thanh toán gồm:

- 02 Hóa đơn thuế GTGT (02 bản gốc), đồng tiền ghi trên hóa đơn là Việt Nam Đồng, trong đó:

+ Hóa đơn số 01: Cho giá trị hàng hóa nhập khẩu ghi trên Tờ khai hải quan và thuế GTGT cho hàng nhập khẩu ghi trên Tờ khai hải quan: tỷ giá qui đổi ra VNĐ là tỷ giá ghi trên Tờ khai hải quan; trên hóa đơn chỉ ghi dòng giá bán là giá không có thuế GTGT. Dòng thuế suất và giá trị thuế GTGT không ghi và được gạch bỏ hoặc theo các quy định hiện hành của pháp luật tại ngày xuất hóa đơn.

+ Hóa đơn số 02: Cho phần phát sinh chênh lệch giữa giá trị hàng hóa đã khai báo tại khâu nhập khẩu và giá trị hàng hóa ghi trong Hợp đồng này, trên hóa đơn ghi thuế suất, số thuế GTGT phù hợp với quy định hiện hành.

- 01 bản gốc Biên bản giao nhận hàng (Điều 4.8 của Hợp đồng này).
- Chứng thư giám định (nếu có trưng cầu quy định tại Điều 4.9 của Hợp đồng này).
- Các chứng từ (theo quy định tại Điều 3.2 của Hợp đồng này).

- Bảo đảm thực hiện Hợp đồng (01 bản copy).
- Tờ khai Hải quan hàng nhập khẩu (bản copy).

8.2 Bên A chỉ thanh toán cho Bên B đối với hàng hóa hoàn toàn phù hợp với yêu cầu nêu trong hợp đồng.

8.3 Số tài khoản giao dịch theo hợp đồng này của Bên B:
- Số tài khoản:
- Tên NH:
- Người thụ hưởng:

8.4 Phí chuyển tiền do Bên A chịu.

<u>Điều 9:</u> Bảo đảm thực hiện Hợp đồng

9.1 Trong vòng 07 ngày làm việc sau ngày ký hợp đồng (ghi tại trang 01 của hợp đồng), Bên B phải nộp giấy bảo lãnh thực hiện hợp đồng (Phụ lục số 03 của hợp đồng này) được cấp bởi Ngân hàng có uy tín. Giá trị Bảo đảm thực hiện hợp đồng bằng **08%** giá trị hợp đồng. Giấy bảo lãnh này có hiệu lực bằng thời hạn giao hàng quy định tại mục 4.1 hợp đồng này cộng thêm 60 ngày lịch.

9.2 Mọi chi phí liên quan đến việc phát hành giấy bảo lãnh thực hiện hợp đồng do Bên B chịu.

9.3 Trong thời gian quy định tại mục 9.1 nêu trên, Bên B phải nộp bản gốc bảo lãnh thực hiện hợp đồng cho Bên A. Nếu sau thời gian quy định nói trên, Bên A không nhận được bảo lãnh thực hiện Hợp đồng thì Bên A có quyền đơn phương chấm dứt Hợp đồng và thu hồi tiền bảo lãnh dự thầu của Bên B hoặc áp dụng quy định tại mục 6.8 của Hợp đồng này.

9.4 Bên B không được nhận lại Bảo đảm thực hiện hợp đồng trong trường hợp Bên B từ chối/không thực hiện hợp đồng sau khi ký hợp đồng.

9.5 Trong trường hợp Bên B vi phạm trách nhiệm thực hiện hợp đồng theo quy định tại hợp đồng này thì khoản tiền bảo đảm được Bên A dùng để khấu trừ tiền phạt.

9.6 Bên B phải ngay lập tức yêu cầu Ngân hàng phát hành giấy bảo lãnh thực hiện hợp đồng thực hiện sửa đổi giấy Bảo đảm thực hiện Hợp đồng trong trường hợp cần gia hạn thời gian hiệu lực của Bảo lãnh này vì lý do chậm giao hàng hoặc gia hạn thời hạn giao hàng, đồng thời gửi ngay cho Bên A giấy Bảo lãnh đã gia hạn hiệu lực (bản gốc) chậm nhất là 07 ngày làm việc trước khi Bảo lãnh cũ hết hiệu lực.

Trong vòng 03 ngày làm việc kể từ khi nhận được yêu cầu gia hạn bằng văn bản của Bên A, nếu Bên B không thực hiện hoặc chậm thực hiện gia hạn hiệu lực bảo lãnh thực hợp đồng thì Bên B sẽ chịu phạt 0,2% giá trị bảo lãnh tương ứng/ mỗi ngày chậm. Tổng giá trị phạt này không vượt quá giá trị bảo lãnh tương ứng. Thu hồi khoản tiền phạt vi phạm này thực hiện theo quy định tại khoản 6.8 Điều 6 của Hợp đồng.

<u>Điều 10:</u> Bất khả kháng

10.1 Sự kiện bất khả kháng là sự kiện xảy ra một cách khách quan không thể lường trước được và không thể khắc phục được mặc dù đã áp dụng mọi biện pháp cần thiết và khả năng cho phép như: chiến tranh, bạo loạn, xung đột vũ trang, cấm vận, thiên tai (lũ lụt, bão, lốc xoáy, động đất, sóng thần), hỏa hoạn, dịch bệnh (Epidemic, Pandemic) được WHO/Quốc gia công bố, lệnh phong tỏa Vùng/Quốc gia do Chính quyền sở tại áp đặt....

10.2 Bên gặp sự kiện bất khả kháng dẫn đến việc không thực hiện được nghĩa vụ theo hợp đồng do ảnh hưởng trực tiếp bởi các sự kiện bất khả kháng có nghĩa vụ phải ngay lập tức thông báo cho bên kia biết, bao gồm cung cấp thông tin, giải trình về sự ảnh hưởng trực tiếp của sự kiện bất khả kháng đến việc vi phạm thực hiện hợp đồng kèm chứng cứ chứng minh, các biện pháp đã được thực hiện để khắc phục vấn đề và giảm thiểu tổn thất. Việc chậm thông báo, cung cấp thông tin và giải trình nếu trễ hơn 10 ngày lịch sau khi sự kiện bất

khả kháng xảy ra sẽ làm cho bên gặp bất khả kháng mất quyền miễn trách sau này vì lý do bất khả kháng.

10.3 Văn bản xác nhận của Phòng Thương mại và Công nghiệp Việt Nam hoặc cơ quan có thẩm quyền ở nơi xảy ra sự kiện bất khả kháng là bằng chứng đủ để chứng minh sự kiện và thời gian xảy ra bất khả kháng.

10.4 Trường hợp do hậu quả trực tiếp của sự kiện bất khả kháng mà một Bên trong Hợp Đồng không thể thực hiện toàn bộ hoặc một phần nghĩa vụ theo hợp đồng này thì thời gian thực hiện hợp đồng sẽ được kéo dài thêm bằng thời gian mà sự kiện bất khả kháng diễn ra.

10.5 Nếu sự kiện bất khả kháng kéo dài hơn 02 tháng, mỗi bên đều có quyền chấm dứt hợp đồng này mà không phải bồi thường bất cứ một khoản tiền nào cho bên kia.

10.6 Các khó khăn trong sản xuất như thiếu vật tư, điện, nhân công, đình công… không được coi là bất khả kháng và không miễn cho Bên B nghĩa vụ giao hàng hoặc giao hàng muộn; Các thông tin từ trang báo, mạng và các phương tiện truyền thông khác chỉ mang tính chất tham khảo.

<u>Điều 11:</u> Giải quyết tranh chấp

11.1 Bất kỳ tranh chấp nào phát sinh từ hợp đồng này sẽ được giải quyết bằng thương lượng giữa hai bên trên tinh thần hợp tác, hai bên cùng có lợi và tôn trọng lẫn nhau.

11.2 Trường hợp tranh chấp không thể giải quyết bằng thương lượng thì sẽ được giải quyết bằng trọng tài tại Trung tâm Trọng tài Quốc tế Việt Nam (VIAC) tại Hà Nội theo Quy tắc tố tụng trọng tài của Trung tâm này. Số lượng trọng tài viên là 03 người. Luật áp dụng là Luật Việt Nam.

Phán quyết của Trung tâm trọng tài là cuối cùng và buộc hai bên phải tuân thủ.

Án phí do bên thua kiện chịu.

<u>Điều 12:</u> Các điều khoản khác

12.1 Bất kỳ sự sửa đổi, bổ sung nào đối với Hợp đồng này đều phải được lập thành văn bản và có chữ ký của cả hai bên. Mọi giao dịch trong quá trình thực hiện Hợp đồng được các Bên thực hiện bằng văn bản và gửi theo đường bưu chính hoặc theo số Fax tới địa chỉ đăng ký hoặc số Fax của mỗi Bên ghi trong hợp đồng và email đến địa chỉ email…theo mẫu thể hiện tại Phụ lục số 04 (A, B) kèm theo.

12.2 Những điều không quy định hoặc quy định không đầy đủ trong Hợp đồng này sẽ căn cứ vào luật pháp Việt Nam hiện hành.

12.3 Không bên nào được chuyển quyền và nghĩa vụ của mình theo hợp đồng này cho bên thứ ba mà không được sự đồng ý trước bằng văn bản của bên kia.

12.4 Trong quá trình thực hiện hợp đồng trường hợp xảy ra tranh chấp thì các văn bản dẫn chiếu được xem xét theo thứ tự ưu tiên xử lý theo mục Mục 2.2 ĐKC.

12.5 Hợp đồng này có hiệu lực kể từ ngày Ngân hàng Bên B mở bảo lãnh thực hiện Hợp đồng (ngày hiệu lực của bảo lãnh) và hoàn thành việc ký Hợp đồng nhưng không muộn hơn 07 ngày làm việc so với ngày được ghi trên Hợp đồng và tiếp tục cho đến khi hai bên thực hiện hết trách nhiệm của mình như quy định trong hợp đồng.

12.6 Hết thời hạn hiệu lực của hợp đồng, nếu hai bên không có khiếu nại gì coi như hợp đồng đã được thanh lý.

12.7 Hợp đồng gồm _____ trang và 04 Phụ lục (Phụ lục số 01: Phạm vi cung cấp, Phụ lục số 02: Biên bản giao nhận hàng, Phụ lục số 03: Mẫu Bảo lãnh Thực hiện Hợp đồng, Phụ lục số 04 (A, B): Mẫu Phương thức giao dịch) được lập thành 05 bản bằng tiếng Việt (có sử dụng tiếng Anh mô tả hàng hóa tại Phụ lục số 01), các bản có giá trị pháp lý như nhau, Bên A giữ 03 bản, Bên B giữ 02 bản.

ĐẠI DIỆN BÊN A **ĐẠI DIỆN BÊN B**

PHỤ LỤC SỐ 01

BẢNG GIÁ TRỊ HỢP ĐỒNG

SỐ LƯỢNG, QUY CÁCH PHẨM CHẤT, GIÁ CẢ

№	Stt	Tên hàng hoá	Code / Part number	Nhà SX	Nước xuất xứ	ĐVT	Số lượng	Đơngiá (VND)	Thành Tiền (VND)
Tổng giá trị hàng hoá (VNĐ): Theo điều kiện giao tại kho Vietsovpetro,tại Thành phố Hồ Chí Minh đã bao gồm thuế, phí, lệ phí phát sinh trên lãnh thổ Việt Nam nhưng không bao gồm thuế nhập khẩu và thuế GTGT của giá trị hàng hóa ghi trên tờ khai Hải quan. Thuế nhập khẩu và thuế GTGT trên được miễn theo Hiệp định (Lô 09-1). Bên B sẽ sử dụng Hạn mức nhập khẩu của Bên A để làm thủ tục nhậpkhẩu hàng hóa.									

ĐẠI DIỆN BÊN A **ĐẠI DIỆN BÊN B**

PHỤ LỤC SỐ 02

Phê duyệt - Утверждаю	Phê duyệt - Утверждаю
Thủ trưởng đơn vị đặt hàng Директор пред–я заказчика	Giám đốc XNDV Cảng &Cung ứng vật tư TB Директор ПОСОМ
Ngày……tháng……năm 20….	*Ngày……tháng……năm 20….*

BIÊN BẢN GIAO NHẬN HÀNG

АКТ О ПРИЁМЕ - ПЕРЕДАЧЕ ТОВАРОВ

Ngày…. tháng…. năm 20….

Căn cứ HĐ (biên bản) số: ký ngày…. tháng….năm 20…

На основнии Договора номер:

Chúng tôi, những người ký tên dưới đây - Мы. Нижеподписавщиеся:

1- Đại diện bên giao - Представители поставщика:

- Ông (Bà) Chứcvụ:
- Ông (Bà): Chứcvụ:

2- Đại diện bên nhận - Представители получателя:

2.1 XN dịch vụ cảng & cung ứng vật tư TB - ПОСОМ

- Ông (Bà): Chứcvụ:
- Ông (Bà): Chứcvụ:

2.2 Đơn vị đặt hàng - Представители предприятия - заказчика:

- Ông (Bà): Chứcvụ:
- Ông (Bà): Chứcvụ:

Cùng nhau tiến hành giao nhận hàng hóa, cụ thể như sau: - Произвели приёмо - передачу следующих товаров на складе:...

STT П/П	Tên hàng, Ký hiệu, Quy cách Наименование. Марка товаров	ĐVT ЕД	Thực nhập Фак. Получение		Bao bì Тара	Chất lượng hàng Качество
			Số lượng Кол	Trọng lượng Вес		

- Mẫu phân tích các mặt hàng No được lấy tại - Образец товара получен на складе:

……Ngày…….tháng…….năm 20….

- Người lấy mẫu: - Лаборант:…… Chức vụ - Должность

- Người lấy mẫu: - Лаборант:…… Chức vụ - Должность

Đối với những mặt hàng lấy mẫu phân tích nêu trên thì hàng chỉ chuyển chủ từ bên giao sang bên nhận. Sau khi có kết quả phân tích mẫu đạt yêu cầu như mẫu chào hàng. Trong thời gian chờ kết quả phân tích mẫu, bên nhận (XNDV hoặc đơn vị đặt hàng) nhận giữ hộ.

CHỨNGTỪKÈMTHEO - Прилагаемые документы:

- Chứng chỉ phẩm chất - Сертификат:……
- Hóa đơn (phiếu xuất kho) - Счёт: ……
- Bản kê chi tiết danh điểm mặt hàng (Перечень товаров) gồm __bản __tờ
- Các chứng từ khác - Другие документы : ……

……
……

Biên bản này chỉ lập một bản và chỉ có giá trị để làm thủ tục thanh toán sau khi được Giám đốc XNDVCảng & Cung ứng vật tư TB và lãnh đạo đơn vị đặt hàng phê duyệt (trường hợp giao nhận thẳng cho đơn vị đặt hàng thì biên bản này phải được thủ trưởng đơn vị đặt hàng phê duyệt trước).

Ngày giao hàng của lô hàng này là …

ĐẠI DIỆN BÊN GIAO **KÝ TÊN** - Подписи **ĐẠI DIỆN BÊN NHẬN**

Представители поставщика: Представители получателя:

(Họ tênvà chữ ký) (Họ tênvà chữ ký)

Xác nhận chất lượng của phòng thí nghiệm hoặc đơn vị đặt hàng (nếu có) - Справка лаборатории (заказчика) по качеству

……
……
……

Đại diện phòng thí nghiệm (Hoặc đơn vị đặt hàng) - Представитель лаборатории (заказчика)

Họvà tên - Фамиля..... Ký tên: Подпись

Ngày…….tháng……..năm 20….

Kiểm tra và xác nhận: Các mặt hàng nêu trên có số lượng, ký mã hiệu, xuất xứ hàng hóa, chứng chỉ chất lượng & được kiểm tra chất lượng v.v. phù hợp với các quy định của hợp đồng (Biên bản) Заключение:

Состояние товаров. Количество марки. Место происхождения. Сертификат по качеству и проверка качества....выщеуказнных товаров соответствуют условиям Договора:

T.P vật tư thiết bị - Начальник курирующего отделаю

Ký tên: Подпись *Ngày……tháng……năm 20….*

Trưởng phòng THHĐ - Начальник ОКД

Ký tên: Подпись

Ngày……tháng……năm 20….

PHỤ LỤC SỐ 03

MẪU BẢO LÃNH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20…

Kính gửi: ……

Liên quan tới Hợp đồng _____ về việc _____ (sau đây được gọi là "Hợp đồng") được ký giữa _____ (sau đây gọi là "BÊN ĐƯỢC BẢO LÃNH") và _____ (sau đây gọi là "BÊN THỤ HƯỞNG"), chúng tôi, _____ có trụ sở chính tại ____ (sau đây gọi là "BÊN BẢO LÃNH") phát hành Thư bảo lãnh không hủy ngang và vô điều kiện cho bên thụ hưởng với số tiền là _____ (Bằng chữ: _____) (sau đây gọi là "THƯ BẢO LÃNH").

*With reference to Contract No. _____ entitled _____ (hereinafter referred to as "the Contract") entered into on the _____ by and between _____, having address at _____ (hereinafter referred to as "APPLICANT") and _____, we, _____, having registered office at _____ (hereinafter referred to as "GUARANTOR") hereby open in the favor of _____ (*Hereinafter referred to as the "*BENEFICIARY") an unconditional and irrevocable bank guarantee for the amount of _____ (In words: _____) (hereinafter referred to as "GUARANTEE").*

THƯ BẢO LÃNH này có hiệu lực kể từ ngày phát hành và sẽ duy trì hiệu lực cho đến _____ sau đây gọi là "Ngày hết hiệu lực". Đối với bất cứ sự gia hạn, đổi mới hoặc chuyển nhượng Hợp đồng vượt quá thời gian được quy định trong THƯ BẢO LÃNH này, BÊN THỤ HƯỞNG sẽ không cần phải thông báo hoặc được sự đồng thuận của BÊN BẢO LÃNH. THƯ BẢO LÃNH này sẽ được gia hạn dựa trên yêu cầu bằng văn bản từ BÊN ĐƯỢC BẢO LÃNH để đảm bảo cho thời gian gia hạn, đổi mới hoặc chuyển nhượng của Hợp đồng.

*This GUARANTEE is effective from the issuance date and shall remain valid, binding and in force until _____, hereinafter referred to as "the **Expiry Date**". For any extensions, renewals, or assignments of the Contract beyond the time stated in this GUARANTEE, BENEFICIARY shall not be required to give notice to nor obtain the consent of GUARANTOR. This GUARANTEE would be extended upon written request of APPLICANT to cover the extension, renewal or assignment periods.*

BÊN BẢO LÃNH cam kết **không hủy ngang và vô điều kiện** thanh toán ngay cho BÊN THỤ HƯỞNG một khoản tiền hay những khoản tiền, theo chỉ thị của BÊN THỤ HƯỞNG, tổng không vượt quá số tiền bảo lãnh nêu trên trong vòng 05 ngày làm việc kể từ ngày nhận được văn bản yêu cầu của BÊN THỤ HƯỞNG ghi rõ BÊN ĐƯỢC BẢO LÃNH đã vi phạm nghĩa vụ theo Hợp đồng.

*GUARANTOR hereby **unconditionally and irrevocably** guarantees to promptly pay BENEFICIARY an amount or amounts, specified by BENEFICIARY, up to the amount stated above, within 05 working days upon our receipt of BENEFICIARY's written demand stating that APPLICANT has failed to fulfill its performance obligation(s) under the Contract.*

Sau Ngày hết hiệu lực, THƯ BẢO LÃNH này sẽ tự động không còn giá trị cho dù bản gốc THƯ BẢO LÃNH và các Thư sửa đổi liên quan (nếu có) có được gửi trả lại BÊN BẢO LÃNH hay không.

After the Expiry date, this GUARANTEE shall automatically become null and void, whatsoever and irrespective of whether this GUARANTEE is returned to GUARANTOR or not.

Số tiền bảo lãnh nêu trên sẽ được thanh toán ngay bởi BÊN BẢO LÃNH cho BÊN THỤ HƯỞNG cho dù có sự tranh cãi hoặc phản đối nào của BÊN ĐƯỢC BẢO LÃNH hoặc của BÊN BẢO LÃNH hoặc của bất kì bên thứ ba nào khác, và bất kể có hay không sự tranh chấp giữa BÊN ĐƯỢC BẢO LÃNH và BÊN THỤ HƯỞNG về hoặc liên quan tới Hợp đồng hoặc

về bất cứ vấn đề khác và cho dù những tranh chấp này, nếu có, đã được giải quyết, dàn xếp, kiện tụng hoặc phân xử bằng bất kỳ hình thức nào.

The said guarantee amount shall be paid by GUARANTOR forthwith to BENEFICIARY notwithstanding any contestation or protest by APPLICANT or by GUARANTOR or by any third party, and irrespective of whether or not there is any dispute between APPLICANT and BENEFICIARY in respect of or relating to the Contract or in respect of any other matter and irrespective of whether or not such said dispute, if any, has been settled, resolved, litigated, or adjudicated upon otherwise howsoever.

BÊN BẢO LÃNH hoặc BÊN ĐƯỢC BẢO LÃNH sẽ không được giải trừ bất cứ nghĩa vụ nào theo THƯ BẢO LÃNH này cho dù có bất cứ sự sửa đổi, thay đổi, thanh toán sai lệch, gia hạn nào liên quan tới Hợp đồng hay bất kỳ sự trì hoãn ân hạn nào của BÊN THỤ HƯỞNG trong hoặc liên quan đến bất cứ vấn đề gì của Hợp đồng.

Neither alteration, variation, incorrect payment, extension in terms of the Contract nor any forbearance of forgiveness in or in respect of any matter or thing concerning the Contract on the part of BENEFICIARY shall in any way release GUARANTOR or APPLICANT or from any liabilities under this GUARANTEE.

Việc đòi tiền nhiều lần theo bảo lãnh này là được phép và theo đó, Số tiền bảo lãnh nêu trên sẽ tự động giảm tương ứng với số tiền mà Ngân hàng đã thực hiện thanh toán cho Bên thụ hưởng theo Thư bảo lãnh.

Multiple demands under this Guarantee are allowed. In such event, the Guarantee Amount aforementioned shall automatically be reduced by the amount of each and any payment made by us under this Guarantee.

Thư bảo lãnh được điều chỉnh và giải thích theo pháp luật Việt Nam. Bất kỳ tranh chấp nào phát sinh từ hoặc liên quan đến Thư bảo lãnh sẽ [do Tòa án nhân dân có thẩm quyền của Việt Nam giải quyết theo quy định của pháp luật] / [sẽ được giải quyết tại Trung tâm Trọng tài quốc tế Việt Nam (VIAC) bên cạnh Phòng Thương mại và Công nghiệp Việt Nam theo quy tắc tố tụng trọng tài của VIAC].

The Guarantee shall be governed by and construed in accordance with the laws of Vietnam. Any dispute arising out of or relating to this Guarantee shall be submitted to [the jurisdiction of competent People's Court of Vietnam in accordance with the governing law] / [arbitration by the Vietnam Arbitration Center international (VIAC) at the Vietnam Chamber of Commerce and Industry in accordance with its rules of arbitration].

THƯ BẢO LÃNH này được phát hành duy nhất 01 (một) bản song ngữ (tiếng Việt và tiếng Anh) và không được phép chuyển nhượng. Trường hợp có sự khác nhau về cách hiểu giữa nội dung tiếng Việt và tiếng Anh thì nội dung tiếng Việt là căn cứ pháp lý.

This GUARANTEE is issued solely in 01 (one) bilingual original (Vietnamese and English) and is not transferrable. Should there be any inconsistence between the two languages of this GUARANTEE, the Vietnamese content shall prevail and be final.

Đại diện hợp pháp của ngân hàng
[ghi tên, chức danh, ký tên và đóng dấu]

PHỤ LỤC SỐ 04 (A)

MẪU THƯ TÍN GIAO DỊCH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20..

Kính gửi: Liên doanh Việt - Nga Vietsovpetro/Nhà thầu.

105 Lê Lợi, phường Thắng Nhì, Tp. Hồ Chí Minh

Người nhận: **Ông Trần Quốc Thắng – Phó Tổng giám đốc Thương mại**

Sao gửi: **Bà Nguyễn Thị Vân Anh – Trưởng phòng Thương mại**

Email: vspadmin@vietsov.com.vn

thanhnq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Ghi nội dung giao dịch về: *Thay đổi về Hàng hoá/Dịch vụ, tiến độ, sử dụng Quota, các nội dung liên quan tới giá trị HĐ, thanh toán…….*)

ĐẠI DIỆN BÊN ….
(Ký tên và đóng dấu)

PHỤ LỤC SỐ 04 (B)

MẪU THƯ TÍN GIAO DỊCH THỰC HIỆN HỢP ĐỒNG

Ngày tháng năm 20..

Kính gửi: Liên doanh Việt - Nga Vietsovpetro/Nhà thầu.

105 Lê Lợi, phường Thắng Nhì, Tp. Hồ Chí Minh

Người nhận: Phòng Thương mại VSP/ XN Dịch vụ Cảng và CUVTTB/ Đơn vị thực hiện dịch vụ/xây lắp.

Email: vspadmin@vietsov.com.vn

thanhnq.hq@vietsov.com.vn

huonghm.hq@vietsov.com.vn

(Ghi nội dung giao dịch về: *Thông báo giao hàng, gửi chứng từ hàng hóa, thông báo bắt đầu thực hiện DV/XL, thông tin về nhân sự/thiết bị thực hiện DV/XL….*)

ĐẠI DIỆN BÊN ….
(Ký tên và đóng dấu)

Form No. 18

CONTRACT PERFORMANCE SECURITY

(The Employer/Procuring entity can use another contract form but must still ensure the basic contents of this form)

_____, date ____ month ____ year ____

To: _____ *[insert the Employer's name]*

(hereinafter referred to as the "Employer")

At the request of ____ *[insert the contractor's name]* (hereinafter referred to as the "Contractor"), the contractor who has won the bid for the package___ *[insert the name of the package]* and who undertakes to enter into contracts for the construction and installation the above package (hereinafter referred to as the contract) ;(1)

In accordance with the BD *(or the contract)*, the Contractor is required to furnish the Employer with a guarantee issued by a bank with a specific guarantee amount to guarantee its obligations and responsibilities in performing the contract;

We, ____ *[insert bank's name]*, having registered headquarter at_____*[insert bank's address(2)]* (hereinafter referred to as "Bank"), hereby undertakes to guarantee the Contractor's performance of the contract with the guarantee amount of_____*[insert the value in both number and words and insert the names of the currencies to be used in accordance with* ***SCC*** *5.2]*. We irrevocably undertake to pay the Employer unconditionally any sum or sum(s) not exceeding in total an amount of_____ *[insert the guaranteed amount]* as mentioned above without the Contractor's prior review when the Employer notifies us in writing that the Contractor is in breach of its obligations under the Contract during the validity period of the performance security.

This guarantee shall take effect from the date of issue to the end of ___ day, ___ month, and ___ year. (3)

For and on behalf of the bank

[insert name, title, signature and stamp]

Note:

(1) If the bank requires an executed contract as a condition to issuing the guarantee, the Procuring Entity will report this matter to the Employer for its consideration and decision. In this case, the paragraph concerned may be modified as follows:

"At the request of____ *[insert the Contractor's name]* (hereinafter referred to as the "Contractor"), the contractor who has won the bid for the package ____ *[insert the package's name]* and who entered into the contract No._____ *[insert contract No.]* dated___ (hereinafter referred to as the "Contract")."

(2) Bank address: clearly state address, phone number, fax number, and e-mail for contact.

(3) Insert the time in accordance with the requirements specified in **SCC** 5.2.

Form No. 19

ADVANCE PAYMENT GUARANTEE (1)

(The Employer/Procuring entity can use another contract form but must still ensure the basic contents of this form)

_____, date ____ month ____ year ____

To: _____ *[insert the Employer's name]*

(hereinafter referred to as the "Employer")

[insert name and identification number of the contract]

In accordance with the provisions on advance payment specified in the special conditions of the contract, _____ *[insert the name and address of the contractor]* (hereinafter referred to as the "Contractor") is required to provide the Employer with a bank guarantee to guarantee that the Contractor will use the advance payment of_____ *[insert the value in number and words and the names of the currencies to be used]* for the purpose of contract performance;

We, ____ *[insert the bank's name]* with registered headquarter at ___ *[insert name of country or territory* (2)] (hereinafter referred to as "Bank"), at the request of the Employer, irrevocably undertake to pay the Employer unconditionally any sum or sum(s) not exceeding in total an amount of _____ *[insert the value in both number and words and the names of the currencies to be used in accordance with **SCC** 35]*.

In addition, we undertake that any amendment of or supplement to any conditions of the contract or any related documents executed by the Contractor and the Employer shall not change any of our obligations under this guarantee.

This guarantee shall come into force from the date the Contractor receives the advance payment under the Contract until ___ day, ___ month, and ___ year (3).

For and on behalf of the bank
[insert name, title, signature and stamp]

Note:

(1) Based on the specific conditions of the bid package, the regulations shall comply with the requirements specified in **SCC** 13.1.

(2) Bank address: clearly state address, phone number, fax number, and e-mail for contact.

(3) The delivery date is stipulated in the contract. If the goods are partially delivered, this letter may stipulate that the advance payment guarantee will cease to have validity when the value of the delivered and accepted goods is equal to or greater than the advance payment in the event of an extension of the expected completion date of the Contract, the Employer would need to request an extension of this guarantee from the Bank.

Form No. 20

POWER OF ATTORNEY [(1)]

(The Employer/Procuring entity can use another contract form but must still ensure the basic contents of this form)

Today, ___ *[insert date of signing]*, in____ *[insert place of signing]*

I am ____ *[insert name, number of identification or passport number, title of the legal representative of the bidder]*, who is the legal representative of the bidder___ [*insert name of the bidder]* having address at____*[insert address of the bidder]*, do hereby authorize ____ *[insert name, number of identification or passport number, title of authorized person] title of person who is authorized]* shall implement the following works during participating in the bid package____ *[insert name of bid package]* under the project ____ *[insert name of project/procurement estimate]* organized by ____ *[write name of Employer]:*

[- Participating in the process of negotiating and finalization the contract;

- Signing a contract with the Employer if selected] [(2).]

The above authorized person only implements works in scope of authorization on behalf of___ *[insert name of bidder]*.____ *[Insert name of legal representative of bidder]* shall bear full responsibilities for items executed by___ *[insert name of authorized person]* in scope of authorization.

The Power of Attorney is effective from ____ to ____ [(3).] This Power of Attorney shall be prepared in ___originals having equal validity, the authorized person shall keep __original(s,) the authorizing person shall keep __original(s) and the Procuring entity shall keep ____original(s).

Authorized person	**Authorizer**
[name, title, signature and [stamp (if any)]	*[name of the legal representative of the bidder, title, signature and stamp]*

Note:

(1) In case of authorization, the original power of attorney must be sent to the Procuring entity upon finalization and signing of the contract. The authorization of the legal representative of the bidder to the deputy, subordinate, branch director, head of the representative office of the bidder to perform one or more of the above-mentioned tasks on behalf of the legal representative of the bidder. The use of a stamp in the case of authorization may be the stamp of the bidder or the stamp of the unit to which the relevant individual is authorized. The authorized person may not further authorize another person.

(2) The scope of authorization includes one or more of multiple tasks above.

(3) Insert the effective date and expiration date of the power of attorney in accordance with the process of finalizing and signing the contract and must ensure that the effective date is before the date of performing the authorized work.

PART 5. APPENDIX

Appendix 01: Scope of supply (see attachment)

Appendix 02: Technical Requirement (see attachment)

Appendix 03: Technical Evaluation Criteria (see attachment)

DANH MỤC- СПЕЦИФИКАЦИЯ

Tên hàng hóa/Dịch vụ - На приобретение товаров/услуг: Thiết bị hệ thống điều khiển và thiết bị báo khí, báo cháy cho giàn BK-26/
Инструментальное оборудование и детекторы для проекта БК-26.

Scope of Supply: Instruments and Detectors Package
(VT-2988/25-XL-DA-HMH)

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
I. VẬT TƯ THIẾT BỊ					
	GROUP 1: Pressure Gauge, Differential Pressure Gauge, Temperature Gauge				
1	00.019.027.02014	Pressure Gauge, Scale: 0 - 160 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Hydrocarbon Gas; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½” NPT-M; GAUGE Scale: 0-160 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC) Process connection: ½” NPT-F; Instrument connections ½” NPT-F;	set	11,00
2	00.019.027.02013	Pressure Gauge, Scale: 0 - 40 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS;	set	15,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-40Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F		
3	00.019.027.02016	Pressure Gauge, Scale: 0 - 10 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed) Манометр	"PRESSURE GAUGE Service: Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-10 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / MONEL; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F;	set	2,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Instrument connections ½" NPT-F;		
4	00.019.027.02365*	Pressure Gauge, Scale: 0 - 4 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Oil, Gas, Water Mixture; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-4 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Overpressure Protector: PISTON TYPE, 316 SS	set	1,00
5	00.019.027.02367*	Pressure Gauge, Scale: 0 - 16 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2" NPT-M, With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Diesel Fuel Oil; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min;Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / 316 SS; Mounting: Direct Mount	set	5,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS;Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Snubber, 316SS, 1/2" NPT-M x 1/2" NPT-F		
6	00.019.027.02396*	Pressure Gauge, Scale: 0 - 16 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, Material: BOURDON/ Monel; With Two-Valve Manifold (block and bleed). Манометр	PRESSURE GAUGE Service: Fire Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-16 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON / Monel; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @ 200 °F (103 barg @ 93 °C) Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES N/A	set	4,00
7	00.019.027.02015	Pressure Gauge, Scale: 0 - 400 Bar; Dial size:100mm, IP56, Liquid filled: Glycerin; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Манометр	PRESSURE GAUGE Service: Water; CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Glycerin; Blow-out: Solidfront and blow-out back;	set	3,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Adjustable pointer: YES; Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-400 Bar; Accuracy: 1 % FS; Element Type / Material: BOURDON/ MONEL; Mounting: Direct Mount COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @200 degF (414 barg @ 93 degC) Process connection: ½" NPT-F; Instrument connections ½" NPT-F;		
8	00.019.027.02369*	Pressure Gauge (Diaphragm Seal), Scale: 0 - 160 Bar; Dial size:100mm, IP56; Process connection: 1/2" NPT-M, With 316SS 2-valve manifold and accessories. Манометр	Pressure Gauge (Diaphragm Seal) Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Scale: 0-160 Bar; Accuracy: 1 % FS; Mounting: 2" pole stand; Diaphragm Seal:- Design Type: Welded design; - Material: 316 SS; - Operating Temperature: Up to 752 degF (400 degC) - Process Connection: ½" NPT-M - Capillary Line/Length : Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories	set	2,00
9	00.019.027.02372*	Differential Pressure Gauge, Scale: 0 - 2.5 Bar; Dial size:100mm, IP56, Lens: Shatterproof glass; Process connection: 1/2" NPT-M, With 5-Valves Manifold Integral to Instrument. Манометр	DIFFERENTIAL PRESSURE GAUGE Service: Oil, Gas, Water Mixture CASE Dial: 100 mm; Case material: 316 SS; IP-56 min; Lens: Shatterproof glass; Liquid filled: Silicon; Blow-out: Solidfront and blow-out back; Adjustable pointer: YES;	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Radial bottom pressure entry; Process connection: ½" NPT-M; GAUGE Scale: 0-2.5 Bar; Accuracy: 1% FS; Element Type / Material: Diaphragm / 316 SS; COMPLETED WITH 5-Valves Manifold Integral to Instrument; Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC) Process connection: ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
10	00.019.005.00705*	Temperature Gauge, Scale: 0 - 100 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #300, RF; Immersion length (dimension U): 500 mm. Датчик температуры	TEMPERATURE GAUGE Service: Oil, Water; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell; Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-100 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", 300, RF; Instrument connection: ½" NPT-F; Material: 316 SS;Immersion length (dimension U): 500 mm;	set	6,00
11	00.019.005.00712*	Temperature Gauge, Scale: 0 - 60 degC; Dial:100mm, IP56, Lens: Shatterproof glass; Process connection: Flange 2", #900, RTJ; Immersion length (dimension U): 220 mm. Датчик температуры	TEMPERATURE GAUGE Service: Hydrocarbon Gas; SENSOR Type: Bi-Metal with silicone oil dampener; Stem Material: 316 SS; Stem Size / Length: to suit Thermowell;	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Process connection: ½" NPT-M; CASE Dial: 100 mm; Case material: 316 SS; IP: 56 min; Lens: Shatterproof glass; Orientation: Rotatable on stem 360 deg GAUGE Scale: 0-60 degC; Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", 900, RTJ; Instrument connection: ½" NPT-F; Material: 316 SS;Immersion length (dimension U): 220 mm;		
GROUP 2: Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter					
12	00.019.028.01352*	Magnetic Gauge/ Level Transmitter; Center-Center Dimension: 700 mm; Process Connection: Flange 2-inch, #300 RF; Transmitter Range: 0-1000 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: 700 mm; Process Connection: Flange 2-inch, #300 RF; GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: 0 - 1000 mm; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Local LCD meter; Completed with Drain/Vent Ball valves	set	1,00
13	00.019.028.01353*	Magnetic Gauge/ Level Transmitter; Center-Center Dimension: 800 mm; Process	MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		Connection: Flange 2-inch, #150 RF; Transmitter Range: 0-1000 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: 800 mm; Process Connection: Flange 2-inch, #150 RF; GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: 0 - 1000 mm; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Local LCD meter; Completed with Drain/Vent Ball valves		
14	00.019.028.01354*	Magnetic Gauge/ Level Transmitter; Center-Center Dimension: 1200 mm; Process Connection: Flange 2-inch, #150 RF; Transmitter Range: 0-1600 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: 1200 mm; Process Connection: Flange 2-inch, #150 RF; GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: 0 - 1600 mm; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Local LCD meter; Completed with Drain/Vent Ball valves	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
15	00.019.028.01355*	Magnetic Gauge/ Level Transmitter; Center-Center Dimension: 1200 mm; Process Connection: Flange 2-inch, #150 RF; Transmitter Range: 0-1500 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: 1200 mm; Process Connection: Flange 2-inch, #150 RF; GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: 0 - 1500 mm; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Local LCD meter; Completed with Drain/Vent Ball valves	set	1,00
16	00.019.028.01356*	Magnetic Gauge/ Level Transmitter; Center-Center Dimension: 700 mm; Process Connection: Flange 2-inch, #300 RF; Transmitter Range: 0-1000 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: 700 mm; Process Connection: Flange 2-inch, #300 RF; GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: 0 - 1000 mm; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS;	set	1,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Local LCD meter; Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves		
17	00.019.028.01357*	Magnetic Level Transmitter; Center-Center Dimension: 800 mm; Process Connection: Flange 2-inch, #150 RF; Transmitter Range: 0-1000 mm; Completed with Drain/Vent Ball valves. Преобразователь уровня	MAGNETIC LEVEL TRANSMITTER CHAMBER Type: Flange connection on Top and at Bottom; Chamber Size: 2-inch; Chamber / Flange Material: 316LSS Center-Center Dimension: 800 mm; Process Connection: Flange 2-inch, #150 RF; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: ± 0.1 % FS; Range: 0 - 1000 mm; Housing: IP 56 min, 316 SS; Exd, IIA, T3 (IEC); Local LCD meter; Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves	set	1,00
18	00.019.027.02375*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½” NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed)Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½” NPT-F; Instrument connections ½” NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	37,00
19	00.019.027.02377*	Pressure Transmitter, Pressure range: 0-40 Barg (VTA); Process connection: 1/2 NPT-M, With	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture	set	4,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		Two-Valve Manifold (block and bleed). Датчик давления	TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
20	00.019.027.02397*	Pressure Transmitter, Pressure range: 0-10 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	Pressure Transmitter TRANSMITTER Element type: Diaphragm; Element Material: 316SS; Pressure range: 0 - 10 Barg (VTA) Barg; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	set	1,00
21	00.019.027.02379*	Pressure Transmitter, Pressure range: 0-400 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	PRESSURE TRANSMITTER Service: Sea Water TRANSMITTER Pressure range: 0-400 Barg (VTA); Element type/material: Diaphragm / Monel; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M;	set	1,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 6000 psig @200 degF (414 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
22	00.019.027.02398*	Pressure Transmitter, Pressure range: 0-16 Barg (VTA); Element Material: Monel; Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed). Датчик давления	Pressure Transmitter TRANSMITTER Element type: Diaphragm, Element Material: Monel; Pressure range: 0 - 16 Barg (VTA) Barg; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	set	2,00
23	00.019.027.02383*	Pressure Transmitter, Pressure range: 0-40 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Oil, Gas, Water Mixture TRANSMITTER Pressure range: 0-40 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH	set	14,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Two-Valve Manifold (block and bleed)Material: 316 SS; Rating: 3000 psig @200 degF (207 barg @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
24	00.019.027.02382*	Pressure Transmitter, Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-160 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	10,00
25	00.019.027.02385*	Pressure Transmitter, Pressure range: 0-16 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Instrument Air TRANSMITTER Pressure range: 0-16 Barg (VTA); Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered;	set	6,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;		
26	00.019.027.02385*	Pressure Transmitter, Pressure range: 0-16 Barg (VTA); Process connection: 1/2 NPT-M, With Two-Valve Manifold (block and bleed); Safety Level: SIL 2. Датчик давления	PRESSURE TRANSMITTER Service: Instrument Air TRANSMITTER Pressure range: 0-16 Barg (VTA); Element type/material: Diaphragm / Monel; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: SIL 2; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH Two-Valve Manifold (block and bleed) Material: 316 SS; Rating: 1500 psig @200 degF (103 barg @ 93 degC); Process connection: ½" NPT-F; Instrument connections ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	2,00
27	00.019.027.02386*	Pressure Transmitter (Diaphragm Seal), Pressure range: 0-160 Barg (VTA); Process connection: 1/2 NPT-M, With 2-valve manifold and accessories. Датчик давления	Pressure Transmitter (Diaphragm Seal) TRANSMITTER Element type: Diaphragm; Pressure range: 0-160 Barg (VTA); Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter;	set	1,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Safety Integrity Level: N/A; Diaphragm Seal:- Design Type: Welded Design; - Material: 316 SS; - Operating Temperature: 752 DegF (400 DegC) - Connection: ½" NPT-M (Process side) - Capillary Line/ Length: Yes, 316 SS /Min 5 Feet (1.5m) - System Fill Fluids : High –Temperature Silicone OilCompleted with 2-valve manifold and accessories		
28	00.019.027.02392*	Differential Pressure Transmitter; Pressure range: 0-2.5 Barg; Process connection: 1/2 NPT-M, With 5-Valves Manifold Integral to the Transmitte; Safety Level: N/A. Датчик давления	DIFFERENTIAL PRESSURE TRANSMITTER Service: Hydrocarbon Gas TRANSMITTER Pressure range: 0-2.5 Barg; Element type/material: Diaphragm / 316 SS; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Level: N/A; HOUSING Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; COMPLETED WITH 5-Valves Manifold Integral to the Transmitter; Material: 316 SS; Rating: 3000 psig @200 degF (207 bar @ 93 degC); Process connection: ½" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pole stand, 316 SS, c/w bolts and nuts;	set	1,00
29	00.019.027.02393*	HVAC. Differential Pressure Transmitter; Element type: Piezo-resistive; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A. Преобразователь перепада давления	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC; Local LCD meter; Ingress Protection: IP44 min; Explosion proof: N/A;	set	1,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Housing material: 316SS; Completed with accessories.		
30	00.019.027.02394*	HVAC. Differential Pressure Transmitter; Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC). Преобразователь перепада давления	HVAC. DIFFERENTIAL PRESSURE TRANSMITTER Service: Clean Air TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC; Local LCD meter; Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	set	5,00
31	00.019.005.00384	Temperature Transmitter, Instrument range: 0-100 degC; Accuracy: At least 0.1 % FS; Process connection: Flange 2", #1500, RTJ; Immersion length (dimension U): 225 mm Передатчик температуры	TEMPERATURE TRANSMITTER Service: Oil Water Gas Mixture; SENSOR Type: 3-Wire RTD, PT-100 (α=0.00385), Mineral Insulated; Stem: 316 SS, diameter and length suit to the thermowell; Process connection: ½” NPT-M; TRANSMITTER Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING Ex d, IIA, T3, IP-56 min, 316 SS; Electrical connection: ½” NPT-F, standard terminal block; THERMOWELL Type: Flange with Tapered drilled bar stock; Process connection: Flange 2", #1500, RTJ; Instrument connection: ½” NPT-F; Material: 316 SS;Immersion length (dimension U): 225 mm;	set	13,00
32	00.019.005.00713*	Temperature Transmitter, Instrument range: 0-100 degC; Accuracy: ± 0.1 % FS; Process	TEMPERATURE TRANSMITTER FOR HVAC SYSTEM	set	2,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		connection: Process connection: ½" NPT-M; Thermowell: N/A. Передатчик температуры	Service: Clean Air; SENSOR Type: 3-Wire RTD, PT-100 (α=0.00385), Mineral Insulated; Stem Material: 316 SS; Process connection: ½" NPT-M; TRANSMITTER Instrument range: 0-100 degC; Output: 4-20 mA, HART, 2-wire; Accuracy: ± 0.1 % FS; Power supply: 24 V DC, Loop Powered; Mounted directly on the sensor; LCD local indication; HOUSING IP-44 min, 316 SS; Electrical connection: ½" NPT-F, standard terminal block; THERMOWELL N/A ACCESSORIES Wall mounting bracket		
GROUP 3: Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter ,Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator					
33	00.019.031.00602*	Coriolis Flow meter (Liquid); Type: Coriolis Mass Flow and Density Meter; Process connection: Flange 3" RF #300; Instrument range: 0 - 22 (VTA) m3/hr. Кориолисовый расходомер	CORIOLIS FLOW METER (LIQUID): METER Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; TRANSMITTER Mounting: remote mounting; Ingress Protection: IP56 min; Instrument range: 0 - 22 (VTA) m3/hr; Process connection: Flange 3-inch, #300 RF; Housing material: 316SS; Explosion Protection: Ex 'd', IIA T3 (IEC); Local LCD meter; Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.1 % of Reading Smart meter Verification/ Enhanced Verification, Net Oil Calculation Completed with 316SS mounting kit.	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
34	00.019.031.00603*	Coriolis Flow meter (Gas); Type: Coriolis Mass Flow and Density Meter; Process connection: Flange 4” RF #300; Instrument range: 0 - 80000 (VTA) Sm3/d. Кориолисовый расходомер	CORIOLIS FLOW METER (GAS): METER Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; TRANSMITTER Mounting: remote mounting; Ingress Protection: IP56 min; Instrument range: 0 - 80000 (VTA) Sm3/d; Process connection: Flange 4-inch, #300 RF; Housing material: 316SS; Explosion Protection: Ex ‘d', IIA T3 (IEC); Local LCD meter; Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.35 % of Reading Smart meter Verification/ Enhanced Verification; Completed with 316SS mounting kit.	set	1,00
35	00.019.031.00604*	Orifice Flowmeter (Dual Chamber Orifice Fitting); Process Connections: Flange 4-inch, #900 RTJ; Completed with Two sets: 316SS block valve & nipple. Диафрагменный расходомер	ORIFICE FLOWMETER (DUAL CHAMBER ORIFICE FITTING) Orifice plate Type: Concentric, Square edged; Material: 316SS; Process Connections: Flange 4-inch, #900 RTJ; Three (03) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 20 000 - 60 000 (VTA) Sm3/d 50 000 - 120 000 (VTA) Sm3/d 110 000 - 260 000 (VTA) Sm3/d; Fitting type: Dual Chamber Orifice Fitting; Chamber: ASTM A216 WCB; Completed with Two sets: 316SS block valve & nipple	set	1,00
36	00.019.031.00605*	Orifice Flowmeter (Single Chamber Orifice Fitting); Process Connections: Flange 2-inch, #1500 RTJ; Completed with Two sets: 316SS block valve & nipple. Диафрагменный расходомер	ORIFICE FLOWMETER (SINGLE CHAMBER ORIFICE FITTING): Orifice plate Type: Concentric, Square edged; Material: 316SS; Process Connections: Flange 2-inch, #1500 RTJ; Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow: 5 000 - 26 000 (VTA) Sm3/d 25 000 - 50 000 (VTA) Sm3/d; Fitting type: Single Chamber Orifice Fitting; Chamber: ASTM A216 WCB;	set	9,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Completed with Two sets: 316SS block valve & nipple		
37	00.019.031.00606*	Differential Pressure Flow Transmitter; Pressure range: 0 – 1600 (VTA) mbarg; Ingress Protection: IP56 min; Completed with: 316SS-5-Valve Manifold. Диафрагменный расходомер	DIFFERENTIAL PRESSURE FLOW Service: Hydrocarbon Gas TRANSMITTER Element type/material: Diaphragm / 316 SS; Pressure range: 0 – 1600 (VTA) mbarg; Output: 4-20 mA, HART, 2-wire; Accuracy: 0.25 % of Span; Ingress Protection: IP56 min; Housing material: 316SS; Explosion proof: Ex ‘d', IIA T3 (IEC); Power supply: 24 V DC; Local LCD meter; Completed with: 316SS- 5-Valve Manifold	set	10,00
38	00.019.031.00607*	Utrasonic Flowmeter; TRANSMITTER: Instrument Range: 0 - 550 (VTA) m3/d; IP56 min; Completed with 316SS mouting kit, 5m sensor cable length. Ультразвуковой расходомер	ULTRASONIC FLOWMETER TRANSDUCER/ SENSOR Type: Clamp on; Single Channel measurement path; Body material: 316SS Transducer Material: 316SS; Explosion proof: Exd, Zone 2, IIA, T3 TRANSMITTER Mounting: remote mounting; Housing material: 316SS; Instrument Range: 0 - 550 (VTA) m3/d; Output: 4-20 mA HART (active), 2-wire; Local LCD meter; Accuracy: ±4 % of Reading; Process connection: Clamp on; Ingress Protection: IP56 min; Explosion Protection: Ex ‘d', IIA T3 (IEC); Output Signal type: 4-20mA Hart; Completed with 316SS mouting kit, 5m sensor cable length	set	2,00
GROUP 4: Push Button, Gas Detector, Flame Detector, Test Kit for Gas Detector…					
39	00.070.004.03619*	Manual Call Point Pushbuttons кнопки	Manual Call Point Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Breaking glass lift flap press button latching type; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC	set	10,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			Safety Integrity Level: N/A; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS or GRP; Color: RED; ACCESSORIES Wall Mounting Bracket, 316 SS		
40	00.070.004.03620*	Emergency Shutdown Push button кнопки	EMERGENCY SHUTDOWN PUSH BUTTON Type: Lift flap press button latching type, key reset; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: YELLOW; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	set	10,00
41	00.070.004.03617*	Abandon Platform Pushbuttons Отказаться от кнопки	Abandon Platform Pushbuttons Tropical, Marine, Offshore, Open-Door Type: Push button latching key reset; Status Indicator: YES, LED; End-of-Line Resistor: YES; Switch: SPDT, 2 A (min), 24 V DC Safety Integrity Level: SIL2; HOUSING Protection: Ex d IIA T3, IP 56 min; Material: 316 SS; Color: BLUE ACCESSORIES Wall Mounting Bracket, 316 SS	set	4,00
42	00.070.004.03621*	Manual Realease Push Button Discharge кнопки	MANUAL REALEASE PUSH BUTTON DISCHARGE Type: Lift flap press button latching type; Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex d IIA T3 (IEC), IP56 Completed with key reset & accessories	set	2,00
43	00.070.004.03622*	System Abort Switch; Type: Momentary Pushbutton (Non-Latching); Enclosure Material: 316SS or Marine Grade GRP; кнопки	SYSTEM ABORT SWITCH Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; IP44 min; Completed with accessories	set	1,00
	00.070.004.03623*	System Abort Switch; Type: Momentary	SYSTEM ABORT SWITCH	set	1,00

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(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		Pushbutton (Non-Latching); Enclosure Material: 316SS or Marine Grade GRP; Ex ia IIC T3 (IEC), IP56 min. кнопки	Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex ia IIC T3 (IEC), IP56 min; Completed with accessories		
45	00.019.007.00113	GAS DETECTOR, Type: IR Point Detector Bộ cảm biến khí, gas detector, type: IR point detector/ газовый детектор, тип: IR	GAS DETECTOR Tropical, Marine, Offshore, Open-door. TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts;Sunshield / Water splashes protection	set	35,00
46	00.019.007.00138	GAS DETECTOR газовый детектор	GAS DETECTOR Tropical, Marine, Offshore, In-door, HVAC Duct TRANSMITTER Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires;Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for Mounting bracket for HVAC Rectangular Duct, 316 SSSunshield / Water splashes	set	3,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
			protection		
47	00.019.007.00143*	GAS DETECTOR; Tropical, Marine, Offshore, In-door; Type: Catalytic Bed Detector, Point, for Hydrogen Gas; Range; 0-100 % LEL; Response Time: T50 ≤ 10 s, T90 ≤ 30 s; Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts. газовый детектор	GAS DETECTOR Tropical, Marine, Offshore, In-door TRANSMITTER Type: Catalytic Bed Detector, Point, for Hydrogen Gas; Range; 0-100 % LEL; Response Time: T50 ≤ 10 s, T90 ≤ 30 s; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; ACCESSORIES Mounting Bracket for 2-inch pipe stand, 316 SS, c/w bolts and nuts; Sunshield / Water splashes protection.	set	2,00
48	00.019.029.00275*	FLAME DETECTOR; Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis/ Bộ báo cháy. Детектор пламени	FLAME DETECTOR Tropical, Marine, Offshore, Open-door TRANSMITTER Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuittry, Sensors, Optic cleaness; Local Status Indicator: LED; Housing: Zone1, Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Bracket (Vertical / Horizontal Tilt) for 2-inch pipe stand, 316 SS, c/w bolts and nuts;	set	27,00
	00.019.027.02395*	SMOKE DETECTOR; Tropical, Marine,	SMOKE DETECTOR	set	5,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in. Дымовые аэрозоли	Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base		
50	00.019.029.00276*	SMOKE DETECTOR; Tropical, Marine, Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE. Дымовые аэрозоли	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base; Remote Status Indicator.	set	3,00
51	00.019.029.00277*	SMOKE DETECTOR; Tropical, Marine, Offshore, In-door; Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, REMOTE; Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate. Дымовые аэрозоли	SMOKE DETECTOR Tropical, Marine, Offshore, In-door. Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: Ex d IIC T3 (IEC), IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; ACCESSORIES Mounting Base	set	3,00
52	00.019.029.00278*	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS Комплект для проверки/калибровки детекторов углеводородных газов	TEST/CALIBRATION KIT FOR HYDROCARBON GAS DETECTORS 6D Cylinder Type, Calibration Gas Methane,103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in airc/w Veriflow Gas Regulator, 0.5L/m	set	1,00
53	00.019.029.00279*	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS Комплект для проверки/калибровки	TEST/CALIBRATION KIT FOR HYDROGEN GAS DETECTORS 6D Cylinder Type, Calibration Gas Hydrogen, 103	set	1,00

STT П/п	Mã Vật Tư Код МТР	Tên VTTB/dịch vụ (Việt/Nga hoặc Anh) Наименование МТР/услуг (вьетнам./русс. или англ.)	Đặc Tính Kỹ Thuật Технические характеристики	ĐVT Ед. Изм.	Số Lượng Кол-во
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
		детекторов углеводородных газов	liters, 1000psig, 50% LEL H2 (2% H2), balance in airc/w Veriflow Gas Regulator, 0.5L/m		
54	00.019.029.00280*	TEST/CALIBRATION KIT FOR FLAME DETECTORS Комплект для проверки/калибровки детекторов пламени	TEST/CALIBRATION KIT FOR FLAME DETECTORS According to Manufacturer Standard	set	1,00
55	00.019.029.00281*	TEST/CALIBRATION KIT FOR SMOKE DETECTORS Комплект для проверки/калибровки дымовых извещателей	TEST/CALIBRATION KIT FOR SMOKE DETECTORS According to Manufacturer Standard	set	1,00
II. DỊCH VỤ					

(*) : New items

BK-26 WELLHEAD PLATFORM

Approved by
Deputy General Director
"VIETSOVPETRO"

DANG DUC PHONG

TECHNICAL REQUIREMENT
FOR INSTRUMENTS AND DETECTORS PACKAGE

DOC. NO : OCD-MSP8.BK26-TR-16
REV : 0
DATE : 07/2025

ISSUED FOR BID

Agreed by:

Manager of Capital Construction Department - VSP	Nguyen Hong Giang
Manager of ME&A Department - VSP	Trinh Hoang Linh
Deputy Director of REI	Tran Duy Hai

Prepared by:

Deputy Director of Offshore Construction Division	Nguyen The Van
Expert of ME&A Department - VSP	Huynh Le Thien Chinh
Engineer of Capital Construction Department - VSP	Ngo Dinh Minh
Engineering Manager	Nguyen Ngoc Tiep
Lead Instrument Engineer	Tran Anh Nguyen
Manager of Technical Dept. OCD	Dong Van Nhuong
Engineer of Technical Dept. OCD	Nguyen Van Truong
Expert of Technical Dept.	Nguyen Manh Hoang
Engineer of Technical Dept.	Luu Sung Ba
Engineer of Technical Dept.	Mai Van Tran Minh Quan

TABLE OF CONTENTS

1. PURPOSE AND SCOPE OF USE

- This document covers the requirements for **Instrument and Detectors Package for BK-26** Wellhead Platform at White Tiger Field, hereinafter referred to as "Goods".

2. GENERAL REQUIREMENTS FOR EQUIPMENT:

- **Year of manufacture**: Goods and All components of Goods must be brand new and unused, manufactured in **year 2025 or later.**
- **Warranty**: All of the goods shall be furnished with Warranty Certificate for **18** months from the delivery date or **12** months after the Goods have been put into service, whichever comes first.
- In the offer, it is necessary to clearly state the name, code, technical characteristics, manufacturer and origin of each item of materials.

3. TECHNICAL REQUIREMENT

- Bidder is required to offer Goods meet all requirements in the Scope of supply in Invitation to Bid and in the documents in Appendix 1.
- In the event of any conflict between this Technical Requirement, Specification, Datasheet, drawings and other documents, the order of the precedence of the documents is as follows:
    - This Technical requirement
    - Project Datasheets
    - Project Specifications.
    - Other documents and drawings in Appendix 1.

4. RECOMMENDED VENDOR LIST

- The Bidder is recommended to offer the manufacturer listed below. In case the manufacturer is not on the Vendor List, Bidder needs to provide information about the manufacturer's capacity (production capacity, experience, production process, facilities, certification system, similar contracts, documents proving production capacity...) for evaluation.

Group	Description	Recommended manufacturer
Group 1	Pressure Gauge, Differential Pressure Gauge ,Temperature Gauge	-Pressure Gauge, Differential Pressure Gauge: Wika, Bourdon, Nuova Fima, Ashcroft, McDaniel, Baumer, Badotherm, Excel, Midwest -Temperature Gauge: Wika, Bourdon, Nuova Fima, Aschroft, Rototherm, Excel
Group 2	Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter Temperature Transmitter	-Level Gauge: Magnetrol - Orion, K-Tek (ABB), KSR Kuebler (Wika), Fisher (Emerson), Masoneilan Dresser (GE), Mobrey, Jerguson - Level Transmitter: Magnetrol - Orion, Officine Orobiche, Jerguson, Seetru, K-Tek (ABB) - Pressure Transmitter, Differential Pressure Transmitter: Emerson, Yokogawa, Endress+Hauser, ABB, Siemens, Krohne - Temperature Transmitter: Yokogawa, Honeywell, Rosemount (Emerson), ABB, Endress + Hauser
Group 3	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter ,Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	- Coriolis Flow Meter: Emerson, Yokogawa, Krohne, Endress + Hauser, Honeywell, Micromotion - Orifice Fitting/Flange: DHF, System Dynamics, Canalta, FMC, Daniel, ABB, Krohne, Cameron -DPT for D/P Flow Meter: Emerson, Yokogawa, Krohne, Endress + Hauser, ABB, Siemens - Ultrasonic Flow Meter: Krohne, Flexim, Siemens, Panametrics (GE), SICK, FMC, Daniel
Group 4	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke Detector	- Push Botton: Honeywell, MEDC, E2S, AMO Safety, Federal Signal - Gas Detector: Det-tronics, General Monitors, Simtronics (Teledyne Gas & Flame Detection), Spectrex, Honeywell, Crowcon, Autronica, Draeger - Flame Detector: Det-tronics, General Monitors, Simtronics (Teledyne Gas & Flame Detection), Spectrex, Honeywell, Crowcon, Autronica, Draeger - Smoke Detector: Tyco, Apollo, Notifier, Hochiki, Autronica

5. RECOMMENDED ORIGIN OF GOODS

- The Bidder is recommended to offer the country of origin listed below. Other countries of origin will also be evaluated.

Group	Description	Recommended Country of Origin
Group 1	Pressure Gauge, Differential Pressure Gauge, Temperature Gauge	G7, Russia, EU, Singapore, Australia, Korea, Thailand, Malaysia, Indonesia, China, India
Group 2	Level Gauge, Level Transmitter, Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter	
Group 3	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	
Group 4	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke Detector	

- In the offer, the origin of each item of goods shall be clearly identify.
- In case the bidder offers many origins for one item, Vietsovpetro will evaluate the item according to the origin with the lowest score.

6. TIME AND LOCATION OF DELIVERY

- All GOODs shall be delivered at Vietsovpetro warehouse/ Vietsovpetro port.
- Delivery time of GOODs, including vendor data review, packing/handling, shipping, transportation, delivery time shall be not later than **135 calendar days** after LOI (Letter of Intent)/LOA (Letter of Award).

7. QUANTITY AND PACKAGING

- Detail requirements of Goods to be referred to all documents and drawings in the Appendix 1.
- Vendor's scope of supply for **Instrument and Detectors Package** shall be as per scope of supply in ITB (Invitation to Bid).
- Bidder can quote each Group or all Groups but Bidder must quote enough quantity of all items in each Group. Detail of Groups as below:

GROUP	DESCRIPTION	REMARK
Group 1.	Pressure Gauge, Differential Pressure Gauge, Temperature Gauge	More detail to be referred to documents in the Appendix 1.
Group 2.	Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter	
Group 3.	Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter, Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator	
Group 4.	Push Button (APS, ESD, MCP), Gas Detector, Flame Detector, Smoke Detector, Test Kit for Gas Detector, Test Kit for Flame Detector, Test Kit for Smoke Detector	

- Packaging shall be as per Manufacturer's standard.

8. REQUIREMENTS FOR OCCUPATIONAL SAFETY, INDUSTRIAL HYGIENE, AND ENVIRONMENTAL SAFETY:

- Bidder has to follow Vietsovpetro's HSE policy when delivery goods to Vietsovpetro site.

9. TECHNICAL DOCUMENTATION REQUIREMENTS

BIDDER is requested to submit a complete of Technical Documentations as a part of its bid document and the minimum requirements as below:

Item	Documents	Group 1	Group 2	Group 3	Group 4	With BID	After purchase order (for Review/ Information)	Final with Equipment Data book
1.	Scope of supply with detailed model or part number, manufacturer, Origin and quantity (No information or any information such as "or equal", "or equivalent" is not acceptable).	X	X	X	X	Yes		
2.	Manufacturer datasheet, specification or full filled datasheet (as VSP's form) that shown the detailed specification, model and Part number stamped and signed by manufacturer.	X	X	X	X	Yes	R	Yes
3.	Equipment Catalog with highlight specification, model, part number	X	X	X	X	Yes	I	Yes
4.	Equipment General Arrangement drawing (dimension of equipment)	X	X	X	X	Yes	R	Yes

5.	Sizing, Calculation stamped and signed by manufacturer.			X		Yes	R	Yes
6.	Certificates of Explosion protection, Ingress Protection issued by third party (Where applicable) (copy)		X	X	X	Yes	I	Yes
7.	SIL certificate issued by third party (Where applicable) (copy)		X		X	Yes	I	Yes

Note:

- *The symbol (X) in the table above is "Yes" required submission for Bidding*
- *All documents and drawings in tender proposal shall be provided with: one (1) original and three (03) copies and one (1) set of electronic copies on USB.*
- *All final documents for Installation, Operation and Maintenance shall be provided with: one (01) original and three (03) copies and one (01) set of electronic copies on USB.*

10. REQUIREMENTS FOR CERTIFICATES OF THE GOODS

All relevant certificates must be confirmed or committed to provide and to be submitted before delivery, but not limited to the following:

Item	Certificates	Group 1	Group 2	Group 3	Group 4
1.	Certificate of quality, quantity issued by Manufacturer	Original	Original	Original	Original (Except: accept Certified copy for Test Kit)
2.	Certificate of Origin issued by the competent authority of Manufacturer's country or exporter's country	Original/ Electronic	Original/ Electronic	Original/ Electronic	Original/ Electronic (Except: accept Certified copy for Test Kit)
3.	Test report issued by manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer (does not apply to test kits)
4.	Pressure Test report issued by manufacturer (for Thermowell, Chambers)	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	Original or Certified copy by Manufacturer	

5.	Certificates of Explosion protection, Ingress Protection issued by third party (Where applicable)		Certified copy by Manufacturer	Certified copy by Manufacturer	Certified copy by Manufacturer
6.	Material certificate issued by Manufacturer	Certified copy by Manufacturer (wetted parts)	Certified copy by Manufacturer (wetted parts)	Certified copy by Manufacturer (wetted parts)	
7.	SIL certificate issued by third party (Where applicable)		Certified copy by Manufacturer		Certified copy by Manufacturer
8.	Warranty Certificate issued by Bidder	Original	Original	Original	Original

Note:

a. Certified copy: Certified copy by manufacturer or final fabricator/authorized distributor/ Vendor.

b. Electronic: Copy shall be provided with web-link to check.

11. METHODS FOR EVALUATION OF TECHNICAL PROPOSALS

Technical offers will be evaluated for each group of the package according to the attached Technical Evaluation Criteria/ Technical Scoring Table Doc. No. OCD-MSP8.BK26-TE-16.

12. APPENDIX

Appendix 1: Technical Documents.

Note: *All documents and drawings in Appendix 1 can be updated during bidding stage.*

APPENDIX 1 – TECHNICAL DOCUMENTS

ITEM	DOCUMENT NO.	DOCUMENT TITLE	NOTE
1.	MSP8.BK26-002-GE-IA2-RQ-003	PURCHASE REQUISITION FOR INSTRUMENTS AND DETECTORS	Rev.2
2.	MSP8.BK26-002-GE-IA2-DS-002	DATASHEET FOR PUSH BUTTONS	
3.	MSP8.BK26-002-GE-IA2-DS-003	DATASHEET FOR GAS DETECTORS	
4.	MSP8.BK26-002-GE-IA2-DS-004	DATASHEET FOR FLAME DETECTORS	
5.	MSP8.BK26-002-GE-IA2-DS-005	DATASHEET FOR SMOKE DETECTORS	
6.	MSP8.BK26-002-GE-IA2-DS-006	DATASHEET FOR PRESSURE INSTRUMENTS	
7.	MSP8.BK26-002-GE-IA2-DS-007	DATASHEET FOR TEMPERATURE INSTRUMENTS	
8.	MSP8.BK26-002-GE-IA2-DS-008	DATASHEET FOR LEVEL INSTRUMENTS	
9.	MSP8.BK26-002-GE-IA2-DS-009	DATASHEET FOR FLOW INSTRUMENTS	
10.	MSP8.BK26-002-GE-IA2-SP-003	GENERAL INSTRUMENT SPECIFICATION	
11.	MSP8.BK26-002-GE-IA2-SP-006	SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION	

Note*: Attachment documents may be updated and complemented during bidding stage.*

BK-26 WELLHEAD PLATFORM

Approved by
Deputy General Director
"VIETSOVPETRO"

DANG DUC PHONG

TECHNICAL EVALUATION CRITERIA

FOR INSTRUMENTS AND DETECTORS PACKAGE

DOC.NO	**OCD-MSP8.BK26-TE-16**
DATE	**07/2025**
REV	**0**

ISSUE FOR BID

Agreed by:

Manager of Capital Construction Department - VSP	Nguyen Hong Giang
Manager of ME&A Department - VSP	Trinh Hoang Linh
Deputy Director of REI - VSP	Tran Duy Hai

Prepared by:

Deputy Director of Offshore Construction Division	Nguyen The Van
Expert of ME&A Department - VSP	Huynh Le Thien Chinh
Expert of Capital Construction Department - VSP	Ngo Dinh Minh
Engineering Manager	Nguyen Ngoc Tiep
Lead Instrument Engineer	Tran Anh Nguyen
Manager of Technical Dept. OCD	Dong Van Nhuong
Engineer of Technical Dept.	Nguyen Van Tho
Expert of Technical Dept.	Nguyen Manh Hoang
Engineer of Technical Dept.	Luu Sung Ba
Engineer of Technical Dept.	Mai Van Tran Minh Quan

Tender technical proposal shall be evaluated through 2 steps for each Group, detailed as below:

Step 1 : Technical proposal shall be passed step 1 if it meet all the condition as below:

1. Year of Manufacture (Section 2 of Technical Requirement): Comply as required in Technical Requirement.

2. Warranty (Section 2 of Technical Requirement): Comply as required in Technical Requirement.

3. Certificates (Section 9 of Technical Requirement): Comply as required in Technical Requirement.

Step 2: Step 2 shall be evaluated in case the Technical proposal passed prerequisites in step 1

Item according to rating levels			Evaluation Criteria	Offer content	Score			Reject point	Reasons for score reduction for each item	Note
Level I	Level II	Level III			Level I	Level II	Level III			
					Point	%	%			
1	2	3	4	5	6	7	8	9	10	11
1			**Technical Requirements** (Section 3 of Technical Requirement)		**55**					*Note 1,3*
	1.1			Fully comply as required in Technical Requirement.		100				
	1.2			Comply with minor concern but acceptable		60 - 90				
	1.3			Not comply		0		**R**		
2			**Manufacturer** (Section 4 of Technical Requirement)		**10**					*Note 2* *Note 4*
	2.1			Comply as required in Recommended Vendor List		100				
	2.2			Manufacturer is not belongs to Recommended Vendor List but Bidder provides full information about Manufacturer's capacity, catalogs, profiles providing materials meets the requirement		70				
	2.3			Not belong to the cases above		0				
3			**Country of Origin** (Section 5 of Technical Requirement)		**15**					*Note 2* *Note 4*
	3.1			G7/ Russia/ Europe		100				
	3.2			Australia, Korea, Singapore, Thailand, Malaysia, Indonesia, China, India		70				
	3.3			Other countries		20				
4			**Time and location of delivery** (Section 6 of Technical Requirement)		**10**					
	4.1			Comply as required in Technical Requirement		100				
	4.2			No later than 15 calendar days and delivery at Vietsovpetro Port/warehouse as required in Technical Requirement Document		50				
	4.3			Later than 15 calendar days or Not delivery at Vietsovpetro Port/warehouse as required in Technical Requirement Document		0		**R**		
5			**Technical Documentation** (Section 8 of Technical Requirement)		**10**					

	5.1		Provide documents along with bid			60				
		5.1.1		Provide full documentation as required			100			
		5.1.2		Providing incomplete documents as requested but not affecting the assessment			10 - 90			
		5.1.3		Not provide documents as requested			0			
	5.2		Providing technical documentation upon delivery			40				
		5.2.1		The Bidder commits to provide all documents as requested			100			
		5.2.2		Commit to provide documents, not fully as requested but does not affect the use of goods			10 - 90			
		5.2.3		Not commit to provide documents as requested			0			
6			**Total scores (100 as maximum)**		**100**					

Notes:

1. For this item is subject to evaluate in range of 0-100% that correspond to bidder's technical proposal

2. Fully meet the requirements will be evaluated as 100% and 0% if not.

3. For this item is picked from each stated case that correspond to bidder's technical proposal. In case the bidder offers many origins for one item, Vietsovpetro will evaluate the item according to the origin with the lowest score.

4. a. Each "minor concern" shall be minus 10%. "Minor concern" is defined as not fully comply as required in Technical Requirement Document but acceptable (check for each statement of requirement).

b. Each "Fully not comply" shall be minus 20%. "Fully not comply" is defined as completely not comply as required in Technical Requirement Document (check for each statement of requirement).

5. Technical Requirement for Instrument and Detectors Package is referred to Doc.No. OCD-MSP8.BK26-TR-16

Passed Conditions: All of the below conditions:

- Passed in "Step 1"
- No Item in Step 2 that score at Level II is equal 0 point
- And total score of Item "6" of Step 2 is equal or higher than 80 points

Disqualified Conditions: One of the below conditions:

- Disqualified in "Step 1"
- Passed in "Step 1" but Total score of Item "6" of Step 2 is below 80 points
- Any Item in Step 2 that score at Level II is equal 0 point.

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
GROUP 1 : Pressure Gauge, Differential Pressure Gauge, Temperature Gauge						
1	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 160 Barg;** Element Material: 316SS; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	11	SET	BK26-PG-0811 to 0819; BK26-PG-0810; MSP8-PG-0802	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
2	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 40 Barg;** Element Material: 316SS; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	15	SET	BK26-PG-1401; BK26-PG-1011; BK26-PG-1010; BK26-PG-1020; BK26-PG-1402; BK26-PG-0051 to 0059; BK26-PG-0210	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
3	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 10 Barg;** Element Material: 316SS; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	2	SET	BK26-PG-0201; BK26-PG-1006	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	Acess: PG-1006: Gauge saver
4	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 4 Barg;** Element Material: 316SS; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	1	SET	BK26-PG-0301	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
5	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 16 Barg;** Element Material: 316SS; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	5	SET	BK26-PG-0501; BK26-PG-0503; BK26-PG-5202; BK26-PG-1103; BK26-PG-0510	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
6	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 16 Barg;** Element Material: Monel; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	4	SET	BK26-PG-7110; BK26-PG-7111; BK26-PG-7112; BK26-PG-7113	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
7	**Pressure Gauge:** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 400 Barg;** Element Material: Monel; Mounting: Direct Mount; Completed with 316SS 2-valve manifold and accessories	3	SET	BK26-PG-1101; BK26-PG-1102; BK26-PG-1111	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
8	**Pressure Gauge (Diaphragm Seal):** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Range: **0 - 160 Barg;** Element Material: 316SS; Mounting: 2" pole stand; Diaphram Seal: - Design Type: Welded design; - Material: 316 SS; - Operating Temperature: Up to 752 degF (400 degC) - Process Connection: ½" NPT-M - Capillary Line/Length : Yes, 316 SS / Min 5 Feet (1.5 m) - System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories	2	SET	BK26-PG-1501; BK26-PG-1502	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	
9	**Differential Pressure Gauge** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Accuracy: 1% FS; Range: **0 - 2.5 Barg;** Element Material: 316SS; Element Type: Diaphragm; Completed with 5-valve manifold and accessories	1	SET	BK26-PDG-1010	MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
10	**TEMPERATURE GAUGE** SENSOR Type: Bi-Metal with silicone oil dampener; Case Dial: 100 mm; Case material: 316 SS; IP-56 min; GAUGE Range: **0 - 100 degC;** Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Material: 316 SS;	6	SET	BK26-TG-1401; BK26-TG-0201; BK26-TG-0301; BK26-TG-1010; BK26-TG-1402; BK26-TG-1020	MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS	
11	**TEMPERATURE GAUGE** SENSOR Type: Bi-Metal with silicone oil dampener; Case Dial: 100 mm; Case material: 316 SS; IP-56 min; GAUGE Range: **0 - 100 degC;** Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Material: 316 SS;	1	SET	BK26-TG-0801	MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS	
GROUP 2 : Level Gauge, Level Transmitter; Pressure Transmitter, Differential Pressure Transmitter, Temperature Transmitter						
12	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: **700 mm;** Process Connection: **Flange 2-inch, #300 RF;** GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: **0 - 1000 mm;** Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Completed with Drain/Vent Ball valves	1	SET	BK26-LG/LT-1401	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
13	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: **800 mm;** Process Connection: **Flange 2-inch, #150 RF;** GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: **0 - 1000 mm;** Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Completed with Drain/Vent Ball valves	1	SET	BK26-LG/LT-0201	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	
14	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: **1200 mm;** Process Connection: **Flange 2-inch, #150 RF;** GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: **0 - 1600 mm;** Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Completed with Drain/Vent Ball valves	1	SET	BK26-LG/LT-0301	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	
15	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: **1200 mm;** Process Connection: **Flange 2-inch, #150 RF;** GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: **0 - 1500 mm;** Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Completed with Drain/Vent Ball valves	1	SET	BK26-LG/LT-5201	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
16	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** CHAMBER Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; Center-Center Dimension: **700 mm;** Process Connection: **Flange 2-inch, #300 RF;** GAUGE Type: Magnetic flags; Housing: IP 56 min, 316 SS; TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Range: **0 - 1000 mm;** Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves	1	SET	BK26-LG/LZT-1402	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	
17	**MAGNETIC LEVEL TRANSMITTER:** CHAMBER Type: Flange connection on Top and at Bottom; Chamber Size: 2-inch; Chamber / Flange Material: 316LSS Center-Center Dimension: **800 mm;** Process Connection: **Flange 2-inch, #150 RF;** TRANSMITTER Type: Magnetostrictive, externally mount on chamber; Accuracy: ± 0.1 % FS; Range: **0 - 1000 mm;** Housing: IP 56 min, 316 SS; Exd, IIA, T3 (IEC); Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves	1	SET	BK26-LZT-0202	MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS	
18	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 160 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	37	SET	BK26-PT-0001 to 0009; BK26-PT-0021 to 0029; BK26-PT-0031 to 0039; BK26-PT-0041 to 0049; BK26-PT-0802	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
19	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 40 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	4	SET	BK26-PT-1011; BK26-PT-1012; BK26-PT-1401; BK26-PT-1006	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
20	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 10 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	1	SET	BK26-PT-0201	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
21	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 400 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	1	SET	BK26-PT-1101	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
22	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm, Element Material: **Monel;** Pressure range: **0 - 16 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	2	SET	BK26-PT-7110; BK26-PT-7111	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
23	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 40 Barg (VTA) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: SIL2; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	14	SET	BK26-PZT-1001 to 1009; BK26-PZT-1402; BK26-PZT-0210; BK26-PZT-1010; BK26-PZT-1402; BK26-PZT-1020	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
24	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 160 (VTC) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: SIL2; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	10	SET	BK26-PZT-0811 to 0819; MSP8-PZT-0802	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
25	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 16 (VTC) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: SIL2; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	6	SET	BK26-PZT-0501A; BK26-PZT-0501B; BK26-PZT-0501C; BK26-PZT-0510A; BK26-PZT-0510B; BK26-PZT-0510C	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
26	**Pressure Transmitter** TRANSMITTER Element type: Diaphragm, Element Material: **Monel;** Pressure range: **0 - 16 (VTC) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: SIL2; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	2	SET	BK26-PZT-7110; BK26-PZT-7111	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
27	**Pressure Transmitter (Diaphragm Seal):** TRANSMITTER Element type: Diaphragm; Element Material: **316SS**; Pressure range: **0 - 160 (VTC) Barg;** Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Safety Integrity Level: N/A; Diaphram Seal: - Design Type: Welded Design; - Material: 316 SS; - Operating Temperature: 752 DegF (400 DegC) - Connection: ½" NPT-M (Process side) - Capillary Line/ Length: Yes, 316 SS / Min 5 Feet (1.5m) - System Fill Fluids : High –Temperature Silicone Oil Completed with 2-valve manifold and accessories	1	SET	BK26-PT-1501	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
28	**Differential Pressure Transmitter** Element type: Diaphragm; Element Material: **316SS;** Pressure range: **0 - 2.5 (VTC) Barg;** Accuracy: ± 0.25 % of Span; Housing material: 316SS; Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Completed with: 316SS 5-Valve Manifold & accessories.	1	SET	BK26-PDT-0801	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
29	**HVAC Differential Pressure Transmitter** TRANSMITTER Element type: Piezo-resistive ; Element Material: **316SS;** Pressure range: **0 - 600 (VTC) Pa;** Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A; Housing material: 316SS; Completed with accessories.	1	SET	BK26-PDT-8501	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
30	**HVAC Differential Pressure Transmitter** TRANSMITTER Element type: Piezo-resistive ; Element Material: **316SS;** Pressure range: **0 - 600 (VTC) Pa;** Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	5	SET	BK26-PDT-8502; BK26-PDT-8503; BK26-PDT-8504; BK26-PDT-8505; BK26-PDT-8506	MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS	
31	**Temperature Transmitter** 3-Wire RTD, PT-100 Sensor; Instrument range: **0-100 degC;** Accuracy: ± 0.1 % FS; Housing material: 316SS; Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Completed with: Themowell 316SS material	13	SET	BK26-TT-1001 to BK26-TT-1009 (09); BK26-TT-0801; BK26-TT-1010; BK26-TT-1402; BK26-TT-1020	MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS	
32	**TEMPERATURE TRANSMITTER FOR HVAC SYSTEM** 3-Wire RTD, PT-100 Sensor; Instrument range: **0 - 100 degC;** Accuracy: ± 0.1 % FS; Housing material: 316SS; Ingress Protection: IP44 min; Explosion proof: N/A; THERMOWELL: N/A ACCESSORIES: Wall mounting bracket	2	SET	BK26-TT-8501; BK26-TT-8502	MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS	
GROUP 3 : Coriolis Flowmeter, D/P Flowmeter Primary Element, D/P Flow Meter ,Ultrasonic Flow Meter, Diesel Fuel Meter Assembly, Pig Indicator						

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
33	**CORIOLIS FLOW METER (LIQUID):** METER Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; TRANSMITTER Mounting: remote mounting; Ingress Protection: IP56 min; Instrument range: **0 - 22 (VTA) m3/hr;** Process connection: **Flange 3-inch, #300 RF;** Housing material: 316SS; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.1 % of Reading Smart meter Verification/ Enhanced Verification, Net Oil Calculation Completed with 316SS mounting kit.	1	SET	BK26-FT-1401	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	
34	**CORIOLIS FLOW METER (GAS):** METER Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; TRANSMITTER Mounting: remote mounting; Ingress Protection: IP56 min; Instrument range: **0 - 80000 (VTA) Sm3/d;** Process connection: **Flange 4-inch, #300 RF;** Housing material: 316SS; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.35 % of Reading Smart meter Verification/ Enhanced Verification; Completed with 316SS mounting kit.	1	SET	BK26-FT-1411	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	
35	**ORIFICE FLOWMETER (DUAL CHAMBER ORIFICE FITTING)** Orifice plate Type: Concentric, Square edged; Material: 316SS; Process Connections: **Flange 4-inch, #900 RTJ;** Three (03) orifice plates shall be calculated and provided for overlapped flow ranges as follow: **20 000 - 60 000 (VTA) Sm3/d** **50 000 - 120 000 (VTA) Sm3/d** **110 000 - 260 000 (VTA) Sm3/d;** Fitting type: Dual Chamber Orifice Fitting; Chamber: ASTM A216 WCB; Completed with Two sets: 316SS block valve & nipple	1	SET	BK26-FE-0810	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	3 Orifice plates for 3 ranges
36	**ORIFICE FLOWMETER (SINGLE CHAMBER ORIFICE FITTING):** Orifice plate Type: Concentric, Square edged; Material: 316SS; Process Connections: **Flange 4-inch, #900 RTJ;** Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow: **5 000 - 26 000 (VTA) Sm3/d** **25 000 - 50 000 (VTA) Sm3/d;** Fitting type: Single Chamber Orifice Fitting; Chamber: ASTM A216 WCB; Completed with Two sets: 316SS block valve & nipple	9	SET	BK26-FE-0811; BK26-FE-0812; BK26-FE-0813; BK26-FE-0814; BK26-FE-0815; BK26-FE-0816; BK26-FE-0817; BK26-FE-0818; BK26-FE-0819	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	2 Orifice plates for 2 ranges (each)

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
37	**DIFFERENTIAL PRESSURE FLOW TRANSMITTER:** Type: Diaphragm; Pressure range: **0 – 1600 (VTA) mbarg;** Ingress Protection: IP56 min; Housing material: 316SS; Explosion proof: Ex 'd', IIA T3 (IEC); Completed with: 316SS- 5-Valve Manifold	10	SET	BK26-FT-0811 to 0819; BK26-FT-0810	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	
38	**ULTRASONIC FLOWMETER:** TRANSDUCER/ SENSOR Type: Clamp on; Single Channel measurement path; Body material: 316SS Transducer Material: 316SS; Explosion proof: Exd, Zone 2, IIA, T3 TRANSMITTER Mounting: remote mounting; Housing material: 316SS; Instrument Range: **0 - 550 (VTA) m3/d;** Process connection: **Clamp on;** Ingress Protection: IP56 min; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: 4-20mA Hart; Completed with 316SS mouting kit, 5m sensor cable length	2	SET	BK26-FT-1111; BK26-FT-1102	MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS	
GROUP 4 :Push Button (APS, ESD, MCP), Gas Detector, Flame Detector; Test Kit for Gas Detector, Test Kit For Hydrogen Gas Detectors, Test Kit for Flame Detector; Smoke Detector, Test Kit for Smoke Detector						
39	**MANUAL CALL POINT:** Type: Lift flap press button latching type; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: RED; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	10	SET	BK26-MCP-1001; BK26-MCP-1002; BK26-MCP-1003; BK26-MCP-2001; BK26-MCP-2002; BK26-MCP-2003; BK26-MCP-3001; BK26-MCP-3002; BK26-MCP-SPARE; BK26-MCP-SPARE;	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	
40	**EMERGENCY SHUTDOWN PUSH BUTTON:** Type: Lift flap press button latching type, key reset; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: YELLOW; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	10	SET	BK26-ESD-1001; BK26-ESD-1002; BK26-ESD-1003; BK26-ESD-2001; BK26-ESD-2002; BK26-ESD-2003; BK26-ESD-3001; BK26-ESD-3002; BK26-ESD-SPARE; BK26-ESD-SPARE;	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	
41	**ABANDON PUSH BUTTON:** Type: Lift flap press button latching type, key reset; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: BLUE; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	4	SET	BK26-APS-1001; BK26-APS-1002; BK26-APS-2001; BK26-APS-SPARE;	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	
42	**MANUAL REALEASE PUSH BUTTON DISCHARGE:** Type: Lift flap press button latching type; Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex d IIA T3 (IEC), IP56 Completed with key reset & accessories	2	SET	BK26-HS-7001; BK26-HS-7002;	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
43	**SYSTEM ABORT SWITCH:** Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; IP44 min; Completed with accessories	1	SET	BK26-HS-7003	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	
44	**SYSTEM ABORT SWITCH:** Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex ia IIC T3 (IEC), IP56 min; Completed with accessories	1	SET	BK26-HS-7004	MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS	
45	**IR POINT GAS DETECTOR:** Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 %LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; Completed with accessories.	35	SET	BK26-GD-1001 to 1008; BK26-GD-1101 to 1102; BK26-GD-2001 to 2018; BK26-GD-2101 to 2102; MSP8-GD-2601; MSP8-GD-2602; BK26-GD-SPARE; BK26-GD-SPARE; BK26-GD-SPARE;	MSP8.BK26-002-GE-IA2-DS-003_0_DATASHEET FOR GAS DETECTORS	2" Pole stand mounting
46	**IR POINT GAS DETECTOR:** Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 %LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; Completed with accessories.	3	SET	BK26-GD-2105; BK26-GD-2106; BK26-GD-2107;	MSP8.BK26-002-GE-IA2-DS-003_0_DATASHEET FOR GAS DETECTORS	Duct Mounting
47	**FLAME DETECTOR:** Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuittry, Sensors, Optic cleaness; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; Completed with accessories & Shield/ Cover.	2	SET	BK26-GD-2103; BK26-GD-2104	MSP8.BK26-002-GE-IA2-DS-003_0_DATASHEET FOR GAS DETECTORS	
48	**FLAME DETECTOR:** Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuittry, Sensors, Optic cleaness; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; Completed with accessories & Shield/ Cover.	24	SET	BK26-FD-1001 to 1008; BK26-FD-1101; BK26-FD-2001 to 2011; BK26-FD-3001 to 3002; BK26-FD-SPARE; BK26-FD-SPARE;	MSP8.BK26-002-GE-IA2-DS-004_0_DATASHEET FOR FLAME DETECTORS	

ITEM No.	DESCRIPTION	TOTAL QUANTITY	UNIT	TAG NAME	DATASHEET	REMARRK
49	**SMOKE DETECTOR:** Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; Completed with accessories.	5	SET	BK26-SD-1101 to 1102; BK26-SD-1105; BK26-SD-3101; BK26-SD-SPARE;	MSP8.BK26-002-GE-IA2-DS-005_0_DATASHEET FOR SMOKE DETECTORS	
50	**SMOKE DETECTOR (RAISED FLOOR, REMOTE INDICATOR):** Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Remote Indicator; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; Completed with accessories	3	SET	BK26-SD-1103; BK26-SD-1104; BK26-SD-SPARE;	MSP8.BK26-002-GE-IA2-DS-005_0_DATASHEET FOR SMOKE DETECTORS	
51	**SMOKE DETECTOR - HAZADOUS AREA:** Type: Photoelectric; Housing: Manufacturer standard; Output signal: 4-20mA Expl. Protection: Ex ia IIC T3 (IEC) Completed with accessories.	3	SET	BK26-SD-2101; BK26-SD-2102; BK26-SD-SPARE;	MSP8.BK26-002-GE-IA2-DS-005_0_DATASHEET FOR SMOKE DETECTORS	
52	**TEST KIT FOR HYDROCARBON GAS DETECTORS** 6D Cylinder Type, Calibration Gas Methane,103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in air c/w Veriflow Gas Regulator, 0.5L/m	1	SET			
53	**TEST KIT FOR HYDROGEN GAS DETECTORS** 6D Cylinder Type, Calibration Gas Hydrogen, 103 liters, 1000psig, 50% LEL H2 (2% H2), balance in air c/w Veriflow Gas Regulator, 0.5L/m	1	SET			
54	**TEST KIT FOR FLAME DETECTORS** According to Manufacturer Standard	1	SET			
55	**TEST KIT FOR SMOKE DETECTORS** According to Manufacturer Standard	1	SET			

NOTES:

This document is summarized from: MSP8.BK26-002-GE-IA2-RQ-003

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

VIETSOVPETRO
RESEARCH & ENGINEERING INSTITUTE

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : PURCHASE REQUISITION FOR INSTRUMENT AND DETECTOR

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-RQ-003

PHASE : DETAILED ENGINEERING

			Signed by: Vũ Thị Mơ Date: 08/07/2025 11:26:20 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 08/07/2025 13:47:53 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 08/07/2025 22:41:15 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
2	IFA	02.07.25	Signed by: Trần Đức Nhân Date: 07/07/2025 16:59:52 Certified by: Vietsovpetro CA	Signed by: Nguyễn hải Chung Date: 07/07/2025 17:02:58 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 08.07.2025 11:02:00 Certified by: Vietsovpetro CA
1	IFA	25.06.25			
0	IFA	25.04.25			
REV.	**DES.**	**DATE**	**PREPARED: N.H.CHUNG**	**CHECKED: N.H.CHUNG**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No	Rev.	Content of Changes	Note
1	0	Issued for Approval	
2	1	Issued for Approval	
		Page 12: Update the Quantity and tag name of Flame detector	
3	2	Issued for Approval	
		Page 4: Update the Quantity and tag name of Pressure Gauge	
		Page 5: Update the Quantity and tag name of Pressure Transmitter	

NOTES

1. This Purchase Requisition shall be read in conjunction with the following project documents:
   - MSP8.BK26-002-GE-PI1-SP-001 - Piping Material Class Specification
   - MSP8.BK26-002-GE-IA2-SP-003 - General Instrument Specification
   - MSP8.BK26-002-GE-IA2-DS-002 - Datasheets for Push Button
   - MSP8.BK26-002-GE-IA2-DS-003 - Datasheets for Gas Detector
   - MSP8.BK26-002-GE-IA2-DS-004 - Datasheets for Flame Detector
   - MSP8.BK26-002-GE-IA2-DS-005 - Datasheets for Smoke Detector
   - MSP8.BK26-002-GE-IA2-DS-006 - Datasheets for Pressure Instruments
   - MSP8.BK26-002-GE-IA2-DS-007 - Datasheets for Temperature Instruments
   - MSP8.BK26-002-GE-IA2-DS-008 - Datasheets for Level Instruments
   - MSP8.BK26-002-GE-IA2-DS-009 - Datasheets for Flow Instruments
   - MSP8.BK26-002-GE-IA2-DS-010 - Datasheet for Watercut Analyzer
   - MSP8.BK26-002-GE-AC7-SP-001 - Technical specification for painting
2. Vendor shall supply Nickel Brass/ 316SS plugs suitable for Exd, IIA T3 hazardous area classification for spare cable entry.

No.	Description	Tagname	Instrument Range	Unit	Element Material	Qty. (set)	Remark
A. INSTRUMENTS:							
I. PRESSURE GAUGE: DATASHEET: MSP8.BK26-002-GE-IA2-DS-006_DATASHEET FOR PRESSURE INSTRUMENTS							
	Pressure Gauge: Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Mounting: Direct Mount Completed with 316SS 2-valve manifold and accessories	BK26-PG-0811 to 0819 BK26-PG-0810 MSP8-PG-0802	0 -160	barg	316SS	11	
		BK26-PG-1401 BK26-PG-1011 BK26-PG-1010 BK26-PG-1020 BK26-PG-1403 BK26-PG-0051 to 0059 BK26-PG-0210	0 - 40	barg	316SS	15	
		BK26-PG-0201 BK26-PG-1006	0 - 10	barg	316SS	2	Acess: PG-1006: Gauge saver
		BK26-PG-0301	0 - 4	barg	316SS	1	
		BK26-PG-0501 BK26-PG-0503 BK26-PG-5202 BK26-PG-1103 **BK26-PG-0510**	0-16	barg	316SS	**5**	2
		BK26-PG-7110 BK26-PG-7111 BK26-PG-7112 BK26-PG-7113	0-16	barg	Monel	4	
		BK26-PG-1101 BK26-PG-1102 BK26-PG-1111	0-400	barg	Monel	3	
1.2	**Pressure Gauge (Diaphragm Seal):** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Element Type: BOURDON; Accuracy: 1 % FS; Mounting: 2" pole stand; Diaphram Seal: -Design Type: Welded design; -Material: 316 SS; -Operating Temperature: Up to 752 degF (400 degC) -Process Connection: ½" NPT-M -Capillary Line/Length : Yes, 316 SS / Min 5 Feet (1.5 m) -System Fill Fluids : High-temperature Silicone Oil Completed with 316SS 2-valve manifold and accessories	BK26-PG-1501 BK26-PG-1502	0 -160	barg	316SS	2	
1.3	**Differential Pressure Gauge** Dial: 100 mm; Case material: 316 SS; IP-56 min; Process connection: ½" NPT-M; Accuracy: 1% FS; Element Type: Diaphragm; Completed with 5-valve manifold and accessories	BK26-PDG-1010	0 - 2.5	barg	316SS	1	

No.	Description	Tagname	Instrument Range	Unit	Element Material	Qty. (set)	Remark
II. PRESSURE TRANSMITTER: DATASHEET: MSP8.BK26-002-GE-IA2-DS-006_DATA SHEET FOR PRESSURE INSTRUMENTS							
2.1	**Pressure Transmitter** **TRANSMITTER** Element type: Diaphragm; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	BK26-PT-0001 to 0009; BK26-PT-0021 to 0029; BK26-PT-0031 to 0039; BK26-PT-0041 to 0049; BK26-PT-0802	0 - 160 (VTC)	barg	316SS	37	
		BK26-PT-1011 BK26-PT-1012 BK26-PT-1401 BK26-PT-1006	0 - 40 (VTC)	barg	316SS	4	
		BK26-PT-0201	0-10 (VTC)	barg	316SS	1	
		BK26-PT-1101	0-400 (VTC)	barg	316SS	1	
2.2	**Pressure Transmitter** **TRANSMITTER** Element type: Diaphragm, Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: N/A; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Completed with 316SS 2-valve manifold and accessories	BK26-PT-7110 BK26-PT-7111	0-16 (VTC)	barg	Monel	2	
2.3	**Pressure Transmitter** **TRANSMITTER** Element type: Diaphragm; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: *SIL2;* Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	BK26-PZT-1001 to 1009; BK26-PZT-1402 BK26-PZT-0210 BK26-PZT-1010 BK26-PZT-1403 BK26-PZT-1020	0 - 40 (VTC)	barg	316SS	14	
		BK26-PZT-0811 to 0819; MSP8-PZT-0802	0 - 160 (VTC)	barg	316SS	10	
	2	BK26-PZT-0501A BK26-PZT-0501B BK26-PZT-0501C **BK26-PZT-0510A** **BK26-PZT-0510B** **BK26-PZT-0510C**	0-16 (VTC)	barg	316SS	**6** 2	
	Pressure Transmitter **TRANSMITTER** Element type: Diaphragm, Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Safety Integrity Level: SIL2; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Local LCD meter; Completed with 316SS 2-valve manifold and accessories	BK26-PZT-7110 BK26-PZT-7111	0-16 (VTC)	barg	Monel	2	

No.	Description	Tagname	Instrument Range	Unit	Element Material	Qty. (set)	Remark
2.3	**Pressure Transmitter (Diaphragm Seal): TRANSMITTER** Element type: Diaphragm; Output: 4-20 mA, HART, 2-wire; Accuracy: At least 0.25 % of calibrated span; Process connection: ½" NPT-M; Ex-d, IP-56 min, 316 SS; Power supply: 24 V DC, Loop Powered; Safety Integrity Level: N/A; Diaphram Seal: -Design Type: Welded Design; -Material: 316 SS; -Operating Temperature: 752 DegF (400 DegC) -Connection: ½" NPT-M (Process side) -Capillary Line/ Length: Yes, 316 SS / Min 5 Feet (1.5m) -System Fill Fluids : High –Temperature Silicone Oil Completed with 2-valve manifold and accessories	BK26-PT-1501	0 - 160 (VTC)	barg	316SS	1	
2.4	**Differential Pressure Transmitter** Element type: Diaphragm; Accuracy: ± 0.25 % of Span; Housing material: 316SS; Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Completed with: 316SS 5-Valve Manifold & accessories.	BK26-PDT-0801	0 - 2.5 (VTC)	barg	316SS	1	
2.5	**HVAC Differential Pressure Transmitter** TRANSMITTER Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP44 min; Explosion proof: N/A; Housing material: 316SS; Completed with accessories.	BK26-PDT-8501	0 - 600 (VTC)	Pa	316SS	1	
2.6	**HVAC Differential Pressure Transmitter TRANSMITTER** Element type: Piezo-resistive ; Output: 4-20 mA, HART, 2-wire; Accuracy: 1 % of Span; Power supply: 24 V DC, Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Housing material: 316SS; Completed with accessories.	BK26-PDT-8502 BK26-PDT-8503 BK26-PDT-8504 BK26-PDT-8505 BK26-PDT-8506	0 - 600 (VTC)	Pa	316SS	5	
III. TEMPERATURE GAUGE: DATASHEET: MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS							
3.1	**TEMPERATURE GAUGE** SENSOR Type: Bi-Metal with silicone oil dampener; Case Dial: 100 mm; Case material: 316 SS; IP-56 min; GAUGE Accuracy: 1 % FS; THERMOWELL Type: Flange with Tapered drilled bar stock; Material: 316 SS;	BK26-TG-1401 BK26-TG-0201 BK26-TG-0301 BK26-TG-1010 BK26-TG-1403 BK26-TG-1020	0 - 100	degC		6	
		BK26-TG-0801	0 - 60	degC		1	

No.	Description	Tagname	Instrument Range	Unit	Element Material	Qty. (set)	Remark
IV. TEMPERATURE TRANSMITTER: DATASHEET: MSP8.BK26-002-GE-IA2-DS-007_DATASHEETS FOR TEMPERATURE INSTRUMENTS							
4.1	**Temperature Transmitter** 3-Wire RTD, PT-100 Sensor; Accuracy: ± 0.1 % FS; Housing material: 316SS; Ingress Protection: IP56 min; Explosion proof: Exd, IIA, T3 (IEC); Completed with: Themowell 316SS material	BK26-TT-1001 to BK26-TT-1009 (09) BK26-TT-0801 BK26-TT-1010 BK26-TT-1403 BK26-TT-1020	0 - 100 (VTC)	degC		13	
4.2	**TEMPERATURE TRANSMITTER FOR HVAC SYSTEM** 3-Wire RTD, PT-100 Sensor; Accuracy: ± 0.1 % FS; Housing material: 316SS; Ingress Protection: IP44 min; Explosion proof: N/A; THERMOWELL: N/A ACCESSORIES: Wall mounting bracket	BK26-TT-8501 BK26-TT-8502	0 - 100 (VTC)	degC		2	

No.	Description	Tagname	C-C Dimension	Instrument Range	Unit	Process Connection	Qty. (set)	Remark
V. LEVEL INSTRUMENT **DATASHEET: MSP8.BK26-002-GE-IA2-DS-008_DATASHEETS FOR LEVEL INSTRUMENTS**								
5.1	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** **CHAMBER** Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; **GAUGE** Type: Magnetic flags; Housing: IP 56 min, 316 SS; **TRANSMITTER** Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Completed with Drain/Vent Ball valves	BK26-LG/LT-1401	700	0-1000	mm	2", #300 RF	1	
		BK26-LG/LT-0201	800	0-1000	mm	2", #150 RF	1	
		BK26-LG/LT-0301	1200	0-1600	mm	2", #150 RF	1	
		BK26-LG/LT-5201	1200	0-1500	mm	2", #150 RF	1	
5.2	**MAGNETIC LEVEL GAUGE / LEVEL TRANSMITTER:** **CHAMBER** Type: Welded cap on Top, Flange connection at Bottom; Size / Material: 2-inch / 316 SS; Mounting: Side-Side; Float Material: 316 SS; **GAUGE** Type: Magnetic flags; Housing: IP 56 min, 316 SS; **TRANSMITTER** Type: Magnetostrictive, externally mount on chamber; Accuracy: 0.1% FS; Output: 4-20 mA, HART, 2-wire; Power supply: 24 V DC, Loop Powered; Housing: Ex d, IIA T3, IP-56 min, 316 SS; Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves	BK26-LG/LZT-1402	700	0-1000	mm	2", #300 RF	1	
5.3	**MAGNETIC LEVEL TRANSMITTER:** **CHAMBER** Type: Flange connection on Top and at Bottom; Chamber Size: 2-inch; Chamber / Flange Material: 316LSS **TRANSMITTER** Type: Magnetostrictive, externally mount on chamber; Accuracy: ± 0.1 % FS; Housing: IP 56 min, 316 SS; Exd, IIA, T3 (IEC); Safety Integrity Level: SIL2; Completed with Drain/Vent Ball valves	BK26-LZT-0202	800	0-1000	mm	2", #150 RF	1	

No.	Description	Tagname	Instrument Range	Unit	Process Connection	Qty. (set)	Remark
VI. FLOW INSTRUMENTS **DATASHEET: MSP8.BK26-002-GE-IA2-DS-009_DATASHEETS FOR FLOW INSTRUMENTS**							
6.1	**CORIOLIS FLOW METER (LIQUID):** **METER** Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; **TRANSMITTER** Mounting: remote mounting; Ingress Protection: IP56 min; Housing material: 316SS; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.1 % of Reading Smart meter Verification/ Enhanced Verification, Net Oil Calculation Completed with 316SS mounting kit.	BK26-FT-1401	0-22 (VTA)	m3/hr	Flange 3", 300# RF	1	
6.2	**CORIOLIS FLOW METER (GAS):** **METER** Type: Coriolis Mass Flow and Density Meter; Housing material: 316SS; Flowtube material: 316SS; TRANSMITTER Mounting: remote mounting; Ingress Protection: IP56 min; Housing material: 316SS; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: Modbus 485, 4-20mA (Optional), Pulse; Accuracy: ± 0.35 % of Reading Smart meter Verification/ Enhanced Verification, Completed with 316SS mounting kit.	BK26-FT-1411	0-80 000 (VTA)	Sm3/d	Flange 4", 300# RF	1	
6.3	**ORIFICE FLOWMETER (DUAL CHAMBER ORIFICE FITTING)** Orifice plate Type: Concentric, Square edged; Material: 316SS; Fitting type: Dual Chamber Orifice Fitting; Chamber: ASTM A216 WCB; Completed with Two sets: 316SS block valve & nipple	BK26-FE-0810	20 000-60 000 (VTA) 50 000-120 000 (VTA) 110 000-260 000 (VTA)	Sm3/d	Flange 4", 900# RTJ	1	3 Orifice plates for 3 ranges
6.4	**ORIFICE FLOWMETER (SINGLE CHAMBER ORIFICE FITTING):** Orifice plate Type: Concentric, Square edged; Material: 316SS; Fitting type: Single Chamber Orifice Fitting; Chamber: ASTM A216 WCB; Completed with Two sets: 316SS block valve & nipple	BK26-FE-0811 BK26-FE-0812 BK26-FE-0813 BK26-FE-0814 BK26-FE-0815 BK26-FE-0816 BK26-FE-0817 BK26-FE-0818 BK26-FE-0819	5 000 - 26 000 (VTA) 25 000 - 50 000 (VTA)	Sm3/d	Flange 2", 1500# RTJ	9	2 Orifice plates for 2 ranges (each)
6.5	**DIFFERENTIAL PRESSURE FLOW TRANSMITTER:** Type: Diaphragm; Ingress Protection: IP56 min; Housing material: 316SS; Explosion proof: Ex 'd', IIA T3 (IEC); Completed with: 316SS- 5-Valve Manifold	BK26-FT-0811 to 0819; BK26-FT-0810;	0-1600 (VTA)	mbar	-	10	

No.	Description	Tagname	Instrument Range	Unit	Process Connection	Qty. (set)	Remark
6.6	**ULTRASONIC FLOWMETER:** TRANSDUCER/ SENSOR Type: Clamp on; Single Channel measurement path; Body material: 316SS Transducer Material: 316SS; Explosion proof: Exd, Zone 2, IIA, T3 TRANSMITTER Mounting: remote mounting; Housing material: 316SS; Ingress Protection: IP56 min; Explosion Protection: Ex 'd', IIA T3 (IEC); Output Signal type: 4-20mA Hart; Completed with 316SS mouting kit, 5m sensor cable length	BK26-FT-1111 BK26-FT-1102	0-550 (VTA)	m3/d	Clamp on	2	

No.	Description	Tagname	Qty. (set)	Remark
B. FIRE & GAS DEVICES:				
I. PUSH BUTTON: **DATASHEET: MSP8.BK26-002-GE-IA2-DS-002_DATASHEETS FOR PUSH BUTTONS**				
1.1	**MANUAL CALL POINT:** Type: Lift flap press button latching type; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: RED; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	BK26-MCP-1001; BK26-MCP-1002; BK26-MCP-1003; BK26-MCP-2001; BK26-MCP-2002; BK26-MCP-2003; BK26-MCP-3001; BK26-MCP-3002; BK26-MCP-SPARE; BK26-MCP-SPARE;	10	
1.2	**EMERGENCY SHUTDOWN PUSH BUTTON:** Type: Lift flap press button latching type, key reset; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: YELLOW; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	BK26-ESD-1001; BK26-ESD-1002; BK26-ESD-1003; BK26-ESD-2001; BK26-ESD-2002; BK26-ESD-2003; BK26-ESD-3001; BK26-ESD-3002; BK26-ESD-SPARE; BK26-ESD-SPARE;	10	
1.3	**ABANDON PUSH BUTTON:** Type: Lift flap press button latching type, key reset; Switch: SPDT, 2A (min), 24 V DC; Enclosure Material: 316SS or GRP; Color: BLUE; Ex d IIA T3 (IEC), IP56 ACCESSORIES: Wall Mounting Bracket, 316 SS	BK26-APS-1001; BK26-APS-1002; BK26-APS-2001; BK26-APS-SPARE;	4	
1.4	**MANUAL REALEASE PUSH BUTTON DISCHARGE:** Type: Lift flap press button latching type; Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex d IIA T3 (IEC), IP56 Completed with key reset & accessories	BK26-HS-7001; BK26-HS-7002;	2	
1.5	**SYSTEM ABORT SWITCH:** Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; IP44 min Completed with accessories	BK26-HS-7003;	1	
1.6	**SYSTEM ABORT SWITCH:** Type: Momentary Pushbutton (Non-Latching); Switch: SPDT,2 A (min), 24 V DC; Enclosure Material: 316SS or Marine Grade GRP; Ex ia IIC T3 (IEC), IP56 min Completed with accessories	BK26-HS-7004;	1	
II. GAS DETECTOR: **DATASHEET: MSP8.BK26-002-GE-IA2-DS-003_0_DATASHEET FOR GAS DETECTORS**				
2.1	**IR POINT GAS DETECTOR:** Type: IR Point Type Combustible Gas Detector for Hydrocarbon Gas; Range; 0-100 % LEL; Response Time: less 7 secs; Accuracy: ± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL); Analog output: 4-20 mA (stepped), source mode, HART, 3-wires; Power supply: 24 V DC nominal; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS;	BK26-GD-1001 to 1008; BK26-GD-1101 to 1102; BK26-GD-2001 to 2018; BK26-GD-2101 to 2102; MSP8-GD-2601 MSP8-GD-2602 BK26-GD-SPARE; BK26-GD-SPARE; BK26-GD-SPARE;	35	2" Pole stand mounting

No.	Description	Tagname	Qty. (set)	Remark
	Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 2 x 1/2" NPT-F; Completed with accessories.	BK26-GD-2105; BK26-GD-2106; BK26-GD-2107;	3	Duct Mounting
2.2	**HYDROGEN GAS DETECTOR:** Sensor Type: Catalytic Bed Detector, Point, for Hydrogen Gas; SIL2 min; Housing Material: 316SS; Completed with accessories.	BK26-GD-2103; BK26-GD-2104;	2	
III. FLAME DETECTORS: **DATASHEET: BK20.BK26-002-GE-IA2-DS-004_0 DATASHEET FOR FLAME DETECTORS**				
3.1	**FLAME DETECTOR:** Type: Triple Infrared (3IR) / Multi-spectrum Infrared (MSIR); Sensitivity: 0.1 m2 n-Neptane pan fire at 30 m; Response Time: up to 5 secs; Field of View: Minimum 90 deg horizontal axis, 75 deg vertical axis; Analog output: 4- 20mA current source, 3 wires, HART; Power supply: 24 VDC nominal; Fault Monitored: Electronics circuittry, Sensors, Optic cleaness; Local Status Indicator: LED; Housing: Ex d IIA T3, IP56 min, 316 SS; Safety Level: SIL-2; Electrical connection: 1/2" NPT-F; Completed with accessories & Shield/ Cover.	BK26-FD-1001 to 1008; FD-1009 BK26-FD-1101; BK26-FD-2001 to 2011; BK26-FD-3001 to 3002; MSP8-FD-0801 MSP8-FD-0802 BK26-FD-SPARE; BK26-FD-SPARE;	27	
IV. SMOKE DETECTORS: **DATASHEET: BK20.BK26-002-GE-IA2-DS-005_0 DATASHEET FOR SMOKE DETECTORS**				
4.1	**SMOKE DETECTOR:** Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Built-in; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; Completed with accessories.	BK26-SD-1101 to 1102; BK26-SD-1105; BK26-SD-3101; BK26-SD-SPARE;	5	
4.2	**SMOKE DETECTOR (RAISED FLOOR, REMOTE INDICATOR):** Type: Optical, Photoelectric; Sampling Frequency: Once every 4 second or Better; Status Indicator: YES, LED, Remote Indicator; Power supply: 24 V DC nominal; Output: CURRENT OUTPUT, 2 WIRES; Housing: IP-44 min, Polycarbonate; Electrical connection: 1/2" NPT-F; Completed with accessories.	BK26-SD-1103; BK26-SD-1104; BK26-SD-SPARE;	3	
4.3	**SMOKE DETECTOR - HAZADOUS AREA:** Type: Photoelectric; Housing: Manufacturer standard; Output signal: 4-20mA Expl. Protection: Ex ia IIC T3 (IEC) Completed with accessories.	BK26-SD-2101; BK26-SD-2102; BK26-SD-SPARE;	3	
V. FIRE & GAS CALIBRATION TOOL & TEST KIT:				
5.1	TEST KIT FOR HYDROCARBON GAS DETECTORS 6D Cylinder Type, Calibration Gas Methane,103 liters, 1000psig, 50% LEL CH4 (2.5% CH4), balance in air c/w Veriflow Gas Regulator, 0.5L/m		1	
5.2	TEST KIT FOR HYDROGEN GAS DETECTORS 6D Cylinder Type, Calibration Gas Hydrogen, 103 liters, 1000psig, 50% LEL H2 (2% H2), balance in air c/w Veriflow Gas Regulator, 0.5L/m		1	
5.3	TEST KIT FOR FLAME DETECTORS According to Manufacturer Standard		1	
5.4	TEST KIT FOR SMOKE DETECTORS According to Manufacturer Standard		1	

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR PUSHBUTTONS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-002

PHASE : DETAILED ENGINEERING

			Signed by: Vũ Thị Mơ Date: 23/04/2025 14:03:42 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 23/04/2025 14:10:04 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 23/04/2025 14:41:02 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
0	IFA	04.2025	Signed by: Đỗ Quốc Huy Date: 23/04/2025 10:02:13 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 23.04.2025 13:36:36 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: D.Q.HUY**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issue for Approval	

OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore		
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes		
	3	Ambient Temp.	Rel. Humidity		21 - 39 degC	Aver. 80 % (MAX 100 %)	
	4	Wind Velocity	Rainfall		Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr	
	5	Hazardous Area Classification			Zone 2 IIA T3		
PUSHBUTTON	6	Type		Qty	Emergency Pushbutton with latching key, lift flap		4
	7	EOL Resistor	Status Indicator		YES	YES, LED NOTE 2	
	8	Switch Form	Rating		2 x SPDT	2 A (min), 24 V DC / 230 V AC	
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd
	10	Safety Integrity Level			N/A		
	11						
HOUSING	12	Housing material	Color		316 SS or GRP	BLUE	
	13	Electrical Conn.	Cable Gland		2 x 1/2" NPT-F	plugged NOTE 3	
	14	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	15						
ACCESSORIES	16	Mounting			YES,Wall Mounting, 316 SS		
	17						
PURCHASE	18	Manufacturer			VTA		
	19	Model			VTA		

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-__)	LOCATION	COLOR	NOTE
1	BK26-APS-1001	TS.BK26-IA2-LD-002	Cellar Deck. Muster Area	BLUE	
2	BK26-APS-1002	TS.BK26-IA2-LD-002	Cellar Deck. Muster Area	BLUE	
3	BK26-APS-2001	TS.BK26-IA2-LD-002	Main Deck. Escape Route. Near Bridge	BLUE	
4	BK26-APS-SPARE	-			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preffered Option. Not mandatory.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore			
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes			
	3	Ambient Temp.	Rel. Humidity		21 - 39 degC	Aver. 80 % (MAX 100 %)		
	4	Wind Velocity	Rainfall		Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr		
	5	Hazardous Area Classification			Zone 2 IIA T3			
PUSHBUTTON	6	Type		Qty	Emergency Pushbutton with latching key, lift flap			10
	7	EOL Resistor	Status Indicator		YES	YES, LED	NOTE 2	
	8	Switch Form	Rating		2 x SPDT	2 A (min), 24 V DC / 230 V AC		
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd	
	10	Safety Integrity Level			N/A			
	11							
HOUSING	12	Housing material	Color		316 SS or GRP	YELLOW		
	13	Electrical Conn.	Cable Gland		2 x 1/2" NPT-F	plugged	NOTE 3	
	14	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	15							
ACCESSORIES	16	Mounting			YES,Wall Mounting, 316 SS			
	17							
PURCHASE	18	Manufacturer			VTA			
	19	Model			VTA			

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-___)	LOCATION	COLOR	NOTE
1	BK26-ESD-1001	TS.BK26-IA2-LD-002	Cellar Deck	YELLOW	
2	BK26-ESD-1002	TS.BK26-IA2-LD-002	Cellar Deck	YELLOW	
3	BK26-ESD-1003	TS.BK26-IA2-LD-002	Cellar Deck	YELLOW	
4	BK26-ESD-2001	TS.BK26-IA2-LD-002	Main Deck	YELLOW	
5	BK26-ESD-2002	TS.BK26-IA2-LD-002	Main Deck	YELLOW	
6	BK26-ESD-2003	TS.BK26-IA2-LD-002	Main Deck	YELLOW	
7	BK26-ESD-3001	TS.BK26-IA2-LD-002	Upper Deck	YELLOW	
8	BK26-ESD-3002	TS.BK26-IA2-LD-002	Upper Deck	YELLOW	
9	BK26-ESD-SPARE	-	-	YELLOW	
10	BK26-ESD-SPARE	-	-	YELLOW	

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preffered Option. Not mandatory.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8	MSP8.BK26-002-GE-IA2-DS-002			
	DATASHEET FOR PUSHBUTTONS	Rev.	0	Page	5 of 5
	MANUAL CALL POINT PUSHBUTTONS				

OPERATING CONDITIONS	1	Environment			Tropical, Marine, Offshore			
	2	Area			Open-door, exposed to sun, wind, rainfall, water splashes			
	3	Ambient Temp.	Rel. Humidity		21 - 39 degC	Aver. 80 % (MAX 100 %)		
	4	Wind Velocity	Rainfall		Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr		
	5	Hazardous Area Classification			Zone 2 IIA T3			
PUSHBUTTON	6	Type		Qty	Emergency Pushbutton, latching type, lift flap			10
	7	EOL Resistor	Status Indicator		YES	YES, LED	NOTE 2	
	8	Switch Form	Rating		2 x SPDT	2 A (min), 24 V DC / 230 V AC		
	9	Terminals Size	Type	Qty	2.5 mm2	Screw	MfrStd	
	10	Safety Integrity Level			N/A			
	11							
HOUSING	12	Housing material	Color		316 SS or GRP	RED		
	13	Electrical Conn.	Cable Gland		2 x 1/2" NPT-F	plugged	NOTE 3	
	14	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	15							
ACCESSORIES	16	Mounting			YES,Wall Mounting, 316 SS			
	17							
PURCHASE	18	Manufacturer			VTA			
	19	Model			VTA			

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-___)	LOCATION	COLOR	NOTE
1	BK26-MCP-1001	TS.BK26-IA2-LD-002	Cellar Deck	RED	
2	BK26-MCP-1002	TS.BK26-IA2-LD-002	Cellar Deck	RED	
3	BK26-MCP-1003	TS.BK26-IA2-LD-002	Cellar Deck	RED	
4	BK26-MCP-2001	TS.BK26-IA2-LD-002	Main Deck	RED	
5	BK26-MCP-2002	TS.BK26-IA2-LD-002	Main Deck	RED	
6	BK26-MCP-2003	TS.BK26-IA2-LD-002	Main Deck	RED	
7	BK26-MCP-3001	TS.BK26-IA2-LD-002	Upper Deck	RED	
8	BK26-MCP-3002	TS.BK26-IA2-LD-002	Upper Deck	RED	
9	BK26-MCP-SPARE	-	-	RED	
10	BK26-MCP-SPARE	-	-	RED	

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preffered Option. Not mandatory.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR GAS DETECTORS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-003

PHASE : DETAILED ENGINEERING

			Signed by: Vũ Thị Mơ Date: 23/04/2025 14:03:41 Certified by: Vietsovpetro CA	Signed by: Nguyễn Ngọc Tiệp Date: 23/04/2025 14:10:02 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 23/04/2025 14:41:02 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
0	IFA	04.2025	Signed by: Đỗ Quốc Huy Date: 23/04/2025 10:02:13 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 23.04.2025 13:36:36 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: D.Q.HUY**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note

GENERAL DATA	1	Tag Number	Qty.	See NEXT PAGE		35
	2	Plan / Layout DWG.		See NEXT PAGE		
	3	Location		See NEXT PAGE		
	4	Hazardous Area Classification		Class 1, Zone 1 IIA T3		
	5					
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore		
	7	Area		Open-door, exposed to sun, wind, rainfall, water splashes		
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)	
	9	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr	
	10					
SENSOR AND TRANSMITTER	11	Sensor Type		Dual-Wavelength Infrared, Point, for Hydrocarbon Gas		
	12	Range	Response Time	0 - 100 % LEL	T50 ≤ 7 s, VTA	
	13	Accuracy		± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)		
	14	Power Supply		24 V DC nominal (± 10 % floating)		
	15	Output Signal		4-20 mA (stepped) ,source mode, HART, 3-wires		
	16	Output Relays	Quantity	N/A		
	17	Relays Form	Rating			
	18	Electrical Terminals		MfrStd according Output Signal		
	19	Wiring Size		up to 2.5 mm2		
	20	Optics		Self-compensated or Heated (preferred)		
	21	Status Indicator	Sensor Life	YES (LED)	5 years and more	
	22	Safety Integrity Level		SIL2		
	23					
	24					
HOUSING	25	Housing material		316 SS		
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F	plugged	
	27	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	28					
	29					
	30					
ACCESSORIES	31	Weather Protector		YES, (Sunshield / Water splashes protection)		
	32	Junction Box		MfrStd (if need to meet above listed requirements)		
	33	Mounting bracket		YES, for 2-inch pole stand, 316 SS		
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. One (01) hydrocarbon gas calibration and test Kit shall be suppled.

No	TAG	Layout DWG (MSP8.BK26-002-___)	LOCATION	NOTE
1	BK26-GD-1001	TS.BK26-IA2-LD-002	Cellar Deck	
2	BK26-GD-1002	TS.BK26-IA2-LD-002	Cellar Deck	
3	BK26-GD-1003	TS.BK26-IA2-LD-002	Cellar Deck	
4	BK26-GD-1004	TS.BK26-IA2-LD-002	Cellar Deck	
5	BK26-GD-1005	TS.BK26-IA2-LD-002	Cellar Deck	
6	BK26-GD-1006	TS.BK26-IA2-LD-002	Cellar Deck	
7	BK26-GD-1007	TS.BK26-IA2-LD-002	Cellar Deck	
8	BK26-GD-1008	TS.BK26-IA2-LD-002	Cellar Deck	
9	BK26-GD-1101	TS.BK26-IA2-LD-002	Shelter. E&I Room	
10	BK26-GD-1102	TS.BK26-IA2-LD-002	Shelter. E&I Room	
11	BK26-GD-2001	TS.BK26-IA2-LD-002	Main Deck	
12	BK26-GD-2002	TS.BK26-IA2-LD-002	Main Deck	
13	BK26-GD-2003	TS.BK26-IA2-LD-002	Main Deck	
14	BK26-GD-2004	TS.BK26-IA2-LD-002	Main Deck	
15	BK26-GD-2005	TS.BK26-IA2-LD-002	Main Deck	
16	BK26-GD-2006	TS.BK26-IA2-LD-002	Main Deck	
17	BK26-GD-2007	TS.BK26-IA2-LD-002	Main Deck	
18	BK26-GD-2008	TS.BK26-IA2-LD-002	Main Deck	
19	BK26-GD-2009	TS.BK26-IA2-LD-002	Main Deck	
20	BK26-GD-2010	TS.BK26-IA2-LD-002	Main Deck	
21	BK26-GD-2011	TS.BK26-IA2-LD-002	Main Deck	
22	BK26-GD-2012	TS.BK26-IA2-LD-002	Main Deck	
23	BK26-GD-2013	TS.BK26-IA2-LD-002	Main Deck	
24	BK26-GD-2014	TS.BK26-IA2-LD-002	Main Deck	
25	BK26-GD-2015	TS.BK26-IA2-LD-002	Main Deck	
26	BK26-GD-2016	TS.BK26-IA2-LD-002	Main Deck	
27	BK26-GD-2017	TS.BK26-IA2-LD-002	Main Deck	
28	BK26-GD-2018	TS.BK26-IA2-LD-002	Main Deck	
29	BK26-GD-2101	TS.BK26-IA2-LD-002	Battery Room. Air Intake	
30	BK26-GD-2102	TS.BK26-IA2-LD-002	Battery Room. Air Intake	
31	MSP8-GD-2601	TS.BK26-IA2-LD-002	MSP8 - Platform	
32	MSP8-GD-2602	TS.BK26-IA2-LD-002	MSP8 - Platform	
33	BK26-GD-SPARE			
34	BK26-GD-SPARE			
35	BK26-GD-SPARE			
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NOTES

GENERAL DATA	1	Tag Number	Qty.	See Table Below		3
	2	Plan / Layout DWG.		See Table Below		
	3	Location		See Table Below		
	4	Hazardous Area Classification		Safe Area		
	5					
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore		
	7	Area		HVAC Duct		
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)	
	9	Wind Velocity	Rainfall	up to 2 m/s		
	10					
SENSOR AND TRANSMITTER	11	Sensor Type		Dual-Wavelength Infrared, Point, for Hydrocarbon Gas		
	12	Range	Response Time	0 - 100 % LEL	T50 ≤ 7 s, VTA	
	13	Accuracy		± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)		
	14	Power Supply		24 V DC nominal (± 10 % floating)		
	15	Output Signal		4-20 mA (stepped) ,source mode, HART, 3-wires		
	16	Output Relays	Quantity	N/A		
	17	Relays Form	Rating			
	18	Electrical Terminals		MfrStd according Output Signal		
	19	Wiring Size		up to 2.5 mm2		
	20	Optics		Self-compensated or Heated (preferred)		
	21	Status Indicator	Sensor Life	YES (LED)	5 years and more	
	22	Safety Integrity Level		SIL2		
	23					
HOUSING	24	Housing material		316 SS		
	25	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F	plugged	
	26	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	27					
ACCESSORIES	28	Weather Protector		N/A		
	29	Junction Box		MfrStd (if need to meet above listed requirements)		
	30	Mounting bracket		YES, for HVAC Rectangular Duct, 316 SS		
PURCHASE	31	Manufacturer		VTA		
	32	Model		VTA		
	33					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

No	TAG	Layout DWG (MSP8.BK26-002-___)	LOCATION	NOTE
1	BK26-GD-2105	TS.BK26-IA2-LD-002	Shelter. HVAC Air Intake.	
2	BK26-GD-2106	TS.BK26-IA2-LD-002	Shelter. HVAC Air Intake.	
3	BK26-GD-2107	TS.BK26-IA2-LD-002	Shelter. HVAC Air Intake.	

NOTES

1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number	Qty.	BK26-GD-2103, BK26-GD-2104		2
	2	Plan / Layout DWG.		MSP8.BK26-002-TS.BK26-IA2-LD-002		
	3	Location		Main Deck. Battery Room.		
	4	Hazardous Area Classification		Class 1, Zone 2 IIC T3		
	5					
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore		
	7	Area		In-door		
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)	
	9	Wind Velocity	Rainfall			
	10					
SENSOR AND TRANSMITTER	11	Sensor Type		Catalytic Bed Detector, Point, for Hydrogen Gas		
	12	Range	Response Time	0 - 100 % LEL	T50 ≤ 10 s, T90 ≤ 30 s	
	13	Accuracy		± 3 % LEL (@ 0-50 % LEL), ± 5 % LEL (@ 51-100 % LEL)		
	14	Power Supply		24 V DC nominal (± 10 % floating)		
	15	Output Signal		4-20 mA (stepped) ,source mode, HART, 3-wires		
	16	Output Relays	Quantity	N/A		
	17	Relays Form	Rating			
	18	Electrical Terminals		MfrStd according Output Signal		
	19	Wiring Size		up to 2.5 mm2		
	20	Optics		Self-compensated or Heated (preferred)		
	21	Status Indicator	Sensor Life	YES (LED)	5 years and more	
	22	Safety Integrity Level		SIL2		
	23					
	24					
HOUSING	25	Housing material		316 SS		
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F	plugged	
	27	Expl. Protection	Ingress Protec.	Ex d IIC T3 (IEC)	IP 56 min	
	28					
	29					
	30					
ACCESSORIES	31	Weather Protector		N/A		
	32	Junction Box		MfrStd (if need to meet above listed requirements)		
	33	Mounting bracket		YES, for 2-inch pole stand, 316 SS		
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIC T3 hazardous area for spare cable entry.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. One (01) hydrogen gas calibration and test Kit shall be suppled.

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR FLAME DETECTORS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-004

PHASE : DETAILED ENGINEERING

			Signed by: Vũ Thị Mơ Date: 26/06/2025 16:17:22 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 26/06/2025 16:51:14 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 26/06/2025 20:56:35 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
1	IFA	25.06.2025	Signed by: Trần Đức Nhân Date: 26/06/2025 14:27:14 Certified by: Vietsovpetro CA	Signed by: Nguyễn hải Chung Date: 26/06/2025 14:29:22 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 26.06.2025 15:47:06 Certified by: Vietsovpetro CA
0	IFA	04.2025			
REV.	**DES.**	**DATE**	**PREPARED: T.D.NHAN**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issued for Approval	
2	1	Issued for Approval	
		Page 3: Update the quantity of Flame Detector	
		Page 4: Update the tag name of Flame Detector and their location	

GENERAL DATA	1	Tag Number	Qty.	See NEXT PAGE	1	27
	2	Plan / Layout DWG.		See NEXT PAGE		
	3	Location		See NEXT PAGE		
	4	Hazardous Area Classification		Class 1, Zone 1 IIA T3		
	5					
OPERATING CONDITIONS	6	Environment		Tropical, Marine, Offshore		
	7	Area		Open-door, exposed to sun, wind, rainfall, water splashes		
	8	Ambient Temp.	Rel. Humidity	21 - 39 degC	Aver. 80 % (MAX 100 %)	
	9	Wind Velocity	Rainfall	Aver. 8.5 m/s (MAX 45.6 m/s)	up to 50 mm/hr	
	10					
SENSOR AND TRANSMITTER	11	Sensor Type		Triple Infrared (3IR) / Multispectrum Infrared (MSIR)		
	12	Sensitivity	Response Time	0.1 m2 n-Neptane pan fire at 30 m	up to 5 sec	
	13	Field of View		Horizontally ≥ 90 deg. Vertically ≥ 75 deg		
	14	Power Supply		24 V DC nominal (± 10 % floating)		
	15	Output Signal		0-20 mA (stepped) ,source mode, HART, 3-wires		
	16	Output Relays	Quantity	N/A		
	17	Relays Form	Rating			
	18	Electrical Terminals		MfrStd according Output Signal / Relay configuration		
	19	Wiring Size		up to 2.5 mm2		
	20	Built-in-Test		Automatic and Manual		
	21	Status Indicator		YES (LED)		
	22	Safety Integrity Level		SIL2		
	23					
	24					
HOUSING	25	Housing material		316 SS NOTE 1		
	26	Electrical Conn.	Cable Gland	2 x 1/2" NPT-F (VTA)	plugged NOTE 2	
	27	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	28					
	29					
	30					
ACCESSORIES	31	Weather Protector		YES, (Shield / Cover)		
	32	Air Shield		NO		
	33	Mounting bracket		YES, for 2-inch pole-stand, Vertical / Horizontal Tilt, 316 SS		
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.

No	TAG	Layout DWG (MSP8.BK26-002-___)	LOCATION	NOTE
1	BK26-FD-1001	TS.BK26-IA2-LD-002	Cellar Deck	
2	BK26-FD-1002	TS.BK26-IA2-LD-002	Cellar Deck	
3	BK26-FD-1003	TS.BK26-IA2-LD-002	Cellar Deck	
4	BK26-FD-1004	TS.BK26-IA2-LD-002	Cellar Deck	
5	BK26-FD-1005	TS.BK26-IA2-LD-002	Cellar Deck	
6	BK26-FD-1006	TS.BK26-IA2-LD-002	Cellar Deck	
7	BK26-FD-1007	TS.BK26-IA2-LD-002	Cellar Deck	
8	BK26-FD-1008	TS.BK26-IA2-LD-002	Cellar Deck	
9	BK26-FD-1009	TS.BK26-IA2-LD-002	Cellar Deck	1
10	BK26-FD-2001	TS.BK26-IA2-LD-002	Main Deck	
11	BK26-FD-2002	TS.BK26-IA2-LD-002	Main Deck	
12	BK26-FD-2003	TS.BK26-IA2-LD-002	Main Deck	
13	BK26-FD-2004	TS.BK26-IA2-LD-002	Main Deck	
14	BK26-FD-2005	TS.BK26-IA2-LD-002	Main Deck	
15	BK26-FD-2006	TS.BK26-IA2-LD-002	Main Deck	
16	BK26-FD-2007	TS.BK26-IA2-LD-002	Main Deck	
17	BK26-FD-2008	TS.BK26-IA2-LD-002	Main Deck	
18	BK26-FD-2009	TS.BK26-IA2-LD-002	Main Deck	
19	BK26-FD-2010	TS.BK26-IA2-LD-002	Main Deck	
20	BK26-FD-2011	TS.BK26-IA2-LD-002	Main Deck	
21	BK26-FD-3001	TS.BK26-IA2-LD-002	Upper Deck	
22	BK26-FD-3002	TS.BK26-IA2-LD-002	Upper Deck	
23	BK26-FD-1101	TS.BK26-IA2-LD-002	Mechanical Store - Cellar Deck	
24	MSP8-FD-0801	TS.BK26-IA2-LD-002	MSP8 WHP - Main Deck Near Bride MSP8-BK26	1
25	MSP8-FD-0802	TS.BK26-IA2-LD-002	MSP8 WHP - Main Deck Near Bride MSP8-BK27	1
26	BK26-FD-SPARE			
27	BK26-FD-SPARE			
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NOTES

VIETSOVPETRO	**RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS**	VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR SMOKE DETECTORS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-005

PHASE : DETAILED ENGINEERING

			Signed by: Vũ Thị Mơ Date: 23/04/2025 14:03:42 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 23/04/2025 14:10:06 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 23/04/2025 14:41:03 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
0	IFA	04.2025	Signed by: Đỗ Quốc Huy Date: 23/04/2025 10:02:13 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 23.04.2025 13:36:36 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: D.Q.HUY**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore		
	2	Area		In-door, HVAC controlled		
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC	45-55 % NOTE 2	
	4	Wind Velocity	Rainfall			
	5	Hazardous Area Classification		Safe Area		
DETECTOR	6	Type	Qty	Optical, Photoelectric		5
	7	Sampling Frequency		Once every 4 second or Better		
	8	Status Indicator	Type	YES, LED	Built-in, MfrStd	
	9	Supply	Wiring	24 V DC	Two-wire, polarity insensitive	
	10	Sensor Life		Minimum 2 years		
	11	Safety Integrity Level		N/A		
	12	E.O.L Resistor	Inline Resistor	3.3K Ohm	1.2K Ohm	
HOUSING	13	Housing material	Color	Polycarbonate	WHITE or MfrStd	
	14	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd	YES	
	15	Expl. Protection	Ingress Protec.	N/A	IP 44 min	
	16					
ACCESSORIES	17	Mounting Base		YES		
	18	Remote Status Indicator		N/A		
PURCHASE	19	Manufacturer		VTA		
	20	Model		VTA		

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-__)	LOCATION	NOTE
1	BK26-SD-1101	TS.BK26-IA2-LD-002	Shelter. Sanitary Room	
2	BK26-SD-1102	TS.BK26-IA2-LD-002	Shelter. Compressor Room	
3	BK26-SD-1105	TS.BK26-IA2-LD-002	Sanitary Room	
4	BK26-SD-3101	TS.BK26-IA2-LD-002	Crane Cabin	
5	BK26-SD-spare			
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VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore		
	2	Area		In-door, HVAC controlled		
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC	45-55 %	NOTE 2
	4	Wind Velocity	Rainfall			
	5	Hazardous Area Classification		Safe Area		
DETECTOR	6	Type	Qty	Optical, Photoelectric		3
	7	Sampling Frequency		Once every 4 second or Better		
	8	Status Indicator	Type	YES, LED	REMOTE, MfrStd	
	9	Supply	Wiring	24 V DC	Two-wire, polarity insensitive	
	10	Sensor Life		Minimum 2 years		
	11	Safety Integrity Level		N/A		
	12	E.O.L Resistor	Inline Resistor	3.3K Ohm	1.2K Ohm	
HOUSING	13	Housing material	Color	Polycarbonate	WHITE or MfrStd	
	14	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd	YES	
	15	Expl. Protection	Ingress Protec.	N/A	IP 44 min	
	16					
ACCESSORIES	17	Mounting Base		YES		
	18	Remote Status Indicator		YES		
PURCHASE	19	Manufacturer		VTA		
	20	Model		VTA		

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-__)	LOCATION	NOTE
1	BK26-SD-1103	# -TS.BK26-IA2-LD-002	Shelter. Electrical & Instrumentation Room. Raised Floor	
2	BK26-SD-1104	# -TS.BK26-IA2-LD-002	Shelter. Electrical & Instrumentation Room. Raised Floor	
3	BK26-SD-spare			
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VTC - Vendor to Conform / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure

OPERATING CONDITIONS	1	Environment		Tropical, Marine, Offshore		
	2	Area		In-door, HVAC controlled		
	3	Ambient Temp.	Rel. Humidity	21 - 24 degC	45-55 % NOTE 2	
	4	Wind Velocity	Rainfall			
	5	Hazardous Area Classification		Zone 2, IIC T3		
DETECTOR	6	Type	Qty	Optical, Photoelectric		3
	7	Sampling Frequency		Once every 4 second or Better		
	8	Status Indicator	Type	YES, LED	Built-in, MfrStd	
	9	Supply	Wiring	24 V DC	Two-wire, polarity insensitive	
	10	Sensor Life		Minimum 2 years		
	11	Safety Integrity Level		N/A		
	12	E.O.L Resistor	Inline Resistor	3.3K Ohm	1.2K Ohm	
HOUSING	13	Housing material	Color	MfrStd	MfrStd	
	14	Electrical Conn.	Cable Gland	1/2" NPT-F or MfrStd	YES	
	15	Expl. Protection	Ingress Protec.	Ex ia IIC T3 (IEC) (NOTE 3)	IP 44 min	
	16					
ACCESSORIES	17	Mounting Base		YES		
	18	Remote Status Indicator		N/A		
PURCHASE	19	Manufacturer		VTA		
	20	Model		VTA		

No	TAG NUMBER	LAYOUT DWG. (MSP8.BK26-002-___)	LOCATION	NOTE
1	BK26-SD-2101	TS.BK26-IA2-LD-002	Shelter. Battery Room	
2	BK26-SD-2102	TS.BK26-IA2-LD-002	Shelter. Battery Room	
3	BK26-SD-spare			
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VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Shall be able to operate at 40 degC, humidity 80% in Case of HVAC failure
3. "Ex ia" type protection shall be completed with an appropriate IS Safety Barrier.

VIETSOVPETRO

RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS

VIETSOVPETRO
RESEARCH & ENGINEERING INSTITUTE

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR PRESSURE INSTRUMENTS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-006

PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Lương Thuỳ Dương Date: 08/07/2025 08:39:40 Certified by: Vietsovpetro CA	Signed by: Bùi Quang Thuận Date: 08/07/2025 09:28:59 Certified by: Vietsovpetro CA
				PIPING: L.T.DUONG	**PROCESS: C.T.LAM**
			Signed by: Vũ Thị Mơ Date: 08/07/2025 11:26:21 Certified by: Vietsovpetro CA UNCONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 08/07/2025 13:47:54 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 08/07/2025 22:41:16 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
1	IFA	02.07.25	Signed by: Trần Đức Nhân Date: 07/07/2025 16:59:52 Certified by: Vietsovpetro CA	Signed by: Nguyễn hải Chung Date: 07/07/2025 17:02:58 Certified by: Vietsovpetro CA	Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 08.07.2025 11:02:00 Certified by: Vietsovpetro CA
0	IFA	09.05.25			
REV.	**DES.**	**DATE**	**PREPARED: N.H.CHUNG**	**CHECKED: N.H.CHUNG**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issued for Approval	
2	1	Issued for Approval	
		Page 3: Add 1 PG and 3 PZT	
		Page 8: Update the Quantity of PG	
		Page 9: Update the List of PG	
		Page 18: Update the Quantity of Pressure Transmitter	
		Page 19: Update the List of Pressure Transmitter	

NO	Equipment Tag No.	Page No.
1	BK26- PG-0051	4,5
2	BK26- PG-0052	4,5
3	BK26- PG-0053	4,5
4	BK26- PG-0054	4,5
5	BK26- PG-0055	4,5
6	BK26- PG-0056	4,5
7	BK26- PG-0057	4,5
8	BK26- PG-0058	4,5
9	BK26- PG-0059	4,5
10	BK26- PG-0811	6,7
11	BK26- PG-0812	6,7
12	BK26- PG-0813	6,7
13	BK26- PG-0814	6,7
14	BK26- PG-0815	6,7
15	BK26- PG-0816	6,7
16	BK26- PG-0817	6,7
17	BK26- PG-0818	6,7
18	BK26- PG-0819	6,7
19	BK26- PG-0810	6,7
20	MSP8- PG-0802	6,7
21	BK26- PG-1006	8,9
22	BK26- PG-1401	8,9
23	BK26- PG-1011	8,9
24	BK26- PG-0201	8,9
25	BK26- PG-0301	8,9
26	BK26- PG-0501	8,9
27	BK26- PG-0503	8,9
28	BK26- PG-1010	8,9
29	BK26- PG-1403	8,9
30	BK20- PG-1020	8,9
31	BK26- PG-0210	8,9
32	BK26- PG-5202	8,9
1 33	BK26- PG-0510	8,9
34	BK26- PG-1101	10,11
35	BK26- PG-1102	10,11
36	BK26- PG-1111	10,11
37	BK26- PG-7110	10,11
38	BK26- PG-7111	10,11
39	BK26- PG-7112	10,11
40	BK26- PG-7113	10,11
41	BK26- PG-1103	12
42	BK26- PG-1501	13
43	BK26- PG-1502	13

NO	Equipment Tag No.	Page No.
44	BK26- PT-0001	14,15
45	BK26- PT-0002	14,15
46	BK26- PT-0003	14,15
47	BK26- PT-0004	14,15
48	BK26- PT-0005	14,15
49	BK26- PT-0006	14,15
50	BK26- PT-0007	14,15
51	BK26- PT-0008	14,15
52	BK26- PT-0009	14,15
53	BK26- PT-0021	14,15
54	BK26- PT-0022	14,15
55	BK26- PT-0023	14,15
56	BK26- PT-0024	14,15
57	BK26- PT-0025	14,15
58	BK26- PT-0026	14,15
59	BK26- PT-0027	14,15
60	BK26- PT-0028	14,15
61	BK26- PT-0029	14,15
62	BK26- PT-0031	14,15
63	BK26- PT-0032	14,15
64	BK26- PT-0033	14,15
65	BK26- PT-0034	14,15
66	BK26- PT-0035	14,15
67	BK26- PT-0036	14,15
68	BK26- PT-0037	14,15
69	BK26- PT-0038	14,15
70	BK26- PT-0039	14,15
71	BK26- PT-0041	14,15
72	BK26- PT-0042	14,15
73	BK26- PT-0043	14,15
74	BK26- PT-0044	14,15
75	BK26- PT-0045	14,15
76	BK26- PT-0046	14,15
77	BK26- PT-0047	14,15
78	BK26- PT-0048	14,15
79	BK26- PT-0049	14,15
80	BK26- PZT-1001	16,17
81	BK26- PZT-1002	16,17
82	BK26- PZT-1003	16,17
83	BK26- PZT-1005	16,17
84	BK26- PZT-1006	16,17
85	BK26- PZT-1007	16,17
86	BK26- PZT-1008	16,17

NO	Equipment Tag No.	Page No.
87	BK26- PZT-1009	16,17
88	BK26- PZT-0811	16,17
89	BK26- PZT-0812	16,17
90	BK26- PZT-0813	16,17
91	BK26- PZT-0814	16,17
92	BK26- PZT-0815	16,17
93	BK26- PZT-0816	16,17
94	BK26- PZT-0817	16,17
95	BK26- PZT-0818	16,17
96	BK26- PZT-0819	16,17
97	BK26- PT-0802	16,17
98	MSP8- PZT-0802	16,17
99	BK26- PT-1006	18,19
100	BK26- PT-1011	18,19
101	BK26- PT-1012	18,19
102	BK26- PT-1401	18,19
103	BK26- PZT-1402	18,19
104	BK26- PT-0201	18,19
105	BK26- PZT-0210	18,19
106	BK26- PZT-0501A	18,19
107	BK26- PZT-0501B	18,19
108	BK26- PZT-0501C	18,19
109	BK26- PZT-1403	18,19
110	BK26- PZT-1010	18,19
111	BK26- PZT-1020	18,19
112	BK26-PZT-0510A	18,19
113	BK26-PZT-0510B	18,19
114	BK26-PZT-0510C	18,19
115	BK26- PT-1101	20,21
116	BK26- PT-7110	20,21
117	BK26- PT-7111	20,21
118	BK26- PZT-7110	20,21
119	BK26- PZT-7111	20,21
120	BK26- PT-1501	22
121	BK26- PDT-0801	23
122	BK26- PDG-1010	24
123	BK26- PDT-8501	25,26
124	BK26- PDT-8502	25,26
125	BK26- PDT-8503	25,26
126	BK26- PDT-8504	25,26
127	BK26- PDT-8505	25,26
128	BK26- PDT-8506	25,26

1

GENERAL DATA	1	Tag Number		Qty.	See Next Page		9
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-002		#900
	3	Line No.	Line size		See Next Page		4"
	4						
	5						
OPERATING CONDITIONS	6	Fluid			Oil, Gas, Water Mixture		
	7	Oper. Press. Min/Op/Max barg			15	-	20
	8	Oper. Temp. Min/Op/Max degC			25	-	60
	9	Design Press.	Design Temp.		151 barg	-29-80 degC	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	0-40 barg	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	316 SS	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Direct mount		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Size			1/2" NPT-F x 1/2" NPT-F		
	26	Rating			3000 psig @200 degF (207 barg @ 93 degC)		
	27	Body material			316 SS		
DIAPHRAGM SEAL	28	Type			N/A		
	29	Process Connection			N/A		
	30						
ACCESSORIES	31	Overpressure Protector			YES, PISTON TYPE, 316SS		
	32	Mounting bracket			N/A		
	33	Snubber			N/A		
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

No	TAG	SERVICE DESCRIPTION	LINE No	NOTE
1	BK26-PG-0051	FLOWLINE WH-0001	CO-DC1-4"-0001-N	
2	BK26-PG-0052	FLOWLINE WH-0002	CO-DC1-4"-0001-N	
3	BK26-PG-0053	FLOWLINE WH-0003	CO-DC1-4"-0001-N	
4	BK26-PG-0054	FLOWLINE WH-0004	CO-DC1-4"-0001-N	
5	BK26-PG-0055	FLOWLINE WH-0005	CO-DC1-4"-0001-N	
6	BK26-PG-0056	FLOWLINE WH-0006	CO-DC1-4"-0001-N	
7	BK26-PG-0057	FLOWLINE WH-0007	CO-DC1-4"-0001-N	
8	BK26-PG-0058	FLOWLINE WH-0008	CO-DC1-4"-0001-N	
9	BK26-PG-0059	FLOWLINE WH-0009	CO-DC1-4"-0001-N	
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
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22				
23				
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35				

NOTES

GENERAL DATA	1	Tag Number		Qty.	See Next Page		11
	2	P&ID No.	Pipe class		See Next Page		See Next Page
	3	Line No.	Line size		See Next Page		See Next Page
	4						
	5						
OPERATING CONDITIONS	6	Fluid			HC Gas		
	7	Oper. Press. Min/Op/Max barg			95	-	110
	8	Oper. Temp. Min/Op/Max degC			20	-	45
	9	Design Press.	Design Temp.		130 barg	-29-80 degC	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	0-160 barg	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	316 SS	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Direct mount		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Size			1/2" NPT-F x 1/2" NPT-F		
	26	Rating			3000 psig @200 degF (207 barg @ 93 degC)		
	27	Body material			316 SS		
DIAPHRAGM SEAL	28	Type			N/A		
	29	Process Connection			N/A		
	30						
ACCESSORIES	31	Overpressure Protector			N/A		
	32	Mounting bracket			N/A		
	33	Snubber			N/A		
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

No	TAG	P& ID NO. (BK20.BK26-002-)	SERVICE DESCRIPTION	LINE No.	LINE SIZE (INCH)	PIPE CLASS	NOTE
1	BK26-PG-0811	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0001	GL-DC1-1 1/2"-0821-N	1 1/2"	#1500	
2	BK26-PG-0812	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0002	GL-DC1-1 1/2"-0822-N	1 1/2"	#1500	
3	BK26-PG-0813	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0003	GL-DC1-1 1/2"-0823-N	1 1/2"	#1500	
4	BK26-PG-0814	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0004	GL-DC1-1 1/2"-0824-N	1 1/2"	#1500	
5	BK26-PG-0815	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0005	GL-DC1-1 1/2"-0825-N	1 1/2"	#1500	
6	BK26-PG-0816	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0006	GL-DC1-1 1/2"-0826-N	1 1/2"	#1500	
7	BK26-PG-0817	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0007	GL-DC1-1 1/2"-0827-N	1 1/2"	#1500	
8	BK26-PG-0818	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0008	GL-DC1-1 1/2"-0828-N	1 1/2"	#1500	
9	BK26-PG-0819	TS.BK26-PR1-PID-005	GASLIFT LINE TO WELLHEAD WH-0009	GL-DC1-1 1/2"-0829-N	1 1/2"	#1500	
10	BK26-PG-0810	BR-PR1-PID-001	GASLIFT LINE FROM MSP8 TO BK26	GL-DC1-4"-0801-N	4"	#900	
11	MSP8-PG-0802	BR-PR1-PID-001	GASLIFT LINE FROM MSP8 TO BK27	GL-DC1-4"-0806-N	4"	#900	

NOTES

GENERAL DATA	1	Tag Number		Qty.	See Next Page	1	13
	2	P&ID No.	Pipe class		See Next Page		See Next Page
	3	Line No.	Line size		See Next Page		See Next Page
	4						
	5						
OPERATING CONDITIONS	6	Fluid			See Next Page		
	7	Oper. Press. Min/Op/Max barg			See Next Page		
	8	Oper. Temp. Min/Op/Max degC			See Next Page		
	9	Design Press.	Design Temp.		See Next Page	See Next Page	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	See Next Page	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	316 SS	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Direct mount		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Size			1/2" NPT-F x 1/2" NPT-F		
	26	Rating			1500 psig @200 degF (103 barg @ 93 degC)		
	27	Body material			316 SS		
DIAPHRAGM SEAL	28	Type			N/A		
	29	Process Connection			N/A		
	30						
ACCESSORIES	31	Overpressure Protector			N/A		
	32	Mounting bracket			N/A		
	33	Snubber			316SS, 1/2" NPT-M x 1/2" NPT-F (NOTE 3)		
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Applied for Tag. BK26-PG-0210, BK26-PG-5202,

PRESSURE GAUGE LIST-3

ITEM NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE DESCRIPTION	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	INST. RANGE (Barg)	PRESSURE (Barg)		TEMP. (Deg. C)		REMARK
					FLUID	STATE				DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PG-1006	TS.BK26-PR1-PID-003	INLET MANIFOLD - RELIEF HEADER	VT-AC1-6"-0218-IE	PROCESS MIX	GAS & LIQ.	4"	#150	**0 ÷ 10**	7	0-2	0 ÷ 80	38.4 ÷ 39.7	Gauge saver
2	BK26- PG-1401	TS.BK26-PR1-PID-004	TEST SEPARATOR PRESSURE	V-1401	PROCESS MIX	GAS & LIQ.	-	#300	**0 ÷ 40**	40	7.5-13.5	0 ÷ 80	38.8 ÷ 42.9	
3	BK26- PG-1011	TS.BK26-PR1-PID-004	START-UP FILTER F-1001 PRESSURE	F-1001	PROCESS MIX	GAS & LIQ.	-	#300	**0 ÷ 40**	40	8.2-13.9	0 ÷ 80	39 ÷ 43	
4	BK26- PG-0201	TS.BK26-PR1-PID-007	CLOSE DRAIN TANK V-200 PRESSURE	V-200	PROCESS MIX	GAS & LIQ.	-	#150	**0 ÷ 10**	7	0-2	-29 ÷ 80	0 ÷ 55	
5	BK26- PG-0301	TS.BK26-PR1-PID-007	OPEN DRAIN TANK V-300 PRESSURE	V-300	PROCESS MIX	GAS & LIQ.	-	#150	**0 ÷ 4**	7	0-2	-29 ÷ 80	0 ÷ 55	
6	BK26- PG-0501	TS.BK26-PR1-PID-008	AIR RECEIVER V-500 PRESSURE	V-500	INSTRUMENT AIR	AIR	-	#150	**0 ÷ 16**	12	9-11	0 ÷ 65	45	
7	BK26- PG-0503	TS.BK26-PR1-PID-008	AIR RECEIVER V-500 OULET PRESSURE	AU-AS1-2"-0507-N	INSTRUMENT AIR	AIR	2"	#150	**0 ÷ 16**	12	9-11	0 ÷ 65	45	
8	BK26- PG-1010	BR-PR1-PID-001	TEST HEADER FROM MSP-8 TO V-1401 on BK26	CO-BC1-4"-1024-N	PROCESS MIX	GAS & LIQ.	4"	#300	**0 ÷ 40**	40	15-20	0 ÷ 80	38.4 ÷ 39.7	
9	BK26- PG-1403	BR-PR1-PID-001	TEST HEADER FROM BK-26 TO MSP8	CO-BC1-4"-1403-N	PROCESS MIX	GAS & LIQ.	4"	#300	**0 ÷ 40**	40	15-20	0 ÷ 80	0 ÷ 55	
10	BK20- PG-1020	BR-PR1-PID-001	PRODUCTION HEADER FROM BK-26 TO MSP8	CO-BC1-8"-1001-N	PROCESS MIX	GAS & LIQ.	8"	#300	**0 ÷ 40**	40	15-20	0 ÷ 80	30 ÷ 60	
11	BK26- PG-0510	BR-PR1-PID-001	INSTRUMENT AIR FROM MSP8 TO BK26	AU-AS1-2"-0506-N	INSTRUMENT AIR	AIR	2"	#150	**0 ÷ 16**	12	9-10	0 ÷ 65	45 1	
12	BK26- PG-0210	TS.BK26-PR1-PID-007	DRAIN PUMP DISCHARGE PRESSURE	DC-BC1-2"-0206-IE	PROCESS MIX	GAS & LIQ.	2"	#300	**0 ÷ 40**	40	15-20	0 ÷ 80	30 ÷ 60	Snubber
13	BK26- PG-5202	TS.BK26-PR6-PID-002	FRESH WATER PUMP DISCHARGE PRESSURE	WW-AC5-2"-8023-N	FRESH WATER	WATER	2"	#150	**0 ÷ 16**	12	0-8	0 ÷ 45	21 ÷ 39	Snubber

GENERAL DATA	1	Tag Number		Qty.	See Next Page		7
	2	P&ID No.	Pipe class		See Next Page	See Next Page	
	3	Line No.	Line size		See Next Page	See Next Page	
	4						
	5						
OPERATING CONDITIONS	6	Fluid			See Next Page		
	7	Oper. Press. Min/Op/Max		barg	See Next Page		
	8	Oper. Temp. Min/Op/Max		degC	See Next Page		
	9	Design Press.	Design Temp.		See Next Page	See Next Page	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	See Next Page	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	Monel	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Direct mount		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Size			1/2" NPT-F x 1/2" NPT-F		
	26	Rating			6000 psig @200 degF (414 barg @ 93 degC) for other 1500 psig @200 degF (103 barg @ 93 degC) for item 4 to 7 sheet 11		
	27	Body material			Monel		
DIAPHRAGM SEAL	28	Type			N/A		
	29	Process Connection			N/A		
	30						
ACCESSORIES	31	Overpressure Protector			N/A		
	32	Mounting bracket			N/A		
	33	Snubber			N/A		
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

PRESSURE GAUGE LIST-4

ITEM NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE DESCRIPTION	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	INST. RANGE (Barg)	PRESSURE (Barg)		TEMP. (Deg. C)		REMARK
					FLUID	STATE				DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PG-1101	TS.BK26-PR1-PID-006	WATER INJECTION FROM MSP8	WI-FC3-4"-1101-N	SEA WATER	LIQUID	4"	#2500	**0 ÷ 400**	275	220-250	0 ÷ 65	AMB	
2	BK26- PG-1102	TS.BK26-PR1-PID-006	WELL KILLING HEADER	WI-FC3-3"-1110-N	SEA WATER	LIQUID	3"	#2500	**0 ÷ 400**	275	220-250	0 ÷ 65	AMB	
3	BK26- PG-1111	TS.BK26-PR1-PID-006	WATER INJECTION TO WI WELL	WI-FC3-3"-1113-N	SEA WATER	LIQUID	3"	#2500	**0 ÷ 400**	275	220-250	0 ÷ 65	AMB	
4	BK26- PG-7110	TS.BK26-PR6-PID-004	FIRE WATER SYSTEM FROM MSP8 TO BK26	FW-AB1-6"-7104-N	FIRE WATER	LIQUID	6"	#150	**0 ÷ 16**	10.5	-	0 ÷ 65	AMB	
5	BK26- PG-7111	TS.BK26-PR6-PID-004	FIRE WATER SYSTEM FROM MSP8 TO BK26	FW-AB1-6"-7105-N	FIRE WATER	LIQUID	6"	#150	**0 ÷ 16**	10.5	-	0 ÷ 65	AMB	
6	BK26- PG-7112	TS.BK26-PR6-PID-004	FIRE WATER RINGMAN	FW-AB1-6"-7115-N	FIRE WATER	LIQUID	6"	#150	**0 ÷ 16**	10.5	-	0 ÷ 65	AMB	
7	BK26- PG-7113	TS.BK26-PR6-PID-004	FIRE WATER RINGMAN	FW-AB1-6"-7116-N	FIRE WATER	LIQUID	6"	#150	**0 ÷ 16**	10.5	-	0 ÷ 65	AMB	

GENERAL DATA	1	Tag Number		Qty.	BK26-PG-1103		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-006		#150
	3	Line No.	Line size		WI-AC1-2"-1104-N		2"
	4						
	5						
OPERATING CONDITIONS	6	Fluid			Sea Water		
	7	Oper. Press. Min/Op/Max barg			1	2-3	5
	8	Oper. Temp. Min/Op/Max degC				AMBIENT	
	9	Design Press.	Design Temp.		12 barg	0-65 degC	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	0-16 barg	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Glycerine	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	MONEL	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Direct mount		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Size			1/2" NPT-F x 1/2" NPT-F		
	26	Rating			1500 psig @200 degF (103 barg @ 93 degC)		
	27	Body material			Monel		
DIAPHRAGM SEAL	28	Type			N/A		
	29	Process Connection			N/A		
	30						
ACCESSORIES	31	Overpressure Protector			N/A		
	32	Mounting bracket			N/A		
	33						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number		Qty.	BK26-PG-1501, BK26-PG-1502		2
	2	P&ID No.	Pipe class		MSP8.BK26-TS.BK26-PR1-PID-002		#1500
	3	Line No.	Line size		ST-DC2-2"-1504-IH/ST-DC2-2"-1506-IH		2"
	4						
	5						
OPERATING CONDITIONS	6	Fluid			Steam		
	7	Oper. Press. Min/Op/Max barg				0-100	
	8	Oper. Temp. Min/Op/Max degC				20-310	
	9	Design Press.	Design Temp.		125 barg	0-325 degC	
	10						
	11						
GAUGE	12	Type	Range		Direct Reading	0-160 barg	
	13	Accuracy	Overpress. Limit		± 1 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Bourdon Tube	316 SS	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Remote mounting		
	23						
MANIFOLD	24	Type			2-Valves (Block and Bleed)		
	25	Connection Instr.	Process		1/2" NPT-F x 1/2" NPT-F		
	26	Rating			3000 psig @750 degF (207 barg @ 400 degC)		
	27	Body material			316 SS		
	28						
Diaphram Seal	29	Design Type			Welded design		
	30	Material			316 SS		
	31	Operating temperature			Up to 752 degF (400 degC)		
	32	Process connection			1/2" NPT-M		
	33	Capillary Line	Length		Yes, 316 SS	Min 5 feet (1.5 m)	
	34	System Fill Fluids			High-temperature silicone oil		
ACCESSORIES	35	Overpressure Protector			N/A		
	36	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	37						
PURCHASE	38	Manufacturer			VTA		
	39	Model			VTA		
	40						

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MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number	Qty.	See Next Page	36	
	2	P&ID No.	Pipe class	See Next Page	See Next Page	
	3	Line No.	Line size	See Next Page	See Next Page	
	4	Hazardous Area Classification		Zone 2 IIA T3		
	5					
OPERATING CONDITIONS	6	Fluid		See Next Page		
	7	Oper. Press. Min/Op/Max barg		See Next Page		
	8	Oper. Temp. Min/Op/Max degC		See Next Page		
	9	Design Press.		See Next Page		
	10	Design Temp.		See Next Page		
	11					
TRANSMITTER	12	Instr. range	Calibrated range	See Next Page	See Next Page	
	13	Accuracy	Overpress. Limit	± 0.25 % of Span	1.3 x Design Pressure	
	14	Output signal	Power supply	4-20 mA HART, 2-wire	24 V DC , loop powered	
	15	Element type	Material	Diaphragm	316 SS	
	16	Fill Fluid		MfrStd		
	17	Housing material		316 SS NOTE 1		
	18	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F NOTE 2	
	19	Cable Gland		cable entry plugged		
	20	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	21	Safety Integrity Level		See Next Page		
	22					
MANIFOLD	23	Type		2-Valves (Block and Bleed)		
	24	Size		1/2" NPT-F x 1/2" NPT-F		
	25	Rating		3000 psig @200 degF (207 barg @ 93 degC)		
	26	Body material		316 SS		
DIAPHRAGM SEAL	27	Type		N/A		
	28	Process Connection		N/A		
	29					
ACCESSORIES	30	Integral Meter		YES (LCD)		
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS		
	32					
PURCHASE	33	Manufacturer		VTA		
	34	Model		VTA		
	35					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.

PRESSURE TRANSMITTER (PT) EQUIPMENT LIST-1

NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE / LINE NO.	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	SIL LEVEL	INSTR. RANGE (Barg)	CALIB. RANGE (Barg)	PRESSURE (Barg)		TEMPERATURE (Deg. C)		REMARK
					FLUID	STATE						DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PT-0001	TS.BK26-PR1-PID-002	WELLHEAD WH-0001	WH-0001	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
2	BK26- PT-0002	TS.BK26-PR1-PID-002	WELLHEAD WH-0002	WH-0002	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
3	BK26- PT-0003	TS.BK26-PR1-PID-002	WELLHEAD WH-0003	WH-0003	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
4	BK26- PT-0004	TS.BK26-PR1-PID-002	WELLHEAD WH-0004	WH-0004	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
5	BK26- PT-0005	TS.BK26-PR1-PID-002	WELLHEAD WH-0005	WH-0005	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
6	BK26- PT-0006	TS.BK26-PR1-PID-002	WELLHEAD WH-0006	WH-0006	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
7	BK26- PT-0007	TS.BK26-PR1-PID-002	WELLHEAD WH-0007	WH-0007	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
8	BK26- PT-0008	TS.BK26-PR1-PID-002	WELLHEAD WH-0008	WH-0008	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
9	BK26- PT-0009	TS.BK26-PR1-PID-002	WELLHEAD WH-0009	WH-0009	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
10	BK26- PT-0021	TS.BK26-PR1-PID-002	WELLHEAD WH-0001 - ANNULUS	WH-0001	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
11	BK26- PT-0022	TS.BK26-PR1-PID-002	WELLHEAD WH-0002 - ANNULUS	WH-0002	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
12	BK26- PT-0023	TS.BK26-PR1-PID-002	WELLHEAD WH-0003 - ANNULUS	WH-0003	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
13	BK26- PT-0024	TS.BK26-PR1-PID-002	WELLHEAD WH-0004 - ANNULUS	WH-0004	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
14	BK26- PT-0025	TS.BK26-PR1-PID-002	WELLHEAD WH-0005 - ANNULUS	WH-0005	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
15	BK26- PT-0026	TS.BK26-PR1-PID-002	WELLHEAD WH-0006 - ANNULUS	WH-0006	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
16	BK26- PT-0027	TS.BK26-PR1-PID-002	WELLHEAD WH-0007 - ANNULUS	WH-0007	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
17	BK26- PT-0028	TS.BK26-PR1-PID-002	WELLHEAD WH-0008 - ANNULUS	WH-0008	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
18	BK26- PT-0029	TS.BK26-PR1-PID-002	WELLHEAD WH-0009 - ANNULUS	WH-0009	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
19	BK26- PT-0031	TS.BK26-PR1-PID-002	WELLHEAD WH-0001 - WELL CASING	WH-0001	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
20	BK26- PT-0032	TS.BK26-PR1-PID-002	WELLHEAD WH-0002 - WELL CASING	WH-0002	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
21	BK26- PT-0033	TS.BK26-PR1-PID-002	WELLHEAD WH-0003 - WELL CASING	WH-0003	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
22	BK26- PT-0034	TS.BK26-PR1-PID-002	WELLHEAD WH-0004 - WELL CASING	WH-0004	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
23	BK26- PT-0035	TS.BK26-PR1-PID-002	WELLHEAD WH-0005 - WELL CASING	WH-0005	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
24	BK26- PT-0036	TS.BK26-PR1-PID-002	WELLHEAD WH-0006 - WELL CASING	WH-0006	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
25	BK26- PT-0037	TS.BK26-PR1-PID-002	WELLHEAD WH-0007 - WELL CASING	WH-0007	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
26	BK26- PT-0038	TS.BK26-PR1-PID-002	WELLHEAD WH-0008 - WELL CASING	WH-0008	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
27	BK26- PT-0039	TS.BK26-PR1-PID-002	WELLHEAD WH-0009 - WELL CASING	WH-0009	PROCESS MIX	GAS & LIQ.	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	15-100	80	26-58	
28	BK26- PT-0041	TS.BK26-PR1-PID-002	WELLHEAD WH-0001 - GASLIFT	WH-0001	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
29	BK26- PT-0042	TS.BK26-PR1-PID-002	WELLHEAD WH-0002 - GASLIFT	WH-0002	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
30	BK26- PT-0043	TS.BK26-PR1-PID-002	WELLHEAD WH-0003 - GASLIFT	WH-0003	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
31	BK26- PT-0044	TS.BK26-PR1-PID-002	WELLHEAD WH-0004 - GASLIFT	WH-0004	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
32	BK26- PT-0045	TS.BK26-PR1-PID-002	WELLHEAD WH-0005 - GASLIFT	WH-0005	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
33	BK26- PT-0046	TS.BK26-PR1-PID-002	WELLHEAD WH-0006 - GASLIFT	WH-0006	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
34	BK26- PT-0047	TS.BK26-PR1-PID-002	WELLHEAD WH-0007 - GASLIFT	WH-0007	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
35	BK26- PT-0048	TS.BK26-PR1-PID-002	WELLHEAD WH-0008 - GASLIFT	WH-0008	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	
36	BK26- PT-0049	TS.BK26-PR1-PID-002	WELLHEAD WH-0009 - GASLIFT	WH-0009	GASLIFT GAS	GAS	-	API 5000	N/A	VTA	0 ÷ 160	API 5000	55-110	80	0-25	

GENERAL DATA	1	Tag Number		Qty.	See Next Page		20
	2	P&ID No.	Pipe class		See Next Page		See Next Page
	3	Line No.	Line size		See Next Page		See Next Page
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			See Next Page		
	7	Oper. Press. Min/Op/Max barg			See Next Page		
	8	Oper. Temp. Min/Op/Max degC			See Next Page		
	9	Design Press.			See Next Page		
	10	Design Temp.			See Next Page		
	11						
TRANSMITTER	12	Instr. range	Calibrated range		See Next Page	See Next Page	
	13	Accuracy	Overpress. Limit		± 0.25 % of Span	1.3 x Design Pressure	
	14	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered	
	15	Element type	Material		Diaphragm	316 SS	
	16	Fill Fluid			MfrStd		
	17	Housing material			316 SS NOTE 1		
	18	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 2	
	19	Cable Gland			cable entry plugged		
	20	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	21	Safety Integrity Level			See Next Page		
	22						
MANIFOLD	23	Type			2-Valves (Block and Bleed)		
	24	Size			1/2" NPT-F x 1/2" NPT-F		
	25	Rating			3000 psig @200 degF (207 barg @ 93 degC)		
	26	Body material			316 SS		
DIAPHRAGM SEAL	27	Type			N/A		
	28	Process Connection			N/A		
	29						
ACCESSORIES	30	Integral Meter			YES (LCD)		
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	32						
PURCHASE	33	Manufacturer			VTA		
	34	Model			VTA		
	35						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.

PRESSURE TRANSMITTER (PT) EQUIPMENT LIST-2

NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE / LINE NO.	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	SIL LEVEL	INSTR. RANGE (Barg)	CALIB. RANGE (Barg)	PRESSURE (Barg)		TEMPERATURE (Deg. C)		REMARK
					FLUID	STATE						DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PZT-1001	TS.BK26-PR1-PID-003	WELL WH-0001 FLOWLINE	CO-DC1-4"-0001-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
2	BK26- PZT-1002	TS.BK26-PR1-PID-003	WELL WH-0002 FLOWLINE	CO-DC1-4"-0002-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
3	BK26- PZT-1003	TS.BK26-PR1-PID-003	WELL WH-0003 FLOWLINE	CO-DC1-4"-0003-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
4	BK26- PZT-1004	TS.BK26-PR1-PID-003	WELL WH-0004 FLOWLINE	CO-DC1-4"-0004-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
5	BK26- PZT-1005	TS.BK26-PR1-PID-003	WELL WH-0005 FLOWLINE	CO-DC1-4"-0005-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
6	BK26- PZT-1006	TS.BK26-PR1-PID-003	WELL WH-0006 FLOWLINE	CO-DC1-4"-0006-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
7	BK26- PZT-1007	TS.BK26-PR1-PID-003	WELL WH-0007 FLOWLINE	CO-DC1-4"-0007-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
8	BK26- PZT-1008	TS.BK26-PR1-PID-003	WELL WH-0008 FLOWLINE	CO-DC1-4"-0008-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
9	BK26- PZT-1009	TS.BK26-PR1-PID-003	WELL WH-0009 FLOWLINE	CO-DC1-4"-0009-N	PROCESS MIX	GAS & LIQ.	4"	#900	SIL2	VTA	0 ÷ 40	151	15-20	0-80	25-60	
10	BK26- PZT-0811	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0001	GL-DC1-1 1/2"-0821-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
11	BK26- PZT-0812	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0002	GL-DC1-1 1/2"-0822-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
12	BK26- PZT-0813	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0003	GL-DC1-1 1/2"-0823-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
13	BK26- PZT-0814	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0004	GL-DC1-1 1/2"-0824-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
14	BK26- PZT-0815	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0005	GL-DC1-1 1/2"-0825-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
15	BK26- PZT-0816	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0006	GL-DC1-1 1/2"-0826-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
16	BK26- PZT-0817	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0007	GL-DC1-1 1/2"-0827-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
17	BK26- PZT-0818	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0008	GL-DC1-1 1/2"-0828-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
18	BK26- PZT-0819	TS.BK26-PR1-PID-005	GASLIFT LINE TO WH-0009	GL-DC1-1 1/2"-0829-N	GASLIFT GAS	GAS	1 1/2"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	
19	BK26- PT-0802	TS.BK26-PR1-PID-005	GASLIFT HEADER	GL-DC1-4"-0801-N	GASLIFT GAS	GAS	4"	#900	N/A	VTA	0 ÷ 160	130	95-110	0-45	0-25	
20	MSP8- PZT-0802	BR-PR1-PID-001	GASLIFT LINE FROM MSP8 TO BK26	GL-DC1-4"-0806-N	GASLIFT GAS	GAS	4"	#900	SIL2	VTA	0 ÷ 160	130	95-110	0-45	0-25	

GENERAL DATA	1	Tag Number		Qty.	See Next Page	1	16
	2	P&ID No.	Pipe class		See Next Page	See Next Page	
	3	Line No.	Line size		See Next Page	See Next Page	
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			See Next Page		
	7	Oper. Press. Min/Op/Max barg			See Next Page		
	8	Oper. Temp. Min/Op/Max degC			See Next Page		
	9	Design Press.			See Next Page		
	10	Design Temp.			See Next Page		
	11						
TRANSMITTER	12	Instr. range	Calibrated range		See Next Page	See Next Page	
	13	Accuracy	Overpress. Limit		± 0.25 % of Span	1.3 x Design Pressure	
	14	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered	
	15	Element type	Material		Diaphragm	316 SS	
	16	Fill Fluid			MfrStd		
	17	Housing material			316 SS NOTE 1		
	18	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 2	
	19	Cable Gland			cable entry plugged		
	20	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	21	Safety Integrity Level			See Next Page		
	22						
MANIFOLD	23	Type			2-Valves (Block and Bleed)		
	24	Size			1/2" NPT-F x 1/2" NPT-F		
	25	Rating			1500 psig @200 degF (103 barg @ 93 degC)		
	26	Body material			316 SS		
DIAPHRAGM SEAL	27	Type			N/A		
	28	Process Connection			N/A		
	29						
ACCESSORIES	30	Integral Meter			YES (LCD)		
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	32						
PURCHASE	33	Manufacturer			VTA		
	34	Model			VTA		
	35						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.

PRESSURE TRANSMITTER (PT) LIST-3

NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE / LINE NO.	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	SIL LEVEL	INSTR. RANGE (Barg)	CALIB. RANGE (Barg)	PRESSURE (Barg)		TEMPERATURE (Deg. C)		REMARK
					FLUID	STATE						DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PT-1006	TS.BK26-PR1-PID-003	IM-1000 RELIEF HEADER PRESSURE	VT-AC1-6"-0218-IE	PROCESS MIX	GAS & LIQ.	4"	#150	N/A	VTA	0 ÷ 40	7	0-2	0 ÷ 80	38.4 ÷ 39.7	
2	BK26- PT-1011	TS.BK26-PR1-PID-003	PRODUCTION HEADER PRESSURE	CO-BC1-8"-1001-N	PROCESS MIX	GAS & LIQ.	8"	#300	N/A	VTA	0 ÷ 40	40	15-20	0-80	25-60	
3	BK26- PT-1012	TS.BK26-PR1-PID-003	TEST HEADER PRESSURE	CO-BC1-4"-1002-N	PROCESS MIX	GAS & LIQ.	4"	#300	N/A	VTA	0 ÷ 40	40	15-20	0-80	25-60	
4	BK26- PT-1401	TS.BK26-PR1-PID-004	TEST SEPARATOR V-1401	V-1401	PROCESS MIX	GAS & LIQ.	-	#300	N/A	VTA	0 ÷ 40	40	15-20	0-80	25-60	
5	BK26- PZT-1402	TS.BK26-PR1-PID-004	TEST SEPARATOR V-1401	V-1401	PROCESS MIX	GAS & LIQ.	-	#300	SIL2	VTA	0 ÷ 40	40	15-20	0-80	25-60	
6	BK26- PT-0201	TS.BK26-PR1-PID-007	CLOSED DRAIN TANK V-200 PRESSURE	V-200	PROCESS MIX	GAS & LIQ.	-	#150	N/A	VTA	0 ÷ 10	7	0-2	0-80	0-55	
7	BK26- PZT-0210	TS.BK26-PR1-PID-007	DRAIN PUMP H-211 DISCHARGE PRESS.	DC-BC1-2"-0206-IE	PROCESS MIX	GAS & LIQ.	2"	#300	SIL2	VTA	0 ÷ 40	40	15-27	0-80	25-55	
8	BK26- PZT-0501A	TS.BK26-PR1-PID-008	AIR RECEIVER V-500 OUTLET PRESS.	AU-AS1-2"-0507-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	
9	BK26- PZT-0501B	TS.BK26-PR1-PID-008	AIR RECEIVER V-500 OUTLET PRESS.	AU-AS1-2"-0507-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	
10	BK26- PZT-0501C	TS.BK26-PR1-PID-008	AIR RECEIVER V-500 OUTLET PRESS.	AU-AS1-2"-0507-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	
11	BK26- PZT-1403	BR-PR1-PID-001	FROM TEST SEPARATOR ON BK26 TO MSP8	CO-BC1-4"-1403-N	PROCESS MIX	GAS & LIQ.	4"	#300	SIL2	VTA	0 ÷ 40	40	15-20	0-80	25-60	
12	BK20- PZT-1020	BR-PR1-PID-001	PRODUCTION HEADER FROM BK26 TO MSP8	CO-BC1-8"-1001-N	PROCESS MIX	GAS & LIQ.	8"	#300	SIL2	VTA	0 ÷ 40	40	15-20	0-80	25-60	
13	BK20- PZT-1010	BR-PR1-PID-001	TEST HEADER FROM BK26 TO MSP8	CO-BC1-4"-1024-N	PROCESS MIX	GAS & LIQ.	4"	#300	SIL2	VTA	0 ÷ 40	40	15-20	0-80	25-60	
14	BK26- PZT-0510A	BR-PR1-PID-001	INSTRUMENT AIR FROM MSP8 TO BK26	AU-AS1-2"-0506-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	
15	BK26- PZT-0510B	BR-PR1-PID-001	INSTRUMENT AIR FROM MSP8 TO BK26	AU-AS1-2"-0506-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	
16	BK26- PZT-0510C	BR-PR1-PID-001	INSTRUMENT AIR FROM MSP8 TO BK26	AU-AS1-2"-0506-N	INSTRUMENT AIR	AIR	2"	#150	SIL2	VTA	0-16	12	4-9	0-45	25	

1

GENERAL DATA	1	Tag Number		Qty.	See Next Page		5
	2	P&ID No.	Pipe class		See Next Page	See Next Page	
	3	Line No.	Line size		See Next Page	See Next Page	
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			See Next Page		
	7	Oper. Press. Min/Op/Max barg			See Next Page		
	8	Oper. Temp. Min/Op/Max degC			See Next Page		
	9	Design Press.			See Next Page		
	10	Design Temp.			See Next Page		
	11						
TRANSMITTER	12	Instr. range	Calibrated range		See Next Page	See Next Page	
	13	Accuracy	Overpress. Limit		± 0.25 % of Span	1.3 x Design Pressure	
	14	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered	
	15	Element type	Material		Diaphragm	MONEL	
	16	Fill Fluid			MfrStd		
	17	Housing material			316 SS NOTE 1		
	18	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 2	
	19	Cable Gland			cable entry plugged		
	20	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	21	Safety Integrity Level			See Next Page		
	22						
MANIFOLD	23	Type			2-Valves (Block and Bleed)		
	24	Size			1/2" NPT-F x 1/2" NPT-F		
	25	Rating			6000 psig @200 degF (414 bar @ 93 degC) for Item 1 sheet 21		
					1500 psig @200 degF (103 barg @ 93 degC) for other		
	26	Body material			316 SS		
DIAPHRAGM SEAL	27	Type			N/A		
	28	Process Connection			N/A		
	29						
ACCESSORIES	30	Integral Meter			YES (LCD)		
	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	32						
PURCHASE	33	Manufacturer			VTA		
	34	Model			VTA		
	35						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.

PRESSURE TRANSMITTER (PT) LIST-4

NO.	TAG NO.	P& ID NO. (BK20.BK26-002-)	SERVICE / LINE NO.	LINE NO./ EQUIPMENT NO.	FLUID/STATE		LINE SIZE (INCH)	PIPE CLASS	SIL LEVEL	INSTR. RANGE (Barg)	CALIB. RANGE (Barg)	PRESSURE (Barg)		TEMPERATURE (Deg. C)		REMARK
					FLUID	STATE						DESIGN	OPER.	DESIGN	OPER.	
1	BK26- PT-1101	TS.BK26-PR1-PID-006	WATER INJECTION FROM MSP8	WI-FC3-4"-1101-N	INJECTION WATER	LIQUID	4"	#2500	N/A	VTA	0 ÷ 400	275	220-250	0 ÷ 65	AMB	
2	BK26- PT-7110	TS.BK26-PR6-PID-004	FIRE WATER SYSTEM FROM MSP8 TO BK26	FW-AB1-6"-7104-N	FIRE WATER	LIQUID	6"	#150	N/A	VTA	0 ÷ 16	10.5	-	0 ÷ 65	AMB	
3	BK26- PT-7111	TS.BK26-PR6-PID-004	FIRE WATER RINGMAN	FW-AB1-6"-7115-N	FIRE WATER	LIQUID	6"	#150	N/A	VTA	0 ÷ 16	10.5	-	0 ÷ 65	AMB	
4	BK26- PZT-7110	TS.BK26-PR6-PID-004	FIRE WATER SYSTEM FROM MSP8 TO BK26	FW-AB1-6"-7105-N	FIRE WATER	LIQUID	6"	#150	SIL2	VTA	0 ÷ 16	10.5	-	0 ÷ 65	AMB	
5	BK26- PZT-7111	TS.BK26-PR6-PID-004	FIRE WATER RINGMAN	FW-AB1-6"-7116-N	FIRE WATER	LIQUID	6"	#150	SIL2	VTA	0 ÷ 16	10.5	-	0 ÷ 65	AMB	

GENERAL DATA	1	Tag Number		Qty.	BK26-PT-1501		1
	2	P&ID No.	Pipe class		MPS8.BK26-TS.BK26-PR1-PID-002		#900
	3	Line No.	Line size		ST-DC2-2"-1504-IH		2"
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			Steam		
	7	Oper. Press. Min/Op/Max barg				0-100	
	8	Oper. Temp. Min/Op/Max degC			20	-	310
	9	Design Press.	Design Temp.		115 barg	0-325degC	
	10						
	11						
TRANSMITTER	12	Instr. range	Calibrated range		0-160 barg (VTA)	0-160 barg	
	13	Accuracy	Overpress. Limit		± 0.25 % of Span	1.3 x Design Pressure	
	14	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered	
	15	Element type	Material		Diaphragm	316 SS	
	16	Fill Fluid			MfrStd		
	17	Housing material			316 SS NOTE 1		
	18	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 2	
	19	Cable Gland			cable entry plugged		
	20	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	21	Safety Integrity Level			N/A		
	22						
MANIFOLD	23	Type			2-Valves (Block and Bleed) NOTE 3		
	24	Size			1/2" NPT-F x 1/2" NPT-F		
	25	Rating			3000 psig @752 degF (207 barg @ 400 degC)		
	26	Body material			316 SS		
	27						
Diaphram Seal	28	Design Type			Welded design		
	29	Material			316 SS		
	30	Operating temperature			Up to 752 degF (400 degC) at 3000 psig (207 barg)		
	31	Process connection			1/2" NPT-M		
	32	Capillary Line	Length		Yes, 316 SS	Min 5 feet (1.5 m)	
	33	System Fill Fluids			High-temperature silicone oil		
ACCESSORIES	34	Integral Meter			YES (LCD)		
	35	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	36						
PURCHASE	37	Manufacturer			VTA		
	38	Model			VTA		
	39						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
3. Manifold shall c/w 316 SS plug for vent/drain/test port.
4. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number	Qty	**PDT-0801**		1
	2	P&ID No.	Pipe Class	BK20.BK24-002-TS.BK24-PR1-PID-005		#900
	3	Line No.	Line Size	SFS-0801		
	4	Location		Gaslift Filter		
	5					
OPERATING CONDITIONS	6	Fluid		Hydrocarbon Gas		
	7			**Minimum**	**Normal**	**Maximum**
	8	Oper. Press. Min/Op/Max barg		100	105-107	110
	9	Oper. Temp. Min/Op/Max degC		20	AMBIENT	40
	10	Design Press.	Design Temp.	130 barg	0-45 °C	
	11					
TRANSMITTER	12	Type		Differential Pressure Transmitter		
	13	Instr. range	Calibrated range	**0-2.5 barg (VTA)**	**0-2.5 barg**	
	14	Accuracy	Overpress. Limit	± 0.25 % of Span	1.3 x Design Pressure	
	15	Adjustable Zero	Adjustable Span	YES	YES	
	16	Output signal	Power supply	4-20 mA HART, 2-wire	24 V DC , loop powered	
	17	Element type	Material	Diaphragm	316 SS	
	18	Fill Fluid		Manufacturer Standard		
	19	Housing material		316 SS		
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F	
	21	Cable Gland		cable entry plugged (Note 1)		
	22	Expl. Protection	Ingress Protec.	Ex 'd' IIA T3 (IEC)	IP 56 min	
	23	Hazardous Area Classification		Zone 2 IIA T3		
	24	Safety Integrity Level		N/A		
MANIFOLD	25	Type		5-Valves Manifold Integral to the Transmitter		
	26	Size		1/2" NPT-F		
	27	Rating		3000 psig @ 200 °F (207 barg @ 93 °C)		
	28	Body material		316 SS		
	29					
ACCESSORIES	30	Integral Meter		YES (LCD)		
	31	Mounting bracket		YES, for 2-inch pole stand, 316 SS		
	32	Over pressure Protector		VTA		
PURCHASE	33	Manufacturer		VTA		
	34	Model		VTA		
	35					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

NOTES

1. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.
2. Manifold shall c/w 316 SS plug for vent/drain/test port.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.
4. Refer Doc No. "BK14.BT7.BK24-001-GE-IA2-SP-003 General Instrument Specification" for more details.

GENERAL DATA	1	Tag Number		Qty.	BK26-PDG-1010		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-004	#300	
	3	Line No.	Line size		F-1001		
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			GAS & LIQ. MIXTURE		
	7	Oper. Press. Min/Op/Max barg			15	18	20
	8	Oper. Temp. Min/Op/Max degC			30	40-45	60
	9	Design Press.	Design Temp.		45 barg	0-80 degC	
	10	Oper. Diff Pressure			2.5 bar		
	11						
GAUGE	12	Type	Range		Direct Reading	0-2.5 barg	
	13	Accuracy	Overpress. Limit		± 1.6 % FS	1.3 x Design Pressure	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Case Material	Window		316 SS	Shatterproof glass	
	17	Liqued Filled	Adjustable Zero		YES, Silicone	YES	
	18	Blow-out			YES, Solidfront and blow-out back		
	19	Element Type	Material		Diaphragm	316 SS	
	20	Connection Size	Layout		1/2" NPT-M	Bottom	
	21	Ingress Protection			IP 56 min		
	22	Mounting			Remote Mounting		
	24						
MANIFOLD	25	Type			5-Valves (Block, Vent, Equalize), Integral to Instrument		
	26	Size			1/2" NPT-F		
	27	Rating			1500 psig @200 degF (103 bar @ 93 degC)		
	28	Body material			316 SS		
DIAPHRAGM SEAL	27	Type			N/A		
	28	Process Connection			N/A		
	29						
ACCESSORIES	31	Mounting bracket			YES, for 2-inch pole stand, 316 SS		
	32	Overpressure protector			N/A		
	33						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Manifold shall c/w 316 SS plug for vent/drain/test port.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number	Qty	See Next Page			6
	2	P&ID No.		See Next Page			
	3	Location		See Next Page			
	4	Hazardous Area Classification		See Next Page			
	5						
OPERATING CONDITIONS	6	Fluid		Clean Air			
	7			**Minimum**	**Normal**	**Maximum**	
	8	Oper. Press. Min/Op/Max Pa		0	-	55	
	9	Oper. Temp. Min/Op/Max degC		15	25	45	
	10	Design Press.	Design Temp.	See Next Page		0-50 °C	
	11	Humidity		< 95 % r.H., non-precipitating air			
TRANSMITTER	12	Type		Differential Pressure Transmitter			
	13	Instr. range	Calibrated range	**(-600) - 600 Pa (VTA)**		**0 - 600 Pa**	
	14	Accuracy	Overpress. Limit	± 1% of Span		1.3 x Design Pressure	
	15	Adjustable Zero	Adjustable Span	YES		YES	
	16	Output signal	Power supply	4-20 mA HART, 2-wire		24 V DC , loop powered	
	17	Element type	Material	Piezo-resistive		VTA	
	18	Housing material		316 SS (NOTE 1)			
	19	Process conn.	Electrical Conn.	Sleeves Ø 6 mm		M20 (NOTE 2)	
	20	Expl. Protection	Ingress Protec.	See Next Page		IP 44 min	
	21	Safety Integrity Level		N/A			
HVAC CONNECTION	22	Duct Penetration/ Connection Set		YES, 02 Sets, 316 SS			
	23	Sensing Tubes	Material	YES, flexible		VTA	
	24	Size	Length	ID 6 mm		2 x 10 m	
ACCESSORIES	25	Integral Meter		YES (LCD)			
	26	Mounting bracket		YES, Wall Mounting Accessories			
PURCHASE	27	Manufacturer		VTA			
	28	Model		VTA			

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NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Vendor shall supply Plugs suitable for area classification for spare cable entry.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.

NO	TAG	P&ID No. (MSP8.BK26-002-___)	SERVICE	HAZARDOUS AREA CLASSIFICATION	Explosion Protection	Ingress Protection	Design Press. Range (Pa)	REMARK
1	**BK26-PDT-8501**	TS-VC6-PID-001	E&I Room Diff. Pressure	Indoor, Safe Area	**N/A**	**IP44 min**	0-100	
2	**BK26-PDT-8502**	TS-VC6-PID-001	Filter FC-8501 Diff. Pressure	Outdoor, Safe Area	**Ex d IIA T3 (IEC)**	**IP56 min**	0-400	
3	**BK26-PDT-8503**	TS-VC6-PID-001	Exhaust Fan AF-8501A Diff. Pressure	Outdoor, Safe Area	**Ex d IIA T3 (IEC)**	**IP56 min**	0-400	
4	**BK26-PDT-8504**	TS-VC6-PID-001	Exhaust Fan AF-8501B Diff. Pressure	Outdoor, Safe Area	**Ex d IIA T3 (IEC)**	**IP56 min**	0-400	
5	**BK26-PDT-8505**	TS-VC6-PID-001	Exhaust Fan AF-8502A Diff. Pressure	Outdoor, Safe Area	**Ex d IIA T3 (IEC)**	**IP56 min**	0-400	
6	**BK26-PDT-8506**	TS-VC6-PID-001	Exhaust Fan AF-8502B Diff. Pressure	Outdoor, Safe Area	**Ex d IIA T3 (IEC)**	**IP56 min**	0-400	

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEETS FOR TEMPERATURE INSTRUMENTS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-007

PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Lương Thuỳ Dương Date: 12/05/2025 16:21:42 Certified by: Vietsovpetro CA	Signed by: Cao Tùng Lâm Date: 14/05/2025 09:52:44 Certified by: Vietsovpetro CA
				PIPING:	**PROCESS:**
			Signed by: Vũ Thi Mơ Date: 14/05/2025 14:03:52 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 14/05/2025 15:46:57 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 14/05/2025 21:49:59 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N.TIEP**	**PRO.MGR: T.D.HAI**
0	IFA	09.05.2025	Signed by: Nguyễn hải Chung Date: 09/05/2025 15:51:43 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 14.05.2025 13:40:27 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: N.H.CHUNG**	**CHECKED: N.H.CHUNG**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issued for Approval	

GENERAL DATA	1	Tag Number	Qty.	BK26-TG-1401		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-TS.BK26-PR1-PID-004		
	3	Line No.	Line size	V-1401		
	4					
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.5		13.5
	8	Oper. Temp. Min/Op/Max degC		38.8		42.9
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.62-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 3.05 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)		42.8 (ID) x 350 (Length)	
GAUGE	12	Type	Option	Bi-metal	with Silicone oil dampener	
	13	Range	Accuracy	0-100 degC	± 1 % FS	
	14	Dial Size		100 mm		
	15	Dial Color		Black Letters on White Background		
	16	Window		Shatterproof glass		
	17	Adjustable Pointer		YES		
	18	Case Orientation		Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.	316 SS	IP 56 min	
	20	Stem Material	Stem Length	316 SS	to suit Thermowell	
	21	Process conn.		1/2" NPT-M		
	22					
THERMOWELL	23	Type		Flanged with Tapered drilled bar stock		
	24	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	25	Body material		316 SS		
	26	Connection Length (H)		minimal by MfrStd		
	27	Insertion Length (U)		500 mm		
	28	Plug & Chain, Material		YES, Required, 316 SS		
	29					
PURCHASE	30	Manufacturer		VTA		
	31	Model		VTA		
	32					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number		Qty.	BK26-TG-0801		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-005		#900
	3	Line No.	Line size		GL-DC1-1-4"-0801-N		4" Sch.120
	4						
	5						
OPERATING CONDITIONS	6	Fluid			Hydrocarbon Gas		
	7	Oper. Press. Min/Op/Max barg			100	105-107	110
	8	Oper. Temp. Min/Op/Max degC			20	-	25
	9	Design Press.	Design Temp.		125 barg	0-45 degC	
	10	Fluid Density	Fluid Viscosity		120-135 kg/m3 @OperCond.	0.017 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)		5 m/s (max)	42.8 (ID) x 165.5 (Length)	
GAUGE	12	Type	Option		Bi-metal	with Silicone oil dampener	
	13	Range	Accuracy		0-60 degC	± 1 % FS	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Window			Shatterproof glass		
	17	Adjustable Pointer			YES		
	18	Case Orientation			Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.		316 SS	IP 56 min	
	20	Stem Material	Stem Length		316 SS	to suit Thermowell	
	21	Process conn.			1/2" NPT-M		
	24						
THERMOWELL NOTE 2	25	Type			Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.		Flange 2-inch, #900, RTJ	1/2" NPT-F	
	27	Body material			316 SS		
	28	Connection Length (H)			minimal by MfrStd		
	29	Insertion Length (U)			220 mm		
	30	Plug & Chain, Material			YES, Required, 316 SS		
	31						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Wake Frequency Calculation shall be provided.

GENERAL DATA	1	Tag Number		Qty.	BK26-TG-0201, -0301		**2**
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-007		
	3	Line No.	Line size		DRAIN TANK V-0200 / OPEN DRAIN TANK V-0300		
	4						
	5						
OPERATING CONDITIONS	6	Fluid			Oil, Water		
	7	Oper. Press. Min/Op/Max barg			0.5		2.5
	8	Oper. Temp. Min/Op/Max degC			25		30
	9	Design Press.	Design Temp.		7 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	0.63-3.05 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)			42.8 (ID) x 250 (Length)	
GAUGE	12	Type	Option		Bi-metal	with Silicone oil dampener	
	13	Range	Accuracy		0-100 degC	± 1 % FS	
	14	Dial Size			100 mm		
	15	Dial Color			Black Letters on White Background		
	16	Window			Shatterproof glass		
	17	Adjustable Pointer			YES		
	18	Case Orientation			Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.		316 SS	IP 56 min	
	20	Stem Material	Stem Length		316 SS	to suit Thermowell	
	21	Process conn.			1/2" NPT-M		
	24						
THERMOWELL	25	Type			Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.		Flange 2-inch, #150, RF	1/2" NPT-F	
	27	Body material			316 SS		
	28	Connection Length (H)			minimal by MfrStd		
	29	Insertion Length (U)			500 mm		
	30	Plug & Chain, Material			YES, Required, 316 SS		
	31						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.

GENERAL DATA	1	Tag Number	Qty.	BK26-TG-1010		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-4"-1024-N		4" Sch.80
	4					
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.5		13.5
	8	Oper. Temp. Min/Op/Max degC		38.8		42.9
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.62-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 3.05 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)	14.53 m/s	49.2 (ID) x 108.1 (Length)	
GAUGE	12	Type	Option	Bi-metal	with Silicone oil dampener	
	13	Range	Accuracy	0-100 degC	± 1 % FS	
	14	Dial Size		100 mm		
	15	Dial Color		Black Letters on White Background		
	16	Window		Shatterproof glass		
	17	Adjustable Pointer		YES		
	18	Case Orientation		Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.	316 SS	IP 56 min	
	20	Stem Material	Stem Length	316 SS	to suit Thermowell	
	21	Process conn.		1/2" NPT-M		
	24					
THERMOWELL NOTE 2	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		165 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
	31					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Wake Frequency Calculation shall be provided.

	BK26 WHP AND CONNECTION TO MSP8	MSP8.BK26-002-GE-IA2-DS-007			
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	TEMPERATURE GAUGE				

GENERAL DATA	1	Tag Number	Qty.	BK26-TG-1402		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-4"-1403-N		4" Sch.40
	4					
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.3		13.5
	8	Oper. Temp. Min/Op/Max degC		38.8		42.9
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.82-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 6.18 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)	16.2 m/s	49.2 (ID) x 108.1 (Length)	
GAUGE	12	Type	Option	Bi-metal	with Silicone oil dampener	
	13	Range	Accuracy	0-100 degC	± 1 % FS	
	14	Dial Size		100 mm		
	15	Dial Color		Black Letters on White Background		
	16	Window		Shatterproof glass		
	17	Adjustable Pointer		YES		
	18	Case Orientation		Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.	316 SS	IP 56 min	
	20	Stem Material	Stem Length	316 SS	to suit Thermowell	
	21	Process conn.		1/2" NPT-M		
	24					
THERMOWELL NOTE 2	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		165 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
	31					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Wake Frequency Calculation shall be provided.

GENERAL DATA	1	Tag Number	Qty.	BK26-TG-1020		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-8"-1001-N		8" Sch.40
	4					
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.53		13.43
	8	Oper. Temp. Min/Op/Max degC		38.4		39.7
	9	Design Press.	Design Temp.	40 barg		0-80 degC
	10	Fluid Density	Fluid Viscosity	806.62-1011 kg/m3 @OperCond.		Gas: 0.01 cP; Liquid: 7.79 cP
	11	Fluid Velocity	Nozzle Dim. (mm)	15.60 m/s		49.2 (ID) x 108.1 (Length)
GAUGE	12	Type	Option	Bi-metal		with Silicone oil dampener
	13	Range	Accuracy	0-100 degC		± 1 % FS
	14	Dial Size		100 mm		
	15	Dial Color		Black Letters on White Background		
	16	Window		Shatterproof glass		
	17	Adjustable Pointer		YES		
	18	Case Orientation		Rotatable on stem 360 deg		
	19	Case Material	Ingress Protec.	316 SS		IP 56 min
	20	Stem Material	Stem Length	316 SS		to suit Thermowell
	21	Process conn.		1/2" NPT-M		
	24					
THERMOWELL NOTE 2	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF		1/2" NPT-F
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		220 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
	31					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

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NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Wake Frequency Calculation shall be provided.

GENERAL DATA	1	Tag Number		Qty.	See Next Page		9
	2	P&ID No.	Pipe class		See Next Page		See Next Page
	3	Line No.	Line size		See Next Page		See Next Page
	4	Location			See Next Page		
	5	Hazardous Area Classification			Zone 2 IIA T3		
OPERATING CONDITIONS	6	Fluid			Oil Water Gas Mixture		
	7	Oper. Press. Min/Op/Max barg			7.53		13.43
	8	Oper. Temp. Min/Op/Max degC			38.4		39.7
	9	Design Press.	Design Temp.		139 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 6.96 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)		12.68 m/s	42.8 (ID) x 165.5 (Length)	
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation		3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material		to suit Thermowell	316 SS	
	14	Mounting of Transmitter			Direct on sensor		
	15	Instr. Range	Calibrated range		0-100 degC	0-60 degC	
	16	Accuracy	Linearization		± 0.1 % FS	YES, REQUIRED	
	17	Output Signal	Power Supply		4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection			YES		
	19	Housing material			316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 4	
	21	Cable Gland			cable entry plugged		
	22	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	23	Safety Integrity Level			N/A		
	24						
THERMOWELL NOTE 3	25	Type			Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.		Flange 2-inch, #900, RTJ	1/2" NPT-F	
	27	Body material			316 SS		
	28	Connection Length (H)			minimal by MfrStd		
	29	Insertion Length (U)			220 mm		
	30	Plug & Chain, Material			YES, Required, 316 SS		
ACCESSORIES	31	Integral Meter			YES (LCD), Side View		
	32	Mounting bracket			N/A		
	33						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Wake Frequency Calculation shall be provided.
4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

No	TAG	P&ID No. (MSP8.BK26-002-__)	PIPE CLASS	LINE No	LOCATION	NOTE
1	BK26-TT-1001	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0031-N	WH-0001 Flowline	
2	BK26-TT-1002	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0032-N	WH-0002 Flowline	
3	BK26-TT-1003	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0033-N	WH-0003 Flowline	
4	BK26-TT-1004	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0034-N	WH-0004 Flowline	
5	BK26-TT-1005	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0035-N	WH-0005 Flowline	
6	BK26-TT-1006	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0036-N	WH-0006 Flowline	
7	BK26-TT-1007	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0037-N	WH-0007 Flowline	
8	BK26-TT-1008	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0038-N	WH-0008 Flowline	
9	BK26-TT-1009	TS.BK26-PR1-PID-003	#900	CO-DC1-4"-0039-N	WH-0009 Flowline	
10						
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NOTES

GENERAL DATA	1	Tag Number		Qty.	BK26-TT-0801		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-005		#900
	3	Line No.	Line size		GL-DC1-1-4"-0801-N		4" Sch.120
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid			Hydrocarbon Gas		
	7	Oper. Press. Min/Op/Max barg			100	105-107	110
	8	Oper. Temp. Min/Op/Max degC			20	25	25
	9	Design Press.	Design Temp.		125 barg	0-45 degC	
	10	Fluid Density	Fluid Viscosity		120-135 kg/m3 @OperCond.	0.017 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)		5 m/s (max)	42.8 (ID) x 165.5 (Length)	
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation		3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material		to suit Thermowell	316 SS	
	14	Mounting of Transmitter			Direct on sensor		
	15	Instr. Range	Calibrated range		0-100 degC	0-60 degC	
	16	Accuracy	Linearization		± 0.1 % FS	YES, REQUIRED	
	17	Output Signal	Power Supply		4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection			YES		
	19	Housing material			316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 4	
	21	Cable Gland			cable entry plugged		
	22	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	23	Safety Integrity Level			N/A		
	24						
THERMOWELL NOTE 3	25	Type			Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.		Flange 2-inch, #900, RTJ	1/2" NPT-F	
	27	Body material			316 SS		
	28	Connection Length (H)			minimal by MfrStd		
	29	Insertion Length (U)			220 mm		
	30	Plug & Chain, Material			YES, Required, 316 SS		
ACCESSORIES	31	Integral Meter			YES (LCD), Side View		
	32	Mounting bracket			N/A		
	33						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Wake Frequency Calculation shall be provided.
4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number	Qty.	BK26-TT-1010		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-4"-1024-N		4" Sch.40
	4	Hazardous Area Classification		Zone 2 IIA T3		
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.5		13.5
	8	Oper. Temp. Min/Op/Max degC		38.8		42.9
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.62-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 3.05 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)	14.53 m/s	49.2 (ID) x 108.1 (Length)	
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell	316 SS	
	14	Mounting of Transmitter		Direct on sensor		
	15	Instr. Range	Calibrated range	0-100 degC	0-60 degC	
	16	Accuracy	Linearization	± 0.1 % FS	YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection		YES		
	19	Housing material		316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F NOTE 4	
	21	Cable Gland		cable entry plugged		
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	23	Safety Integrity Level		N/A		
	24					
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		165 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
ACCESSORIES	31	Integral Meter		YES (LCD), Side View		
	32	Mounting bracket		N/A		
	33					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Wake Frequency Calculation shall be provided.
4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number	Qty.	BK26-TT-1402		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-4"-1403-N		4" Sch.40
	4	Hazardous Area Classification		Zone 2 IIA T3		
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.3		13.5
	8	Oper. Temp. Min/Op/Max degC		38.8		42.9
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.82-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 6.18 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)	16.2 m/s	49.2 (ID) x 108.1 (Length)	
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell	316 SS	
	14	Mounting of Transmitter		Direct on sensor		
	15	Instr. Range	Calibrated range	0-100 degC	0-60 degC	
	16	Accuracy	Linearization	± 0.1 % FS	YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection		YES		
	19	Housing material		316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F NOTE 4	
	21	Cable Gland		cable entry plugged		
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	23	Safety Integrity Level		N/A		
	24					
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		165 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
ACCESSORIES	31	Integral Meter		YES (LCD), Side View		
	32	Mounting bracket		N/A		
	33					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Wake Frequency Calculation shall be provided.
4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number	Qty.	BK26-TT-1020		1
	2	P&ID No.	Pipe class	MSP8.BK26-002-BR-PR1-PID-001		#300
	3	Line No.	Line size	CO-BC1-8"-1001-N		8" Sch.40
	4	Hazardous Area Classification		Zone 2 IIA T3		
	5					
OPERATING CONDITIONS	6	Fluid		Oil, Water, Gas Mixture		
	7	Oper. Press. Min/Op/Max barg		7.53		13.43
	8	Oper. Temp. Min/Op/Max degC		38.4		39.7
	9	Design Press.	Design Temp.	40 barg	0-80 degC	
	10	Fluid Density	Fluid Viscosity	806.62-1011 kg/m3 @OperCond.	Gas: 0.01 cP; Liquid: 7.79 cP	
	11	Fluid Velocity	Nozzle Dim. (mm)	15.60 m/s	49.2 (ID) x 108.1 (Length)	
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation	3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material	to suit Thermowell	316 SS	
	14	Mounting of Transmitter		Direct on sensor		
	15	Instr. Range	Calibrated range	0-100 degC	0-60 degC	
	16	Accuracy	Linearization	± 0.1 % FS	YES, REQUIRED	
	17	Output Signal	Power Supply	4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection		YES		
	19	Housing material		316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F NOTE 4	
	21	Cable Gland		cable entry plugged		
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min	
	23	Safety Integrity Level		N/A		
	24					
THERMOWELL NOTE 3	25	Type		Flanged with Tapered drilled bar stock		
	26	Process conn.	Instrum. Conn.	Flange 2-inch, #300, RF	1/2" NPT-F	
	27	Body material		316 SS		
	28	Connection Length (H)		minimal by MfrStd		
	29	Insertion Length (U)		220 mm		
	30	Plug & Chain, Material		YES, Required, 316 SS		
ACCESSORIES	31	Integral Meter		YES (LCD), Side View		
	32	Mounting bracket		N/A		
	33					
PURCHASE	34	Manufacturer		VTA		
	35	Model		VTA		
	36					

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Wake Frequency Calculation shall be provided.
4. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number		Qty.	See Next Page		2
	2	P&ID No.	Pipe class		See Next Page		-
	3	Line No.	Line size		-		-
	4	Location			See Next Page		
	5	Hazardous Area Classification			See Next Page		
OPERATING CONDITIONS	6	Fluid			Clean Air		
	7	Oper. Press. Min/Op/Max Pa			ATM		55
	8	Oper. Temp. Min/Op/Max degC			15	25	39
	9	Design Press.	Design Temp.		100 Pa	0-60 degC	
	10	Fluid Density	Fluid Viscosity				
	11	Fluid Velocity	Nozzle Dim. (mm)				
SENSOR AND TRANSMITTER	12	Sensor Type	Insulation		3-Wire RTD, PT-100 (α=0.00385)	Mineral Insulated	
	13	Sensor Dimension	Material		DIA 6 mm, Length 100 mm	316 SS	
	14	Mounting of Transmitter			Direct on sensor		
	15	Instr. Range	Calibrated range		0-100 degC (VTA)	0-60 degC	
	16	Accuracy	Linearization		± 0.25 % FS	YES	
	17	Output Signal	Power Supply		4-20 mA HART, 2-wire	24 V DC, loop powered	
	18	Burn-out Protection			N/A		
	19	Housing material			316 SS, NOTE 1		
	20	Process conn.	Electrical Conn.		1/2" NPT-M	1/2" NPT-F NOTE 3	
	21	Cable Gland			Plugged		
	22	Expl. Protection	Ingress Protec.		See Next Page	See Next Page	
	23	Safety Integrity Level			N/A		
	24						
THERMOWELL	25	Type			N/A		
	26	Process conn.	Instrum. Conn.				
	27	Body material					
	28	Lagging Extension			No		
	29	Insertion Length (U)					
	30						
ACCESSORIES	31	Integral Meter			YES (LCD)		
	32	Mounting bracket			YES, Wall Mount type		
	33						
PURCHASE	34	Manufacturer			VTA		
	35	Model			VTA		
	36						

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MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Vendor shall supply Plugs suitable for area classification for spare cable entry.

NO	TAG	P&ID No. (MSP8.BK26-002-___)	SERVICE	HAZARDOUS AREA CLASSIFICATION	Explosion Protection	Ingress Protection	REMARK
1	BK26-TT-8501	TS-VC6-PID-001	E&I Room Temperature	Indoor, Safe Area	N/A	IP44 min	
2	BK26-TT-8502	TS-VC6-PID-001	Battery Room Temperature	Indoor, Safe Area	N/A	IP44 min	

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE: DATASHEET FOR LEVEL INSTRUMENTS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-008

PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Lương Thuỳ Dương Date: 12/05/2025 16:21:41 Certified by: Vietsovpetro CA	Signed by: Cao Tùng Lâm Date: 14/05/2025 09:52:43 Certified by: Vietsovpetro CA
				PIPING: L.T.DUONG	PROCESS: C.T.LAM
			Signed by: Vũ Thị Mơ Date: 14/05/2025 14:03:51 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 14/05/2025 15:46:55 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 14/05/2025 21:49:57 Certified by: Vietsovpetro CA
			DC: V.T.MO	ENG.MGR: N.N.TIEP	PRO.MGR: T.D.HAI
0	IFA	09.05.2025	Signed by: Nguyễn hải Chung Date: 09/05/2025 15:51:42 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 14.05.2025 13:40:26 Certified by: Vietsovpetro CA
REV.	DES.	DATE	PREPARED: N.H.CHUNG	CHECKED: N.H.CHUNG	DEPT.MGR: G.E.N.

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issued for Approval	

VIETSOVPETRO	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-008			
	DATASHEET FOR LEVEL INSTRUMENTS				Rev.	0	Page	4 of 9
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GENERAL DATA	1	Tag Number		Qty.	BK26-LG/LT-1401			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-004			
	3	Line No.	Line size		V-1401			
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Water			
	7	Oper. Press. Min/Op/Max barg			7.5			13.5
	8	Oper. Temp. Min/Op/Max degC			38.8			42.9
	9	Design Press.	Design Temp.		40 barg	0-80 degC		
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	0.89-3.05 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	2-inch, #300 WN RF	316 SS		
	16	Center-Center Dimension			700 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range		Relative to Vessel	250 - 950 mm		
	22	Housing Material	Ingress Protec.		316 SS	IP 56 min		
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1000 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level			N/A			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number		Qty.	BK26-LG/LZT-1402			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-004			
	3	Line No.	Line size		V-1401			
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Water			
	7	Oper. Press. Min/Op/Max barg			7.5		13.5	
	8	Oper. Temp. Min/Op/Max degC			38.8		42.9	
	9	Design Press.	Design Temp.		40 barg	0-80 degC		
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	0.89-3.05 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	2-inch, #300 WN RF	316 SS		
	16	Center-Center Dimension			700 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range		Relative to Vessel	250 - 950 mm		
	22	Housing Material	Ingress Protec.		316 SS	IP 56 min		
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1000 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level			SIL2			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-008			
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	LEVEL GAUGE / TRANSMITTER							

GENERAL DATA	1	Tag Number		Qty.	BK24-LG/LT-0201			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-007			
	3	Line No.	Line size		V-200			
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Water			
	7	Oper. Press. Min/Op/Max barg			0.5		2.5	
	8	Oper. Temp. Min/Op/Max degC			25		30	
	9	Design Press.	Design Temp.		7 barg	0-80 degC		
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m @OperCond.	0.63-3.05 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	2-inch, #150 WN RF	316 SS		
	16	Center-Center Dimension			800 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range		Relative to Vessel	150 - 950 mm		
	22	Housing Material	Ingress Protec.		316 SS	IP 56 min		
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1000 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level			N/A			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number		Qty.	BK26-LG/LT-0301			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-007			
	3	Line No.	Line size		T-0300			
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Water			
	7	Oper. Press. Min/Op/Max barg			0	atm		2
	8	Oper. Temp. Min/Op/Max degC			25	45		55
	9	Design Press.	Design Temp.		7 barg	0-80 degC		
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	0.63-3.05 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	2-inch, #150 WN RF	316 SS		
	16	Center-Center Dimension			1200 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug			316 SS
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			Magnetically actuated flags in colors (MfrStd)			
	21	Scale Type	Range		Relative to Vessel	200 - 1400 mm		
	22	Housing Material	Ingress Protec.		316 SS	IP 56 min		
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1600 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level			N/A			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

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NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

GENERAL DATA	1	Tag Number		Qty.	BK26-LZT-0202			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-007			
	3	Line No.	Line size		V-200			
	4	Hazardous Area Classification			Zone 2 IIA T3			
	5							
OPERATING CONDITIONS	6	Fluid			Oil, Water			
	7	Oper. Press. Min/Op/Max barg			0.5		2.5	
	8	Oper. Temp. Min/Op/Max degC			25		30	
	9	Design Press.	Design Temp.		7 barg	0-80 degC		
	10	Fluid Density	Fluid Viscosity		806.62-1011 kg/m3 @OperCond.	0.63-3.05 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	2-inch, #150 WN RF	316 SS		
	16	Center-Center Dimension			800 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			N/A			
	21	Scale Type	Range					
	22	Housing Material	Ingress Protec.					
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1000 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min		
	30	Safety Integrity Level			SIL2			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

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NOTES

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3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-008			
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GENERAL DATA	1	Tag Number		Qty.	BK26-LG/LT-5201			1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR6-PID-001			
	3	Line No.	Line size		T-5201			
	4	Hazardous Area Classification			Non-hazardous Area			
	5							
OPERATING CONDITIONS	6	Fluid			Fresh Water			
	7	Oper. Press. Min/Op/Max barg			-	ATM	-	
	8	Oper. Temp. Min/Op/Max degC			-	Ambient	-	
	9	Design Press.	Design Temp.		12 barg	0-45 degC		
	10	Fluid Density	Fluid Viscosity		1000 kg/m3 @OperCond.	0.982 cP		
	11	NACE MR-01-75 Compliance			NOT REQUIRED			
CHAMBER, FLOAT	12	Type			Welded cap on Top, Flange connection at Bottom			
	13	Size	Material		2-inch	316 SS		
	14	Process connection	Style	Type	Side-Side mounting	Flanged		
	15		Size	Material	1-inch, #150 RF	316 SS		
	16	Center-Center Dimension			1200 mm			
	17	Auxiliary connections	Vent	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	18		Drain	Material	3/4" NPT c/w 3/4" NPT Ball Valve and Plug		316 SS	
	19	Float Material			316 SS			
GAUGE	20	Indicator Type			Magnetic Bar Graph			
	21	Scale Type	Range		Relative to Vessel	110 - 1310 mm		
	22	Housing Material	Ingress Protec.		316 SS	IP 56 min		
TRANSMITTER	23	Type			Magnetostrictive, externally mount on chamber			
	24	Inst. Range	Probe Length		0-1500 mm (VTA)	Suit to Chamber		
	25	Accuracy	Configuration		± 0.1 % FS	Bottom Mount Offset		
	26	Output signal	Power supply		4-20 mA HART, 2-wire	24 V DC , loop powered		
	27	Housing material			316 SS NOTE 2			
	28	Process conn.	Electrical Conn.		Clamp-on	1/2" NPT-F NOTE 3		
	29	Expl. Protection	Ingress Protec.		-	IP 56 min		
	30	Safety Integrity Level			N/A			
	31							
HEAT TRACING	32	Type	Supply		N/A			
	33	Insulation Type						
	34	Termination	Electrical Conn.					
	35	Expl. Protection	Ingress Protec.					
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			

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NOTES

1. Permanent fitted SS Name Plate shall be provided with standard specifications.
2. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for spare cable entry.

RESEARCH AND ENGINEERING INSTITUTE
FOR OFFSHORE OIL AND GAS

PROJECT : BK26 WHP AND CONNECTION TO MSP8

DOCUMENT TITLE : DATASHEET FOR FLOW INSTRUMENTS

DOCUMENT NO. : MSP8.BK26-002-GE-IA2-DS-009

PHASE : DETAILED ENGINEERING

			AGREED	Signed by: Lương Thuỳ Dương Date: 12/05/2025 16:21:43 Certified by: Vietsovpetro CA	Signed by: Cao Tùng Lâm Date: 14/05/2025 09:52:45 Certified by: Vietsovpetro CA
				PIPING: L.T.DUONG	PROCESS: C.T.LAM
			Signed by: Vũ Thị Mơ Date: 14/05/2025 14:03:53 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 14/05/2025 15:46:58 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 14/05/2025 21:50:00 Certified by: Vietsovpetro CA
			DC: V.T.MO	ENG.MGR: N.N.TIEP	PRO.MGR: T.D.HAI
0	IFA	09.05.2025	Signed by: Nguyễn hải Chung Date: 09/05/2025 15:51:43 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 14.05.2025 13:40:28 Certified by: Vietsovpetro CA
REV.	DES.	DATE	PREPARED: N.H.CHUNG	CHECKED: N.H.CHUNG	DEPT.MGR: G.E.N.

TRACK CHANGES

No.	Rev.	Content of Change	Note
1	0	Issued for Approval	

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-009	
	DATASHEET FOR FLOW INSTRUMENTS			Rev.	0	Page 4 of 11
	CORIOLIS FLOWMETER					

GENERAL DATA	1	Tag Number		Qty.	BK26-FT-1411		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-004		#300
	3	Line No.	Line size		PG-BC1-4"-1402-N		4-inch
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid	State		HC gas	Gas	
	7	Design Press.	Design Temp.		45 barg	0-80 degC	
	8	Maximum Allowable Press. Drop (ΔP)			0.1 bar (VTC)		
	9				Minimal	Nominal	Maximal
	10	Flow Rate Sm3/day (15 degC)			30000	77100	80000
	11	Inlet Pressure		barg	7.5	7.5	7.5
	12	Oper. Temperature		degC	40 ÷ 60	40 ÷ 60	40 ÷ 60
	13	Density at Oper. Cond.		kg/m3	13.5	17-19.5	15
	14	Viscosity at Oper. Cond.		cP	0.01	0.01	0.01
	15	Molecular Weight			21.43	22.22	22.06
	16	Compressibility			0.968	0.969	0.971
	17						
	18						
	19						
FLOWMETER SENSOR	20	Type	Configuration		Coriolis	U-shape, self-drain	
	21	Sensor Material	Housing Material		316 SS	316 SS	
	22	Process Connection			Flanged, 4-inch #300, RF WN		
	23	Mounting			Inline		
	24	Electronics Interface			Remote standard connecting cable terminated		
TRANSMITTER	25	Type			Advanced Multi-Variable, Remote Mount		
	26	Instr. range	Calibrated range		VTA	0-80000 Sm3/day	
	27	Accuracy			± 0.5% of flow rate		
	28	Output signal			1 x RS-485 ModbusRTU; 1 x Pulse (passive);		
	29				1 x 4-20mA (HART-Optional)		
	30	Housing material	Power supply		316 SS, (NOTE 1)	24 V DC	
	31	Signal Cable	Electrical Conn.		15 m	1/2" FNPT	
	32	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	33	Safety Integrity Level			N/A		
	35	Software Configuration			Smart meter Verification/ Enhanced Verification		
ACCESSORIES	36	Integral Meter			YES (LCD), Metric Units		
	37	Transmitter Mounting Kit			YES, for 2-inch Pole Stand		
	38	Cable Glands			YES		
PURCHASE	39	Manufacturer	VTA				
	40	Model	VTA				

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for unused cable entry.

GENERAL DATA	1	Tag Number		Qty.	BK26-FT-1401		1
	2	P&ID No.	Pipe class		MSP8.BK26-002-TS.BK26-PR1-PID-004		#300
	3	Line No.	Line size		PL-BC1-4"-1404-N		4-inch
	4	Hazardous Area Classification			Zone 2 IIA T3		
	5						
OPERATING CONDITIONS	6	Fluid	State		Crude Oil	Liquid	
	7	Design Press.	Design Temp.		45 barg	0-80 degC	
	8	Maximum Allowable Press. Drop (ΔP)			0.1 bar (VTC)		
	9				Minimal	Nominal	Maximal
	10	Flow Rate		m3/h	3.58	13.14	20.83
	11	Inlet Pressure		barg	7.5	7.5	7.5
	12	Oper. Temperature		degC	25.79	38.81	41.83
	13	Density at Oper. Cond.		kg/m3		818 - 1011	
	14	Viscosity at Oper. Cond.		cP		0.89 - 5	
	15						
	16						
	17						
	18						
	19						
FLOWMETER SENSOR	20	Type	Configuration		Coriolis	U-shape, self-drain	
	21	Sensor Material	Housing Material		316 SS	316 SS	
	22	Process Connection			Flanged, 3-inch #300, RF WN		
	23	Mounting			Inline, Vertical		
	24	Electronics Interface			Remote standard connecting cable terminated		
TRANSMITTER	25	Type			Advanced Multi-Variable, Remote Mount		
	26	Instr. range	Calibrated range		VTA	0-22 m3/hr	
	27	Accuracy			± 0.3% of flow rate		
	28	Output signal			1 x RS-485 ModbusRTU; 1 x Pulse (passive);		
	29				1 x 4-20mA (HART-Optional)		
	30	Housing material	Power supply		316 SS, (NOTE 1)	24 V DC	
	31	Signal Cable	Electrical Conn.		15 m	1/2" FNPT	
	32	Expl. Protection	Ingress Protec.		Ex d IIA T3 (IEC)	IP 56 min	
	33	Safety Integrity Level			N/A		
	35	Software Configuration			Smart meter Verification/ Enhanced Verification , Net Oil Calculation		
ACCESSORIES	36	Integral Meter			YES (LCD), Metric Units		
	37	Transmitter Mounting Kit			YES, for 2-inch Pole Stand		
	38	Cable Glands			YES		
PURCHASE	39	Manufacturer	VTA				
	40	Model	VTA				

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. Vendor shall supply Brass Plugs suitable for Class 1 Zone 2 IIA T3 hazardous area for unused cable entry.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-009			
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	0	Page	6 of 11
	DP FLOW TRANSMITTER							

GENERAL DATA	1	Tag Number	Qty.	See Next Page	10		
	2	P&ID No.	Pipe class	See Next Page	See Next Page		
	3	Line No.	Line size	See Next Page	See Next Page		
	4	Location		See Next Page			
	5	Hazardous Area Classification		Zone 2 IIA T3			
OPERATING CONDITIONS	6	Fluid		Hydrocarbon Gas			
	7	Oper. Press. Min/Op/Max barg		100	105-107	110	
	8	Oper. Temp. Min/Op/Max degC		20	ambient	40	
	9	Design Press.	Design Temp.	125 barg	0-45 degC		
	10	Oper. Diff Pressure		50 - 550 mbar (VTA according FE calc.)			
	11						
TRANSMITTER	12	Type		Differential Pressure Transmitter			
	13	Instr. range	Calibrated range	0-1600 mbar (VTA)	0-600 mbar		
	14	Accuracy	Overpress. Limit	± 0.25 % of Span	1.3 x Design Pressure		
	15	Adjustable Zero	Adjustable Span	YES	YES		
	16	Output signal	Power supply	4-20 mA HART, 2-wire	24 V DC , loop powered		
	17	Element type	Material	Diaphragm	316 SS		
	18	Fill Fluid		MfrStd			
	19	Housing material		316 SS NOTE 1			
	20	Process conn.	Electrical Conn.	1/2" NPT-M	1/2" NPT-F		
	21	Cable Gland		cable entry plugged			
	22	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min		
	23	Safety Integrity Level		N/A			
	24						
MANIFOLD (NOTE 2)	25	Type		5-Valves (Block, Vent, Equalize), Coplanar Style, Integral to Transmitter, c/w 316 SS Plug for Vent Port			
	26	Size		1/2" NPT-F			
	27	Rating		3000 psig @200 degF (207 barg @ 93 degC)			
	28	Body material		316 SS			
	29	Diaphragm Seal		N/A			
	30						
ACCESSORIES	31	Integral Meter		YES (LCD)			
	32	Mounting bracket		YES, for 2-inch pipe stand, 316 SS			
	33						
PURCHASE	34	Manufacturer		VTA			
	35	Model		VTA			
	36						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Transmitter and Manifold shall be assembled and tested by Manufacturer.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.

No	TAG	P&ID No. (MSP8.BK26-002-___)	PIPE CLASS	LINE No	LOCATION	NOTE
1	BK26-FT-0811	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0811-N	SK-800. Gaslift Distribution.	
2	BK26-FT-0812	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0812-N	SK-800. Gaslift Distribution.	
3	BK26-FT-0813	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0813-N	SK-800. Gaslift Distribution.	
4	BK26-FT-0814	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0814-N	SK-800. Gaslift Distribution.	
5	BK26-FT-0815	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0815-N	SK-800. Gaslift Distribution.	
6	BK26-FT-0816	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0816-N	SK-800. Gaslift Distribution.	
7	BK26-FT-0817	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0817-N	SK-800. Gaslift Distribution.	
8	BK26-FT-0818	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0818-N	SK-800. Gaslift Distribution.	
9	BK26-FT-0819	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0819-N	SK-800. Gaslift Distribution.	
10	BK26-FT-0810	TS.BK26-PR1-PID-005	#900	GL-DC1-4"-0824-N	Gaslift Header	
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NOTES

VIETSOVPETRO	BK26 WHP AND CONNECTION TO MSP8			MSP8.BK26-002-GE-IA2-DS-009	
	DATASHEET FOR FLOW INSTRUMENTS	Rev.	0	Page	8 of 11
	ORIFICE PLATE AND FITTING				

GENERAL DATA	1	Tag Number		Qty.	See Next Page			9
	2	P&ID No.	Pipe class		See Next Page			See Next Page
	3	Line No.	Line size		See Next Page			2" Sch.160
	4	Location			See Next Page			
	5	Hazardous Area Classification			Zone 2 IIA T3			
OPERATING CONDITIONS	6	Fluid	State		Hydrocarbon Gas		GAS	
	7	Design Press.	Design Temp.		130 barg		0-45 degC	
	8	Maximum Allowable Diff. Press.			550 mbar			
	9				Minimal		Nominal	Maximal
	10	Flow	Sm3/day (15 degC		5,000			50,000
	11	Inlet Pressure	barg		100		107	110
	12	Differential Pressure	barg		VTC		VTC	VTC
	13	Oper. Temperature	degC				25	
	14	Molecular Weight					21.36	
	15	Density at Std.Cond.(15 degC	kg/m3				0.95	
	16	Compressibility	-				0.67	
	17	Viscosity at Oper. Cond.	cP				0.010-0.015	
	18	Cp / Cv	-				2.09	
	19	Isentropic Exponent	-					
ORIFICE PLATE (NOTE 1)	20	Type			Concentric, square edged			
	21	Material	Min. Thickness		316 SS		0.125-inch	
	22	Bore Size	Beta Ratio		VTC		VTC	
	23	Drain or Vent Hole			N/A			
	24	Differ. Pressure @ Full Scale			VTC			
	25							
ORIFICE HOLDER (NOTE 5)	26	Type			Single Chamber Orifice Fitting			
	27	Size	Rating	Conn. Type	2-inch	#900	Welded Both Ends (2" S-160)	
	28	Material		Painting as per:	ASTM A216 WCB		MSP8.BK26-002-GE-AC7-SP-001	
	29	Taps Size		Quantity	1/2" NPT-F		2	
	30	Taps Orientation			VTA			
ACCESSORIES (NOTE 2)	31	Block valves		Quantity	YES, required		2	
	32	Size		Material	1/2" NPT		316 SS	
	33	Rating			3000 psig @200 degF (207 barg @ 93 degC)			
	34	Nipple			Nipple: 1/2"NPTM x 1/2"NPTM, SS316			
	35	Operating Wrench			Yes			
PURCHASE	36	Manufacturer			VTA			
	37	Model			VTA			
	38							

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Two (02) orifice plates shall be calculated and provided for overlapped flow ranges as follow:
   - 5 000 - 26 000 Sm3/day (Range A) (VTA)
   - 25 000 - 50 000 Sm3/day (Range B) (VTA)
2. Block Valves shall be assembled and tested by Manufacturer.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.
4. One spare orifice plate for each flow range shall be provided
5. Orifice Seal & Carrier Assembly shall by MfrStd and suitable to process condition. Orifice Seal shall be provided for each Orifice Plate.

No	TAG	P&ID No. (MSP8.BK26-002-___)	PIPE CLASS	LINE No	LINE SIZE	LOCATION	NOTE
1	BK26-FE-0811	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0811-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
2	BK26-FE-0812	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0812-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
3	BK26-FE-0813	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0813-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
4	BK26-FE-0814	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0814-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
5	BK26-FE-0815	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0815-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
6	BK26-FE-0816	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0816-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
7	BK26-FE-0817	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0817-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
8	BK26-FE-0818	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0818-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
9	BK26-FE-0819	TS.BK26-PR1-PID-005	#900	GL-DC1-1-1/2"-0819-N	2" Sch.160	SK-800. Gaslift Distribution.	Note 1
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NOTES

1. Piping will provide reducer to ensure straight length upstream orifice is Minimum 10D and downstream orifice is minium 5D.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-009			
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	0	Page	10 of 11
	ORIFICE PLATE AND FITTING							

GENERAL DATA	1	Tag Number	Qty.	BK26-FE-0810	set	1	
	2	P&ID No.	Pipe class	MSP8.BK26-002-TS.BK26-PR1-PID-005	#900		
	3	Line No.	Line size	GL-DC1-4"-0801-N	4" Sch.120		
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid	State	Hydrocarbon Gas	GAS		
	7	Design Press.	Design Temp.	130 barg	0-45 degC		
	8	Maximum Allowable Diff. Press.		550 mbar			
	9			Minimal	Nominal	Maximal	
	10	Flow	Sm3/day (15 degC	30,000		250,000	
	11	Inlet Pressure	barg	100	107	110	
	12	Differential Pressure	barg	VTC	VTC	VTC	
	13	Oper. Temperature	degC		25		
	14	Molecular Weight			21.36		
	15	Density at Std.Cond.(15 degC	kg/m3		0.95		
	16	Compressibility	-		0.67		
	17	Viscosity at Oper. Cond.	cP		0.010-0.015		
	18	Cp / Cv	-		2.09		
	19	Isentropic Exponent	-				
ORIFICE PLATE (NOTE 1)	20	Type		Concentric, square edged			
	21	Material	Min. Thickness	316 SS	0.125-inch		
	22	Bore Size	Beta Ratio	VTC	VTC		
	23	Drain or Vent Hole		N/A			
	24	Differ. Pressure @ Full Scale		VTC			
	25						
ORIFICE HOLDER (NOTE 5)	26	Type		Dual Chamber Orifice Fitting			
	27	Size	Rating / Conn. Type	4-inch	#900	Flanged, RTJ, Both Ends	
	28	Material	Painting as per:	ASTM A216 WCB	MSP8.BK26-002-GE-AC7-SP-001		
	29	Taps Size	Quantity	1/2" NPT-F	3		
	30	Taps Orientation		VTA			
ACCESSORIES (NOTE 2)	31	Block valves	Quantity	YES, required	2		
	32	Size	Material	1/2" NPT	316 SS		
	33	Rating		3000 psig @200 degF (207 barg @ 93 degC)			
	34	Nipple		Nipple: 1/2"NPTM x 1/2"NPTM, SS316			
	35	Operating Wrench		Yes			
PURCHASE	36	Manufacturer		VTA			
	37	Model		VTA			
	38						

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Three (03) orifice plates shall be calculated and provided for overlaped flow ranges as follow:
   - 20 000 - 60 000 Sm3/day (Range A) (VTA)
   - 50 000 - 120 000 Sm3/day (Range B) (VTA)
   - 110 000 - 260 000 Sm3/day (Range C) (VTA)
2. Block Valves shall be assembled and tested by Manufacturer.
3. Permanent fitted SS Name Plate shall be provided with standard specifications.
4. One spare orifice plate for each flow range shall be provided
5. Orifice Seal & Carrier Assembly shall by MfrStd and suitable to process condition. Orifice Seal shall be provided for each Orifice Plate.

VIETSOVPETRO RESEARCH & ENGINEERING INSTITUTE	BK26 WHP AND CONNECTION TO MSP8				MSP8.BK26-002-GE-IA2-DS-009			
	DATASHEET FOR FLOW INSTRUMENTS				Rev.	0	Page	11 of 11
	ULTRASONIC FLOWMETER (CLAMP-ON)							

GENERAL DATA	1	Tag Number	Qty.	BK26-FT-1111, BK26-FT-1102	set	**2**	
	2	P&ID No.	Pipe class	MSP8.BK26-002-TS.BK26-PR1-PID-006	#2500		
	3	Line No.	Line size	WI-FS1-3"-1111-N/WI-FS1-3"-1114-N	3" Sch. XXS		
	4	Hazardous Area Classification		Zone 2 IIA T3			
	5						
OPERATING CONDITIONS	6	Fluid	State	INJECTION WATER	Liquid		
	7	Design Press.	Design Temp.	275 barg	0-45 degC		
	8	Maximum Allowable Diff. Press.		N/A			
	9			Minimal	Nominal	Maximal	
	10	Flow	m3/d	30		500	
	11	Inlet Pressure	barg		250		
	12	Oper. Temperature	degC		ambient		
	13	Molecular Weight			18.02		
	14	Density at Oper. Cond.	kg/m3		1011		
	15	Compressibility	-		-		
	16	Viscosity at Oper. Cond.	cP		0.89		
	17	Cp / Cv	-				
	18	Isentropic Exponent	-				
TRANSDUCER, SENSOR	19	Type	Configuration	CLAMP-ON	Single Channel		
	20	Sensor Material	Housing Material	316 SS	316 SS		
	21	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min		
	22	Mounting		Mounting base with adjustable and extractable transducer slots			
	23						
TRANSMITTER, COMPUTING PANEL	24	Type		Ultrasonic. Transit time, correlation.			
	25	Instr. range	Calibrated range	VTA	0-550 m3/d		
	26	Accuracy		± 4 % of Reading			
	27	Output signal		4-20 mA HART (active), 2-wire			
	28	Power supply		24 V DC			
	29	Housing: Type	Material	in Field, pole mounted	316 SS, (NOTE 1)		
	30	Sensor Cables	Electrical Conn.	YES, 5 m, MfrStd NOTE 3	1/2" NPT-F		
	31	Expl. Protection	Ingress Protec.	Ex d IIA T3 (IEC)	IP 56 min		
	32	Safety Integrity Level		N/A			
	33	Software Configuration					
ACCESSORIES	34	Integral Meter		YES (LCD)			
	35	Mounting Kit		YES, for 2-inch pole stand, 316 SS			
	36						
PURCHASE	37	Manufacturer		VTA			
	38	Model		VTA			

VTC - Vendor to Confirm / Calculate VTA - Vendor to Advise N/A - Not Applicable (Not Required)

MfrStd - According to Manufacturer Standard or Practice

NOTES

1. Preferred. Cooper free aluminum epoxy-coated (polyurethane-coated) is acceptable.
2. Permanent fitted SS Name Plate shall be provided with standard specifications.
3. All interconnection within of instrument set shall be complete with Ex d, IP 56 min Nickel plated Brass Cable Glands by Manufacturer.

RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS

PROJECT NAME : **BK26 WHP AND CONNECTION TO MSP8**

DOCUMENT TITLE : **GENERAL INSTRUMENT SPECIFICATION**

DOCUMENT NO. **MSP8.BK26-002-GE-IA2-SP-003**

PHASE : **DETAILED ENGINEERING**

Applied Typical Document	VSP-NIPI-TYP-TS-IA2-SP-03	Rev.	1

			Signed by: Vũ Thị Mo Date: 22/04/2025 17:18:26 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 22/04/2025 16:27:22 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 22/04/2025 21:32:24 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N. TIEP**	**PRO. MGR: T.D.HAI**
0	IFA	04.2025	Signed by: Đỗ Quốc Huy Date: 22/04/2025 07:40:28 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.04.2025 11:12:38 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: D.Q.HUY**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No	Rev.	Content of Change	Note

TABLE OF CONTENT

1 INTRODUCTION

BK-26 Wellhead Platform belongs to Vietsovpetro JV. It will be located in Block 09-1, White Tiger oil field, offshore the Socialist Republic of Vietnam.

BK-26 is connected with MSP-8 by a linking bridge. BK-26 is an unmanned platform with 09 slots (03 slots for spare) and will be remotely controlled from the platform MSP-8.

There will be 09 production wells on BK-26 (02 well will be converted into water injection well in the future as planned) and may be additional 03 wells in the future.

Based on the criterion of the need for production and maximize the return on investment, BK-26 will be considered to have the minimum facilities. The full well stream of BK-26 will be gathered together with the produced fluid of MSP-8 and transferred to CPP-3.

The scope of this project is detail engineering design for BK-26 WHP, Linking Bridge and MSP-8 modification.

Location of BK-26 and related platforms is shown in the figure 1 as below.

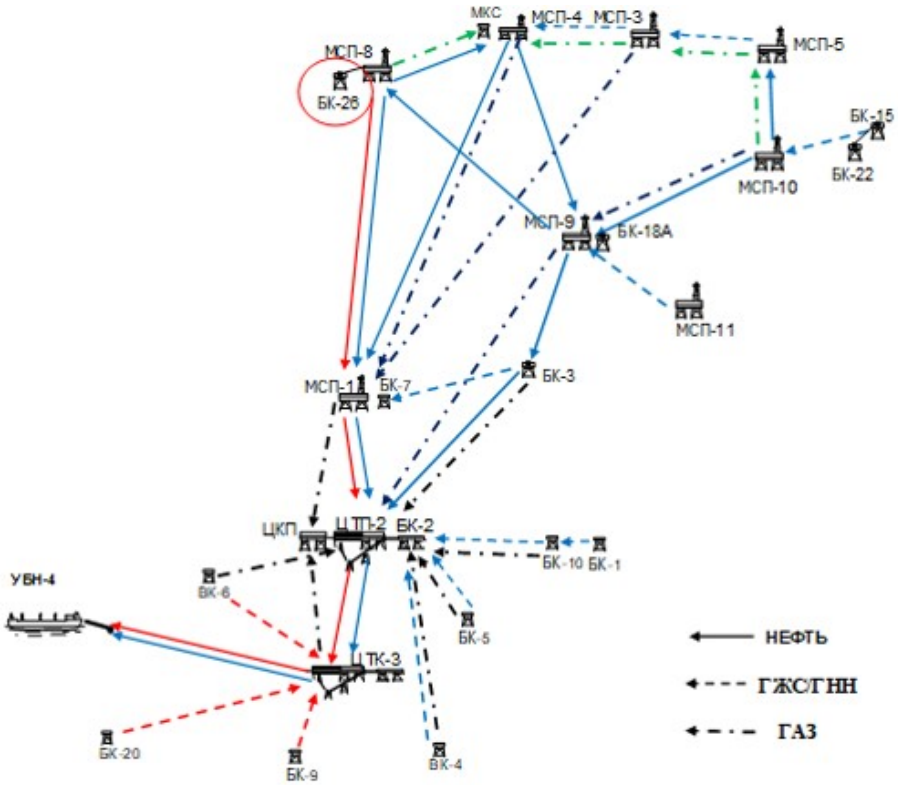

Figure 1: Location of BK-26 and related platforms

2 ADDENDUM

This document uses the Typical Engineering Documentation for this Project. However, some design intends or requirements may require to be revised to fit with Project's purpose. This section lists changes in the applied typical documents, originating in Typical Engineering Documentation for any reason including those indicated in Table 1. These changes are identified in this Addendum to the applied typical document, identifying the document and section affected and the required change.

VENDOR shall review the required changes in conjunction with the referenced document and project's engineering documents. The type of modification shall be defined and indicated in subsequent text as follows:

- "ADD" - Indicates the following statement(s) is/are added to the Company referenced text.
- "DELETE" - Indicates the following statement(s) is/are deleted from the Company referenced text.
- "REPLACE WITH" - Indicates the following statement(s) is/are revision(s) to the Company referenced text.

Table – 1: List of changes

Section	Current Statement or Requirement	Revised to
Reference Documents	VSP-NIPI-TYP-TS-IA2-SP-01 ICSS - Functional Design Specification VSP-NIPI-TYP-TS-IA2-SP-05 Specification for Control Valves VSP-NIPI-TYP-TS-IA2-SP-04 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch	REPLACE WITH: MSP8.BK26-002-GE-IA2-SP-001 ICSS - Functional Design Specification MSP8.BK26-002-GE-IA2-SP-005 Specification For Control Valves MSP8.BK26-002-GE-IA2-SP-004 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch
3.5.2 Protective Coatings	VSP-NIPI-TYP-GEN-AZ7-SP-01 Painting Specification for Platform VSP-NIPI-TYP - GEN-AZ7-SCH-01 Basic Painting Schedules	REPLACE WITH: MSP8.BK26-002-GE-AC7-SP-001 Technical Specification for Painting
4.1.2 Actuated Valves	Refer to document No.: "VSP-NIPI-TYP-TS-IA2-SP-04 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch".	REPLACE WITH: Refer to document No.: "MSP8.BK26-002-GE-IA2-SP-004 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch".
4.1.3 Control Valves	Refer to document No.: "VSP-NIPI-TYP-TS-IA2-SP-05 Specification for Control Valves"	REPLACE WITH: Refer to document No.: "MSP8.BK26-002-GE-IA2-SP-005 Specification for Control Valves"

RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS

AGREED BY
Deputy General Director of Vietsovpetro

Tran Xuan Hoang

23 / 08 /2022

APPROVED BY
Chief Engineer of Vietsovpetro

LIÊN DOANH VIỆT-NGA VIETSOVPETRO

Tran Van Vinh

24/08/2022

TYPICAL ENGINEERING DOCUMENTATION

DOCUMENT TITLE GENERAL INSTRUMENT SPECIFICATION

DOCUMENT NO. : VSP-NIPI-TYP-TS-IA2-SP-03

AGREED:	Name	Date
Capital Construction Department	Signed by: Nguyễn Hồng Giang Date: 22/08/2022 07:26:14 Certified by: Vietsovpetro CA	
Material and Equipment Department	Signed by: Châu Ngọc Hồ Date: 19/08/2022 11:20:28 Certified by: Vietsovpetro CA	
Mechanical Electrical Division	Signed by: Trịnh Hoàng Linh Date: 19/08/2022 08:07:21 Certified by: Vietsovpetro CA	

CONTROLLED

Signed by: Đỗ Quốc Huy
Date: 16/08/2022 14:10:03
Certified by: Vietsovpetro CA

Signed by: Trần Anh Nguyên
Date: 16/08/2022 14:43:44
Certified by: Vietsovpetro CA

Signed by: Nguyễn hải Chung
Date: 16/08/2022 15:00:38
Certified by: Vietsovpetro CA

Signed by: Гайнутдинов Евгений Нурлыгалиевич
Date: 16/08/2022 15:07:26
Certified by: Vietsovpetro CA

Signed by: Trần Duy Hải
Date: 16/08/2022 15:23:19
Certified by: Vietsovpetro CA

Signed by: Bùi Trọng Hân
Date: 16/08/2022 22:13:55
Certified by: Vietsovpetro CA

REV.	DES.	DATE	PREPARED	CHECKED	DEPART. MANAGER	ENG. MANAGER	PRO. MANAGER
1	IFA	15/07/2022	T.A.NGUYEN /D.Q.HUY	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN
0	IFA	25/10/2019	N.H.CHUNG	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN

CHANGE LOG

REV	SECTION	PAGE	CHANGE DESCRIPTION
1	3.6	11	REVISED: ~~DNVGL-OS-D201~~ DNV-OS-D201
1	4.1	13	REVISED: ~~½"~~ 1/4" NPT-F minimum
1	5.2.1	15	REVISED: Thermowells shall have ~~DN40~~ DN50 RF flange process connections ~~(DN50 RF for vessel connection)~~.
1	5.7	19	REVISED: in ~~API MPMS Chap. 5.6 and~~ ISO 10790 Output signal shall be Modbus interface and optional 4-20mA with local indicator ~~(HART type is preferred)~~.
1	5.8	20	REVISED: ~~The Ultrasonic flow measurement shall be according to AGA Report No. 9~~. In order to meet the ~~MPFM~~ performances, Output signal shall be Modbus interface ~~and~~ or 4-20mA
1	5	20, 21	ADDED: Section 5.9 Rotameter Section 5.10 Turbine Meter Section 5.11 Water Cut Meter Section 5.12 Pig Signaller
1	6.4	23	REVISED: Smoke detectors installed within the Battery Room shall be suitable for Class 1 Zone 1 Group IIC T3, ~~and shall be certified SIL2 rated as minimum~~.
1	6.7	24	REVISED: ~~All Emergency pushbutton shall be certified SIL2 rated as minimum.~~
1	6.8	24,25	ADDED: Section 6.8 Open Path Flammable Gas Detector Section 6.9 Sounder Section 6.10 Beacon
1	7.1	26	REVISED: Cross section for copper conductors shall be as follows: • Power cables (i.e. for solenoids, lamps, 24VDC interface signals, etc.): ~~2.5~~ 1.5 mm² minimum • Control cables (i.e. for transmitters, positioners, limit switches): ~~1.5~~ 1.0 mm² minimum
1	8.1	28	ADDED: Section 8.1.2 FRP Cable Tray

REFERENCE DOCUMENTS

Number of document	Description
VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch

TABLE OF CONTENTS

1. INTRODUCTION

The typical engineering documentation is a set of engineering documents issued by Research and Engineering Institute (REI) that can be applied repeatly to many projects that REI involves.

The typical engineering documentation shall be agreed by related departments in Vietsovpetro and approved by Vietsovpetro, if any.

1.1 Purpose of document

This document defines the minimum requirements for design, materials, fabrication, inspection, testing, painting, preparation for shipment, and documentation for the supply of instruments and field devices.

1.2 Definition of Terms

Within this document the following definitions shall apply:

COMPANY	The party which initiates the project and ultimately pays for its design and construction and owns the facilities. Here the COMPANY is Vietsovpetro JV (referred to as VSP).
CONTRACTOR	The party which carries out all or part of the design, engineering, procurement, construction and commissioning of the project.
VENDOR	The party which the order or contract of supply of the equipment/package or services is placed.
Shall	Refers to mandatory requirement
Should	Refers to a recommendation

1.3 Abbreviations

API	American Petroleum Institute
APS	Abandon Platform Shutdown
CCR	Central Control Room
CPP	Central Processing Platform
ESD	Emergency Shutdown System
F&G	Fire and Gas
FAT	Factory Acceptance test
FC	Fail Close
FL	Fail Lock
FO	Fail Open
FGS	Fire & Gas System
HC	Hydrocarbon
HSE	Health, Safety, and Environment
HMI	Human Machine Interface
HVAC	Heating Ventilation and Air Conditioning
IOM	Installation, Operation, and Maintenance
ITP	Inspection and Test Plan
I/O	Input/Output
ICS	Integrated Control System
ICSS	Integrated Control & Safety System
IEC	International Electrotechnical Commission
IR	Infra-red
IS	Intrinsically Safe

ISA	The International Society of Automation
JB	Junction Box
LCD	Liquid Crystal Display
LCP	Local Control Panel
LED	Light Emitting Diode
MODBUS	Serial Communication Protocol by Modicon
MTTR	Mean Time To Recovery
MTBF	Mean Time Between Failure
NC	Normally Close
NO	Normally Open
NDE	Non Destructive Examination
NPS	Nominal Pipe Size
OS&Y	Outside Screw and Yoke
P&ID	Piping and Instrument Diagram
PAPA	Prepare to Abandon Platform
PCB	Polychlorobiphenyls
PCS	Process control system
PVC	Polyvinylchloride
PO	Purchase Order
PLC	Programmable Logic Controller
QA/QC	Quality Assurance / Quality Control
RFI	Radio Frequency Interference
RO	Restriction orifice
RTJ	Ring Type Joint
RF	Raised Face
SAT	Site Acceptance Test
SIL	Safety Integrity Level
SIS	Safety Integrated System
SOE	Sequence of Events
SWB	Steel Wire Braid
SPIR	Spare Parts and Interchange ability Record
TFE	Tetrafluoroethylene
TPI	Third Party Inspection
UCP	Unit Control Panel
UPS	Un-interruptible Power Supply
VDU	Video Display Unit
VDRL	Vendor Data Requirements List

2. REFERENCES, CODES & STANDARDS

2.1 General

All equipment shall comply with the relevant national and international codes, standards and recommendations. The Vendor shall determine what equipment requires type approval by the local Vietnamese Authority and shall provide type approval equipment where necessary. This specification requires that the design, construction and testing of the instrument shall meet all requirements of the codes, standards and other documents listed in Section 2.2.

In general, the Instrumentation and Control systems shall be designed to conform with, but not limited to the latest editions of the following industry standards, codes, professional documents, regulations and project documents.

2.2 International Codes & Standards

API MPMS	API Manual of Petroleum Measurement Standards (for turbine meter, auto sampling, etc)
API RP-14C	Recommended Practice for Analysis, Design, Installation and Testing of Basic Surface Safety Systems for Offshore Production Platforms
API RP-14FZ	Recommended Practice for Design, Installation and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Zone 0, Zone 1 and Zone 2 Locations
API RP 14G	Recommended Practice for Fire Prevention and Control on Open Type Offshore Production Platforms.
API RP 14J	Recommended Practice for Design and Hazards Analysis for Offshore production facilities.
API RP 2218	Fireproofing Practices in Petroleum and Petrochemical Processing Plants
API RP-505	Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities Classified as Class I, Zone 0, and Zone 2
API RP 540	Electrical Installations in Petroleum Processing Plant
API RP 550	Manual on Installation of Refinery Instruments and Control Systems
API RP-551	Process Measurement Instrumentation
API RP-552	Transmission System
API RP 554 (3 parts)	Process Instrumentation and Control
API RP-555	Process Analyzers
API RP 581	Risk Based Inspection Base Resource Document
ASME B16.5	Pipe Flanges and Flanged Fittings: NPS 1/2 through NPS 24 Metric/Inch Standard
ASME 19.3	Performance Test Code, Part 3: Instruments and Apparatus Temperature Measurement
ASTM A269	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
BS 6739	Code of Practice for instrumentation in process control system : Installation design and practice
DNVGL-OS-A101	Safety Principles and Arrangements
DNVGL-OS-D201	Electrical Installations
DNVGL-OS-D202	Instrumentation and Telecommunication Systems
DNVGL-OS-D301	Fire Protection
DNVGL-OS-E201	Oil and Gas Processing Systems
DNVGL-RP-E402	Recommendation for selecting standards for electrical and instrumentation components (tentative recommended practice)
EN 54-2	Fire Alarm Control Panel
IEC 60079-1 to 14	Electrical apparatus for explosive gas atmospheres
IEC 60092 (all parts)	Electrical installation in Ship
IEC 60331	Tests for Electric Cables under Fire Conditions
IEC 60332	Tests on Electric and Optical Fiber Cables under Fire Conditions
IEC 60381	Analogue Signals for Process Control Systems.
IEC 60529	Degrees of Protection Provided by Enclosures (IP Code)
IEC 60534	Industrial Process Control Valves
IEC 60896	Stationary lead Acid Batteries
IEC 61000	Electromagnetic Compatibility (EMC)
IEC 61131	Programmable Controllers
IEC 61499	Functional Blocks
IEC 61508	Functional Safety of Electrical/Electronic/Programmable Electronic Safety-related Systems

IEC 61511	Functional Safety - Safety Instrumented Systems for the Process Industry Sector
IEC 61882	Hazard and Operability Studies (HAZOP Studies)
IEC 61892 series	Mobile and fixed offshore units - Electrical installations
IEC 62040	Uninterruptible Power Supply
IEC 62086	Electrical apparatus for explosive gas atmospheres - Electrical resistance trace heating
IEC 61537	Cable tray systems and cable ladder systems for cable management
IEE (1992)	Recommendations for electrical and electronic equipment of mobile and fixed offshore installations
IEEE Std 1242	Guide for Specifying and Selecting Cable for Petrochemical Plants.
ISA 5.1	Instrumentation Symbols Identification
ISA 5.3	Graphic Symbols for Distributed Control/Shared Display Instrumentation, Logic, and Computer Systems
ISA 5.4	Instrument Loop Diagrams
ISA 5.5	Graphic Symbols for Process Displays
ISA 12.13.01	Performance Requirement for Combustible Gas Detectors
ISA 12.21.01	Use of Fiber Optic Systems in Class 1 Hazardous (Classified) Locations
ISA 12.13.01	Performance Requirements for Combustible Gas Detectors.
ISA 12.13.02	Installation, Operation, and Maintenance of Combustible Gas Detection Instruments
ISA 20	Specification Forms for Process Measurement and Control Instruments, Primary Elements, and Control Valves
ISA RP 60 Series	Control Center
ISA S71	Environmental Conditions for Process Measurement and Control Systems
ISA 75 Series	Control Valve Standards & User Resources
ISA 84.01	Application of Safety Instrumented Systems for the Process Industries.
ISA TR 84 Series	Safety Instrumented Functions (SIF)-Safety Integrity Level (SIL) Evaluation Techniques
ISA RP 92.0.02	Installation, Operation, and Maintenance of Toxic Gas - Detection Instruments: Hydrogen Sulfide.
ISA 92.0.01	Part I Performance Requirements for Hydrogen Sulfide Detection Instruments.
ISO 2715	Liquid hydrocarbons – Volumetric measurement by turbine meter system
ISO 3170	Petroleum liquids – Manual sampling
ISO 3171	Petroleum liquid – Automatic pipeline sampling
ISO 10790	Measurement of fluid flow in closed conduits -- Guidance to the selection, installation and use of Coriolis flowmeters (mass flow, density and volume flow measurements)
NEMA ICS 1	General Requirements for Industrial Control
NEMA ICS 2	Industrial Control Devices, Controllers and Assemblies
NEMA ICS 6	Enclosures for Industrial Control Systems
NEMA PE-1	Uninterruptible Power Supply – Specification and Verification
NFPA 1	Fire Protection Code.
NFPA 70	National Electrical Code ® (NEC)
NFPA 72	National Fire Alarm Code
IP 15	Area Classification Code for Installations

3. ENGINEERING DESIGN DATA

3.1 Environmental conditions

All Instrument and Control equipment shall be suitable for operation on offshore platform. The equipment shall be suitable for continuous and short time duty, in the environmental conditions prevailing at site.

The environmental and climatic data are summarized below:

Atmosphere:	Offshore, salt laden, marine air condition, expose to monsoon storm and winter depression
Ambient Temperature:	39°C (Max) 21°C (Min)
Relative Humidity:	98% (max) 62% (min)
Wind Velocity:	18.8 m/s
Rainfall:	50 mm/hr
Seismic:	5 Richter

Indoor Air-conditioner conditions:

Instruments located in indoor equipment rooms, which will normally be air-conditioned (AC) environments.

These areas shall be subject to the following conditions:

- Ambient Air Temperature: 21 - 24 °C
- Relative Humidity: 45 - 55%

The equipment shall be able to operate correctly under conditions of air-conditioning failure, when the ambient conditions may rise to 50°C and 100% RH.

3.2 Design Life

All new equipment shall be designed for a service life of 15 years and shall have minimum 2 years proven in used in offshore environment condition.

3.3 Utilities

The facilities will be equipped instrument air system which shall meet requirements of ISA-7.0.01 "Quality Standard for Instrument Air" in general as followed.

The instrument air shall be free from oil and other liquids, and from toxic, corrosive, flammable and obnoxious gases or vapors.

The pressure dew point as measured at the dryer outlet shall be at least 10°C below the minimum temperature to which any part of the instrument air system is exposed. The pressure dew point shall not exceed 4°C at line pressure.

The quantity of solids shall be less than 0.1 g/m3 and the diameter of the particles shall not be more than 40 micrometer particle size in the instrument air system is acceptable for a majority of pneumatic devices.

The lubricant content should be as close to zero as possible and under no circumstances shall it exceed one ppm w/w or v/v.

- Design Instrument Air pressure : 12 barg
- Normal Instrument Air pressure : 5~7 barg
- Max./ Min. Instrument Air pressure : 8 / 4 barg

Electrical Power: Power supply to Instrument and Control systems shall be as follows:

- 220 VAC, 50 Hz, 1-phase, unearthed, UPS
- 220 VAC, 50 Hz, 1-phase, Non-UPS, solidly earthed
- 380 VAC, 50 Hz, 3-phase

24 VDC power supplies, if required, shall be derived from the respective power supply unit within the systems.

Note 1: For UPS backup time definition, reference shall be made to "BK21-002-TS-ES2-DB-01_Electrical Design Basis".

3.4 Units of Measurement

Unless otherwise stated, units of measurement shall in general be in accordance with the International System of Units (SI Units), IS0 80000-1.

3.5 Weather Protection

3.5.1 Ingress Protection

Ingress protection for instruments / equipment shall be in accordance with IEC 60529 and as follows:

- Minimum IP 56 for outdoor installations
- Minimum IP 44 for installations inside enclosed rooms without air-conditioner
- Minimum IP 22 for installations inside enclosed rooms with air-conditioner

3.5.2 Painting

All field instruments housing of carbon steel, frame works and supports shall be painted to suit the environmental condition. The detailed requirements for painting will be stated in:

VSP-NIPI-TYP-GEN-AZ7-SP-01	Painting Specification for Platform
VSP-NIPI-TYP -GEN-AZ7-SCH-01	Basic Painting Schedules

Stainless steel instruments/equipment shall not be painted.

3.5.3 Tropicalization

All field mounted electrical/electronic instruments/equipment shall be tropicalized in accordance with manufacturer's standard procedure. All electronic printed circuit boards shall be conformal coated or equal, to protect against humidity, corrosion and heat (i.e. tropical ambience).

3.6 Hazardous Area Classification

Hazardous areas shall be classified according to API RP 505, and equipment specified accordingly.

All equipment for use in hazardous areas shall be certified by reputable bodies such as ATEX, PTB, CENELEC, BASEEFA, FM, UL, CSA...

Sensors and actuating devices outside rooms shall be certified for operation in a Class 1, Zone 2 Group IIA T3 hazardous areas as minimum, except all detector devices located in the hazardous area shall be certified for use in Class 1, Zone 1, Group IIA T3 hazardous areas. Unless otherwise stated, the minimum ingress protection of outdoor instruments and devices shall be IP56 as minimum as per DNV-OS-D201 and IEC 60529. 1

For reasons of standardization, unless otherwise stated, all field mounted electrical equipment used for instrumentation circuits shall utilize the methods of EEx'd' protection and be certified for the hazardous area. Two following cases should be considered:

- Junction boxes for Non-Intrinsically Safe Circuits–Explosion proof/flameproof Ex 'e' if comply with API RP14F, otherwise Ex'd' shall be required
- Cable Gland – Explosion proof/flameproof Ex 'd'.

If specialist instrumentation cannot be provided with the above methods of protection, then alternative methods suitable for the classified area and certified by an acceptable Authority may be proposed The Vendor shall submit a technical report justifying the instrument selection for the Purchaser's consideration.

Cables that necessarily are located so they may come into contact with mud are to be constructed of materials resistant to oil based mud to comply with DNV-OS-D201. 1

The Vendor shall provide a dossier of all hazardous area equipment, containing all information pertinent to the hazardous area work. The dossier shall include all necessary certificates, drawings, calculations, catalogue information, data and specification sheets etc.

All instrument equipment to be installed in a hazardous area meets all the relevant requirements of the ATEX Directive and shall have the CE symbol clearly fixed to indicate compliance.

If they meet other requirement of UL, CSA (North America)..., the (UL); (SP) or relevant symbols shall be provided to indicate compliance.

3.7 Earthing

There are 2 type of earth in platform:

- Instrument Earth: Instrument termination; earth bar... shall be connected to.
- Protective Earth: Instrument housing, enclosure shall be connected to.

All panels, junction boxes, frames, etc. shall be equipped with 10 mm diameter earth studs and all metal work shall be earth bonded. All outdoor equipment shall have external earth studs.

All Instrument signal cable screens shall be earthed at one point only. This shall be at the equipment panels. All screens shall be continued through junction boxes and insulated from earth at the field side.

Cable armors shall be earthed at both ends with continuity through junction boxes.

All electronics field instrument housings shall be separately grounded by connecting the external studs to the platform ground.

For Offshore all the earth points converge to a single earthing boss, however the safety and Instrument earths will remain segregated at the enclosure end.

Earthing cables used shall be stranded Cu and EPR insulated, 600/1000 Volt grade and shall have green / yellow colored outer sheaths.

3.8 Material Requirements

Materials shall be selected with regard to the following criteria:

Suitability for the specified process conditions, with 316SS as the minimum for use outside fully enclosed rooms.

Suitability for the corrosive effects of the atmosphere.

Galvanic compatibility between dissimilar materials, with isolating bushes, plates, used where necessary to prevent corrosion due to galvanic action.

The possibility of selective corrosion in certain alloys and stress corrosion cracking in certain high strength materials when used in corrosive environments.

Purchaser approval shall be obtained for the use of aluminum for any instrument component. Aluminum may only be used if no other suitable material is available from the manufacturer and shall not be used for any component in contact with the process fluid. If aluminum is used for any housing or component it shall be suitably coated and certified as copper free i.e. less than 0.4% copper by mass.

Material for all Ex'e' junction boxes, and instrument electronics and termination housings shall be 316SS.

All proposed plastic components shall be toxic free and fire resistant, UV resistant, and compatible with the environmental conditions.

All bolting, screws etc, shall be manufactured from a suitable grade of stainless steel.

All brackets, fittings etc shall be fabricated from 316SS.

3.9 Nameplates

Each item shall be equipped with a manufacturer's nameplate of 316SS permanently attached with stainless steel screws or rivets indicating the specified data referred to under the particular Instrument Specification in addition to the following as a minimum:

- Instrument Tag No.
- Purchase Order No.
- Name of Manufacturer.
- Place of Manufacture.
- Type and Model No. (including reference to any special features).
- Serial No.

All information displayed on nameplates shall be in the English Language, in Metric units, and approved by the Purchaser.

The Vendor shall install an engraved traffolyte label (black on white), screwed to the instrument mounting, stating the instrument tag number.

4. GENERAL REQUIREMENT FOR CONTROL AND ACTUATED VALVES

4.1 General Requirements

Terminations within wiring enclosures shall be via fixed terminals. Flying leads shall not be used.

Pneumatic connections shall be 1/4" NPT-F minimum. Larger port sizes shall be used where required for larger sizes of actuators.

Accessory mounting bolts shall be 316SS. 1

Flow direction shall be stamped or cast on the body of all valves.

All actuators, positioners, air sets, air lock relays, limit switches, solenoid valves, etc., shall be shipped factory mounted, tubed and wired, in a completely assembled condition. Tubing shall be seamless 316SS tube 3/8" OD minimum with 316SS double ferrule compression fittings.

The Vendor shall provide detailed Pressure-Temperature envelope curves for each combination of valve body, trim and elastomer materials.

Each control and actuated valve shall have a 316SS nameplate attached firmly to the body, furnishing the following information:

- Tag number.
- Body and port size.
- Stem travel.
- Action on air failure.
- Spring range.
- Air supply pressure.
- Manufacturer's model number for valve body, actuator and positioner.
- P.O. number.
- Serial number.
- Leakage class.
- Body rating and material grade.
- Signal range.
- Trim characteristics.
- Body test pressure.
- Bench set pressure.

4.2 Actuated Valves

Refer to document No.: "VSP-NIPI-TYP-TS-IA2-SP-04 Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch".

4.3 Control Valves

Refer to document No.: "VSP-NIPI-TYP-TS-IA2-SP-05 Specification for Control Valves".

5. GENERAL REQUIREMENT FOR PROCESS INSTRUMENTS

5.1 Pressure Instruments

5.1.1 General

Materials for process wetted parts of instruments and accessories shall comply with the project piping specification. The minimum requirement is 316SS for all wetted parts.

In addition to the process isolation valve, pressure instruments shall be provided with close-coupled manifolds providing facilities for isolation of each impulse line, equalization, bleeding and testing DP gauges and switches shall be provided with manifolds, DP transmitters (except DP level transmitters with filled-leg or diaphragm seal) shall be provided with manifolds.

Pressure instruments shall be mounted such that they may be easily removed and adjusted without deforming impulse lines.

All pressure instruments shall be mounted so as to minimize the length of impulse lines.

The use of over-range protector shall be advised by Vendor. Over-range protectors shall not be applied without the written permission of the Purchaser.

5.1.2 Pressure Gauges

Gauge scales shall be direct reading linear in Bar or kPa.

Dials shall have a diameter of 100mm or 160mm for all measurement readings and 63mm for filter regulators or other pneumatic instrument.

Gauges shall withstand 130% of the maximum full range pressure without affecting their calibration.

Pulsation dampeners or snubbers shall be supplied for instruments in pulsating service, such as reciprocating pump and compressor suction and discharge.

Gauges shall be of solid front 316SS construction, with a screwed retaining ring, weather-proof design, equipped with rear blowout disc and zero adjustment. Gauge lenses shall be shatterproof glass or acrylic plastic.

Accuracy shall be within 1% of the scale range. Accuracy within 1.6% of the scale range can be accepted for Difference Pressure Gauge.

Gauge connections shall be ½" NPT-M bottom except for receiver gauges, which may have ½" NPT-M back connection.

Pressure gauges shall be liquid filled as standard, using fluids as listed below:

Pressure Span	Filling	Temp. Range
Spans 243 kPa Minimum	Glycerine 98 %	-10° to 66°C
Spans 60 kPa Minimum	Silicone	-40° to 100°C
Up to 0.61 kPa Maximum	No Filling	N/A

Gauge ranges shall be selected such that the normal operating pressure will read between approximately 1/3 and 2/3 full scale.

5.1.3 Pressure Switches

Pressure switches shall be diaphragm or piston type with hermetically sealed single pole double throw (SPDT) micro-switch rated 1 Amp 24 VDC minimum.

Piston type switches shall have a process isolation diaphragm made of "TFE" or similarly inert material, and may only be applied on utility service.

Pressure switches shall have tamper-proof set point adjustment.

Pressure switch dead band shall be less than the difference between the normal operating pressure and set point.

Pressure switches shall not be used for ESD functions without Purchaser approval.

Set point shall be not less than 50% of the range and shall be adjustable without violating the flameproof integrity of the switch enclosure. A separate cover shall give set point adjustment access.

The switch element shall withstand an over-range pressure of 1.3 times maximum range without loss of calibration.

Electrical connection shall be ½" NPT.

Enclosure material shall be SS316.

Repeatability shall be ± 1.0% with fixed dead-band.

Process connection shall be bottom entry, 316SS threaded 1/2" NPT-F.

Pressure switches shall have provision for surface mounting by body lugs or flange.

5.1.4 Pressure and Differential Pressure Transmitters

All pressure transmitters shall use Coplanar type arrangement process connections. All transmitters shall be supplied with Integral Manifold assembly.

Output signals shall be 4-20mA with HART.

Electrical connection shall be ½" NPT.

Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted. Where the transmitter is not readily visible a separate loop-powered indicator shall be provided.

Transmitters shall be able to withstand an overpressure equal to the body rating.

Span shall be continuously adjustable over the transmitter range.

Transmitters shall have 50% over-range protection and body studs shall be high tensile stainless steel, or other corrosion-resistant material for higher stress levels.

Accuracy shall be within 0.25% of the scale range.

Transmitters shall be constructed of material suitable for the process fluid, 316SS minimum.

Bolting shall be 316SS with 1/2" NPT process connection.

5.1.5 Mounting

Mountings shall be 316SS bracket type suitable for mounting on a 2" pipe stand and/ or flat steel plate.

Nuts, bolts and washers shall be 316SS or better. Where switches and other devices are grouped and mounted on a gauge board, or instrument stand, adjustment or removal of each instrument shall be possible without the need to disconnect, dismantle or remove any other instruments or equipment or deform any tubing.

5.2 Temperature Instruments

5.2.1 Thermowells

Temperature elements installed on process lines or vessels shall be installed in thermowells.

Thermowells shall have DN50 RF flange process connections. Sensor connections to thermowells shall be 1/2" NPT. Stainless steel thermowell flanges shall be rated as the same class of pipe which it is connected.

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Screwed thermowells may be used on utilities with specific Purchaser approval, and shall be fabricated from drilled and threaded bar stock, with 1"NPT (male) and ½" NPT (female) threads.

Thermowell pressure/temperature ratings shall be in accordance with ASME B16.5 (latest edition).

Thermowell material shall be suitable for the process media, generally 316SS, or other material as required by the project piping specification.

Thermowells shall be fabricated from drilled bar stock, with minimum wall thickness of 4.8mm, and 6.5mm bore. Bore shall be concentric with the outside diameter to within 10% of wall thickness.

Thermowells shall be designed to withstand vibration stresses caused by stream velocity. Wake frequency at maximum flow velocity shall be less than 80 per cent of the natural frequency of the thermowell. The Vendor shall provide calculations to ASME Performance Test Code 19.3, Part 3: Instruments and Apparatus Temperature Measurement.

Thermowells shall project into the centre third of pipe diameter, up to a maximum immersion length of 127mm (5inches) as per API RP551. Where a thermowell is required in line sizes DN80 or less, a line section enlarged to DN100 shall be provided. Thermowells shall not be installed in elbows.

Lagging extensions shall be provided on insulated piping and insulated vessels.

Thermowells for use as test wells shall be provided with a stainless steel plug and chain.

All thermowells will be provided with pressure test and NDT certificates.

5.2.2 Temperature Gauges

Local temperature indication shall be Bimetallic thermometer type and provided by gauges with 100mm dials, every angle head, 316SS construction and zero adjustment. Where the use of rigid stem temperature gauges would hamper reading of the scale, remote-mounted gauges with capillary extension may be used.

Gauge accuracy shall be ±1% full scale.

5.2.3 Temperature Sensors and Transmitters

For temperatures up to 350°C, measurement elements shall be platinum resistance temperature detectors, 100 ohms at 0°C to BS 1904, with RTD/current transmitters. Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted.

For critical loops temperature transmitters shall use dual sensors with HOT BACKUP facility.

Surface metal temperatures shall be measured by thermocouples secured to the surface.

Thermocouples shall normally be the mineral-insulated metal-sheathed type, isolated from earth. Characteristics of mV versus temperature shall conform with BS 4937.

Electrical connection shall be ½" NPT.

5.2.4 Thermocouples

Thermocouples shall be mineral insulated and sheathed. The hot junction shall be electrically insulated from the sheath.

Thermoelectric properties, color coding, and limits of error of thermocouples and thermocouple extension wires shall conform to IEC 60584.

In general thermocouples shall be Type K (Chromel-Alumel) for the temperature range - 20°C to 1000°C.

For temperatures above 1000°C, Type R (Platinum/13% Rhodium – Platinum) shall be used.

Thermocouples for temperature-differential measurements shall be electrically isolated from ground.

All thermocouple instruments shall have thermocouple burn-out indication. This will be full upscale or down scale as per specific requirement.

Thermocouple wires (if and when required) shall be as short possible prior to the temperature transmitter.

5.3 Level Instruments

5.3.1 General

Where possible, vessel bridles with DN80 ANSI flanges shall be used for multiple level instrument installations. Process control and safety instruments shall be mounted on separate bridles and have difference nozzles.

Vent and drain connections shall be provided. Vent connections shall be plugged, drain and test connections shall be valved and piped to the platform drains system.

For utility system, level measurement greater than two meters and fixed S.G., a differential type pressure transmitter shall be used. Consideration shall be given to the use of wet legs in this application.

All flanges on the level instrument pressure retaining parts shall be of the same type and rating as the process flanges, and shall be in accordance with the vessel trim specification.

Transmitters shall be fitted with LCD output indicators, scaled 0 –100%. Where this is not possible or desirable, a separate loop-powered indicator shall be installed.

The transmitter housings shall be SS316. Accuracy shall be in range 0.25% of full scale. Output signals shall be 4-20mA with HART.

Electrical connection shall be ½" NPT.

Heat tracing system including electrical heat tracing, isolation, distribution panels... shall be required where necessary. The 220VAC, 1Ph incoming power will be provide by purchaser based on Vendor calculation for power consumption. Electrical heat tracing device shall be suitable for Class 1, Zone 2, Group IIA T3. All technical requirements for heat tracing system shall follow IEEE 515.

5.3.2 Displacement Type Level Instruments

Displacement type level instruments shall be of the externally mounted type.

Preferred ranges are: 356mm 813mm 1219mm

In cases where these steps are too large, intermediate rages of 559 and 1015mm may be specified. For ranges over 1219mm differential pressure instruments are preferred.

Displacer chambers for external displacers shall have minimum DN50 ANSI 300 RF flanged vessel connections.

'Side and Side' connections shall be used with ring type joints or similar connections. 'Side and top' connections shall be used only in cases where this would avoid a pocket in the connecting piping (on small vessels).

Constructions using air fins or torque tube extensions shall be specified for high and low temperature services.

Displacer material shall be compatible with the vessel specifications. Special attention shall be paid to correct welding and heat treatment services.

Torque tube shall be Inconel or Monel minimum, with nylon bushing type bearings.

All other wetted parts shall be 316SS or as approved by Purchaser.

Connection for internal displacer shall be DN100 flanged, unless otherwise specified and approved by the Purchaser.

5.3.3 Magnetic Float Level Gauge

Magnetic Float type level gauges used externally to vessels shall include the following specific features:

- An external gauge chamber
- A hermetically sealed float, which shall have a minimum positive buoyancy in the lower fluid, at the minimum specified density. Vented or pressure-equalized floats shall not be used. The float shall contain a permanent magnet
- Float shall be able to withstand the full design pressure, not just a margin above operating pressure
- Float specific gravity shall be properly selected such that magnetic coverage be 360 degrees.
- Clearance between the float and the gauge chamber internal walls shall be adequate for the intended service, particularly in respect to expected solids or waxes which may occur.
- The gauge chamber shall be sized with due consideration to the float length ·to ensure that float can be accommodated, with clearance, at the specified 0% and 100% of measuring range levels, inclusive of worst case specified density variation. For side entry chambers, the 0% and 100% points correspond to the center line of the process flanges, unless otherwise noted.
- An external visual level indicator, comprising a series of pivoted flapper bars magnetically coupled to the float shall be provided. The indicator bar shall be contained within a hermetically sealed polycarbonate or glass transparent enclosure. It shall be possible to remove the Indicator bar from the enclosure for maintenance. A graduated ruler bar, parallel to the indicator bar, shall also be provided, calibrated in mm. The origin for the scale shall correspond to the relevant level sketch.
- The ruler bar shall be made of SS316L. Numbers shall be painted on and embossed into the metal ruler.
- Top and bottom travel stops shall be fitted to all chambers.
- Means shall be provided to secure the float during transportation.
- All lengths shall be standardized platform wide as far as possible.

Level float elements shall be external chamber type. Floats shall be entered on the instrument data sheet, and marked on the instrument nameplate.

5.3.4 Differential Pressure Level Instruments

The transmitter body shall be suitable for either direct flange-mounted to vessel piping isolation valve or remote mounted type with capillary. The transmitter body and diaphragm sensor materials shall be manufactured from 316 stainless steel or superior metals.

The differential sensor unit shall be able to withstand loss of design static pressure on either side of the diaphragm without permanent damage to the sensor.

Where plugging, condensation of vapor or vaporization is liable to occur chemical seals shall be utilized together with flushing/calibration ring. 'Wet' reference legs for level measurements are not acceptable.

5.3.5 Guided Wave Radar level transmitter

Guided wave radar instruments shall be based on Time Domain Reflectometry (TDR) technology.

Vessel connections of GWR transmitter's head shall be flanged and removal of the transmitter shall be possible in situ with the vessel still pressurized.

Stilling wells if required shall be provided. Manufacturer shall advise the type of probe as selection is dependent on service applications.

5.3.6 Magnetostrictive Level Transmitters (MTL)

Level transmitter shall be included with the magnetic gauge, see section 5.3.3 for gauge requirements.

Transmitter shall be side-bottom mounting. Transmitter shall meet the same enclosure design, signal requirements and electrical area classification defined for other types of level transmitters.

They shall be rated for the design pressure and temperature of the monitored equipment for the service ratings.

5.3.7 Other Level Instrument type

If none of the above types satisfies the requirement of specified application, other type such as capacitance, ultrasonic, etc. can be used with approval by COMPANY.

5.4 Flow Meter Assembly

Supplier to implement calculation, selection, engineering, procurement/ fabrication and delivery of the complete Flow Meter assembly, including meter, pressure transmitter, temperature transmitter, meter tubes, strainer, flanges, gaskets, bolts, nuts, cable, flow computer and all other accessories following API MPMS so that the owner don't need to provide any additional materials to perform the meter assembly. All components can be disassembled for transport and shall be reassembled on the offshore platform.

Sizing calculation/selection, hook-up drawings, full catalogs, data sheets, bill of materials shall be attached to the proposal.

Electrical connection shall be ½" NPT.

5.5 Orifice Plates

5.5.1 Orifice Plate Assemblies

Orifice plates shall be used for Gas service.

Transmitter range and orifice sizing shall be arranged such that normally:

- The differential pressure at maximum flow rate is 25kPa. If circumstances dictate otherwise, the differential pressure shall be a simple multiple or fraction of 25kPa, Vendor to provide the suitable value of Dp for Company's approval. Maximum Dp shall be 50kPa.
- The d/D ratio shall be in the range of 0.2 to 0.75.
- The upper range value of the flow instrument shall be a whole number multiple of the lower range value, to provide straightforward interpretation of chart scales.

The turndown ratio shall not greater than 5:1 unless otherwise specified in Datasheet documents.

Orifice plates shall be square edge, constructed from 316SS and have an identification tab, external to the process, with the following information stamped on the upstream side:

- Tag no
- Material
- Orifice bore size (specified or calculated)
- d (bore corrected to 20°C)
- Line Size

Orifice plates, flanges and fittings shall be fabricated in accordance with ISO 5167 or AGA - Gas Measurement Committee, Report No. 3 (AGA 3). The plate finish shall be 15-20 micro-inch roughness. The Vendor shall

provide a measurement report showing that the orifice plate is within the tolerance limit of the AGA 3. The measurement must be traceable to a known primary reference standard like NIST.

Orifice fitting, quick change orifice fitting or equivalent type orifice holder shall be preferred over conventional orifice holder on live hydrocarbon service. Orifice holder of 8" or less shall have a locating dowel pin on the sealing bar and index hole on the plate holder to ensure that the orifice plate is fully seated and concentric with the line bore. Orifice holder larger than 8" shall have special positioning set screws. These shall be permanently installed at the factory and located so that impinge on the plate holder on all four edges, fixing its position. The seal bar shall have a top set screw that prevents the fitting from being fully sealed off unless the holder is fully seated and centered.

Where conventional orifice carriers are allowed by the Purchaser, they shall be in accordance with the piping classification, have a minimum flange rating of 300 ANSI, be of minimum size DN50 and equipped with jacking bolts. Two sets of alignment dowel pins shall be furnished to ensure mating flanges are aligned correctly.

Orifice assemblies shall be located in horizontal pipe runs. Tapping shall be 1/2" NPT and be 45° above the horizontal for gases, and 45° below for liquids. Upstream and downstream tappings shall be orientated 90° to each other.

Generally, for non-fiscal measurement, the straight lengths of upstream and downstream pipe work run for an orifice installation shall be 15D and 8D respectively (10D and 5D minimum). No connections shall be made in either the upstream or downstream straight pipe work, other than the orifice flange tappings. The piping layout shall always be arranged such that straightening vanes are not required and gas meter runs are self-draining.

Upstream elbows in more than one plane shall be avoided to minimize vorticity.

Piping and equipment shall be arranged so that flashing does not occur at or upstream of orifice plates.

Eccentric, segmental or quadrant edged orifices may be used for special services such as slurry, wet gas or highly viscous service.

5.5.2 Differential pressure flow transmitter

Refer section 5.1.4 for Differential pressure transmitter requirement.

Accuracy shall be within 0.25% of the scale range.

Differential pressure flow transmitters shall be fitted with a 5-valve manifold, mounted directly to the transmitter. The manifold shall be fixed to the mounting arrangement, allowing the transmitter to be freely removed without disturbing impulse lines.

Where possible, the transmitter should be close coupled to the process to keep tubing length to a minimum.

5.6 Restriction Orifice Plates

The Vendor shall provide calculations for sizing, and for stress calculation to validate plate thickness.

5.7 Coriolis Flow Meter

The Coriolis meter shall meet the requirements in ISO 10790. 

A typical uncertainty specification is 0.5% of reading on mass flow (until the influence of the zero stability impacts the measurement).

Coriolis meter shall be used as the mass flow-measuring element and density measuring element.

Coriolis Meter shall be selected such that the nominal bore size of the sensor is equal or less than line size.

Coriolis Meter shall have the flanged end connection, rated for the associated piping class.

Any special cable and/or hardware that required for make the system complete shall be supplied by Contractor.

Contractor shall ensure the sensor and wetted part are compatible with the process fluid condition. The sensor (metal tube) shall be made of SS316 at a minimum.

The coriolis meter transmitter shall be 'SMART' type with 24VDC power supply. Output signal shall be Modbus interface and optional 4-20mA with local indicator.

Transmitter mounting type can be remote or direct otherwise specified in Datasheet. With remote mounting transmitter, pipe 2" mounting kit, internal cable from transmitter to sensor and suitable cable glands both end shall be provided by VENDOR. Transmitter housing material shall be SS316, if SS316 cannot be provided as

Manufacture standard, cooper free Aluminum Alloy Epoxy Coated and certified for offshore/Marine application can be accepted.

5.8 Ultrasonic Flowmeters

Ultrasonic Flow Meters (USM) can be used to measure gas and shall be based on time-of-travel method.

USM shall be in-line type with flanged end connections. Flange shall be in accordance to ASME B16.5.

1 The USM shall consist of flow meter / element and the flow transmitter. In order to meet the performances, calculations and selections of the meter shall be scope of Vendor. The USM shall be able to operate reliably even under unsteady flow, pulsating pressure, varying gas composition and temperature, and the wide flow turndown ranges typical of flare systems.

In general, accuracy shall be better than +/-1% of span.

1 The Ultrasonic meter transmitter shall be 'SMART' type with 24VDC power supply. Output signal shall be Modbus interface 4-20mA with local indicator (HART type is preferred).

Transmitter mounting type can be remote or direct otherwise specified in Datasheet. With remote mounting transmitter, pipe 2" mounting kit, internal cable from transmitter to sensor and suitable cable glands both end shall be provided by VENDOR. Transmitter housing material shall be SS316 if SS316 cannot be provided as Manufacture standard, cooper free Aluminum Alloy Epoxy Coated and certified for offshore/Marine application can be accepted.

5.9 Rotameter

1 Rotameter shall be of the tapered tube and float type. All wetted parts of rotameter shall be minimum stainless steel (SS316). The meter housings shall be a minimum 316 stainless steel unless otherwise specified and protection IP56 as minimum.

Rotameter for remote monitoring shall be provided with transmitter. Output signals of transmitter shall be 4-20mA with HART. Electrical connection shall be ½" NPT.

Transmitters shall include an LCD indicator scaled in engineering units, and shall be mounted integrally in the head of the detecting element where access permits, otherwise remotely mounted.

Rotameter shall have a metal metering tube depending on the application, process conditions, etc. Where metal tube is required, material shall meet the relevant piping specification as well as connecting flanges.

For the Rotameter with metallic tube, the connection between the moving and indicating /transmitting parts shall be glandless magnetic coupling.

Floats shall be self-cleaning and shall be designed for maximum immunity to viscosity variations and dimensional stability.

Rotameter shall be fitted with inlet and outlet float stops.

Rotameter fitted with a constant flow regulator shall only be used for fixed rate flows such as flushing or purging.

Process connections shall be:

- Flanged, according to the relevant piping specification and ASME B16.5.
- Screwed NPT for flushing or purging service.

The rangeability of the rotameter shall be 10:1 and shall have and accuracy of ± 2 % or better.

5.10 Turbine Meter

1 The VENDOR shall calibrate the liquid turbine meters in accordance with the API Manual of Petroleum Measurement Standards (MPMS), Chapter 5, Section 3.

All meters shall be equipped with pre-amplifiers.

Preamplifiers shall be compatible with the turbine meter pickups both in connection and signal.

Preamplifiers shall operate on 24V DC, and protection IP56, Ex'd' as minimum.

Electrical connection shall be ½" NPT.

Preamplifiers shall include an LCD indicator scaled in engineering units, and shall be mounted integrally with the meter where access permits, otherwise remotely mounted.

The meter body material shall be suitable with Piping design and process connections shall be flanged type, according to the relevant piping specification and ASME B16.5.

Preamplifiers housings shall be a minimum 316 stainless steel unless otherwise specified.

Turbine meters for liquids shall have a linearity of +/- 0.15% and a repeatability of 0.05% on non custody services.

For liquid meters rotor hubs, blades, and rims shall be, as a minimum, stainless steel.

5.11 Water cut meter

1 A Water cut meter (*Water/condensate in Oil Analyser*) shall be provided on the liquid line of the Separator to indicate the quantity of Produced water and Condensate on liquid streams.

The water cut meter shall be certified for use in a Class 1, Zone 2, Gas Group IIA temperature class T3 hazardous area as a minimum.

Humidity Operating Range shall be at least from 5%-100% RH, non-condensing.

Water content range shall be from 0% to 100%.

The transmitter output shall be 24VDC Loop Powered and provided 4-20 mA (% of Water) output with HART protocol, real time compensation for temperature effect. In general, the transmitter shall be better than +/-1% absolute accuracy, 0.25% repeatability, 0.05% sensitivity, less than 1 sec of response time and 0%-100%WC calibrated range.

Communication Port of Modbus TCP/IP and/or RS-485 (Modbus TCP/IP is preferred) shall be provided.

All Sensors, spools, flanges, enclosure/transmitter housing materials shall be SS316 and enclosure protection IP56 as minimum.

The Static Mixer shall be designed in accordance with ASME B31.3. The mixer element shall be SS316.

The piping, flanges shall be design and in accordance with ASME B.16.5.

All analysers shall be provided with necessary calibration test kit for zero and span check.

5.12 Pig Signaller

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5.12.1 Pig Signaller transmitter

Pig signaller transmitter shall be Non-Intrusive Type and designed to clamp onto the outside of the pipe, utilizing ultrasonic detection principle.

The pig signaller transmitter shall be provided with local and remote indication to indicate the passing pig. Remote indication shall be loop powered (24VDC) and with 4-20mA (HART) output signal wired to the platform's PCS for monitoring purpose.

The complete pig signaller transmitter including sensor assembly shall be suitable for Class 1, Zone 2 Group IIA T3 hazardous area installation. The Signaller and sensor housing shall be SS316, enclosure protection IP56 as minimum.

5.12.2 Pig Signaller Indicator

Pig signaller indicator shall be Intrusive Type and designed with flanged connection to the pipe, utilizing mechanical trigger detection principle.

The pig signaller indicator shall be provided with local indicator, mechanical type Flag up with Manual reset.

6. GENERAL REQUIREMENT FOR FIRE AND GAS DEVICES

6.1 Point Gas Detector

Gas detector shall be located in process areas, generator rooms and control room air intake.

The detecting unit included in the sensor head shall provide adequate sensitivity and the stability necessary, under all conditions, to repeat any reading within ± 3 percent over the full-scale range.

"Smart" sensor technology shall be used when selecting gas detection systems. The selected detector's maintenance/calibration frequency shall be stated. Low maintenance requirements shall be a factor in the selection.

Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults shall be signaled by the range below 4mA.

Cable entries shall be ½" NPT-F.

Detectors requiring sample pumps for operation shall not be used.

Fixed-point combustible-gas detectors shall be based on infrared absorption technology and shall be calibrated 0-100% LEL (lower explosive limit) of Methane in air. Detectors shall initiate responses at two different concentrations: for warning alarms and for initiation of executive action. Typical values of these set-points are: 20% and 60% LEL for general process areas and shall be reviewed by the Contractor during the risk assessment and detail design, and revised as required.

The alarm condition shall not be resettable until the specific detector reading has dropped below the warning alarm level as applicable.

Operator response shall be required to clear the audible and visual alarms.

Catalytic type detectors shall not be used.

All detector devices shall be certified SIL2 rated as minimum.

All detectors shall be equipped with built-in field display in order to calibrate easily.

6.2 Hydrogen Gas Detectors

Hydrogen detection will be required in battery rooms if hydrogen is generated during the battery charging process. Catalytic type detectors can be used.

All detector devices shall be certified SIL2 rated as minimum.

Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults shall be signaled by the range below 4mA.

Battery room ventilation shall be sufficient as to prevent accumulation of H2 exceeding 20% LEL (high gas alarm) and 60% LEL high high gas alarm) from a single detector shall generate an alarm at the SIS. Detection of 60% LEL from a single detector shall also initiate alarm at mimic panel.

Cable entries shall be ½" NPT-F.

Catalytic bead sensors shall be used to detect the accumulation hydrogen in the enclosed area. A minimum of two detectors shall be provided in the enclosed area.

6.3 Flame detector

Optical flame detectors shall be infra-red triple spectrum type and shall make use of such sensors, filters, and/or design to reject such phenomena as electric arcs, heaters, artificial light sources, lightning, and be completely "solar blind". The detectors shall be able to detect all types of flaming fires. The minimum cone of vision shall be 90°.

The detectors shall alarm to a 0.1m2 n-Heptane fire at 20 meters within three (03) seconds unless otherwise stated in data sheet.

Detectors shall be powered from 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Detector faults and dirty optics shall be signaled at level less than 4 mA signal. Sufficient margin shall be allowed between fault, normal and alarm levels to minimize spurious alarms.

Cable entries shall be ½" NPT-F.

Optical flame detectors shall have automatic, self-diagnostic circuitry that continuously monitors the optical surfaces, sensor sensitivity, and electronic circuitry, and shall fail to fault status. Any detector malfunction shall be alarmed on the SIS.

Test kits shall be supplied for testing of each type of detector from deck level or fixed platforms.

Fire and flame detectors employ the latest technology available, reliable and have low incidence of nuisance alarms, long term stability and long calibration intervals.

The signal from these detectors is wired to the analogue module of SIS, and these detectors send the analogue values which indicate the fault state, normal range value, etc. The wiring to these detectors is therefore line-monitored.

All conventional flame detectors shall be certified SIL2 rated as minimum.

Detail installation of the detectors shall be defined by Contractor's design.

6.4 Smoke Detector

Smoke detectors sense combustion products and should be used within enclosed spaces which are not subject to extremes of temperature, humidity, dust or wind, complying with DNV-OS-D301.

Smoke detectors shall be certified to operate before the smoke density exceeds 12.5% obscuration per meter, but not until the smoke density exceeds 2% obscuration per meter.

Detectors shall incorporate an integral LED indicator for confirmation that the unit is active. Detectors that are not visible, such as ceiling void or under floor, shall provide an output to a remote LED located in the room being monitored.

Ionization/photoelectric type smoke detectors shall be installed in offices and sleeping cabins;

A detector base shall be provided for connecting the individual detectors to the SIS.

Cable entries shall be ½" NPT-F complete with cable gland.

In general, all fire and gas detection equipment, ESD Process Field Devices and ESD Driven actuating devices shall be certified for use in a Zone 1, Gas Group IIA temperature class T3 Hazardous Area. For non-hazardous areas such control rooms, living quarter, etc. where protected by pressurizes system completed with gas detection at air intakes, non-certified smoke and heat detector are acceptable for use.

Smoke detectors installed within the Battery Room shall be suitable for Class 1 Zone 1 Group IIC T3. 1

Detector shall be powered from 24VDC.

Smoke detectors shall remain in alarm state until reset by the SIS. End-Of-Line resistances shall be provided by VENDOR.

6.5 Heat detectors

Heat detectors may be installed in areas where flammable and combustible materials are handled or stored, or where local normal operating conditions are not considered suitable for installing the faster-acting smoke detectors according to DNV-OS-D301.

The positioning of point heat detectors should take account of the density and spacing, including their proximity to bulkheads. Detectors in high ceiling rooms or multiple floor areas should take account of the reduced sensitivity of the detectors at heights above 8 m.

Heat detectors shall also be installed within the machinery enclosures as a complement to IR detectors installed. Where specified such heat detectors shall be based on Rate of Rise type (ROR) principle. ROR type heat detectors shall actuate when the temperature rise within the enclosure exceeds 1degree C/minute. Electrical Conductivity–Type Rate-of-Rise Detector spot-type sensing element in which resistance changes due to a change in temperature. The rate of change of resistance is monitored by associated control equipment, and an alarm is initiated when the rate of temperature increase exceeds a preset value. The sensitivity and the preset temperature value can be adjustable.

Detectors shall be of the plug in base type.

Rate of rise heat detectors shall have no moving parts and shall operate on the twin thermistor principle or similar solid state circuitry.

Detectors shall incorporate an integral LED indicator for confirmation that the unit is active. Detectors that are not visible, such as ceiling void or under floor, shall provide an output to a remote LED located in the room being monitored.

In general, all fire and gas detection equipment, ESD Process Field Devices and ESD Driven actuating devices shall be certified for use in a Zone 1, Gas Group IIA temperature class T3 Hazardous Area. For non-hazardous areas such control rooms, living quarter, etc. where protected by pressurized system completed with gas detection at air intakes, non-certified smoke and heat detector are acceptable for use.

Cable entries shall be ½" NPT-F.

Detector shall be powered from 24VDC.

Heat detectors shall remain in alarm state until reset by the SIS. End-Of-Line resistances shall be provided by VENDOR.

6.6 Manual Call Point Pushbuttons

Manual call point pushbuttons shall be arranged strategically on the platform's different areas installed no higher than 1.4m over floor level. All switches shall mount at a height of 1.3 meters in easily accessible, well lighted, conspicuous areas. The Manual call point shall be provided as specified in Fire & Gas Layout.

The Manual call point shall have screw-less terminals with built-in strain limits accepting wires of 1.5 mm2.

Manual call point pushbutton (MCP) shall be provided throughout the Platform and at the entry / exit points, and escape route stairways.

MCP of the conventional type shall be of the lift flap press button latching type. All MCP shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).

MCP shall be certified for the hazardous area, color red.

The MCP shall be designed for fast, simple and failure-proof dismantling and assembling and shall have provision for easy and clear labelling.

The MCP shall have a sealable opening for wire introduction through compression cable glands on the top and bottom of housing.

The lid of the MCP shall be permanently fixed to the body of the call point by a hinger.

Contact shall be SPDT type with the rated voltage/current shall be 24VDC/2A.

Cable entries shall be ½" NPT-F.

The switches shall also provide with SS316 lid and label fastener and mounting accessories. Where switches are used as inputs to the SIS, they shall be voltage and ground-free, and shall be closed during normal (safe) operation.

End-Of-Line resistances shall be provided by VENDOR.

6.7 Emergency Push Button

The ESD push button shall be provided as specified in Fire & Gas Layout.

All push buttons shall be constructed from 316 stainless steel.

The switches shall be Push Button Latching key reset, and shall be wired directly and individually to the SIS.

Contact shall be SPDT type with the rated voltage/current shall be 24VDC/2A.

Cable entries shall be ½" NPT-F.

Switches shall be prominently located and colored yellow for ESD-1 and blue for APS, so as to be highly visible, shall be protected from inadvertent operation by shrouds or flaps, and clearly labelled with a description of their duty.

The switches shall also provide with SS316 lid and label fastener and mounting accessories.

Where switches are used as inputs to the SIS, they shall be voltage and ground-free, and shall be closed during normal (safe) operation.

All switches shall mount at a height of 1.3 meters in easily accessible, well lighted, conspicuous areas.

End-Of-Line resistances shall be provided by VENDOR.

6.8 Open Path Flammable Gas Detector

The IR open path gas detector (Line of Sight (LOS)) shall comprise separate transmitter and receiver units allowing gas concentration within a specified distant to be measured without the use of reflectors.

Response time shall be less than 5 seconds following a step change in concentration.

Gas concentration shall be in path average LEL meters for the specified composition.

Detector shall measure hydrocarbon gasses between methane to hexane, but shall predominantly be methane and therefore the unit shall be calibrated to methane with a range of 0 to 5 LEL meters and 0 to 5000 as an option if required.

Detectors shall remain fully functional with a power supply 24VDC, with a 4-20mA HART signal loop to cover the calibrated range. Blocked beam shall raise an alarm only (<4mA) after an adjustable time delay.

Cable entries shall be ½" NPT-F.

Detector shall be certified for use in a Class 1, Zone 2, Gas Group IIA temperature class T3 Hazardous Area and certified SIL2 rated as minimum.

Humidity Operating Range shall be at least from 5%-100% RH, non-condensing.

The VENDOR shall provide details that demonstrate the immunity to direct and reflective sunlight and vibration.

Transmitter and receiver pairs will be installed in line of sight locations covering process hazardous areas. VENDORs shall provide all necessary alignment and calibration tools / software to assist the alignment setup and calibration.

6.9 Sounder

The Sounders shall be provided as specified in Fire & Gas Layout.

All Sounders shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).

All sounders shall be supplied with suitable 316 stainless steel mounting assembly that allows speaker to be oriented in any direction and locked in desired position.

1 Cable entries shall be ½" NPT-F.

All sounders shall be certified for area suitable with hazardous area classification.

The indoor sounders shall be maximum rated of 6 watts. These speaker shall be ceiling or wall mouting type.

The hazardous/outdoor sounders shall be maximum rated of 25 watts of power handling capability with 118dBA Sound Pressure Level (SPL), horn type and wide angle. VENDOR shall consider the effect of heavy and high wind in determining the suitable size of outdoor sounders.

6.10 Beacon

The Beacons shall be provided as specified in Fire & Gas Layout.

Flashing beacons color shall be of Red, Yellow, and Blue to show different alarms from Fire and Gas system.

All Sounders shall be constructed from 316 stainless steel or glass reinforced polyester (GRP).

1 Cable entries shall be ½" NPT-F.

All beacons shall be certified for area suitable with hazardous area classification.

Indoor beacon shall be Xeon/LED type.

All beacons shall meet the minimum requirement as following:

Supply Voltage	:	24VDC
Tube Energy	:	Minimum 15 Joules each color
Bulb type	:	Xenon
Effective Intensity	:	95Cd min, at 60 flashes per minute
Color lens	:	Red, Yellow, Blue, ...

7. GENERAL REQUIREMENT FOR INSTRUMENTATION CABLES

7.1 General

Cables shall be segregated for the following services as a minimum:

- 4 to 20 mA signals (Individually screen)
- mV signals (Individually screen)
- Pulse signals (Individually screen)
- RTDs (Individually screen)
- 24 VDC solenoid signals (No screen)
- Digital signals (Overall screen)
- Vibration probes (Individually screen)
- Any other signal (as required)
- Each communication (as per required application)
- Earthing (1C_without armour_UX type)

Cross section for copper conductors shall be as follows:

- Power cables (i.e. for solenoids, lamps, 24VDC interface signals, etc.): 1.5 mm² minimum
- Control cables (i.e. for transmitters, positioners, limit switches): 1.0 mm² minimum
- Earthing cable: 2.5mm² minimum, cable tray jumpers and end point connection 4.0mm²

1

Note: Cable with rated voltage 600V is not required to comply with IEC 60092-376.

All cable materials shall be new and unused, of current manufacture, of the highest grade and free from all defects and imperfections affecting performance.

Cable Core Identification

Color coding for pair/triple identification shall be as described below.

Pairs and triples shall be identified by having the pair/triple number printed on the insulation in contrasting color.

- Pair colors : Blue and Black
- Triad colors : Blue, Black and Brown

Outer Sheath Color

The outer sheath color shall be as follow:

- Digital signals : Grey
- Analogue signals : Grey
- IS signal (Digital/Analogue) : Blue
- Electrical signals (solenoid) : Black
- Earthing cable : Green & Yellow strips, lengthways along the cable.
- FGS signals : Red

Marking on cables

The cable outer sheath shall be marked on its surface at every interval of 1 meter with the following information:

- Voltage grade
- Cable type
- Number of Pairs/Triples and conductor size
- IEC standards
- Manufacturer's name or trademark
- Year of manufacturer

Marking on drums

The wooden drum shall be marked with the following information:

- Drum Number
- Cable type
- Voltage grade
- Number of Pairs/Triples and conductor size
- Cable length (m)
- Net and gross weight
- Manufacturer's name or trademark
- Month and year of manufacture

Packing

The cable shall be coiled in non-returnable wooden drums.

The ends of cables shall be sealed against the ingress of moisture, dirt and insects and the end projecting from the drum shall be adequately protected against mechanical damage during lifting, transportation, intermediate storage and site handling.

Both ends of cable shall be packed out of drum for easy check number of length.

7.2 Instrument Cables for non-essential service

Cable construction shall be as per IEC 60092-376; NEK TS 606. In general, conductor insulation rating shall be as a minimum 150/250V (300V) in accordance with IEC 60092-3. For fire resistant and flame retardant cables both 300V and 600V rated voltage are acceptable. Maximum operating temperature 85°C.

Instrument cables for indoor/ outdoor hazardous and non-hazardous areas, shall be constructed as follows:

(a)	Conductors	:	Tinned annealed stranded copper as per IEC 60228, Class 2.
(b)	Insulation	:	EPR to IEC 60092-360.
(c)	Individual Screen	:	Aluminium back polyester tape, stranded copper drain core
(d)	Overall Screen (as optional).	:	Aluminium back polyester tape, stranded copper drain core.
(e)	Core identification	:	By colour code.
(f)	Inner sheath	:	LSZH compound to IEC 60092-360.
(g)	Armour	:	Tinned Copper Wire Braided (TCWB).
(h)	Outer sheath	:	Extruded layer of flame retardant compound outer sheath to IEC 60332-3 Cat A (reduced propagation). Halogen-free mud resistant thermoset compound in accordance with type SHF Mud in accordance with NEK TS 606.
(i)	Requirement	:	IEC 60092-350, IEC 60092-360, IEC 60228, IEC 60332-3 Cat. A, IEC 60754, IEC 61034, IEC 60092-376, NEK 606.

7.3 Instrument Cables for essential service

Cable construction shall be as per IEC 60092-376; NEK TS 606. In general, conductor insulation rating shall be as a minimum 150/250V (300V) in accordance with IEC 60092-3. For fire resistant and flame retardant cables both 300V and 600V rated voltage are acceptable. Maximum operating temperature 85°C.

Instrument cables for indoor/ outdoor hazardous and non-hazardous areas, shall be constructed as follows:

(a)	Conductors	:	Tinned annealed stranded copper as per IEC 60228, Class 2.
(b)	Insulation	:	EPR to IEC 60092-360.
(c)	Individual Screen	:	Aluminium back polyester tape, stranded copper drain core
(d)	Overall Screen (as optional).	:	Aluminium back polyester tape, stranded copper drain core.
(e)	Fire resistant layer	:	Fire resistant layer to IEC 60331 shall be mica glass tapes applied over the conductor. Cable must be able to withstand 750°C for 3 hours.
(f)	Core identification	:	By colour code.
(g)	Inner sheath	:	LSZH compound to IEC 60092-360.
(h)	Armour	:	Tinned Copper Wire Braided (TCWB).
(i)	Outer sheath	:	Extruded layer of flame retardant compound outer sheath to IEC 60332-3 Cat A (reduced propagation). Fire resistance as per IEC 60331. Halogen-free mud resistant thermoset compound in accordance with type SHF Mud in accordance with NEK TS 606.
(j)	Requirement	:	IEC 60092-350, IEC 60092-360, IEC 60228, IEC 60332-3 Cat. A, IEC 60754, IEC 61034, IEC 60092-376, IEC 60331, NEK 606.

7.4 Communication Cable

Modbus RTU RS-485 cable construction shall be as per ANSI/TIA/EIA-485 Specification.

Communication cable shall be constructed as follows:

- Rated Voltage 150/250V (300).
- Flame retardant in accordance with IEC 60332-3.
- Two twisted paired, 22/24 AWG tinned copper conductor;
- Overall foil shield with tinned copper drain wire plus tinned copper braid shield;
- SHF Mud in accordance with NEK TS 606.

8. GENERAL REQUIREMENT FOR BULK MATERIALS

8.1 Cable tray

8.1.1 Stainless Steel Cable tray

The cable tray/ladder shall be perforated, SS316, 1.5 mm thickness.

The cover shall be SS316 1.0 mm thickness.

Resistance against corrosion for ladder and tray is classified 9B as minimum complied with IEC 61537.

System component for cable ladder and cable tray shall offer impact resistance 20J as minimum as per IEC 61537.

Wherever main cables are exposed to sunlight, or mechanical damages are going to occur during installation or chemical spillage then the main cable ladder/ tray shall be fitted with suitable covers to protect them.

8.1.2 FRP Cable tray

In general, cable trays, cable ladders and fittings shall be:

- Manufactured from Flame Retardant Glass Reinforced Polyester (GRP/FRP). The material shall be non-magnetic, UV resistant, and free from sharp edges so as not to damage the cable.
- Manufactured using the pultrusion process using a high-grade polyester resin and shall have a minimum surface veil of 200 microns thick. The minimum weight percentage of glass in these items shall be 50%.
- All GRP/FRP products shall be halogen free. Material shall be tested in accordance with IEC 60754-1 and no halogen acid should be detected.
- Cable ladder rungs shall be fixed in place in such a way that they cannot roll over during cable pulling. Ladder Rungs shall be secured in place by SS (A4) or GRP / FRP fasteners, PBT insert is preferred. Ladder rungs shall be slotted to allow for clamping of cables, they shall also be designed to prevent fluid build-up.
- Cable Trays shall be slotted base type. The perforations shall be for used with cable ties and other similar accessories.
- Withstand impact testing at an approximate energy of 10 Joules when impact testing is carried out as per the requirements of IEC61537. Testing shall be conducted without the use of covers.
- Available with drill jigs so that new splice plate perforations on side profiles of trays / ladders can be productively & safely drilled when cutting to required lengths.

Flame Retardant and Low Smoke Properties of FRP shall comply with:

- ASTM D635 and have an 'HB' classification.
- Class 1 rating in accordance with BS 476 Part 7 or ASTM E84 and UL94.
- A flame-spread index (FSI) less than 25 and a smoke development index (SDI) less than 450 so that they achieve a class 1 rating when tested in accordance with ASTM E84.
- ANSI/UL94-2013(R2021) section 8 with a V-0 classification

For the UV Resistance Properties, material shall be tested in accordance with ASTM G53 and achieve grade 5 in color change with exposure period 250 hours or better.

Cable Trays, Cable Ladders and Fittings shall not increase in weight by more than 0.5% when tested in accordance with ASTM D570 for Water Resistance. Chemical Resistance shall be tested in accordance with ASTM C581.

In case anti-static properties are required, the material shall be tested in accordance with IEC 60079 or IEC 60093 for surface resistivity.

Color of the tray and ladder shall be grey for non-anti-static, and dark grey or black for anti-static required.

8.2 Multi Cable transit

A-60 Fire rated and/or blast resistant type MCT systems shall be provided.

MCT frames shall be galvanized steel suitable for offshore application.

MCT shall be complete with all accessories to make a complete MCT system, e.g. frame, wedge, stay plates, "fire-resistant, low-smoke halogen free rubber" insert modules and insert spare modules. Lubricant shall also be included for installation of insert modules.

Insert modules shall come in two-halves with multilayer bore, which and can be peeled off to fit the installed cable outside diameter.

Transits shall be identified by weatherproof labels on each side of their penetration.

The compression system is to comprise of a compression plate and end-packer. The three-part end packer unit is to be installed from one side, and only once an external compression tool has correctly compressed the transit. The side elements of the end packer are to incorporate steel pins to evenly distribute pressure to the compression plate.

All components of the transit system are to be lubricated with a silicone lubricant to ensure ease of installation and possible future demounting for cable alterations.

Multi-cable transits shall have the following certification requirements:

- Fire rated certificates
- Accepted and approved by LR, DNVGL, ABS, BV, VR...
- Constructed and tested to DIN 4102-9 and IEC 60092-390

8.3 Cable accessories

8.3.1 Cable gland

Nickel plated brass, Ex-d certified, min IP56, suitable for group IIA, IIB, IIC, zone 1 & 2, metric/NPT pitch threaded, suitable for cables with armor/braid and inner/outer sheath. C/w lock nuts, earth tags and sealing washers.

Cable gland compression system shall be suitable for use with the cables intended. The compression/ sealing method and material shall not cause "cold flow" condition to the cables. Cable glands shall be selected to reduce the effects of "cold flow characteristics" of the cable to comply with IEC 60079-14.

Manufacturer specifications/data sheet/catalogue must be attached to the proposal for reference.

The entry thread sizes / cable O.D. (min – max) are following:

- M20 / 9 –14 mm
- M25 / 14 – 22 mm
- M32 / 22 – 32 mm
- M40 / 32 – 42 mm
- 1/2"NPT / 11 –16 mm
- 3/4"NPT / 14 –20 mm

8.3.2 Cable terminal

- Tinned copper, PVC pre-insulated, ferrule type with wire section 1.5 – 2.5mm2.
- Tinned copper, PVC pre-insulated, ring type, screw M6 with wire section 2.5mm2.

8.3.3 Cable ties

Cable ties shall be Polyamide 6.6, UV stabilized (color black), flammability UL94 class V2, tested according EN 50146, size as below:

- size 9 x 120

- size 9 x 260
- size 9 x 350

8.3.4 Cable marking

Cable marking shall be complete with marker holder for 14 char, red color and cable marker.

Cable marker:

- Number 0 to 9 (50pcs per parcel)
- Letter A to Z (50pcs per parcel)
- Conventional symbol "-" (100pcs per parcel)
- Marker for cable cross-section 1.5 to 2.5, polyamide, number 0 to 9 (100pcs per parcel)

8.4 Instrument Junction Boxes

8.4.1 General

Instrument junction boxes shall be certified for use in the hazardous area in which they are installed.

Boxes certified Explosion-Proof/Flameproof Ex "e" shall be used, suitable for using in Zone 1 hazardous area. Unless otherwise stated boxes shall provide minimum IP56 ingress protection.

Multicore cables should enter from the bottom, and 20% spare entries shall be provided cable entries shall be drilled and tapped to suit the required glands, and fitted with certified brass plugs.

Internal terminals shall be provided with at least 20% spare.

8.4.2 Construction

Increased Safety

Junction box construction shall be 1.5mm 316SS.

Boxes shall be bottom entry and side (for single cable) with a removable 316SS gland plate. The gland plate shall be drilled and tapped; 6mm thick for tapered threads and 3mm thick for parallel threads. The plate shall be bolted to the box with 316SS boltqs, sealed with a neoprene gasket and fitted with an 8mm earthing stud.

Boxes shall have four external mounting lugs, two top and bottom, drilled with 10mm fixing holes.

A full size removable stainless steel gear plate shall be fitted inside each box.

Terminals shall be Ex "e" rail-mounted tunnel-type, made of melamine. Wiring ducts shall be colored blue.

Boxes shall have doors hinged at two points with a neoprene seal fitted all round. Hinges shall be the lift-off pintle type, constructed of stainless steel; piano hinges are not acceptable.

A restraining mechanism shall prevent opening more than 160°. Screwdriver-operated door latches shall be fitted at the top and bottom.

In addition to the manufacturer's certification label, each junction box shall have an identification label attached to the box with 316SS screws in a manner which will not invalidate the hazardous area certification. The label shall be constructed of white-black-white laminated plastic and/or blue-white-blue laminated plastic for difference control/safety systems. The label shall include an engraved Tag No.

Boxes shall have grounding connection c/w SS316 earthing screw. Earthing bar shall be provided and located inside the boxes.

Explosion Proof

Explosion proof junction boxes shall be constructed from Epoxy coated copper free aluminum.

Boxes shall have at least four external mounting lugs, drilled with 10mm fixing holes, and an 8mm external earth lug.

A full size removable stainless steel gear plate shall be fitted inside each box.

Junction box lids shall have cast hinges integral to the box with stainless steel pins.

Each junction box shall have an identification label, in addition the manufacturer's certification label, attached with 316SS screws in a manner which will not invalidate the hazardous area certification. The label shall be constructed of white-black-white laminated plastic.

Terminals shall be rail-mounted tunnel-type, made of melamine.

8.5 Tubing and Fittings

All tubing and fittings shall be Imperial sizes, expressed in nominal outside diameter (OD), and all threads shall be NPT.

Process-to-instrument impulse lines, pneumatic supplies (downstream of filter/regulators) and pneumatic signal lines shall be run in seamless 316SS tubing to ASTM A269.

Impulse lines shall be ½" OD, pneumatic lines shall be 3/8" OD, unless specific applications require the use of other sizes.

Stainless steel tubing size and wall thicknesses shall be as detailed below. Maximum allowable working pressures are also detailed for each size and wall thickness.

- 3/8" OD x 0.035 " wall thickness - 19.6 MPa gauge
- 3/8" OD x 0.065 " wall thickness - 39.0 MPa gauge
- 1/2" OD x 0.035 " wall thickness - 14.7 MPa gauge
- 1/2" OD x 0.065 " wall thickness - 29.4 MPa gauge
- 1/4" OD x 0.035 " wall thickness - 25.3 MPa gauge
- 1/4" OD x 0.049 " wall thickness - 52.0 MPa gauge

Note: 3/8" and 1/2" tubing are the preferred sizes.

Threaded connections shall be NPT for all components and piping and tubing systems for process and utilities connections.

TFE thread sealant shall be used on all threaded connections. Tape shall not be used.

Tubing and fittings shall be 316SS unless specified otherwise. Tube fittings shall be twin ferrule compression type. All fittings shall be the same approved brand.

Tubing shall be supported and protected by stainless steel angle/channel or ladder/tray along the complete length of each run and shall be fastened with stainless steel saddles at a maximum of 1m intervals on straight runs.

All pneumatic exhaust ports and breathers shall be fitted with bug screens, installed facing downwards.

9. DOCUMENTATION

9.1 General

The Vendor shall provide a complete suite of documents for the works, including those described in the following sections. Hard copies plus electronic copies on DVD/CD shall be provided.

9.2 Instrument Index

The Vendor shall be provided preliminary instrument index to update them with full information for each instrument from his data. The index shall be based on Microsoft Excel.

9.3 Instrument Data Sheets

A data sheet shall be completed for every item of instrumentation equipment, including those which are part of equipment packages, except those items which form part of the bulk material take-off.

Preliminary data sheets for instruments that are attached in references must be filled by Vendor/Supplier with all required information.

When a number of items are identical in their requirements, these can be covered by a single specification sheet, providing all tag numbers are clearly listed.

Where a number of items are similar, and it can be identified that these items can be sourced from a single vendor (e.g. control valves), then these items can be covered as separate items of a single specification sheet. A data sheet covering each item, listing the individual item details as stated above, shall be completed for each item.

Where preliminary data sheet is not available for specific instrument, the Vendor shall submit his proposed data sheet for Purchaser approval according to ISA Standards.

Data sheets shall be generated using Microsoft Excel.

9.4 Instrument Calculations

The Vendor shall provide certified calculations for instruments, including but not be limited to:

- Control valve sizing (if any)
- Restriction orifice sizing and stress analysis
- Thermowell wake frequency
- Thermowell calculation
- Instrument Air Consumption
- Flow meter calculation/sizing

Where required in applied codes and standards or requested by Certify Agent, Vendor/Contractor is responsible for provision of other necessary calculations.

9.5 Instrument Tagging

The Vendor shall assign individual tag numbers in accordance with the Purchaser's established system to all instruments.

The tag number that pertains to a specific instrument shall appear on all drawings and documents.

10. CONFLICTS AND ORDER OF PRECEDENCE

In case of conflict or discrepancies between any requirements of technical specifications and/or codes & standards, the more stringent shall govern. Contractor and/or Vendor shall inform and issue officially Technical Queries to VSP for review and making decision.

11. QUALITY ASSURANCE, INSPECTION AND TESTING

11.1 Quality Assurance

The Vendor shall demonstrate that he operates a quality system in accordance with the ISO 9000 series of requirements. The effectiveness of the quality system and the Vendor's compliance with it shall be subject to monitoring by PURCHASER and in addition, may be audited following an agreed period of notice.

The Vendor shall submit a quality control program for PURCHASER review at the time of Tender. The Vendor shall provide facilities for and cooperate with PURCHASER and statutory authority inspectors during manufacturing, assembly and testing.

11.2 Inspection and Testing

Unless otherwise stated, field devices, instruments and cables aren't required inspection and testing with Purchaser's witness. However, Vendor/Contractor is responsible to provide all manufacturers' testing and inspections. Where certificates are required approvals by Third Party or others, Vendor/Contractor to provide all required certificates.

12. SPARE PARTS AND SPECIAL TOOLS

12.1 General

The Vendor shall provide in the Tender the recommended spare parts and priced lists for commissioning and operational spares as well as special tools for the equipment specified herein to cover the commissioning and start-up and the first two (2) years of operation.

12.2 Commissioning Spares

Commissioning spares should largely comprise of consumable items and spares estimated by the Vendor. The Vendor shall propose the commissioning spares which comprise of consumable item and spares that may be required during the commissioning.

12.3 Operational Spares

Replacement parts shall be the responsibility of the Vendor during the Defects Liability Period.

The Vendor shall provide a two-year list of operational spares. The quantities of spares provided shall be based on the expected reliability figures of each item.

The Vendor shall assure from equipment manufacturers that spare components and expansion module or units will be available for a minimum period of ten years after Final Acceptance

12.4 Special Tools

If special tools are required, the Vendor shall provide a priced list of all special tools required for the installation and/or maintenance of the equipment with tender. Special tools shall be purchased at the PURCHASER's discretion.

Prior to shipment each special tool shall be tagged with stainless steel tags indicating Purchase Order number, identification of the tool and equipment that the tool relates to.

13.WARRANTY AND PERFORMANCE GUARANTEE

Vendor shall provide a process and mechanical guarantee. Guarantee period shall be as stated in the commercial documentation accompanying the requisition. Compliance by the Vendor with the provisions of this Specification does not relieve them of the responsibility of furnishing instruments within the bounds of the relevant standards, suited to meet the specified service conditions.

The Vendor shall guarantee that the required quality of materials, fabrication and performance to the specified operating conditions will be met.

Unless otherwise agreed, all instruments shall be guaranteed as follows:

All instruments shall perform satisfactorily under the specified operating conditions detailed on the Instrument Data Sheets, and shall be fit for the intended purpose.

All hardware and software supplied shall be guaranteed free from defects.

All workmanship shall be guaranteed free of defects and in accordance with the best industrial standards and practices.

Vendor shall guarantee the operation of the system to be in full compliance with the Specification, including all attachments and listed Specifications, codes and standards.

The Vendor shall guarantee the mechanical and structural integrity, workmanship and the materials of construction used.

Under the warranty, the Vendor shall replace all hardware, software and subsystems that are found faulty due to defective devices, workmanship or engineering during the warranty period at no cost to the PURCHASER. The Vendor shall, if required by the PURCHASER, supply the services of an experienced technician to supervise the necessary repairs and replacements.

14.PREPARATION FOR SHIPMENT

Instruments shall be packaged separately, in the original manufacturer's boxes, to prevent damage during shipment. Each package shall be identified with purchase order number, content list and destination in a weatherproof envelope.

All openings shall be sealed. Threaded connections shall be protected with forged steel or moulded plastic screwed plugs.

All flanged openings shall be protected with wood or steel closures attached by proper bolting and sealed with a plastic compound to exclude foreign material from the interior and fully protect the flange faces.

All mechanical or machined surfaces subject to atmospheric corrosion prior to installation on site shall be treated with an easily removable rust preventative.

A desiccant shall be provided inside all enclosures to prevent moisture damage due to high humidity.

Any plant component exceeding 40 kg in weight shall be supplied with lifting lugs or eye bolts. The lugs or eye bolts should be positioned such that the component can be readily slung from a point over its center of gravity.

RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS

PROJECT NAME : **BK26 WHP AND CONNECTION TO MSP8**

DOCUMENT TITLE : **SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION**

DOCUMENT NO. **MSP8.BK26-002-GE-IA2-SP-006**

PHASE : **DETAILED ENGINEERING**

Applied Typical Document	VSP-NIPI-TYP-TS-IA2-SP-06	Rev.	1

			Signed by: Vũ Thị Mơ Date: 22/04/2025 11:18:28 Certified by: Vietsovpetro CA CONTROLLED	Signed by: Nguyễn Ngọc Tiệp Date: 22/04/2025 16:27:24 Certified by: Vietsovpetro CA	Signed by: Trần Duy Hải Date: 22/04/2025 21:32:27 Certified by: Vietsovpetro CA
			DC: V.T.MO	**ENG.MGR: N.N. TIEP**	**PRO. MGR: T.D.HAI**
0	IFA	04.2025	Signed by: Đỗ Quốc Huy Date: 22/04/2025 07:40:28 Certified by: Vietsovpetro CA		Signed by: Гайнутдинов Евгений Нурлыгалиевич Date: 22.04.2025 11:12:39 Certified by: Vietsovpetro CA
REV.	**DES.**	**DATE**	**PREPARED: D.Q.HUY**	**CHECKED: D.Q.HUY**	**DEPT.MGR: G.E.N.**

TRACK CHANGES

No	Rev.	Content of Change	Note

TABLE OF CONTENT

I

1 INTRODUCTION

BK-26 Wellhead Platform belongs to Vietsovpetro JV. It will be located in Block 09-1, White Tiger oil field, offshore the Socialist Republic of Vietnam.

BK-26 is connected with MSP-8 by a linking bridge. BK-26 is an unmanned platform with 09 slots (03 slots for spare) and will be remotely controlled from the platform MSP-8.

There will be 09 production wells on BK-26 (02 well will be converted into water injection well in the future as planned) and may be additional 03 wells in the future.

Based on the criterion of the need for production and maximize the return on investment, BK-26 will be considered to have the minimum facilities. The full well stream of BK-26 will be gathered together with the produced fluid of MSP-8 and transferred to CPP-3.

The scope of this project is detail engineering design for BK-26 WHP, Linking Bridge and MSP-8 modification.

Location of BK-26 and related platforms is shown in the figure 1 as below.

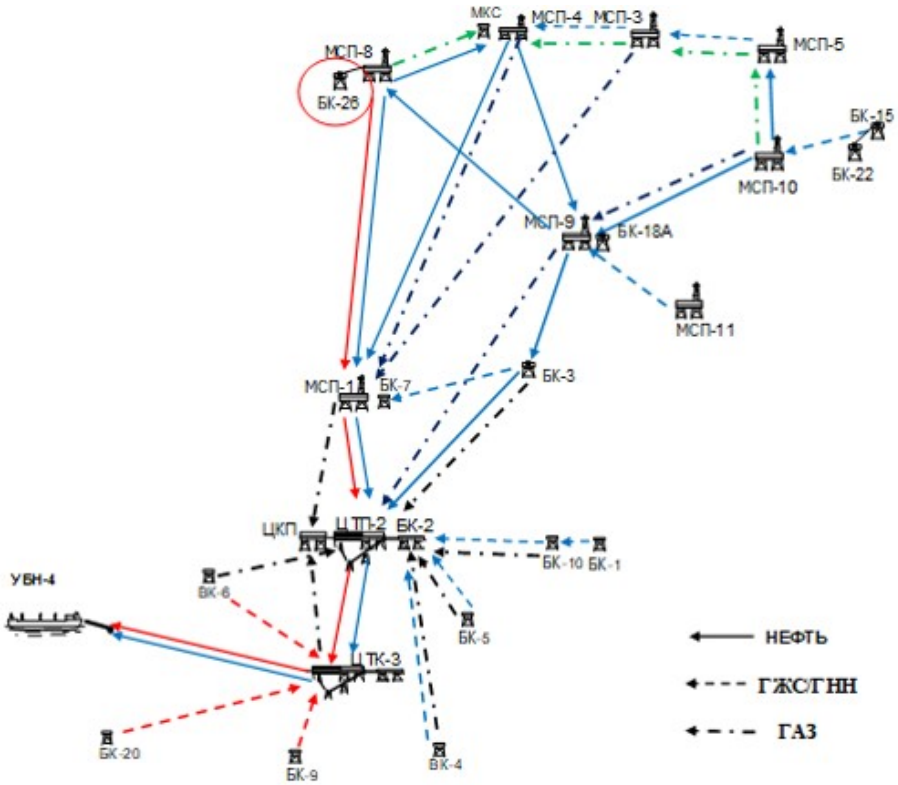

Figure 1: Location of BK-26 and related platforms

2 ADDENDUM

This document uses the Typical Engineering Documentation for this Project. However, some design intends or requirements may require to be revised to fit with Project's purpose. This section lists changes in the applied typical documents, originating in Typical Engineering Documentation for any reason including those indicated in Table 1. These changes are identified in this Addendum to the applied typical document, identifying the document and section affected and the required change.

VENDOR shall review the required changes in conjunction with the referenced document and project's engineering documents. The type of modification shall be defined and indicated in subsequent text as follows:

- "ADD" - Indicates the following statement(s) is/are added to the Company referenced text.
- "DELETE" - Indicates the following statement(s) is/are deleted from the Company referenced text.
- "REPLACE WITH" - Indicates the following statement(s) is/are revision(s) to the Company referenced text.

Table – 1: List of changes

<table>
<tr><th>Section</th><th>Current Statement or Requirement</th><th>Revised to</th></tr>
<tr><td>REFERENCE DOCUMENTS</td><td>VSP-NIPI-TYP-TS-IA2-SP-01_ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-02_Specification for Wellhead Control Panel
VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification
VSP-NIPI-TYP-TS-IA2-SP-04_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch
VSP-NIPI-TYP-TS-IA2-SP-05_Specification for Control Valves</td><td>REPLACE WITH:
MSP8.BK26-002-GE-IA2-SP-001_ICSS - Functional Design Specification
MSP8.BK26-002-GE-IA2-SP-002_Specification for Wellhead Control Panel
MSP8.BK26-002-GE-IA2-SP-003_General Instrument Specification
MSP8.BK26-002-GE-IA2-SP-004_Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch
MSP8.BK26-002-GE-IA2-SP-005_Specification for Control Valves</td></tr>
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RESEARCH AND ENGINEERING INSTITUTE FOR OFFSHORE OIL AND GAS

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AGREED BY
Deputy General Director of Vietsovpetro

Tran Xuan Hoang

23/08/2022

APPROVED BY
Chief Engineer of Vietsovpetro

LIÊN DOANH VIỆT-NGA VIETSOVPETRO

Tran Van Vinh

/2022

TYPICAL ENGINEERING DOCUMENTATION

DOCUMENT TITLE **SPECIFICATION FOR PACKAGE EQUIPMENT INSTRUMENTATION**

DOCUMENT NO. : **VSP-NIPI-TYP-TS-IA2-SP-06**

CONTROLLED

AGREED:	Name	Date
Capital Construction Department	Signed by: Nguyễn Hồng Giang Date: 22/08/2022 07:26:10 Certified by: Vietsovpetro CA	
Material and Equipment Department	Signed by: Châu Ngọc Hồ Date: 19/08/2022 11:20:25 Certified by: Vietsovpetro CA	
Mechanical Electrical Division	Signed by: Trịnh Hoàng Linh Date: 19/08/2022 08:07:19 Certified by: Vietsovpetro CA	

REV.	DES.	DATE	PREPARED	CHECKED	DEPART. MANAGER	ENG. MANAGER	PRO. MANAGER
1	IFA	25/07/2022	T.A.NGUYEN /D.Q.HUY	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN
0	IFA	25/10/2019	N.H.CHUNG	N.H.CHUNG	G.E.N	T.D.HAI	B.T.HAN

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Signed by: Bùi Trọng Hân
Date: 16/08/2022 22:13:53
Certified by: Vietsovpetro CA

CHANGE LOG

REV	SECTION	PAGE	CHANGE DESCRIPTION
1	6.5	12	ADDED: • I/O modules for critical signals

REFERENCE DOCUMENTS

Number of document	Description
VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-02	Specification For Wellhead Control Panel
VSP-NIPI-TYP-TS-IA2-SP-03	General Instrument Specification
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves

TABLE OF CONTENTS

1. INTRODUCTION

The typical engineering documentation is a set of engineering documents issued by Research and Engineering Institute (REI) that can be applied repeatly to many projects that REI involves.

The typical engineering documentation shall be agreed by related departments in Vietsovpetro and approved by Vietsovpetro, if any.

1.1 Purpose of document

This document defines the minimum requirements for design, materials, fabrication, inspection, testing, painting, preparation for shipment, and documentation for the supply of instrumentation part of Packages.

1.2 Definition of Terms

Within this document the following definitions shall apply:

COMPANY	The party which initiates the project and ultimately pays for its design and construction and owns the facilities. Here the COMPANY is Vietsovpetro JV (referred to as VSP).
CONTRACTOR	The party which carries out all or part of the design, engineering, procurement, construction and commissioning of the project.
VENDOR	The party which the order or contract of supply of the equipment/package or services is placed.
Shall	Refers to mandatory requirement
Should	Refers to a recommendation

1.3 Abbreviations

API	American Petroleum Institute
APS	Abandon Platform Shutdown
CR	Control Room
ESD	Emergency Shutdown System
F&G	Fire and Gas
FAT	Factory Acceptance test
FGS	Fire & Gas System
HC	Hydrocarbon
HSE	Health, Safety, and Environment
HMI	Human Machine Interface
HVAC	Heating Ventilation and Air Conditioning
IOM	Installation, Operation, and Maintenance
ITP	Inspection and Test Plan
I/O	Input/Output
ICS	Integrated Control System
ICSS	Integrated Control & Safety System
IEC	International Electrotechnical Commission
IR	Infra-red
IS	Intrinsically Safe

ISA	The International Society of Automation
JB	Junction Box
LCD	Liquid Crystal Display
LCP	Local Control Panel
LED	Light Emitting Diode
MODBUS	Serial Communication Protocol by Modicon
MTTR	Mean Time To Recovery
MTBF	Mean Time Between Failure
NC	Normally Close
NO	Normally Open
NDE	Non Destructive Examination
NPS	Nominal Pipe Size
OS&Y	Outside Screw and Yoke
P&ID	Piping and Instrument Diagram
PAPA	Prepare to Abandon Platform
PCB	Polychlorobiphenyls
PCS	Process control system
PVC	Polyvinylchloride
PO	Purchase Order
PLC	Programmable Logic Controller
QA/QC	Quality Assurance / Quality Control
RFI	Radio Frequency Interference
RO	Restriction orifice
RTJ	Ring Type Joint
RF	Raised Face
SAT	Site Acceptance Test
SIL	Safety Integrity Level
SIS	Safety Integrated System
SOE	Sequence of Events
SWB	Steel Wire Braid
SPIR	Spare Parts and Interchange ability Record
TFE	Tetrafluoroethylene
TPI	Third Party Inspection
UCP	Unit Control Panel
UPS	Un-interruptible Power Supply
VDU	Video Display Unit
VDRL	Vendor Data Requirements List

2. REFERENCES, CODES & STANDARDS

2.1 General

All equipment shall comply with the relevant national and international codes, standards and recommendations. The Vendor shall determine what equipment requires type approval by the local Vietnamese Authority and shall provide type approval equipment where necessary. This specification requires that the design, construction and testing of the instrument shall meet all requirements of the codes, standards and other documents listed in Section 2.2.

In general, the Instrumentation and Control systems shall be designed to conform with, but not limited to the latest editions of the following industry standards, codes, professional documents, regulations and project documents.

2.2 International Codes & Standards

Refer to the applied Codes and Standards listed in:

VSP-NIPI-TYP-TS-IA2-SP-01	ICSS - Functional Design Specification
VSP-NIPI-TYP-TS-IA2-SP-03	General Instrument Specification
VSP-NIPI-TYP-TS-IA2-SP-05	Specification for Control Valves
VSP-NIPI-TYP-TS-IA2-SP-04	Specification for Shutdown, Blowdown Valve and Hand Valve with Limit Switch

3. PACKAGE VENDOR SCOPE OF DELIVERY AND INSTRUMENT DESIGN

3.1 General

The VENDOR shall assume full responsibility for engineering, equipment selection, interface definition, purchase, installation, testing, calibration, function testing and documentation of the instrument equipment and control system for the entire package.

The VENDOR shall be responsible for providing the CONTRACTOR/ COMPANY with information necessary for integration with equipment outside the delivery, but essential for the intended performance of the package.

The VENDOR shall as minimum, submit for CONTRACTOR/ COMPANY review/approval all applicable documents for the package as listed in Appendix B.

The VENDOR shall as a minimum, perform inspection, calibration and function testing according to Section 8.0 of this specification.

It is the VENDOR's responsibility to assist the CONTRACTOR/ COMPANY in defining all relevant functions and parameters for control and monitoring via the PCS.

3.2 Scope of work

Package VENDOR scope of work shall include as a minimum:

- All inline, online, and offline instrumentation shall be fully installed complete with all impulse line tubing, pneumatic signal tubing, instrument valves, instrument manifolds, instrument supports, instrument tags and instrument labels.
- Instrument air manifold(s) c/w isolation valves shall be installed at the skid edge and fully tubed to the instrument air users on angle iron or tubing tray.
- The skid edge junction boxes shall be fully hooked to the skid Instruments and LCP, and fully function tested.
- The VENDOR shall supply all instrument equipment, junction boxes, cable gland, cabling (within the skid and panel), tubing, fittings and other items necessary for the satisfactory operation of the instrumentation and any associated control panels.
- All parts subject to moisture, fungus growth or insect attack shall be treated with a coating to ensure suitability for tropical conditions.
- Where the packaged equipment is provided with its own control and safeguarding system(s), the VENDOR is responsible for the design, engineering and safe operation of these systems. The CONTRACTOR/ COMPANY will review and approve the design for overall compliance but the

satisfactory operation and adherence to requirements remains the VENDOR's responsibility. The system shall be supplied fully assembled, wired, tested and ready for operation.

- To facilitate operation and maintenance of the facility, standardization of all instrument equipment shall be adopted. For this purpose, COMPANY Approved Vendor List shall be followed. If major technical requirements dictate the selection of manufacturer(s) not included in COMPANY's Approved Vendor List, the VENDOR shall inform the CONTRACTOR/ COMPANY of the exception in his bid. Specific details shall be given on the requirements that cannot be achieved by selection from the Approved Vendor List, and of the proposed alternative.

3.3 Instrument Design

Instrument specification and design shall comply with "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification".

Design of the package shall comply with the functional requirement stated in the respective package equipment specification.

Deviations if any shall be brought to the notice of the COMPANY/CONTRACTOR for approval.

3.4 Documentation

The purpose of all drawings and documentation is to enable the equipment to be installed, tested and maintained by the COMPANY's technicians, even if they are not totally familiar with the equipment.

The Package VENDOR shall prepare instrument data sheets for all instruments in his supply in accordance with ISA 20 standard instrument data sheets which are subject to CONTRACTOR/ COMPANY's approval. Tag number for package instruments shall be allocated by CONTRACTOR/ COMPANY in accordance with the VENDOR's P&IDs.

Symbols and legend used on drawings shall be same as that used in the Project's P&IDs.

Logic diagrams shall comply with ISA 5.2 "Binary Logic Diagrams for Process Operation".

VENDOR shall provide other documents such as Instrument Index, Wiring Diagrams, Hook-Up drawings, Layouts, etc as included in Appendix B.

The Package VENDOR shall provide an Operation and Maintenance Manual for all equipment with references to tag numbers to enable COMPANY's technicians to operate and maintain the equipment in a safe and efficient manner.

VENDOR shall provide control narratives for control of the package. Emphasis shall be based on the complex control loops/ configuration that require Interlock.

VENDOR shall provide Cause and Effect Matrix and Loop Drawings for the package.

Test and Inspection plan proposed shall be submitted to CONTRACTOR / COMPANY for approval.

4. PACKAGE DESCRIPTION

The Instrumentation in Package Equipment shall be supplied and designed in one of the following configurations:

- **Package Type 1-P1**

  Instruments located in the package, connected to ICSS, monitored and controlled from ICSS. Cabling from the Instrument to the ICSS shall be by CONTRACTOR/ COMPANY without the use of Package supplied Junction Box.

- **Package Type 2-P2**

  Instruments located in the package, connected to ICSS, monitored and controlled from ICSS. VENDOR shall run the cabling from the Instruments up to junction boxes located at the edge of the package skid. Cabling from the junction box to the ICSS shall be by CONTRACTOR/ COMPANY unless otherwise

stated. Control philosophy and all documents related to design and programming works for package shall be provided by package vendor.

- **Package Type 3-P3**

  Instruments located in the package, connected, monitored and controlled by dedicated control system in a remote central location. The control panel is called Unit Control Panel (UCP). VENDOR shall provide and run all the cabling from the Instruments up to a junction boxes located at the edge of the package skid. CONTRACTOR/ COMPANY shall run the interface cables from the junction box to the UCP and from UCP to ICSS. Interface cables and suitable cable glands (both end) shall be provided by VENDOR as loose item unless otherwise specified in package's specification. The distance between UCP and ICSS shall be confirmed by COMPANY/ CONTRACTOR.

- **Package Type 4-P4**

  Instruments located in the package, connected, monitored and controlled from dedicated control system integral to the package skid. The control panel is called Local Control Panel (LCP). VENDOR shall provide and run all the cabling from the Instruments up to LCP / Skid's JBs and from the skid's JBs to LCP. CONTRACTOR/ COMPANY shall run the interface cables from the LCP to the ICSS. Interface cables and suitable cable glands (both end) shall be provided by VENDOR as loose item unless otherwise specified in package's specification. The distance between LCP and ICSS shall be confirmed by COMPANY/ CONTRACTOR.

The Instrumentation specification and design shall be in accordance to "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification". Where Instrument is part of VENDOR proprietary equipment which requires the use of VENDOR standard engineering and design, VENDOR shall highlight the requirement for acceptance by COMPANY.

5. PACKAGE UNIT CONTROLS AND SAFEGUARDING SYSTEM PHILOSOPHIES

5.1 General

Where the control requirements of the packaged equipment are relatively simple, consideration shall be given to implementing these controls within the platform's PCS. In general, those requirements will be specified in the actual mechanical package specification.

Where the packaged equipment is provided with its own control and safeguarding system(s), the VENDOR is responsible for the design and safe operation of these systems. The CONTRACTOR/ COMPANY will review and approve the design for overall compliance but the satisfactory operation and adherence to requirements remains the VENDOR's responsibility.

The package process control system will perform the following functions:

- Local operator interface
- Interface to platform's ICSS. The interface shall be at sufficient level to enable the operation of the unit from the CR.
- Self-contained control and monitoring of all internal parameters.
- Self-contained protective actions and alarms

Except where specified otherwise in package specification, all controls shall be failsafe i.e. fail into alarm and shutdown.

PLC based and proprietary microprocessor based control systems shall be used for all electronic control systems unless approved otherwise by COMPANY.

Protective shutdown function shall be either wired to the main platform's SIS (Safety Integrated System) or implemented by Package's own Safeguarding System required as part of VENDOR's proprietary design. When

the package supplied with its own Safeguarding system, it is possible to combine it with the control function subject to COMPANY approval.

The Package Safeguarding system related to SIS (Safety Integrated System) shall be implemented in a PLC approved by TUV Rhienland (to IEC 61508, suitable for SIL-3 applications as minimum). This SIL requirement includes the controller, the programming software, the I/O modules and termination boards. VENDOR shall provide the relevant certificates and associated reports.

All control software shall be documented according with ANS/ISA-5.06.01. The software documentations shall be able to be used for control software definition, design, testing and validation and not require specialized knowledge of any particular engineering or computer science discipline to develop or understand.

All software used shall be handed over to the COMPANY after FAT. Third party software requires evergreen license in COMPANY'S name.

5.2 Selection Guidelines

The general platform requirements place emphasis on particular aspects of the instrument systems.

- The operator interface must be easy to use with respect to multi-skilled operators and low manning level.
- The system should be easily configurable /programmable to reduce the need for specialist staff.
- The system maintenance requirement must be low.

Due to operational requirements, VENDOR supplied systems shall be based on the following principles:

- The operator shall, via the PCS system, normally be able to monitor the operation of the package.
- The operators shall, via the PCS system, have access to the parameters necessary to perform remote start-up and shut-down of the package.

The VENDOR shall recommend a control strategy, which in his opinion best meets the CONTRACTOR/ COMPANY's objectives for standardization, easy maintenance, etc. as given above and the package specification and also meets VENDOR's detail design and package responsibility.

The control system (PLC) chosen for the package shall be as per COMPANY Approved Vendor List.

5.3 Local operator interface

The Package shall be supplied with all local operator interfaces required to safely start, stop, commission, operate and maintain the package.

Local field panels will display all pertinent information required by field operators adjacent to the package.

Package unit panels shall contain all operator interfaces necessary for independent operation and trouble shooting.

5.4 Interface to platform's ICSS

Package control systems which are totally self-contained and operated independently will be interconnected to PCS via serial link or hardwired links or combination of both. However, in case where only small amount of data is required to be transferred, hardwired links are preferred. All safeguarding signals shall be hardwired to platform SIS (Safety Integrated System).

The interface shall be at sufficient level to enable the operation of the unit from the CCR.

Where the numbers of signals are small or safety related, a hardwired interface shall be used. The signals shall be of the following types:

- Analogue (4-20mA at 24VDC)
- Volt-free contact (24VDC) for status and alarms from the package to ICSS and be powered by the LCP/UCP. Contact rating shall be 1 Amp.

- Digital output (24VDC powered, 0.5A max) directly from ICSS to the package devices.
- Relay coil (24VDC powered) for output control signals from ICSS to the packages for devices with power consumption higher than 8W 24VDC.

For equipment that operates on AC power or not on 24VDC power, VENDOR shall provide appropriate interposing relays or interface at the local panels to interface with 24VDC powered output signals from the ICSS.

MODBUS RTU RS485 or TCP/IP communications protocol shall be used for all data link interfaces between UCP/LCP and PCS. The UCP/LCP will act as slave in any communications with the PCS.

Data links shall be provided with appropriate test equipment. VENDOR offering data links will include provision for, at the COMPANYs discretion:

- An integration test at the PCS supplier's works.
- Provide facilities and assistance for the PCS supplier to attend tests.

Overrides for the purposes of testing shall be as recommended by VENDOR. In general, all I/O's shall have bypass capability for safe operation and maintenance of package unless specifically agreed by COMPANY in writing.

5.5 Alarm Handling and Annunciation

Each process trip shall have a pre-trip alarm. Alarms generated from instruments shall be provided at the panel to warn operators of potentially hazardous situations before shutdown occurs.

Package panel alarm annunciations that do not require first-up facility (e.g. pre-alarms) should have "Automatic Reset" in accordance with sequence A as detailed in ISA-S18.1. Package panel alarm annunciation groups that require first-up facility should have "Automatic Reset First Out with First Out Flashing and Reset Pushbutton with Silence Pushbutton" in accordance with sequence F3A-1 as detailed in ISA S18.1.

Alarms acknowledge and reset philosophy shall be decided during detailed engineering.

5.6 Fire and Gas System

Fire and gas devices inside package skid for package without F&G System shall be wired to platform's FGS/SIS (Safety Integrated System).

Where detectors and other equipment are installed as part of the VENDOR's scope (i.e. inside enclosures) the make and models shall be required to be in accordance with the make and models approved for the Project.

Refer individual mechanical equipment specification for Fire & Gas Detection and protection requirements.

5.7 Installed Spares

The UCP / LCP shall have minimum 20% spare prewired and tested, up to field I/O incoming cable termination blocks. In addition, 20% spare space and slots shall be provided. All spare positions in racks/slots shall be provided with cover plates. All hardware required for pre-wiring of spare shall be provided by VENDOR. All spare capacity shall be evenly distributed as spare positions over the various cabinets/equipment. Spare terminals shall be provided to terminate all cores/pairs of the field cables.

VENDOR shall also ensure that all power supplies shall be dimensioned to take the above requirements into account.

6. PROGRAMMABLE LOGIC CONTROLLER (PLC)

6.1 General

PLC shall run in a standalone mode and shall be able to operate without operator intervention under normal operating conditions. The overall availability that required to be 99.95% or better for process control.

All key operational data and alarms from equipment packages shall be displayed and recorded by the ICSS.

6.2 Power Supply

The CONTRACTOR will supply 220V A.C. UPS power supplies for the UCP via a redundant cables, further distribution shall be by VENDOR, for which the VENDOR shall provide double pole isolators within the System panel.

Redundant 220VAC/24VDC Power supply unit (PSU), with a common D.C. distribution and circuit protection network shall be provided to power up the PLC. Each PSU shall be rated at 125% maximum system load, and shall provide local and remote status and alarm facilities. Each PSU shall be of the linear type. PSU failure alarm shall be provided as part of common cabinet alarm.

Each PSU in a redundant power supply shall be rated such that all loads, including spares, can be simultaneously powered.

Diagnostics, signaling and isolation facilities shall be provided to service or replace a faulty PSU.

PSU shall be easily replaceable without disrupting the process plant.

6.3 PLC Hardware

6.3.1 Main processor module

Processor module shall be a microprocessor based controller that provides the functions required for a variety of field automation applications.

The module shall be fitted with status and diagnostic LED's (as a minimum, status and fault).

The final design should not utilize more than 50% of available memory at final commissioning.

6.3.2 Communication module

Communication module shall be automatically and permanently tested, to monitor their healthy condition. Identification and location of statuses and faults shall be automatic.

The serial communication between PLC and PCS shall be Modbus RTU RS 485 or TCP/IP, unless otherwise specified. Vendor shall provide details on Modbus address, data type and size, alarm and trip points (for analogue input points), logic active state (for discrete points), slave address, PLC details, baud rate etc at the minimum.

Communication module shall be designed for optimum data transmission speed.

6.3.3 Input and Output modules (I/O)

All input and output circuits shall be electrically isolated to prevent transients in the field wiring from affecting the internal machine circuitry (components other than I/O modules). Optical or transformer isolation is acceptable.

All input/output module electronics and channels shall include individual protecting device to prevent short circuit of the card.

Analog Input/Output modules should have HART pass-through facility to pass on health data coming from the smart field instruments to the LCP/UCP.

The system shall be designed to automatically self-test input and output cards in such a way as not to cause any process disturbance.

The I/O modules shall feature status and diagnostic LED's (as a minimum, power supply status and I/O channel status).

It must be possible to remove the I/O modules and replace them without:

- Disconnecting the field wiring from the I/O module termination assembly.
- Removing power from the PLC or any field devices.
- Disrupting the operation of the PLC in any way except for the functions associated with the module being replaced.

- Incurring any damage to any circuits.

6.4 Application software requirements

The PLC shall be supplied with a standard laptop PC complete with the operating system, antivirus and programming software for programming, commissioning, testing and maintenance. All software used shall be handed over to the COMPANY after FAT. Third party software requires evergreen license in COMPANY'S name.

Type and characteristics of the notebook shall be submitted by VENDOR at bid stage and shall be subject to COMPANY's approval.

Password access shall be provided for different using levels (configuration, programming, operation and maintenance).

6.5 Redundancy Requirement

The PLC shall be equipped with redundant components and designed such that on failure of a single module, the system or components shall be able to switch over automatically in the event of malfunction or failure of the primary unit. The transfer shall be 'bumpless" and no data acquisition shall be lost during the transfer.

The following parts of the system shall be redundant:

- Controller module
- Memory module
- Power supply module
- Communication module (as required)
- I/O modules for regulatory control
- I/O modules for critical signals

7. CONTROL PANEL REQUIREMENT

7.1 General

The VENDOR shall provide all necessary terminals and circuit breakers to distribute power logically within all panels in his supply. A suitably rated heavy duty, double pole, electrical isolator shall be provided for each incoming power cable (VENDOR to advise maximum cable size). Further power distribution within panels shall use Miniature circuit breakers (MCB's). For the LCP all the breakers shall be explosion proof, Ex"d" type.

Panel wiring shall be in accordance with IEEE wiring Regulations. Wiring shall be sized to suit each application with a minimum of 0.5mm2, (except for ribbon type cabling).

Wiring shall be routed in vented flame retardant plastic trunking with adequate separation and sized so that not more than 50% of the cross sectional area is filled with conductors.

For UCP, all field input cables shall be terminated to knife edge isolation terminal block. Terminal block for output field cables shall be installed with fuse. For the LCP, all terminal block shall be Fuse isolation.

Cable entry shall be from bottom only. Top entry shall not be used.

Each panel shall be provided with rigidly supported 25mm x 6mm copper earthing bars. Each bar shall have an identification label and two 10mm bolts for the earthing cables.

7.2 LCP Panel Requirement

LCP shall be constructed for outdoor application with appropriate safety / area classification and suitable for offshore marine using. SS316 and Cooper free aluminum alloy with epoxy or polyurethane coating are preferred. Material selection shall be proposed by Vendor for COMPANY approval.

The LCP at the hazardous area shall be certified suitable for Zone 1 hazardous area (Ex"de"/Ex"d"). This requirement does not include LCP at unclassified / safe area. Ingress protection class shall be IP 56 as a minimum for all the LCP.

If Ex"e" will be provided for LCP enclosure, Ex"ia" components could be provided only when Ex"d" is not available, all relative instruments inside package shall be Ex"ia" and safety barriers shall be provided in LCP. The using of Ex"ia" shall be proposed by VENDOR for COMPANY approval.

Field panel size and shape shall be as per manufacturer's standard.

Weather shields shall cover the LCP front and rear panels.

LCP shall be located at the edge of skid for easy maintenance and operation.

7.3 UCP Cabinet Requirement

UCP shall consist of one combined system and marshalling cabinet. The UCP cabinet shall be used to install input/output modules, controllers, termination of field incoming/outgoing signals, communication modules, network switches, converters and other electronic modules specific to the system architecture and the selected PLC VENDOR. The UCP shall be supplied as a completely assembled unit, pre-wired and tested to meet the operation requirements.

The cabinets shall meet the requirement of IP44 for installation inside enclosed rooms without air conditioner. Installation inside enclosed room with air conditioner shall meet IP22. UCP for high heat dissipation shall be equipped with own cooling and ventilation system.

Cabinets shall be constructed from steel plate painted, these shall be a standard rack cubicle (e.g. Rittal) or custom made cabinet or panels.

Cabinets shall generally be free standing, fully enclosed cubicle type complete with access doors. Unless otherwise stated in package's specification, base cabinet shall be 800mm x 800mm x 2000mm - maximum shipping length 1600mm. Panels shall be fitted with a plinth constructed from 100mm high mild steel channel with a minimum of 4 bolt down points, anti-vibration mountings, and prepared/finished in line with CONTRACTOR/COMPANY approved paint specification.

Access doors shall be fully gasketted and adequately stiffened to prevent distortion. Doors shall be mounted on lift-off hinges complete with lockable handles. Where doors have components mounted on them, steps must be taken to prevent damage to wiring, equipment or adjacent apparatus.

The cabinets shall be supplied as one complete unit unless it is required to be sectioned for access. Removable lifting eye bolts with local stiffening shall be provided to allow lifting and transportation of the fully assembled and wired panel, without any distortion.

Instruments on the panel front which require adjustment or which have dials that require inspection shall be fitted within a height of 1.5m from grade.

8. INSTRUMENT INSTALLATION

Instruments Installation, cable routing and tubing routing within skid limit shall be in accordance to "VSP-NIPI-TYP-TS-IA2-SP-03_General Instrument Specification".

9. INSPECTION, CALIBRATION AND FUNCTIONAL TEST

9.1 Scope of work

The VENDOR shall, before shipment visually inspect, calibrate, and functionally test all instruments which are included in the package instrumentation system. This shall apply whether instruments are mounted on the package, mounted but disconnected for shipment, or shipped loose for installation at the module construction yard or offshore.

The VENDOR shall perform the following:

- Control function testing before installation, installation checking and testing, leak testing, resistance and continuity testing and system function test where applicable.
- Complete package functional test shall be performed at VENDORs workshop, which means VENDORs/Sub-VENDORs Panel(s) and Skid(s) have to be hooked up and tested together.
- Spool pieces shall be provided for all inline instruments which will have to be removed for flushing (control valves, turbine meters, etc.).

9.2 Documentation and Test Equipment

All test shall be recorded and verified by VENDOR on suitable documents, and according to agreed procedures for inclusion in the final documentation for the package.

All test equipment shall have a valid calibration certificate, not older than one year at the time of testing.

9.3 CONTRACTOR / COMPANY's Inspection Representative

CONTRACTOR's Inspection Representatives shall be granted access to VENDOR's premises for inspection and verification of materials and work at any time. All material and test certificates shall be presented to the Inspector for verification or witnessing in accordance with VENDOR's approved Inspection Plan.

9.4 Calibration Procedure

The VENDOR shall perform a check/inspection on equipment purchased or received from sub-VENDOR and ensure that all instruments which are part of his supply, either have a calibration certificate supplied with the equipment, or are calibrated by the VENDOR witnessed by CONTRACTOR / COMPANY approved inspectors in his works.

Calibration/test certificate shall be issued for all instruments.

9.5 Functional Testing

The VENDOR must include the function testing procedure for the instrumentation system for testing of the package. This test procedure shall be prepared by the VENDOR including for control panel, field instruments, etc. and submitted to the CONTRACTOR / COMPANY for approval before testing is performed.

Before shipment, package VENDOR shall test all serial link input/ output on PLC panel side using simulating PC with software.

VENDOR shall supply test simulators to test all I/O's of the panel. Full functional test shall be carried out to simulate both normal and abnormal conditions / sequence.

All equipment failure modes shall be checked (e.g. power dips, redundancy, fail safe). The equipment radiated emission characteristics shall be within the recommendations of IEC standard.

VENDOR shall develop a control narrative for the system prior to functional test. This document shall be approved by COMPANY.

VENDOR shall participate in the panel integration test at the PCS Supplier works, for those packages that are connected via Modbus communication to PCS. VENDOR shall provide the PLC rack with CPU, communication cards, etc. fully loaded with the latest & final configuration files, software's required for this testing at PCS works. It is VENDOR's responsibility for coordinating with PCS Supplier for establishing the successful communication and testing with PCS. VENDOR shall provide all necessary parameters in the requested formats for the PCS interface.

The following tests shall be carried out to demonstrate the immunity of the equipment to radio frequency interference.

- A portable radio of frequency and electric field shall be operated at a distance of 3 feet from each equipment cabinet or console in turn.
- All doors on the equipment cabinets or consoles shall be left fully open for the duration of this test.

- During the test, the system shall be fully operational and shall be monitored for abnormal indications or spurious data.

9.6 Flushing and Testing Requirement

During flushing/clean of process and utility pipework all inline instruments including control valves and orifice plates shall be disconnected, removed and replaced by spool-pieces. Thermowells may be left in place.

In the case of pipework pressure-testing all instruments connected on small bore off-takes which are protected by a block and bleed arrangement shall be isolated and vented. Where no block and bleed is provided the instrument will be removed unless there is no danger of damage due to leakage of the isolating valve. Orifice plates and thermowells may remain in place during pressure testing.

In general, instruments which form part of the process pipework may be left in place during pressure testing but if there is a danger of damage they are to be removed. Control valves with axial stem movement shall be removed or protected by spades or spectacle blinds. Control and shutoff valves with rotary stem movement may be left in place provided the gland is rated to withstand the test pressure. All instruments forming part of the process piping shall be replaced for the reinstatement test.

After the reinstallation the VENDOR shall recheck for correct installation including checks to ensure that valves, flowmeter etc. are installed in the correct flow direction.

Instrument impulse lines shall be flushed and tested according to VENDORs test procedure, which shall be subject to CONTRACTOR / COMPANY approval. A pressure test to 1.5 times maximum process design pressure shall be performed. All the lines shall be drained with clean air or nitrogen after the test, the lines should be considered dry after blowing for 30 minutes.

Hydraulic piping and equipment shall be flushed, pressure tested and leak tested according to VENDORs procedures.

The CONTRACTOR shall certify that the system cleanliness level is in accordance with ISO 4406 Class 17/15/12 or better. The pressure test shall be performed to 1.5 times the maximum working pressure.

The flushing shall be carried out by a dedicated flushing unit with capacity of a flow rate of at least 1.5 times the service pump flow rate. The system hydraulic pump shall not be used for flushing.

Piping and equipment which have been protected with a rust inhibitor (preservation liquid) shall be ascertained for compatibility with the operating fluid. If not, the piping/equipment shall be flushed to remove the rust inhibitor.

Pneumatic signal and supply lines shall be flushed and pressure tested according to VENDORs test procedure, which shall be subjected to CONTRACTOR / COMPANY approval. A pressure test to 1.1 times maximum design pressure shall be performed in accordance with the requirements of ANSI B 31.3.

Pneumatic signal and supply lines shall be leak tested according to VENDORs test procedure, which shall be subject to CONTRACTOR / COMPANY approval. Instrument air or nitrogen to be used for the leak testing at the maximum operating pressure.

All instruments shall be calibrated, and the calibration results recorded on agreed record sheets.

All cables shall be "megger" tested for insulation, between core to core, core to screen, screen to armor, screen to ground, armor to ground.

Polarity and continuity of cores, screens and armor shall also be tested. All tests shall be documented on agreed record sheets.

The completed skid instrumentation shall be subjected to as full functional test as possible. This includes the operation of control valves, block valves and solenoid valves. Where a panel is provided as part of the package a full functional test of the panel together with the skid shall be carried out.

The Package VENDOR shall be responsible for the supply and cost of all replacement material and labor necessary to rectify faults which show up during instrument installation and testing, if such faults are due to design errors, faulty workmanship or faulty materials in the Package VENDOR supply.

10. PACKING, SHIPPING AND REASSEMBLE

The instruments on skid or packaged equipment shall be packed to avoid damage during shipment. Any instrument on skid or packaged equipment which possibly being damaged during shipment shall be disassembled and removed. The disassembled instruments shall be packed and shipped with the skid or packaged equipment. All openings to be suitably sealed.

Any electronic or electrical component in control panel which possibly being damaged during shipment shall be removed. Each such item shall be suitably packed or crated to protect them from damage during shipment. Each item, crate, box, etc. shall be identified. A complete packing list for each box or crate shall be provided.

The electronic and electrical components removed from skid mounted panel shall be shipped independently. The shipping notice shall be written on the box or crate with red letters, such as "Handle with Care", "Keep Dry", "Fragile", etc.

The control panels or junction boxes in which contain electronic or electrical components shall be put drying agent inside to protect from wet and rusty during shipment.

The instruments disassembled during shipment shall be reassembled after the skids or packaged equipment are positioned and installed on site.

The installation material such as fittings, sealant, etc., used for instrument reassemble shall be provided by skid or packaged equipment VENDOR.

It is VENDOR's responsibility to reassemble the instruments removed from skid or packaged equipment during shipment.

The instruments shall be functionally tested and recalibrated after completing the reassemble work. Any fault component or instrument found shall be replaced by the VENDOR of skid or packaged equipment.

The pneumatic tubing reassembled shall be checked for leakage.

11. SPARE PARTS AND SPECIAL TOOLS

11.1 Spare Parts

The package VENDOR shall supply commissioning and start-up spares for instrumentation as part of his scope of delivery. A complete list shall be forwarded by VENDOR for CONTRACTOR / COMPANY approval.

All unused commissioning and start-up spares left after the start-up shall be left onboard, handover with proper documents and become COMPANY's property.

11.2 Special Tools

The Package VENDOR shall supply one set of any and all special tools required for erection or maintenance of the instrument system provided (e.g. HART configurator).

APPENDIX A

Detailed Package type of this project shall be specified later for each Project.

No.	Package Description	Package Type
A	**Process Packages**	
B	**Utility Packages**	

APPENDIX B

Documentation for Instrument for Package Equipment shall be minimum as follow:

DOCUMENT DESCRIPTION	APPLICABLE FOR PACKAGE	APPROVAL/ INFOR.
A. General Documentation		
1. Overall schedule	ALL	Approval
2. P&ID	ALL	Approval
3. Instrument list	ALL	Approval
4. I/O list	P3, P4	Approval
5. Instrument Data sheet	ALL	Approval
6. Interconnection Diagram	P2, P3, P4	Approval
7. Tubing layout and tubing routing	P3, P4	Approval
8. Cable routing and cable tray layout	P3, P4	Approval
9. Instrumentation Loop wiring diagram	P3, P4	Approval
10. Instrument Calculation Sheets	ALL	Approval
11. Calculation sheet for IS loop (if required)	ALL	Approval
12. System Architecture (showing interconnection)	P3, P4	Approval
13. Control and Safety Systems Description	P3, P4	Approval
14. Operating principle and Functional Design Specification	ALL	Infor.
15. Control, logic and sequence diagram, cause and effect chart	ALL	Approval
16. Instrument card I/O assignment	P3, P4	Approval
17. Calculation Sheets of network and controller load	P3, P4	Infor.
18. Software specification, configuration documentation	P3, P4	Infor.
19. Software Database Exchange Table	P3, P4	Infor.
20. Power supply and Instrument air consumption	ALL	Infor.
21. CPU heat dissipation	P3, P4	Infor.
22. SIL Data	ALL	Infor.
B. Operation and Maintenance Documentation		
23. Operating Manual	ALL	Infor.
24. HMI Graphic Display, Report Printouts	P3, P4	Infor.
25. Spare part list (for start-up and for 2 years of normal use)	ALL	Infor.
26. Special Tools List	ALL	Infor.
C. Test Procedure		
27. Performance and Test Procedure	ALL	Infor.

DOCUMENT DESCRIPTION	APPLICABLE FOR PACKAGE	APPROVAL/ INFOR.
28. Hydro test Procedures	ALL	Infor.
29. Performance Test Reports	ALL	Infor.
30. Surface Preparation and Paint System Specification	ALL	Infor.
31. Commissioning and Site Acceptance Test Procedures	ALL	Infor.
32. Factory Acceptance Test Procedure (FAT, IFAT, SAT)	ALL	Infor.
33. Preservation and Storage Procedure	ALL	Infor.
34. Welding Procedures & Qualification Test Reports	ALL	Infor.
35. NDT Procedures	ALL	Infor.
D. QA/Certification		
36. QA Accreditation Certification	ALL	Infor.
37. Contract Quality Plan	ALL	Infor.
38. Inspection and Test Plan	ALL	Approval
39. Statement of Code Compliance	ALL	Infor.
40. Approval of Relevant Authorities	ALL	Infor.
41. Inspection and Test Reports	ALL	Approval
42. Material Certification	ALL	Infor.
43. Hazardous Area Electrical Equipment Certification	ALL	Infor.
44. Electrical Type Test Certificates	ALL	Approval
45. Post Weld Heat Treatment Records	ALL	Approval
46. Hydro test Reports	ALL	Infor.
47. NDT Reports	ALL	Infor.
48. Performance Curves and Data (ANSI and ASME)	ALL	Approval
49. FAT, IFAT, SAT Reports (performance, leak and functional systems tests)	ALL	Approval
50. Commissioning and Site Acceptance Test Results	ALL	Approval
51. Noise Test Data	ALL	Infor.

NOTE:

Other documents may be required as detailed in package specifications and/or relevant codes and standards.