PTTEP ENERGY DEVELOPMENT COMPANY LIMITED

CALL FOR TENDER NO.: THC22-5272

FOR

PROVISION of G1FSO and CALM BUOY SYSTEM LEASE and OPERATE for G1/61

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INSTRUCTIONS TO TENDERERS

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1. PURPOSE

1.1 Through this CFT, PTTEP Energy Development Company Limited (hereinafter referred to as "**COMPANY**") is seeking to nominate a contractor for the performance of works/services under the Contract No. THC22-5272. The details of the works/services are specified in Exhibit A of Form of Contract (PART II of the CFT).

1.2 The tentative and estimated Contract duration is 6 years and 8 months with the details below;

- The EFFECTIVE DATE of the CONTRACT is tentatively on 1st April 2023 which may be subject to change in accordance with the conclusion of the bidding process.
- The preparation period is 18 months from the EFFECTIVE DATE where the CHARTER COMMENCEMENT DATE of the SERVICES is tentatively on 1st October 2024 which may be subject to change in accordance with the conclusion of bidding process.
- The CHARTER PERIOD of the SERVICES is five (5) years from The CHARTER COMMENCEMENT DATE.

2. CLOSING DATE AND TIME

The closing date and time for the submission of the TENDER is **23rd November 2022 at 14.00 hrs., Bangkok time**.

3. DEFINITIONS

For all purposes of this CFT, the terms defined herebelow shall have the meanings assigned to them hereafter.

3.1 **CFT** shall mean the Call for TENDER No. THC22-5272.

3.2 **FOC** (or "Form of Contract") shall mean Form of Contract No. THC22-5272, which is a part of the TENDER DOCUMENTS.

3.3 **ITT** shall mean this Instructions to TENDERER.

3.4 **SERVICES** (or **WORK**) shall mean the works or services and other obligations to be performed by a successful TENDERER as described in the TENDER DOCUMENTS, in particular Exhibit A of the Form of Contract.

3.5 **TENDER** shall mean the TENDERER's offer to perform the SERVICES, and any subsequent revised offer in response to COMPANY's request.

3.6 **TENDER DOCUMENTS** shall mean this CFT and any document related thereto remitted by COMPANY together with any addenda that may be issued by COMPANY to TENDERER prior to the closing date and time set out in Section 2.

3.7 **TENDERER** shall mean the company, partnership or other person who receives this CFT (either via email or any other ways) from COMPANY.

3.8 **TENDER CLARIFICATION** means a written request from COMPANY to a TENDERER made after the Tender closing date for further and better information.

3.9 "days" means "consecutive calendar days, it being understood that all dates and time periods referred to in this ITT relate to Gregorian calendar.

3.10 The definitions of **APPLICABLE LAWS**, **CALM BUOY**, **CHANGE ORDER**, **CHARTER COMMENCEMENT DATE**, **CHARTER PERIOD**, **CONTRACT, DEMOBILIZATION**, **DESIGNATED WORK AREA EFFECTIVE DATE**, **FSO**, **LAY-UP**, **PROVISIONAL ACCEPTANCE CERTIFICATE**, **REDELIVERY**, **TIME CHARTER RATE**, and **WORK** shall refer to article 1.2 of the main agreement of the Form of Contract.

4. ACKNOWLEDGMENT OF RECEIPT OF CALL FOR TENDER DOCUMENTS

4.1 Within forty-eight (48) hours from the receipt of this CFT, TENDERER shall sign and return a Letter of Acknowledgement in the form given in Annex I to COMPANY. TENDERER shall specify the name, position, phone number, fax number and email address of the person in charge of its TENDER.

4.2 If TENDERER does not wish or is unable to tender, it shall decline by submitting the Letter of Acknowledgement (Annex I) and return all TENDER DOCUMENTS to COMPANY without delay.

4.3 All correspondences related to this CFT are to be addressed to:

PTT Energy Development Company Limited
Energy Complex Building A, Floors 6, 19-36
555/1 Vibhavadi Rangsit Road, Chatuchak,
Bangkok 10900, THAILAND

Telephone: +66(0) 2537 4000
Fax: +66(0) 2537 5043

Attention: **Mr. Prathet Pipatmongkolchai *(Focal Point for this CFT)***
Senior Procurement and Contracts Officer
Prathetp@pttep.com

CC: **Mr. Chupong Klunkleeb**
Manager, Maintenance, Construction, Production & Logistic Service
Procurement & Contracts Section
ChupongK@pttep.com

Mr. Apichart Whungkhunnatham
Senior Engineer, Project
ApichartW@pttep.com

Mr. Manit Aimcharoenchaiyakul
Senior Engineer, Marine Support
ManitA@pttep.com

Mr. Phongpipat Trakunsoonthorn
Engineer, Marine
Phongpipatt@pttep.com

5. PRE-BID CLARIFICATIONS

5.1 COMPANY's representative will be available at COMPANY's office stated in Section 4 during the pre-bid period for pre-bid clarifications. Any query shall be addressed in writing to the address and names mentioned in Section 4.

5.2 Such query must reach COMPANY's representative not later than seven (7) days before the closing date stated in Section 2.

6. TENDER SUBMISSION

6.1 **TENDERER shall submit to COMPANY a Letter of Submission in the form set out in Annex II together with its TENDER, and TENDERER shall submit the Bid Bond amount 100,000 USD, in the form set out in Annex V, issued any commercial bank incorporated in Thailand or international banks that have branches in Thailand. TENDERER shall submit Bid Bond in separated sealed envelope to COMPANY together with submitted Technical Proposal and Commercial Proposal. COMPANY reserves the right to not consider the TENDER from TENDERER who fails to meet the Bid Bond requirements.**

6.2 **COMPANY will only consider the TENDER from TENDERER who receives the CFT (either via email or any other ways) from COMPANY. The TENDER from other persons or companies will not be considered.**

6.3 The TENDER shall be submitted in **two (2) original documents** which are **one (1) original Technical Proposal** and **one (1) original Commercial Proposal**, clearly identified "**ORIGINAL**" on each document, and two (2) copy of both documents, clearly identified "**COPY**" on each document. **Each Proposal shall be sealed in a separate envelope**.

6.4 In addition to the hard copy submission, TENDERER shall submit two (2) CDs. The first set of CD, clearly marked "**Technical Proposal CD**", shall contain completed Technical Proposal in editable native files. (2 copies of CD) The second set of CD, clearly marked "**Commercial Proposal CD**", shall contain completed Commercial Proposal in editable native files. (2 copies of CD). **Each CD shall be packed in a separate and sealed envelope**. TENDERER shall refer to further instructions in Appendix I and illustration in Appendix IV.

For the native files, **such native file shall be complete and in-line with the original (hardcopy proposals), and TENDERER shall not lock/protect/encrypt the files.**

6.5 The following mention shall be indicated on the top left corner of each sealed envelope:

NAME OF TENDERER

BID FOR **PTTEP ENERGY DEVELOPEMENT COMPANY LIMITED**

CALL FOR TENDER NO: THC22-5272

COMMERCIAL PROPOSAL or TECHNICAL PROPOSAL *(Please specify)*

ORIGINAL or COPY *(Please specify)*

"**NOT TO BE OPENED**"

Both originals and copies of Technical and Commercial Proposals are to be addressed in a larger envelope and shall be labelled as follows:

NAME OF TENDERER
ADDRESS OF TENDERER

BID FOR **PTTEP ENERGY DEVELOPEMENT COMPANY LIMITED**

CALL FOR TENDER NO: THC22-5272

"**NOT TO BE OPENED**"

TO: **MR. ANUSORN WUTHIJAROEN**
VICE PRESIDENT, GLOBAL SUPPLY CHAIN PROCUREMENT & CONTRACT DEPARTMENT
(For PTTEP Procurement)

PTTEP ENERGY DEVELOPEMENT COMPANY LIMITED
ENERGY COMPLEX BUILDING A, FLOORS 6, 19-36
555/1 VIBHAVADI RANGSIT ROAD
CHATUCHAK, BANGKOK 10900
THAILAND

(PTTEP'S MAILROOM, PARKING 2)

6.6 The TENDER shall be addressed to COMPANY in such a manner that it reaches COMPANY's mailroom, Bangkok office before the closing date and time mentioned in Section 2 above. The TENDER that arrives after such closing date and time may not be considered.

6.7 It is TENDERER's responsibility to send along a document transmittal/delivery form and obtain from COMPANY's addressee a receipt for the delivery of the TENDER before the closing date and time. Without such receipt, no claim will be examined.

6.8 TENDERER is advised that by mailing its TENDER, it runs the risk of envelopes being accidentally opened which would make the TENDER invalid. COMPANY would strongly recommend avoiding normal mailing and giving preference to the use of a reputable courier service.

6.9 The TENDER which is incomplete or vague shall not be considered.

6.10 **Any financial or commercial matters that in any way related to TENDERER's Commercial Proposal must only specify in the Commercial Proposal. Also, these matters shall not be transmitted by e-mail or fax unless specifically instructed otherwise by COMPANY.**

6.11 **COMPANY will not consider the TENDER from TENDERER who fails to meet the technical requirements below.**

Item	Technical Requirements
1	**TENDERER to comply with COMPANY's Terms and Condition and ITT**
2	**TENDERER to comply with COMPANY's Scope of Work per Exhibit A.**
3	**TENDERER confirm that G1FSO and CALM Buoy shall be completed offshore commissioning and fully function no later than 18 months from contract effective date.**
4	**TENDERER or SUBCONTRACTOR shall have minimum one (1) Project or Contract for Tanker or FSO or FPSO in past 10 years from bid closing date.**
5	**TENDERER shall submit the Letter of Undertaking/Right to Use for Candidate Vessel with its IMO number, accepted by vessel owner.** **The commitment shall cover period of TENDER validity and do not propose change of Candidate Vessel after bid closing date.**
6	**TENDERER shall propose vessel(s) comply with COMPANY's Key Functional Requirements as follows;**
6.1	**Vessel Age and CALM Buoy Age:** **Candidate vessel age shall not more than 25 years old at the time of charter commencement date at Designed Work Area. In case redeploy CALM Buoy, the CALM Buoy age shall not more than 5 years old at the time of charter commencement date at Designated Work Area.**
6.2	**Design service life:** **FSO & CALM Buoy operation in Gulf of Thailand for 10 years from FSO charter commencement date at Designated Work Area without dry docking.**
6.3	**FSO & CALM Buoy System Classification:** **FSO & CALM Buoy system shall be certified under the following Class:** **○ ABS, or** **○ DNV, or** **○ BV, or** **○ LR**
6.4	**FSO Minimum Capacity:** **FSO shall have minimum Cargo Storage 600,000 barrels, include one (1) pair Dual Purpose Tank, exclude Slop Tank.**
6.5	**FSO Hull Design:** **FSO shall be double hull construction.**
6.6	**FSO Station Keeping:**

	FSO shall use Main Engine as a primary maneuvering system for station keeping control operation.
6.7	**FSO Inert Gas System:** **FSO shall be provided with a source of inert gas from flue gas.**
6.8	**FSO Tandem Offloading:** **Cargo pump capacity can discharge at flow rate minimum 3,000 m3/hour.**
7	**COMPANY shall only consider the TENDER from TENDERER who agrees and signs on Integrity Pact, by TENDERER's authorized person with TENDERER's company stamp set out in Annex VI of this ITT.**
8	**TENDERER shall comply with COMPANY's SSHE requirements and shall be able to obtain COMPANY's SSHE evaluation score of greater than or equal to eighty percent (≥80%) and Minimum score of each SSHE element shall be greater than or equal to one (≥ 1).** **As a minimum during technical bid evaluation, TENDERER shall be able to obtain COMPANY's SSHE evaluation score of greater than or equal to sixty percent (≥60%), where then TENDERER shall provide practical improvement plan so that TENDERER shall be able to obtain COMPANY's SSHE evaluation score of greater than or equal to eighty percent (≥80%) and Minimum score of each SSHE element shall be greater than or equal to one (≥ 1) before offshore work commencement date.**

6.12 **Commercial proposal must be submitted in the form provided in this TENDER DOCUMENTS, otherwise such Proposal will not be considered by COMPANY.**

6.13 **Commercial Proposal shall be submitted in US Dollar (USD) and in the form provided in this TENDER DOCUMENTS, otherwise, such Proposal will not be considered by COMPANY.**

TENDERER shall not change, amend, or revise any format, price structures or any contents, including shall not add pricing terms/conditions or including any other optional rates and/or fees, to/of/from the COMPANY's Exhibit B, and/or commercial proposal form(s) provided in this TENDER DOCUMENTS without written consent from COMPANY.

Unless otherwise clearly stated by COMPANY through written communication or TENDERER receive written consent from COMPANY, TENDERER shall be able to quote/provide commercial proposal for all items in Exhibit B of the TENDER DOCUMENTS/FOC.

As such, for all items which TENDERER completed with "QUOTED" in Section 13 of the Volume I – Technical Proposal, TENDERER shall provide numerical value proposal for such items in Section 1 of Volume II – Commercial Proposal. Subject to this instruction, for item(s) where TENDERER's intention for the commercial rate for the item is "ZERO US Dollar (ie. no charge of fees to COMPANY)", TENDERER shall complete with "QUOTED" in Section 13 of the Volume I – Technical Proposal and TENDERER shall then indicate "Zero (0.00)" for such items in Section 1 of Volume II – Commercial Proposal.

Furthermore, unless otherwise clearly stated by COMPANY, TENDERER's commercial proposals submitted in Section 1 of Volume II – Commercial Proposal shall be proposed in numerical value (up to 2 decimal places) for each and every field(s) and rate(s). COMPANY shall not accept a 'mark-up' or 'at cost' or 'cost plus' (eg. "actual cost + x%") or such similar format proposal which COMPANY cannot use for its commercial evaluation.

7. BASIS OF TENDER

7.1 TENDERER shall separately submit Technical and Commercial Proposals in the manners set out in Appendix I and Appendix II.

7.2 **Supplementary Proposals** (Delta cost impact after Technical, Commercial and Contractual Clarification)

Provided that TENDERER has submitted a modified TENDER in accordance with Section 9, upon completion of the TENDER clarification process (including Technical, Commercial and Contractual

Clarification), TENDERER will be requested by COMPANY to submit Supplementary Proposal which includes:

(a) Unpriced Supplementary Proposal which includes:
  (i) agreed clarification documents (Technical, Commercial and Contractual) with TENDERER's initial on each page, and
  (ii) a Letter of Confirmation stating that TENDERER has no further requests for clarifications and qualifications; and

(b) Priced Supplementary Proposal, which is the same as the agreed clarification documents without modifications other than the inclusion of the individual Delta Cost Impact for all the items previously indicated by TENDERER in its Unpriced Supplementary Proposal as having cost impact. Priced Supplementary Proposal must be initialled on each page by TENDERER.

The Supplementary Proposal shall be submitted in two (2) original documents which are one (1) Unpriced Supplementary Proposal and one (1) Priced Supplementary Proposal, clearly identified "Unpriced" or "Priced" on each document. **Each Proposal shall be sealed in a separate envelope**.

TENDERER is advised that any attempt to submit a revised TENDER at the time of submitting the Supplementary Proposal without COMPANY's request will automatically disqualify TENDERER.

8. COMMERCIAL PROPOSAL

TENDERER's Commercial Proposal shall be established by taking into account all the information and provisions included in the TENDER DOCUMENTS (including, but is not limited to, PART II - FORM OF CONTRACT) as well as subsequent clarifications between COMPANY and TENDERER.

Moreover, TENDERER shall obtain all information and take into account all circumstances, regarding proposed operations and their location which may affect its costs and expenses included in its TENDER.

9. MODIFIED TENDER

9.1 If TENDERER wishes to submit a modified TENDER on the basis of the modifications to the TENDER DOCUMENTS, in particular the Form of Contract and its attachments, it may do so but COMPANY will not consider such TENDER unless it fully complies with the following conditions:

- all such modifications shall be presented in a precise alternative wording; generalizations or other imprecise languages will not be considered; and
- each modification shall be presented in a "Exception/Deviation Sheet (Unpriced)" (in the form set out in Annex III), showing clearly the impact, if any, on price and schedule.

9.2 For various technical options, TENDERER may submit those options in its modified TENDER.

9.3 COMPANY reserves the right to give precedence to those TENDERERS who submit their TENDERS without modifications.

10. PERIOD OF TENDER VALIDITY

The TENDER shall remain valid for a period of **eight (8) months** from the closing date and time set out in Section 2 above. However, COMPANY reserves the right to request the extension of the validity period.

11. COST OF TENDERING

11.1 The TENDER shall be proposed and submitted at TENDERER's sole cost and expense. In no case will any cost or expense incurred by TENDERER in the preparation or submission of its TENDER be borne by COMPANY.

11.2 TENDERER shall, at its own cost, be prepared to discuss at COMPANY's office mentioned in Section 4, at COMPANY's option, any aspect of the TENDER, especially, but not only, the modifications

TENDERER may have brought to any TENDER DOCUMENTS, at any reasonable time between the closing date and time and the award of a contract.

12. COMPLIANCE WITH INSTRUCTIONS

The TENDER shall be submitted in accordance with all instructions contained in PART I – INSTRUCTIONS TO TENDERERS, especially **Section 6 (TENDER SUBMISSION)**, **Section 7 (BASIS OF TENDER)**, **Section 10 (PERIOD OF TENDER VALIDITY)** and **Section 14 (CONFIDENTIALITY)**. Any TENDER which does not comply with such instructions may be disqualified and may not be considered by COMPANY.

13. WITHDRAWAL OF TENDER

The TENDER submitted by TENDERER shall not be withdrawn during the period of its validity stipulated in Section 10. If TENDERER does or attempts to do so, it may be debarred from COMPANY's future call for tenders.

14. CONFIDENTIALITY

14.1 The TENDER DOCUMENTS are confidential, contain proprietary information belonging to COMPANY and may only be reproduced or disclosed by TENDERER for the purpose of preparing its TENDER, subject however to prior written permission of COMPANY first being obtained by TENDERER.

14.2 The TENDER DOCUMENTS shall remain the property of COMPANY. COMPANY may require an unsuccessful TENDERER to return the TENDER DOCUMENTS to COMPANY.

15. OWNERSHIP OF TENDER

All documents submitted by TENDERER in response to this CFT shall become the property of COMPANY. However, intellectual property in the information contained in such documents shall remain vested in TENDERER. This Section 15 is without prejudice to any provisions to the contrary in any subsequent contract between COMPANY and TENDERER.

16. MISCELLANEOUS INSTRUCTIONS

16.1 TENDERER shall be responsible to comply with and be fully aware of all applicable governmental and local laws, regulations, practices, codes and requirements in relation with, but not limited to, safety, taxation and customs, which might affect TENDERER when bidding, executing the Contract for the SERVICES and provision of the SERVICES.

16.2 TENDERER shall clearly specify its position regarding local taxes, with reference to the Form of Contract (PART II of the CFT) and shall indicate (i) the official name of the TENDERER who, in case of a successful TENDER, will sign the Contract with COMPANY, (ii) TENDERER's country of registration, and (iii) whether TENDERER has established or not a permanent office or local company in Thailand.

16.3 TENDERER's legal status, country of incorporation and country of residence for tax purposes (if different from country of incorporation) must be disclosed. Financial statement and valid TENDERER Registration Certificate which clearly indicates its classification of business field/sub-field and qualification of expertise have to be provided.

16.4 No TENDER shall be conditional upon the availability to TENDERER of goods, labour, equipment, material or any other resources required for the performance of the SERVICES. If requested by COMPANY, TENDERER shall provide supporting documents to evidence the availability of same.

16.5 TENDERER's information as requested in Sections 16.2 – 16.4 shall be an essential part of the TENDER and, in the case of a successful TENDER, may be incorporated as appropriate in the Contract between COMPANY and TENDERER.

16.6 The TENDER and all attachments, information, notes, catalogues, and any other written material shall be in the English language.

16.7 COMPANY reserves the right to visit, inspect and satisfy itself regarding the premises, facilities, equipment and other resources of TENDERER, and to carry out a technical and commercial appraisal prior to awarding a Contract.

16.8 After the closing date and time set out in Section 2, COMPANY reserves the right to request TENDERER for any further information it may deem necessary to evaluate the TENDER.

17. ACCEPTANCE OF TENDER AND FINAL AWARD

17.1 TENDERER understands and agrees that COMPANY shall be under no obligation to accept the lowest or any TENDER. The decision made by COMPANY on this matter shall be final and shall not be contested or opposed by TENDERER. COMPANY shall not enter into correspondence with TENDERER regarding the reasons for non-acceptance of the TENDER.

17.2 COMPANY reserves the right of accepting any portion of the TENDER as COMPANY may decide unless TENDERER expressly stipulates to the contrary in its TENDER.

17.3 No TENDERER may consider itself successful unless and until it receives written notice to that effect from COMPANY.

17.4 COMPANY may notify its acceptance of the unmodified or modified TENDER, as the case may be, by sending TENDERER a Letter of Intent to Award ("**LOI**"). In such case, TENDERER shall confirm its agreement to the terms and conditions of the LOI within two (2) days of receipting it. Then the LOI shall constitute a binding agreement between COMPANY and TENDERER pending completion and exchange of formal Contract.

18. GOOD CORPORATE GOVERNANCE AND BUSINESS ETHICS

PTTEP Group operates in a lawful, transparent, fair and accountable manner, as well as in compliance with its Good Corporate Governance Principles and Code of Business Ethics (CG&BE). For the details of CG&BE, please visit http://www.pttep.com/en/Aboutpttep/Corporategovernance/CgandbusinessEthics.aspx#topic-179

In case TENDERER is aware or suspect in good faith that any person acting on behalf of PTTEP Group has been involved in Misconduct (as defined in item 2 of the link below) or suspected Misconduct or may breach the law or violate the CG&BE, please file a report to one of the channels listed in item 7 of the link below. For more information regarding PTTEP group's Reporting & Whistleblowing Regulations, please visit the link below. http://www.pttep.com/en/Aboutpttep/Corporategovernance/Reportingandwhistleblowingregulations.aspx

PTTEP Group is committed to protecting people who report Misconduct in good faith.

APPENDIX

APPENDIX I

DOCUMENT TO BE INCLUDED IN TENDER

The documents to be included in the TENDER are as follows:

Volume I - Technical Proposal (Section 1-8)

Section 1: **Letter of Submission:** TENDERER shall submit the signed Letter of Submission in the form provided in Annex II of this ITT.

Section 2: **Exception/Deviation Sheet** (Unpriced) (if any, in the form set out in Annex III of this ITT)

Section 3: **UNPRICED Commercial Terms and Schedule of Rates** in the form as given in Exhibit B of the Form of Contract duly completed with "QUOTED" for quoted items or "NOT QUOTED" for items that are not quoted. **Prices shall NOT be indicated anywhere in the UNPRICED Commercial Terms and Schedule of Rates**. TENDERER shall quote all the rates as specified in Exhibit B of the Form of Contract for COMPANY's evaluation.

Section 4: **Legal documents:** Memorandum of Associate, Affidavit, Power of Attorney, or other documents showing the name of authorized person who can sign on behalf of and bind TENDERER regarding the TENDER and a relevant contract/agreement between COMPANY and TENDERER, copy of tax certificate etc.

Note: Should the document(s) (TENDERER's company affidavit) indicate that multiple authorized persons can sign on behalf of and bind TENDERER regarding the TENDER and a relevant contract/agreement between COMPANY and TENDERER, TENDERER shall clearly indicate the name of the selected authorized person.

Section 5: **Original Bid Bond**, in the form set out in Annex V, issued by any commercial bank incorporated in Thailand or international banks that have branches in Thailand.

The original Bid Bond shall be enclosed in a separate sealed envelope in the TENDER. A TENDERER who does not include a satisfactory Bid Bond shall be disqualified.

The Bid Bond shall be in the amount of **One Hundred Thousand US Dollars (USD 100,000)** and shall be valid for at least **eight (8) months** from the Tender closing date, or until;

- TENDERER receives notification from the COMPANY that the Contract with the successful TENDERER has been executed, in the case of acceptance, the TENDERER has submitted a satisfactory Performance Bank Guarantee in accordance with sub-article 33.1 of the AGREEMENT, or
- Eight (8) months after the Tender closing date or such extended period as the COMPANY may request, whichever is the earlier.

The COMPANY may make a call on the Bid Bond and draw down any sum it sees fit on any number of occasions up to the full value of the Tender Bond in the following circumstances if the TENDERER should:

- withdraw his TENDER, without COMPANY's agreement, after the Tender closing date and before the expiry of its period of validity, or if,
- TENDERER refuses to accept the correction of pricing errors and or other errors in his TENDER in accordance with terms of the Call for TENDER Package, or if,
- in the case of acceptance, refuse to execute the formal written CONTRACT, or if,
- fail to provide a satisfactory Performance Bank Guarantee.

COMPANY decision in this matter shall be final and not open to challenge by the TENDERER.

Note: The original Tender Bond must be enclosed in **a separate sealed envelope** marked 'ORIGINAL BID BOND' enclosed within the Package containing the original of the TENDER proposal and able to be opened independently.

Section 6: **Technical required documents** for Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61 and confirmation in the form set out in Appendix II of this ITT. The technical required documents shall be consistent with TENDERER's proposed Candidate Vessel as specified in Letter of Undertaking.

Section 7: **SSHE required documents** as specified in Appendix III of this ITT

Section 8: **Integrity Pact** signed by TENDERER's authorized person and with TENDERER's company stamp as set out in Annex VI of this ITT

Volume II - Commercial Proposal

Section 1: PRICED Commercial Terms and Schedule of Rates in the form as given in Exhibit B of the Form of Contract duly completed with price proposal. Each Proposal shall be sealed in a separate envelope for each package.

Section 2: Exception/Deviation Sheet (Priced) (if any, in the form set out in Annex IV)

Note: Information provided in CD for both Technical and Commercial Proposal shall contain PDF version and native editable (word/ excel) same as shown in hard copy submission.

APPENDIX II

TECHNICAL REQUIRED DOCUMENTS

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
1	FSO & CALM Buoy Delivery Schedule	Letter of Confirmation: 1. TENDERER shall submit the signed Letter of Confirmation that G1FSO and CALM Buoy System shall be completed offshore commissioning and fully function no later than 18 months from CONTRACT EFFECTIVE DATE.
		TENDERER shall submit a Project Execution Plan (PEP) for COMPANY review and approval.. The Project Execution Plan shall include the followings but not limited to; 1. Project Schedule from CONTRACT EFFECTIVE DATE until Final Acceptance 2. EPCIC Project Management Team (PMT) Organization Capability 2.1 G1FSO PMT Organization Chart 2.2 CALM Buoy PMT Organization Chart 2.3 CV's the key personals 3. G1FSO & CALM Buoy System Operation & Maintenance Organization Capability 3.1 Onshore Organization Chart 3.2 Offshore Organization Chart 3.3 CV's the key personal 4. Project Management, Interface Management, Control & Administrative 5. Project Engineering, Procurement, Construction, Installation and Commissioning Management Plan 6. Project Quality Management Plan 7. Project Safety, Security, Health and Environment (SSHE) Plan 8. Project Operation Readiness and Plan
2	Compliance with COMPANY's Scope of Work: - Design engineering, - Procurement and subcontracting, -Construction, modification, fabrication, - Demolishment, - Refurbishment, - Life extension, - Conversion, - Preservation, - Onshore commissioning, - Load-Out, Towing and transportation - Hook up and installation - Offshore commissioning - Operation and Maintenance	Letter of Confirmation: 1. TENDERER shall submit the signed Letter of Confirmation that TENDERER shall comply with Exhibit A Scope of Work, Requirements and Specifications.
		TENDERER's Technical Proposal shall be submitted to described TENDERER's offer related to the CALM Buoy System, Mooring, Risers, FSO demolishment, refurbishment, life extension and conversion of the existing hull and marine systems to Company. This offer shall submit in full compliance to the ITT. The CALM Buoy System, Mooring and Riser specification, FSO demolishment, refurbishment, life extension and conversion specification are required to submit to Company as a part of bid proposal. The objective of this document is intended to be used with all parties involved in detail design engineering, project, management, classification, registration, contract management, procurement, construction, installation, commissioning and start-up until successful performance and acceptance according to the requirements. This document shall be also defined the boundaries of the Work and describes interfaces with TENDERER and sub-Contractor. The FSO Demolishment, Refurbishment, Preservation, Life Extension, Conversion Specification shall include but not limited to hull, marine system, safety, firefighting, electrical, instrumentation, communication, process utilities and mooring system.

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
		TENDERER shall submit Commissioning Execution Plan document for COMPANY review and approval for the test and trial standards for FSO and CALM Buoy System. The purpose of the document is to set out the general requirements for the inspection and testing of the equipment in all relative disciplines. This shall form the basis for the documentation to be prepared and completed by TENDERER commissioning team. The mechanical completion and pre-commissioning process shall verify and document that all systems and facilities on the FSO and CALM Buoy System are designed, converted and built to fulfil their purpose, meet specified requirements and are according to all applicable rules, regulations, class, code and standard. TENDERER shall submit FSO and CALM Buoy System load-out, transportation, hook-up, installation and commissioning management plan (included contingency plan due to weather condition) in accordance with the completion schedule of COMPANY provided subsea pipeline and PLEM installation tentatively end of July 2024. 1. G1FSO Technical Proposal 1.1 FSO Demolishment, Refurbishment, Preservation, Life Extension, Conversion Specification 1.2 FSO Onshore Commissioning Execution Plan 1.3 FSO Transportation to Platong Field 1.4 FSO Installation, Hook Up and Offshore Commissioning Execution Plan 2.CALM Buoy System, Mooring and Riser Technical Proposal 2.1 CALM Buoy Construction Specification 2.2 CALM Buoy demolishment, refurbishment, life extension and conversion specification issued by their manufacture (applicable for CALM Buoy redeployment) 2.2 CALM Buoy Onshore Commissioning Execution Plan 2.3 CALM Buoy Load-Out and Transportation to Platong Field 2.4 CALM Buoy Installation, Hook Up and Offshore Commissioning Execution Plan
		TENDERER's Operation & Maintenance (O&M) Proposal shall be submitted to described TENDERER's responsibility for operating and maintaining a safe and healthy Work environmental of FSO and CALM Buoy at Designated Work Area. The proposal shall be included O&M philosophy, scope of Work, organization capability and O&M responsibility matrix. 3. O&M Proposal 3.1 O&M Philosophy 3.2 O&M Scope of Work 3.3 Organization Chart and Responsibility 3.4 O&M Matrix of Responsibility 3.5 Metering System Specification with Operation & Maintenance Plan
		TENDERER shall submit Preliminary Master Document List including drawings, plans, diagrams, specifications, data sheets, procedures, manuals, design studies, calculation reports, test procedures and records, certification and other documentation as required by Scope of Work, Requirement and Specification 4. Preliminary Master Document List

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
		4.1 G1FSO Documents 4.2 CALM Buoy System Documents
3	Compliance with COMPANY's Key Functional Specification: - Candidate Vessel Age - Design Life - Classification - Minimum Cargo Capacity - Hull Design - Station Keeping - Inert Gas System - Tandem Offloading - Power Generation	TENDERER to comply with COMPANY's FSO & CALM Buoy Functional Specification as specified in Exhibit-A TENDERER shall provide candidate vessel class survey status report, certificate of registry, trading history, SIRE inspection, Q88 and hull inspection report. The Condition Assessment Program (CAP) report shall be provided. TENDERER shall establish candidate vessel's hull inspection report in detail to ascertain the structural condition, coating, histories of crack, anomaly, and repair through the tracking of opened items in Classification survey reports and owners maintain records. 1. Candidate Vessel Specification 1.1 Certificate of Registry 1.2 Latest Updated Class Survey Status 1.3 Latest Updated SIRE Inspection Report and Q88 1.4 Trading History Report 1.5 Hull Inspection Report 1.6 Condition Assessment Program (CAP) Report In case CONTRACTOR propose CALM Buoy redeployment The documents for CALM Buoy redeployment are to be provided. 2. Candidate CALM Buoy Specification 2.1 Candidate CALM Buoy BOD, specification, system P&ID and GA Plan 2.2 Latest updated class survey status 2.3 Existing installation location history 2.4 Historical inspection and maintenance report 2.5 Condition Assessment Report
		TENDERER shall provide these documents describe a philosophy and conversion activities to be adopted during the conversion of the Candidate Vessel into G1FSO to ensure adequate hull structural and marine system (included piping, valves, tanks, pressure vessels, condenser, heat exchanger, centrifugal pump, reciprocating equipment, diesel engine, main engine, steam turbine equipment, fan equipment, boiler, electric motor, electric distribution, equipment, instrument and controls, deck machinery and fitting etc.) performance during their entire service life. 3. G1FSO Hull & Marine System Specification 3.1 Preliminary Global Strength & Fatigue Evaluation Report 3.2 Preliminary Steel Renewal and Assessment Report 3.3 Hull Inspection and Steel Renewal Philosophy 3.4 Blasting and Painting Specification 3.5 Tank testing philosophy 3.6 Marine System Refurbishment Philosophy
		TENDERER shall submit these documents which are intended to provide minimum design requirement for the G1FSO and CALM Buoy system. The objective of these documents is to ensure compatibility and consistency of design input and output data used between FSO and CALM Buoy. 4. G1FSO Proposal & Drawing 4.1 General Arrangement Drawing

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
		4.2 Machinery Arrangement Drawing 4.3 Accommodation Layout 4.4 Tank Capacity Plan 4.5 Cargo Oil and Produce Water Handling System P&ID (include loading and offloading system) 4.6 Inert Gas System P&ID 4.7 Equipment Lists 4.8 Electrical Load Lists 4.9 Overall Facilities Single Line Diagram 5. CALM Buoy System Proposal & Drawing 5.1 CALM Buoy System BOD, System P&ID and GA Plan 5.2 Mooring BOD and GA Plan 5.3 Riser BOD and GA Plan 5.4 Hawser BOD and GA Plan 5.5 Floating Hose and MBC BOD and GA Plan
4	TENDERER and SUBCONTRACTOR's Experience	TENDERER shall submit Past Experience and Track Record of: 1. EPCIC for Single Point Mooing FSO or FPSO Project 2. Operation and Maintenance of Single Point Mooing FSO or Single Point Mooring FPSO or CALM Buoy FSO
		Major Subcontractor and Vendor Lists 3. TENDERER shall submit the major subcontractors, vendors, and makers list for all the FSO and CALM Buoy equipment and machinery per Exhibit A Section 8.3 Table 14. To facilitate completion of this list, TENDERER shall provide a comprehensive list of long lead and major equipment, vendors and sub-contractor procurement plan in accordance with PEP and Project Schedule.
5	Letter of Undertaking for Candidate Vessel and Confirmation for Vessel Condition	Letter of Undertaking: 1. TENDERER shall submit the Letter of Undertaking for Candidate Vessel with its IMO number which accepted by vessel owner in the form provided in Annex VII of this ITT.

APPENDIX III

SSHE REQUIRED DOCUMENTS

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
1	SSHE Capability	1. Project organization chart, SSHE role and responsibilities. 2. SSHE personnel a. Qualified SSHE personnel to be manage this Contract. b. CVs with evidence of training records & certificates of SSHE personnel." 3. Example of Bidder SSHE Training referenced to SSHE contract requirement, SSHE TRAININGS MATRIX a. SSHE training procedure and SSHE training matrix b. SSHE Training record 3 years history c. SSHE Training certificated 4. SSHE Management System a. TENDERER SSHE management system/procedure/work procedure/documents to ensure this contract to be safe operation no body get hurt. b. Example of SSHE management implementation in previous project in same work scope with this contract c. Please provide SSHE management plan for manage this contract. d. Please provide example of SSHE management implementation in previous project." 5. Draft Contract SSHE management plan to manage this contract and also SSHE monitoring program/plan (Tracking action plan) 6. Draft of SSHE bridging document or example of previous project bridging document 7. SSHE Risk Assessment a. TENDERER Risk assessment procedure. b. Full risk assessment for this project with mitigation measures. 8. Sub-contractor management a. Sub-contractor management procedure. b. Sub-contractor list that will support in this contract. c. Evidence of evaluation and control the sub-contractor in previous contract. d. Plan to comply with the sub-contractor management for this contract. 9. Hygiene System a. CV competent personnel to perform the catering, laundry, cook b. Training of all staff for hygiene and food management (training Matrix & Record) c. Food Management system d. Hygiene inspection and monitoring report from previous project during 2019-2021 10. Emergency Readiness a. Project Emergency response plan/procedure b. List of emergency facilities and response team for this project. c. Example of Emergency response drill in case of fire, Medical evacuation and etc of previous project. 11. Equipment Control & Maintenance which complied with International and Local standard a. Maintenance and inspection procedure. b. Safety critical equipment (SCE) and equipment list (depend of work scope) c. Maintenance plan, schedule, check list including SCE (Safety Critical Equipment) and mapping with equipment list d. Maintenance record/Certificate and mapping with equipment list e. Safety critical equipment (SCE) test record f. Equipment certificate that shows TENDERER equipment are follow International and Local standard 12. SSHE audit and review a. SSHE audit and review procedure b. Audit report of year 2021 and result of follow up finding item

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
		c. SSHE management system certification 13. Fit to Work / Medical Check-up a. Medical health checkup or fit to work procedure. b. Medical health checkup program/plan for dedicated staffs. 14. Incident management system a. Incident management procedure b. Incident report of all incidents refer to Table in item 15 + result of closing incident c. Incident lesson learned/incident communication to workforce d. Evidence of Incident communication to staff e. Evidence of the incident corrective actions closure monitoring and incident close to process. 15. Waste Management System a. Waste management procedure b. Waste record during 2019-2021 c. Waste report during 2019-2021 d. License of waste treatment/ transportation during 2019-2021 16. Marine Transportation and Installation (T&I) Safety Management a. Marine Transportation and Installation (T&I) Safety Management procedure b. Route survey Plan c. Evidence of T&I execution plan and completely route survey, provided as well as evidence of implementation. 17. SSHE performance and monitoring a. SSHE performance and monitoring procedure. b. Evidence of implementation follow SSHE performance and monitoring procedure. c. Evidence of management SSHE review during 2019-2021 d. Evidence of communication SSHE performance to employees 18. SSHE record and SSHE award during 2019-2021 a. SSHE records over the past 3 years for major oil and gas operators (e.g. Chevron, Shell, ExxonMobil, Total, BP, Conoco Phillips and etc.) by provide the data in below tables. b. Official letter from major oil and gas operators(Shall be signed by management level up) to guarantee the bidder SSHE statistic that provide in the table(All items) c. SSHE award that contract receive from major oil and gas operators (e.g. Chevron, Shell, ExxonMobil, Total, BP, ConocoPhillips and etc.)
		SSHE record table during 2019-2021

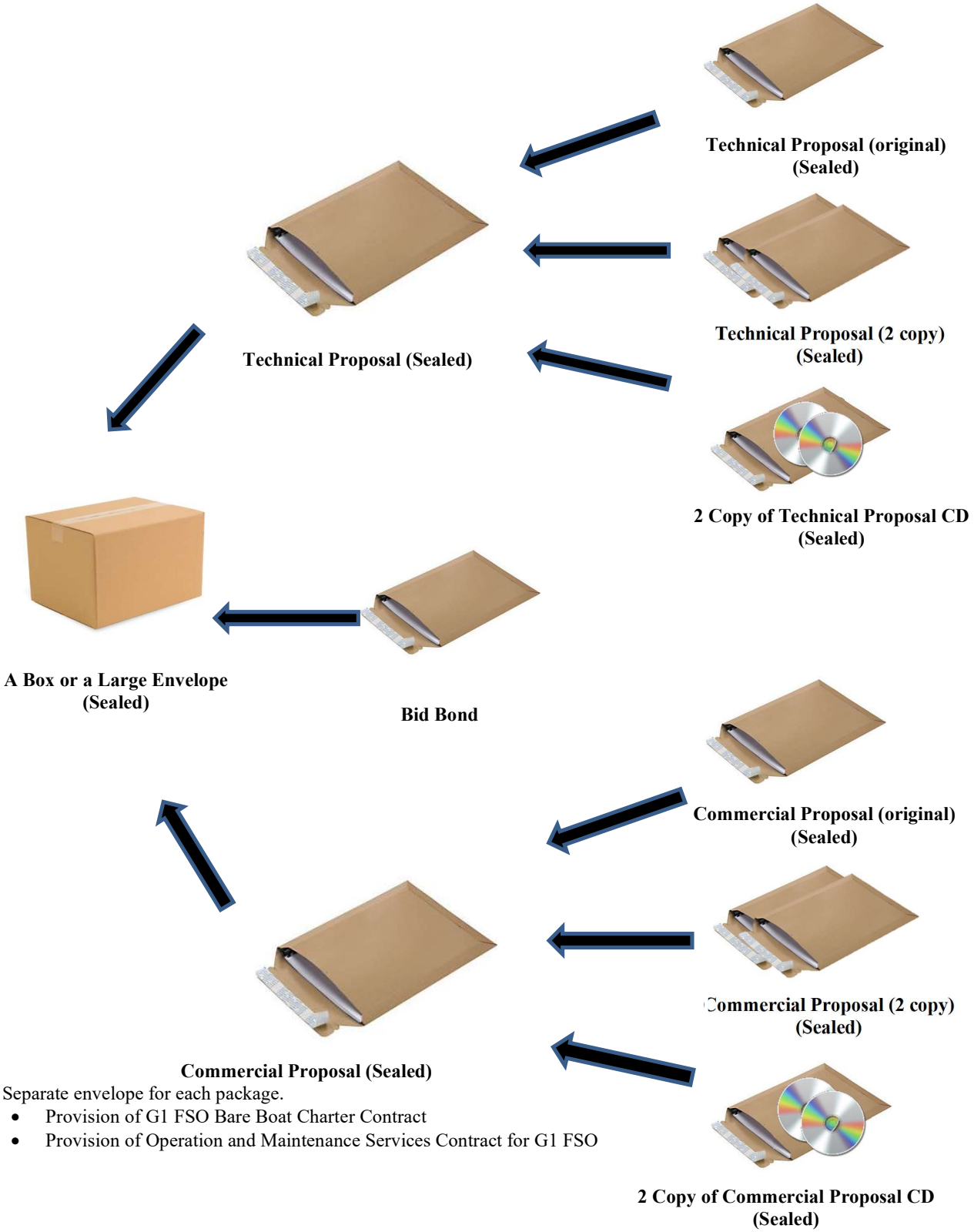
	2019(Cases)	2020(Cases)	2021(Cases)
Major Accident Event (MAE)			
Fatality (FAT)			
Lost Time Injury (LTI)			
SPILL			
Loss of Primary Containment (LOPC)			
Vessel cash Accident			
Total Recordable Injury(TRI)			
Official Non-Compliance Report			
Property Damage			
High Potential Incident(HPI)			
Man-hours			

Remark:

Item	Specification/ Requirements	Document or information to be submitted or Confirmed by TENDERER in his technical TENDER
		1. General definition of SSHE record please see in document 11038-STD-SSHE-600-011-R06 Incident Management Standard. 2. Definition of Loss of Primary Containment (LOPC) please see in SSHE-106-GDL-431 Loss of Primary Containment (LOPC) Reporting and Reduction Guideline. 3. Document to submit into 2 category for installation and Operation and Maintenance

APPENDIX IV

HOW TO SUBMIT TENDER



Separate envelope for each package.

- Provision of G1 FSO Bare Boat Charter Contract
- Provision of Operation and Maintenance Services Contract for G1 FSO

The following mention shall be indicated on the top left corner of each sealed envelope:

NAME OF TENDERER

BID FOR **PTTEP ENERGY DEVELOPEMENT COMPANY LIMITED**

CALL FOR TENDER NO: THC22-5272

COMMERCIAL PROPOSAL <u>or</u> TECHNICAL PROPOSAL *(Please specify)*

"**NOT TO BE OPENED**"

The following mentions shall be indicated on the top left corner of a box or a large envelope:

NAME OF TENDERER
ADDRESS OF TENDERER

BID FOR **PTTEP ENERGY DEVELOPEMENT COMPANY LIMITED**
CALL FOR TENDER NO: THC22-5272

"**NOT TO BE OPENED**"

TO: **MR. ANUSORN WUTHIJAROEN**
VICE PRESIDENT, GLOBAL SUPPLY CHAIN PROCUREMENT AND CONTRACTS DEPARTMENT
(For PTTEP PROCUREMENT)

PTTEP ENERGY DEVELOPMENT COMPANY LIMITED
ENERGY COMPLEX BUILDING A, FLOORS 6, 19-36
555/1 VIBHAVADI RANGSIT ROAD
CHATUCHAK, BANGKOK 10900
THAILAND

(PTTEP'S MAILROOM, PARKING 2)

ANNEXES

ANNEX I

FORM OF LETTER OF ACKNOWLEDGMENT

(To be printed on TENDERER's letter head paper)

QUOTE

Date:

Subject: Call for TENDER No: **THC22-5272- Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61**

Dear Sirs,

We acknowledge receipt of your invitation for TENDER and the TENDER DOCUMENTS for the above mentioned Call for TENDER and are in possession of all documents listed therein which were received on ……

We hereby agree to keep all information contained in the TENDER DOCUMENTS strictly confidential, and will not disclose or communicate such information to any third parties without prior approval from you.

We acknowledge that any breach of this undertaking will not only result in disqualification, but may also affect any possible future works or services with you.

<Remark: ***Delete (*) which is not applicable****>*

(*) We hereby accept to respond to your invitation and to submit our TENDER not later than the Closing Date and Time and we agree to comply with your INSTRUCTIONS TO TENDERERS.

The person responsible for this job in our organization is:

Mr. / Ms. : .....

Position : .....

Company Name : .....

Address : .....

.....

Telephone : .....

Fax : .....

Email : .....

(*) We hereby decline your invitation and return all your TENDER DOCUMENTS herewith, in accordance with your instructions. Reason for declining: ……

UNQUOTE

ANNEX II

FORM OF LETTER OF SUBMISSION

(To be printed on TENDERER's letter head paper)

QUOTE

Date:

Subject: Call for TENDER No: **THC22-5272- Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61**

Dear Sirs,

Having examined the TENDER DOCUMENTS contained in the abovementioned Call for TENDER issued by you on ....., we, the undersigned, undertake to offer the performance of the SERVICES and all obligations described in the said TENDER DOCUMENTS within the contractual dates specified therein, for the prices and rates mentioned in the present TENDER.

- (●) Our TENDER is in full compliance with the terms and conditions set forth in the TENDER DOCUMENTS.
- ( ) Our TENDER contains modifications/exceptions to the following terms and conditions, all of which are provided in the separate exception documents:
  - ☐ Technical requirements/specifications
  - ☐ Commercial terms and conditions
  - ☐ Contractual terms and conditions
  - ☐ Pricing structure

We agree to keep our TENDER valid for a period of **ten (10) months** from the closing date and time stipulated in Section 2 of the INSTRUCTIONS TO TENDERERS and it shall remain binding upon us and may be accepted by you at any time before the expiration of such period.

If our TENDER is accepted within the period mentioned above, we agree to enter into a formal agreement for the SERVICES in accordance with the conditions of the Form of Contract.

We understand and agree that:
(i) you shall be under no obligation to accept the lowest or any TENDER; the decision made by you on this matter shall be final and shall not be contested or opposed by us;
(ii) our TENDER is proposed and submitted at our cost and expense; in no case will any cost or expense incurred by us in the preparation or submission of our TENDER be borne by you; and
(iii) all documents submitted by us in response to this CFT shall become the property of COMPANY, except for any intellectual property rights in such documents which shall remain vested in us.

All capitalized terms in this letter shall have the meaning ascribed to them in the INSTRUCTIONS TO TENDERERS (PART I of the Call for TENDER).

UNQUOTE

ANNEX III

EXCEPTION/DEVIATION SHEET (UNPRICED)

As per Section 9 of the INSTRUCTIONS TO TENDERERS, TENDERER shall clearly specify the items which do not comply with COMPANY's technical, contractual or commercial requirements.

The Exception/Deviation Sheet (Unpriced), to be prepared as per the template below, shall be submitted as Section 8 of Volume I - Technical Proposal.

#	Reference Document /Section No.	Proposed Exception/Deviation	Reason for Exception/Deviation	(A) Impact to Schedule (Y/N)	(B) Impact to Contract Cost (Y/N)	(C) Cost Impact is quantifiable (Y/N)	(D) Increase or Decrease in Contract Cost if to withdraw this exception & comply with COMPANY's requirements
TECHNICAL EXCEPTIONS							
1							
2							
…							
CONTRACTUAL EXCEPTIONS							
1							
2							
…							
COMMERCIAL EXCEPTIONS (NO PRICE QUOTED)							
1							
2							
…							

ANNEX IV

EXCEPTION/DEVIATION SHEET (PRICED)

Reference is made to the Exception/Deviation Sheet (Unpriced) (Annex III). In case TENDERER submits the Exception/Deviation Sheet (Unpriced) as part of its Technical Proposal, if calculable TENDERER is required to prepare the Exception/Deviation Sheet (Priced) specifying the Cost Impact Amount incurred. The Cost Impact Amount shall be specified in relation to **each** exception item identified as having Impact to Contract Cost and Cost Impact is quantifiable.

The Exception/Deviation Sheet (Priced), to be prepared as per the template below, shall be submitted as Section 2 of Volume II - Commercial Proposal.

#	Reference Document /Section No.	Proposed Exception/Deviation	Reason	Impact to Contract Cost? (Y/N)	Cost Impact is quantifiable? (Y/N)	Increase or Decrease in Contract Cost if to withdraw this exception & comply with COMPANY's requirement	Cost Impact Amount (USD or THB)
TECHNICAL EXCEPTIONS							
1							
2							
…							
CONTRACTUAL EXCEPTIONS							
1							
2							
…							
COMMERCIAL EXCEPTIONS							
1							
2							
…							

ANNEX V

FORM OF BID BOND

(BANK GUARANTEE)

I. We, the Undersigned (1) …… (hereinafter referred to as "**GUARANTOR**"), established at (2) …… represented by (3) …… have taken notice of the Call for Tender No. (4) THC22-5272 (5) Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61 (6) …… whose registered office is at (7) …… (hereinafter referred to as "**TENDERER**") to (8) …….. (hereinafter referred to as "**COMPANY**") a Company registered under the laws of ……. , with its registered office at (9) ……

II. The GUARANTOR hereby irrevocably guarantees that if TENDERER withdraws its tender for the above mentioned Call for Tender before the expiry of its tender's validity, or fails, after receipt from COMPANY of notice of award, to enter into the contract for such Call for Tender with COMPANY, or fails to provide performance guarantee within the period set forth in the contract, the GUARANTOR undertakes on behalf of TENDERER to pay to COMPANY ……. This guarantee is given at the request of TENDERER made to the GUARANTOR in accordance with the above-mentioned Call for Tender.

III. Each demand by COMPANY for payment under this guarantee shall be made in writing (including telex or cable) to the following address:
(10) ……,

The GUARANTOR shall promptly notify COMPANY any change in the above address.

IV. The GUARANTOR shall make payment hereunder on first demand without restriction or conditions and notwithstanding any objection by TENDERER. The GUARANTOR shall not have any recourse against COMPANY in respect of any payment made hereunder.

V. The GUARANTOR shall pay the sum demanded by COMPANY hereunder within fifteen (15) days after the date of receipt of COMPANY's demand.

VI. No alteration in the terms of the TENDERER's tender for the above-mentioned Call for Tender made by agreement between TENDERER and COMPANY shall in any way release the GUARANTOR from all or any part of its liabilities under this Guarantee.

VII. This Guarantee shall be valid for 8 **months** from 30th of November 2022 (which is the closing date for tender submission and in the event that TENDERER is notified of the award of the Contract by COMPANY it shall in addition be valid for another 1 month.

VIII. This guarantee shall be interpreted in accordance with the laws of the Kingdom of Thailand.

IX. The GUARANTOR represents that this guarantee has been established in such form and with such content that it is fully and freely enforceable against the GUARANTOR in the manner provided in all paragraphs above.

X. If any provision (or part thereof) of, or pursuant to, this guarantee, is or become unlawful, void, or unenforceable, the legality, validity or enforceability of any other part of that provision or any other provision shall not be affected but shall continue in full force and effect.

(Date) ……
(Common Seal of Signature of the GUARANTOR or such other formality as may be required under the law to render a unilateral promise binding on the GUARANTOR).

(1) Name of the Bank proposed by TENDERER and approved by COMPANY.
(2) GUARANTOR's address
(3) GUARANTOR's authorized representative
(4) Call for Tender's number
(5) Call for Tender's title
(6) Name of TENDERER
(7) TENDERER's address
(8) Name of COMPANY
(9) COMPANY's address
(10) Bank address for notices

ANNEX VI

INTEGRITY PACT

ข้อตกลงคุณธรรม (Integrity Pact)
ความร่วมมือป้องกันการทุจริตในการจัดซื้อจัดจ้างภาครัฐ
(ระหว่างหน่วยงานของรัฐเจ้าของโครงการ ผู้ประกอบการและผู้สังเกตการณ์)

ข้อตกลงคุณธรรมฉบับนี้ทำขึ้นระหว่าง ปตท.สผ. เอนเนอร์ยี่ ดีเวลลอปเมนท์ จำกัด ซึ่งเป็นหน่วยงานของรัฐ ซึ่งต่อไปในข้อตกลงคุณธรรมนี้เรียกว่า “หน่วยงานของรัฐเจ้าของโครงการ” ฝ่ายหนึ่ง กับ .....ซึ่งเป็นผู้ประกอบการ จดทะเบียนเป็นนิติบุคคล ณ ..... มีสำนักงานใหญ่อยู่เลขที่.....ถนน.....ตำบล/แขวง .....อำเภอ/เขต.....จังหวัด.....โดย .....ผู้มีอำนาจลงนามผูกพันนิติบุคคลปรากฏตามสำเนาหนังสือรับรองของสำนักงานทะเบียนหุ้นส่วนบริษัท.....ลงวันที่ .....(และสำเนาหนังสือมอบอำนาจลงวันที่ .....) แนบท้ายข้อตกลงคุณธรรมนี้ ซึ่งต่อไปในข้อตกลงคุณธรรมนี้เรียกว่า “ผู้ประกอบการ” ฝ่ายหนึ่ง และ ผศ.ดร. พลชัย ลิมวิภูวัฒน์, นางประไพพิศ รัตนไพบูลย์กิจ และ นายสถาพร โคธีรานุรักษ์ ดังปรากฏตามสำเนาบัตรประจำตัวประชาชนแนบท้ายข้อตกลงคุณธรรมนี้ ซึ่งต่อไปในข้อตกลงคุณธรรมนี้เรียกว่า “ผู้สังเกตการณ์” อีกฝ่ายหนึ่ง

เนื่องด้วย หน่วยงานของรัฐเจ้าของโครงการจะดำเนินการจัดทำสัญญาจัดซื้อจัดจ้าง “Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61” ซึ่งต่อไปในข้อตกลงคุณธรรมนี้เรียกว่า “โครงการ” ภายใต้กระบวนการที่กำหนดตามกฎหมายและกฎระเบียบต่าง ๆ ที่เกี่ยวข้องกับการจัดซื้อจัดจ้างภาครัฐ จึงมีความประสงค์ที่จะสร้างความร่วมมือป้องกันการทุจริตในการจัดซื้อจัดจ้างในโครงการ เพื่อให้การใช้เงินงบประมาณเป็นไปอย่างคุ้มค่าและมีประสิทธิผล และปฏิบัติการจัดซื้อจัดจ้างด้วยความสุจริต โปร่งใส และเป็นธรรมยิ่งขึ้น จึงกำหนดให้ผู้ประกอบการเฉพาะที่ได้ร่วมลงนามในข้อตกลงคุณธรรมนี้เท่านั้น เป็นผู้มีสิทธิเข้าร่วมกระบวนการจัดซื้อจัดจ้างในโครงการ

และโดยที่หน่วยงานของรัฐเจ้าของโครงการและผู้ประกอบการเห็นพ้องต้องกันว่าผู้สังเกตการณ์มีส่วนสำคัญในความร่วมมือป้องกันการทุจริตในกระบวนการจัดซื้อจัดจ้างภาครัฐในโครงการ หน่วยงานของรัฐเจ้าของโครงการ ผู้ประกอบการ และผู้สังเกตการณ์ จึงร่วมกันทำข้อตกลงคุณธรรมนี้ โดยรับรองว่า จักร่วมมือกันปฏิบัติตามประกาศคณะกรรมการความร่วมมือป้องกันการทุจริต เรื่อง แนวทางและวิธีการในการดำเนินงานโครงการความร่วมมือป้องกันการทุจริตในการจัดซื้อจัดจ้างภาครัฐ แบบของข้อตกลงคุณธรรม การคัดเลือกผู้สังเกตการณ์ และการจัดทำรายงานตามมาตรา ๑๗ และมาตรา ๑๘ แห่งพระราชบัญญัติการจัดซื้อจัดจ้างและการบริหารพัสดุภาครัฐ พ.ศ. ๒๕๖๐ ประกาศ ณ วันที่ ๕ กรกฎาคม พ.ศ. ๒๕๖๑ และที่มีการแก้ไขเพิ่มเติม หรือที่ประกาศขึ้นใหม่ ซึ่งต่อไปในข้อตกลงคุณธรรมนี้เรียกว่า “ประกาศ” รวมทั้งจักดำเนินการตามเงื่อนไขที่กำหนด ดังต่อไปนี้

๑. หน่วยงานของรัฐเจ้าของโครงการ

โดยที่หน่วยงานของรัฐเจ้าของโครงการมีเจตจำนงอันแรงกล้าที่จะใช้หลักการทางคุณธรรมเป็นเครื่องช่วยให้เกิดความร่วมมือและร่วมใจระหว่างทุกฝ่ายอันจะเกิดผลให้กระบวนการจัดซื้อจัดจ้างในโครงการปลอดจากการทุจริต หรือการกระทำโดยมิชอบทั้งปวง เพื่อให้การใช้เงินงบประมาณสำหรับการดำเนินงานตามโครงการเป็นไปอย่างคุ้มค่า มีประสิทธิผล และเกิดประโยชน์แก่ประเทศชาติและประชาชนอย่างแท้จริง จึงขอให้คำมั่นสัญญาในการปฏิบัติตามข้อตกลงคุณธรรมไว้ดังนี้

๑.๑ จักเปิดเผยข้อมูลที่เกี่ยวข้องกับการจัดซื้อจัดจ้างภาครัฐ ตามขั้นตอนที่กำหนด เช่น (๑) แผนการจัดซื้อจัดจ้างของโครงการ (๒) ขอบเขตของงาน (Terms of Reference : TOR) (๓) ประกาศการจัดซื้อจัดจ้าง/ประกาศเชิญชวน ร่างเอกสารประกวดราคา (๔) ประกาศราคากลาง (ราคาอ้างอิง) (๕) รายชื่อผู้รับ/ซื้อเอกสาร (๖) รายชื่อผู้ยื่นเอกสารการเสนอราคา (๗) สรุปข้อมูลการเสนอราคาเบื้องต้น (๘) รายชื่อผู้ผ่านการพิจารณาคุณสมบัติและข้อเสนอด้านเทคนิค (๙) รายชื่อผู้ชนะการเสนอราคาและราคาที่ตกลงซื้อหรือจ้าง (๑๐) สัญญา (๑๑) การแก้ไขสัญญา (๑๒) การส่งมอบงาน (๑๓) การตรวจรับงาน (๑๔) การจ่ายเงิน (๑๕) ข้อร้องเรียนและผลการพิจารณาข้อร้องเรียน โดยเผยแพร่ไว้ในระบบเครือข่ายสารสนเทศของหน่วยงาน และกรมบัญชีกลางผ่านระบบจัดซื้อจัดจ้างภาครัฐด้วยอิเล็กทรอนิกส์ (Electronic Government Procurement : e-GP) เพื่อเปิดโอกาสให้ประชาชนทั่วไปสามารถมีส่วนร่วมในการตรวจสอบกระบวนการจัดซื้อจัดจ้างภาครัฐได้

๑.๒ จักปฏิบัติต่อผู้ประกอบการซึ่งเป็นผู้เข้าร่วมเสนอราคาทุกรายอย่างเท่าเทียมกัน เช่น ให้ข้อมูลเดียวกันกับผู้เข้าร่วมเสนอราคาทุกราย กรณีที่มีความจำเป็นต้องกำหนดรายละเอียดเพิ่มเติมหรือมีการแก้ไขคุณลักษณะเฉพาะที่เป็นสาระสำคัญ ซึ่งมิได้กำหนดไว้ในเอกสารตั้งแต่ต้น หน่วยงานของรัฐเจ้าของโครงการจะต้องจัดทำเป็นเอกสารประกวดราคาเพิ่มเติม รวมทั้ง แจ้งเป็นหนังสือให้ผู้ที่ได้รับหรือได้ซื้อเอกสารประกวดราคาไปแล้วทุกรายทราบ และไม่ให้ข้อมูลที่เป็นความลับ หรือที่ให้ประโยชน์กับผู้เข้าร่วมเสนอราคารายหนึ่งรายใด ที่จะทำให้เกิดข้อได้เปรียบเสียเปรียบกับผู้เข้าร่วมเสนอราคาในขั้นตอนการเสนอราคา หรือการดำเนินการตามสัญญา ทั้งนี้ เพื่อสนับสนุนให้เกิดการแข่งขันอย่างเป็นธรรม เป็นต้น

๑.๓ จักกำหนดมาตรการป้องกันมิให้เกิดพฤติการณ์ หรือการกระทำใด ๆ ระหว่างหน่วยงานของรัฐเจ้าของโครงการ หรือกรรมการ หรือผู้บริหาร หรือเจ้าหน้าที่ของหน่วยงานของรัฐเจ้าของโครงการ กับผู้ประกอบการที่จะเข้ายื่นข้อเสนอในโครงการ หรือซึ่งเป็นผู้เข้าร่วมเสนอราคาหรือผู้ทำสัญญาในโครงการ ในลักษณะที่อาจทำให้บุคคลอื่น หรือสาธารณชนเกิดข้อสงสัยว่าส่อไปในทางทุจริตหรืออาจนำไปสู่การทุจริตในการปฏิบัติหน้าที่ หรือในกระบวนการจัดซื้อจัดจ้างภาครัฐในโครงการ พร้อมทั้งมาตรการป้องกันมิให้มีการเรียก - รับ หรือยอมจะรับทรัพย์สิน หรือประโยชน์อื่นใดไม่ว่าเพื่อตนเอง หรือผู้อื่นในการกำหนดเงื่อนไข หรือผลประโยชน์ตอบแทน เพื่อช่วยเหลือให้ผู้ที่จะเข้ายื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคาในโครงการรายใดได้มีสิทธิเข้าทำสัญญากับหน่วยงานของรัฐเจ้าของโครงการโดยไม่เป็นธรรมหรือกีดกันผู้ที่จะ

เข้ายื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคาในโครงการรายใดมิให้มีโอกาสเข้าแข่งขันในการยื่นข้อเสนอ หรือเสนอราคาอย่างเป็นธรรม

๑.๔ จักอนุญาตและอำนวยความสะดวกให้ผู้สังเกตการณ์เข้าร่วมสังเกตการณ์การทำงาน หรือการประชุมที่เกี่ยวข้องกับการจัดซื้อจัดจ้างภาครัฐ และเปิดเผยข้อมูลและเอกสารที่เกี่ยวข้องในกระบวนการจัดซื้อจัดจ้างภาครัฐให้ผู้สังเกตการณ์ทราบ ตลอดระยะเวลาของโครงการในทุกขั้นตอนของการจัดซื้อจัดจ้าง ซึ่งรวมถึงขั้นตอนดังต่อไปนี้ (๑) แผนการจัดซื้อจัดจ้างของโครงการ (๒) การจัดทำร่างขอบเขตของงาน (TOR) (๓) การจัดทำร่างเอกสารประกวดราคา ประกาศการจัดซื้อจัดจ้าง ประกาศเชิญชวน (4) การกำหนดราคากลาง (ราคาอ้างอิง) (5) การตรวจสอบคุณสมบัติผู้เสนอราคา การตรวจสอบเอกสารข้อเสนอทางเทคนิคและราคา การต่อรองราคา การพิจารณาอุทธรณ์ หรือทุกขั้นตอนของการดำเนินการจัดซื้อจัดจ้าง (6) การจัดทำสัญญา (7) การแก้ไขสัญญา (8) การตรวจรับงานตามสัญญาจัดซื้อจัดจ้าง ทั้งนี้หน่วยงานของรัฐเจ้าของโครงการต้องกำหนดการประชุมและให้ข้อมูลที่เพียงพอเกี่ยวกับการประชุมใด ๆ ที่มีขึ้นของหน่วยงานของรัฐเจ้าของโครงการ หรือระหว่างหน่วยงานของรัฐเจ้าของโครงการกับผู้ที่จะเข้ายื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคา หรือผู้ทำสัญญา ให้ผู้สังเกตการณ์ได้ทราบล่วงหน้า เพื่อให้ผู้สังเกตการณ์ได้ทำหน้าที่และร่วมสังเกตการณ์ได้อย่างมีประสิทธิภาพ

๑.๕ จักกำหนดมาตรการและช่องทางที่สะดวกต่อการปฏิบัติสำหรับผู้ที่พบเห็นว่ากรรมการ หรือผู้บริหาร หรือเจ้าหน้าที่ หรือผู้มีส่วนเกี่ยวข้องกับการจัดซื้อจัดจ้างผู้ใดมิได้ปฏิบัติตามข้อตกลงคุณธรรมนี้ หรือได้กระทำการใด ๆ ที่ไม่เป็นไปตามที่ข้อตกลงคุณธรรมนี้กำหนด หรือพบเห็นพฤติกรรมที่ส่อไปในทางทุจริต หรืออาจนำไปสู่การทุจริตได้ ให้สามารถแจ้งหน่วยงานของรัฐเจ้าของโครงการ นอกจากนี้อาจแจ้งไปยังหน่วยงานที่เกี่ยวข้อง เช่น สำนักงานคณะกรรมการป้องกันและปราบปรามการทุจริตแห่งชาติ สำนักงานคณะกรรมการป้องกันและปราบปรามการทุจริตในภาครัฐ กรมสอบสวนคดีพิเศษ สำนักงานการตรวจเงินแผ่นดิน เป็นต้น ให้พิจารณาดำเนินการตามอำนาจหน้าที่ โดยหน่วยงานของรัฐเจ้าของโครงการอาจพิจารณาดำเนินการทางวินัยควบคู่ไปด้วยก็ได้หากผู้ที่เกี่ยวข้องนั้นเป็นเจ้าหน้าที่ของรัฐในสังกัด

๒. ผู้ประกอบการ

โดยที่ผู้ประกอบการตระหนักดีว่า ผู้ประกอบการที่มีคุณธรรมเป็นผู้มีบทบาทสำคัญยิ่งในความร่วมมือป้องกันการทุจริตในการจัดซื้อจัดจ้างภาครัฐ เพื่อให้การดำเนินโครงการในทุกขั้นตอนปลอดจากการทุจริต หรือการกระทำโดยมิชอบทั้งปวง สมดังเจตจำนงของหน่วยงานของรัฐเจ้าของโครงการจึงขอให้คำมั่นสัญญาในการปฏิบัติตามข้อตกลงคุณธรรมไว้ ดังนี้

๒.๑ จักปฏิบัติตามมาตรการและวิธีการดำเนินงานที่จำเป็น เพื่อป้องกันการทุจริตในการจัดซื้อจัดจ้างภาครัฐและสนับสนุนให้กระบวนการจัดซื้อจัดจ้างภาครัฐเป็นไปด้วยความสุจริต โปร่งใส

และเป็นธรรม โดยกำหนดให้มีนโยบายต่อต้านการทุจริต พร้อมทั้ง สื่อสารนโยบายต่อต้านการทุจริตให้ทั่วถึงทั้งองค์กรของผู้ประกอบการ

๒.๒ จักไม่กระทำการใด ๆ ที่เป็นการให้ เสนอให้ หรือรับว่าจะให้ทรัพย์สิน หรือประโยชน์อื่นใดแก่กรรมการ หรือผู้บริหาร หรือเจ้าหน้าที่ของหน่วยงานของรัฐเจ้าของโครงการ หรือผู้มีส่วนเกี่ยวข้องกับการจัดซื้อจัดจ้างในโครงการ หรือผู้ที่จะเข้ายื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคารายอื่น เพื่อจูงใจให้กระทำการ ไม่กระทำการ หรือประวิงการกระทำใด ๆ อันมิชอบ ไม่ว่าในทางตรงหรือทางอ้อม หรือสมยอมกัน ในการเสนอราคาต่อหน่วยงานของรัฐเจ้าของโครงการ หรือในกระบวนการจัดซื้อจัดจ้าง หรือในการปฏิบัติตามสัญญา ทั้งก่อน ระหว่างการเสนอราคา และหลังการทำสัญญาจัดซื้อจัดจ้าง

๒.๓ จักยินยอมและอำนวยความสะดวกให้ผู้สังเกตการณ์เข้าร่วมสังเกตการณ์ เข้าถึงข้อมูลและเอกสาร และตรวจสอบโครงการได้ในขั้นตอนต่าง ๆ เช่นเดียวกับหน่วยงานของรัฐเจ้าของโครงการ รวมถึงการตรวจรับงาน

๒.๔ กรณีหากผู้ประกอบการได้ทำสัญญาในโครงการ จักต้องรับผิดชอบการกระทำของผู้รับเหมาช่วงใด ๆ ของผู้ประกอบการ (ถ้ามี) เสมือนเป็นการกระทำของผู้ประกอบการเอง และจักต้องจัดการให้ผู้รับเหมาช่วงเหล่านั้นต้องมีหน้าที่ปฏิบัติเสมือนเป็นผู้ร่วมลงนามในข้อตกลงคุณธรรมนี้ด้วย

๒.๕ ในกรณีที่ผู้ประกอบการพบว่า ผู้ที่จะเข้ายื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคา หรือผู้ทำสัญญา หรือตัวแทนในโครงการนี้รายใดมิได้ปฏิบัติตามข้อตกลงคุณธรรม หรือได้กระทำการใด ๆ ที่ไม่เป็นไปตามที่ข้อตกลงคุณธรรมกำหนด หรือพบเห็นพฤติกรรมที่ส่อไปในทางทุจริต หรืออาจนำไปสู่การทุจริตได้ จักแจ้งให้หน่วยงานของรัฐเจ้าของโครงการทราบ นอกจากนี้อาจแจ้งไปยังหน่วยงานอื่น ๆ ที่เกี่ยวข้อง เช่น สำนักงานคณะกรรมการป้องกันและปราบปรามการทุจริตแห่งชาติ สำนักงานคณะกรรมการป้องกันและปราบปรามการทุจริตในภาครัฐ กรมสอบสวนคดีพิเศษ สำนักงานการตรวจเงินแผ่นดิน เป็นต้น ให้พิจารณาดำเนินการตามอำนาจหน้าที่

๓. ผู้สังเกตการณ์ (Observer)

โดยที่ผู้สังเกตการณ์รับรู้ว่า ผู้สังเกตการณ์ที่มีความเป็นอิสระ มีความเป็นกลาง มีคุณธรรม และมีความรู้ความสามารถในวิชาชีพเฉพาะในทุกด้านที่เกี่ยวข้องกับโครงการ เป็นเสมือนกลไกสำคัญ ในการป้องกันการทุจริตในการจัดซื้อจัดจ้าง เพื่อให้การดำเนินโครงการในขั้นตอนต่าง ๆ ปลอดจากการทุจริต หรือการกระทำโดยมิชอบทั้งปวง จึงขอให้คำมั่นสัญญาในการปฏิบัติตามข้อตกลงคุณธรรมไว้ ดังนี้

๓.๑ จักเข้าร่วมสังเกตการณ์ในกระบวนการจัดซื้อจัดจ้างตลอดระยะเวลาของโครงการ และทุกขั้นตอนของการดำเนินการจัดซื้อจัดจ้าง ซึ่งรวมถึงขั้นตอนดังต่อไปนี้ (1) แผนการจัดซื้อจัดจ้างโครงการ (๒) การจัดทำร่างขอบเขตของงาน (TOR) (๓) การจัดทำร่างเอกสารประกวดราคา ประกาศการจัดซื้อจัดจ้าง ประกาศเชิญชวน (4) การกำหนดราคากลาง (ราคาอ้างอิง) (5) การตรวจสอบคุณสมบัติผู้เสนอราคา การตรวจสอบเอกสารข้อเสนอทางเทคนิคและราคา การต่อรองราคา การพิจารณาข้ออุทธรณ์ หรือทุกขั้นตอนของ

การดำเนินการจัดซื้อจัดจ้าง (6) การจัดทำสัญญา (7) การแก้ไขสัญญา (8) การตรวจรับงานตามสัญญาจัดซื้อจัดจ้าง

ผู้สังเกตการณ์มีสิทธิเข้าถึงข้อมูลและเอกสารที่เกี่ยวข้องกับโครงการ โดยทั้งหน่วยงานของรัฐเจ้าของโครงการและผู้ที่จะยื่นข้อเสนอ หรือผู้เข้าร่วมเสนอราคา หรือผู้ทำสัญญา จะต้องให้ความร่วมมืออำนวยความสะดวกในการให้ข้อมูล

๓.๒ จักปฏิบัติหน้าที่โดยอิสระ ซื่อสัตย์สุจริตและเที่ยงธรรม โดยให้การสนับสนุนด้านความรู้ที่ถูกต้องและเป็นประโยชน์ แสดงความคิดเห็นตามหลักวิชาความรู้ โดยไม่มีสิทธิออกเสียงหรือร่วมลงมติ และจักไม่กระทำการใด ๆ อันมิชอบที่จะเป็นเหตุในการขัดขวางกระบวนการจัดซื้อจัดจ้าง

๓.๓ ผู้สังเกตการณ์และสมาชิกในครอบครัวของผู้สังเกตการณ์โดยตรง จักไม่มีส่วนได้เสียหรือมีความสัมพันธ์กับหน่วยงานของรัฐเจ้าของโครงการ บุคคลหรือนิติบุคคล บริษัทและกรรมการบริษัท ที่เข้าร่วมเสนอราคา

๓.๔ การรักษาข้อมูลความลับ ดังนี้

๓.๔.๑ จักไม่นำเอกสารและข้อมูลต่าง ๆ ที่ได้รับจากการเป็นผู้สังเกตการณ์ของโครงการไปเปิดเผย เว้นแต่ที่เป็นไปตามแนวทางปฏิบัติที่กล่าวไว้ในข้อตกลงคุณธรรม และการเปิดเผยตามขั้นตอนของการจัดซื้อจัดจ้างที่กฎหมายกำหนด

๓.๔.๒ จักไม่นำเอกสารที่เกี่ยวข้องกับโครงการไปใช้ในการแสวงหาผลประโยชน์ส่วนตัว หรือนำไปใช้ในทางที่มิชอบ หรือให้เป็นประโยชน์แก่บุคคล

๓.๔.๓ หากเปิดเผยข้อมูลที่เป็นความลับทางการค้าโดยมิได้รับอนุญาตเป็นลายลักษณ์อักษรจากคณะกรรมการความร่วมมือป้องกันการทุจริต จะต้องรับผิดต่อความเสียหายที่เกิดขึ้นอันเนื่องมาจากการเปิดเผยข้อมูล หรือการใช้ข้อมูลความลับนั้น

๓.๕ จักลงนามในหนังสือการรักษาข้อมูลเป็นความลับและไม่มีส่วนได้เสียตามฟอร์มที่กำหนดแนบท้ายประกาศ เพื่อให้หน่วยงานของรัฐเจ้าของโครงการเก็บไว้เป็นเอกสารประกอบการลงนามข้อตกลงคุณธรรม

๓.๖ จักดำเนินการตามแนวทางการปฏิบัติงานของผู้สังเกตการณ์ รวมทั้งรายงานผล การสังเกตการณ์ และจัดทำรายงานการประเมินผลโครงการ เพื่อเสนอต่อคณะกรรมการความร่วมมือป้องกันการทุจริต ตามหลักเกณฑ์ วิธีการและรายละเอียดที่กำหนดในประกาศ

๓.๗ ในกรณีที่พบว่า หน่วยงานของรัฐเจ้าของโครงการ ผู้เข้าร่วมเสนอราคา หรือผู้ทำสัญญา หรือตัวแทนรายใดมิได้ปฏิบัติตามข้อตกลงคุณธรรมนี้ หรือได้กระทำการใด ๆ ที่ไม่เป็นไปตามที่ข้อตกลงคุณธรรมนี้กำหนด หรือพบเห็นพฤติกรรมที่ส่อไปในทางทุจริต หรืออาจนำไปสู่การทุจริตได้ จะต้องรีบแจ้งหน่วยงานของรัฐเจ้าของโครงการทราบ เพื่อให้มีการชี้แจง หรือแก้ไขในระยะเวลาที่กำหนด หากหน่วยงานของรัฐเจ้าของโครงการไม่ชี้แจง หรือแก้ไข ให้ผู้สังเกตการณ์รายงานคณะกรรมการความร่วมมือป้องกันการทุจริตทันที เพื่อดำเนินการรายงานข้อมูลสู่สาธารณะ และผู้สังเกตการณ์อาจแจ้งหน่วยงานอื่น ๆ ที่เกี่ยวข้อง เช่น สำนักงานคณะกรรมการป้องกันและปราบปรามการทุจริตแห่งชาติ สำนักงานคณะกรรมการ

ป้องกันและปราบปรามการทุจริตในภาครัฐ กรมสอบสวนคดีพิเศษ สำนักงานการตรวจเงินแผ่นดิน เป็นต้น ให้พิจารณาดำเนินการตามอำนาจหน้าที่

ข้อตกลงคุณธรรมนี้ทำขึ้นเป็นสามฉบับ มีข้อความถูกต้องตรงกัน หน่วยงานของรัฐเจ้าของโครงการ ผู้ประกอบการ และผู้สังเกตการณ์ ได้อ่านและเข้าใจข้อความโดยละเอียดตลอดแล้ว จึงได้ลงลายมือชื่อพร้อมทั้งประทับตรา (ถ้ามี) ไว้เป็นสำคัญต่อหน้าพยาน และต่างยึดถือไว้ฝ่ายละหนึ่งฉบับ

ลงนาม.....	ลงนาม.....
(นายมนตรี ลาวัลย์ชัยกุล)	(……)
ตำแหน่ง ประธานเจ้าหน้าที่บริหาร	ตำแหน่ง.....
หน่วยงาน หน่วยงานของรัฐเจ้าของโครงการ	หน่วยงาน ผู้ประกอบการ
วันที่.....เดือน.....ปี.....	วันที่.....เดือน.....ปี.....
บ้านเลขที่..... ตำบล/แขวง.....	บ้านเลขที่..... ตำบล/แขวง.....
อำเภอ/เขต.....จังหวัด.....	อำเภอ/เขต.....จังหวัด.....
ประเทศ.....	ประเทศ.....

ลงนาม.....

(ผศ.ดร. พลชัย ลิมวิภูวัฒน์)

ตำแหน่ง ผู้สังเกตการณ์ข้อตกลงคุณธรรม

หน่วยงาน องค์กรต่อต้านคอร์รัปชัน (ประเทศไทย)

วันที่.....เดือน.....ปี.....

บ้านเลขที่..... ตำบล/แขวง.....

อำเภอ/เขต.....จังหวัด.....

ประเทศ.....

ลงนาม.....

(นางประไพพิศ รัตนไพบูลย์กิจ)

ตำแหน่ง ผู้สังเกตการณ์ข้อตกลงคุณธรรม

หน่วยงาน องค์กรต่อต้านคอร์รัปชัน (ประเทศไทย)

วันที่.....เดือน.....ปี.....

บ้านเลขที่..... ตำบล/แขวง.....

อำเภอ/เขต.....จังหวัด.....

ประเทศ.....

ลงนาม.....

(นายสถาพร โคธีรานุรักษ์)

ตำแหน่ง ผู้สังเกตการณ์ข้อตกลงคุณธรรม

หน่วยงาน องค์กรต่อต้านคอร์รัปชัน (ประเทศไทย)

วันที่.....เดือน.....ปี.....

บ้านเลขที่..... ตำบล/แขวง.....

อำเภอ/เขต.....จังหวัด.....

ประเทศ.....

(English Translation)

Integrity Pact

Agreement for Cooperation to Prevent and Anti-Corruption

For Government agency/State-Owned Enterprise/Public Organization and Private Sector

…… (Government Agency's Name) intends to conduct procurement contract on …… (Project's name) in compliance with laws and related regulations on government procurement, together with cooperation to prevent and anti-corruption, in order to ensure the efficiency in government budget spending, transparency and integrity in government procurement. Only suppliers who sign Integrity Pact shall be entitled to participate in this procurement project.

To achieve the abovementioned requirements on cooperation to prevent and anti-corruption, …… (the "Bidder"), who participating in this procurement, shall realize the important of the anti-corruption policy and, therefore, enter into Integrity Pact.

The Government Agency and the Bidder agree that ……. (the "Observer") shall be allowed to observe the procurement project in cooperation to prevent and anti-corruption.

The Government Agency, the Bidder and the Observer, hereby, execute the Integrity Pact as follows:

1. Government Agency

The Government Agency strongly intends to apply ethical principle as a supporting mechanism to enhance cooperation among all parties to ensure that the above project is conducted in a corruption-free and without any misconduct manner, which leads to the efficiency in government budget spending and brings true benefits to the country and citizens. The Government Agency shall commit to the followings:

1.1 Disclose all information which related to government procurement project, including but not limited to (1) project plan (2) scope of work (Terms of Reference: TOR) (3) notification including the reference price (4) name list of recipient/buyer of document (5) name list of bidders (6) name list of bidders with no co-benefits (7) name list of bidders who pass the technical qualification evaluation (8) name and proposed price of all bidders (9) name of the bidder who wins the bidding award (10) contract (11) contract amendments (12) delivery of work (13) acceptance of work (14) payment (15) Complaint and investigation results. This information shall be published on the government agency's website and e-GP's website, where can be easily access by all interested parties in order to monitoring government procurement process.

1.2 Treat all bidder fairly and equally, e.g., provide the same information to all bidders. In case it is necessary to include any additional conditions or amendment to any specific qualifications, which are considered to be significant and not mentioned in the original documents, the government agency shall inform in writing to all recipient/buyers of documents and shall not provide any confidential information to any specific bidder that may cause an undue advantage to that particular bidder.

1.3 Take measures to prevent any unfair treatments and corrupt practices, including measures to protect any demand, take promise for or accept any bribe, consideration, gift, rewards, favor, benefit or any other advantage from Bidder, either for themselves or for any person, and shall not set up any condition that shall favor any prospective bidder in any form that could afford an undue advantage to that particular bidder in bidding process, evaluation, contracting and implementing the contract, or discriminate any bidder from fair competition.

1.4 Allow and facilitate the Observer to participate in procuring process throughout the project, including the following processes: (1) calculation and disclosure of reference price (2) preparation of the TOR (3) examine qualifications of the bidder or all procuring processes (4) inspection and acceptance of the work according to the contract. The Government Agency shall arrange meeting(s) with the Observer and shall provide a necessary and sufficient information to the Observer.

1.5 Take measures and set up channel that convenient for any person to access and report any corrupt practices, illegal activities or violation of the Pact to the Government Agency or other related authorities, e.g., the National Anti-Corruption Commission, Department of Special Investigation or Office of the Auditor General. The Government Agency can also take disciplinary action against all related government officials who have been involved.

2. Supplier/Bidder/Contractor or Agent/Representative

Supplier/Bidder/Contractor or Agent/Representative, who notify and intention to participate in the abovementioned project, shall realize that ethical supplier plays an important role in preventing and fighting corruption in government procurement. In order to ensure that all procuring processes are corruption-free and without misconduct as intended by the government agency, hereby to commit to perform as follows:

2.1 Follow measures and procedures necessary to prevent corruption in public sector and to support transparency and integrity in government procurement as follows:

2.1.1 Set up policy to prevent corruption and misconduct, and communicate such policy throughout the organization;

2.1.2 Follow state measures strictly, including preparing account of receipts and expenditures of the project and submit to the Revenue Department according to the Organic Act on Counter Corruption B.E. 2542.

2.2 Will not give, offer or promise any bribe, benefits, or any direct or indirect incentive to collusion and price fixing that will lead to undue advantage to a particular bidder in bidding process, evaluation, contracting and implementing the contract;

2.3 Allow and facilitate the Observer to observe and monitoring any process throughout the project, including the inspection and acceptance of the work and account of receipts and expenditures of the project;

2.4 A contractor shall be responsible for the acts of its sub-contractor(s) (if any) as if have been performed virtually as main contractors and shall ensure that such sub-contractor performs as if he/she is a contractor to this Pact;

2.5 In case where violation of the Pact, any corrupt practices or illegal activities has been found, Supplier/Bidder/Contractor or Agent/Representative shall inform the government agency owner of the procurement project and also inform other related authorities, e.g. the National Anti-Corruption Commission, Department of Special Investigation or Office of the Auditor General.

3. Observer

An independent, neutral and ethical observer, who has expertise in above mentioned project, is an important mechanism to prevent and anti-corruption in government procurement. In order to ensure that project shall be free from corruption or any misconduct, the Observer hereby agrees to perform as follows:

3.1 Observe the procurement process throughout the project and in every step including (1) calculation and disclosure of reference price (2) preparation of TOR (3) examination of Bidder's qualification or every step of procurement process (4) inspection and acceptance of work according to a contract;

3.2 Act independently, honestly, fairly and provide suggestions based on areas of expertise, but without right to vote or interrupt the procurement process;

3.3 Has the right to require any information about the project, which shall be cooperated by Government Agency, Bidder/Contractor or Agent. However, the Observer shall keep all received information confidential and shall not disclose trade secrets which are not related to the project;

3.4 Provide information or clue, and also examine account of receipts and expenditures of the project in order to support the compliance with the Organic Act on Counter Corruption B.E. 2542.

3.5 Prepare and submit report(s) on observation in procurement project to the Anti-Corruption Cooperation Committee.

3.6 In case where Government Agency, Bidder/Contractor or Agent violate the Pact, or any corrupt practices or illegal activities has been found, the Observer shall inform the government agency owner of the procurement project to provide explanation or clarification with in a time period. If the Government Agency did not do so, the Observer shall inform the Anti-Corruption Cooperation, and can also inform other related authorities, e.g. the National Anti-Corruption Commission, Department of Special Investigation or Office of the Auditor General.

Penalty

In case any party violate the Pact, the related authorities shall proceed to legal actions.

ANNEX VII

LETTER OF UNDERTAKING FOR CANDIDATE VESSEL

(Form of Letter of Undertaking for Candidate Vessel and Confirmation for Vessel Condition – Version for bidders that are not vessel owner to bid)

Letterhead of Ship Owner
(Tenderer Name)
(Address of Tenderer)

Reference Document No: (•) **Date: (•)**

SUBJECT: LETTER OF UNDERTAKING FOR CANDIDATE VESSEL AVAILABILITY AND CONFIRMATION ON VESSEL CONDITION

Dear Sirs,

Reference is made to Call for Tender No. THC22-5272 - The Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61 (**"CFT"**), we, *(Ship Owner Name)*, the owner of the "*(Candidate Vessel Name)"* vessel ("**Vessel**") hereby represent, warrant and also undertake to give our full support to *(Tenderer Name)* (**"Tenderer"**), as follows:

1. We are the legal owner of the Vessel as indicated in the attached certificate of registry (Attachment I).

2. We hereby grant our irrevocable consent for our Vessel to be the donor vessel to bid for the CFT in favor of Tenderer, throughout the CFT period, which is 8 months between 30th November 2022 and 31st July 2022, and any extension of the CFT period ("**CFT Period**").

3. We hereby grant free and full access to Tenderer, PTTEP Energy Development Company Limited (**"PTTEP ED"**), their affiliates, and/or their respective authorized representatives (e.g. third party inspection company) the right to inspect the Vessel upon request(s), subject to advance notice.

4. The Vessel is in good working condition suitable for providing the services as specified in the CFT documents without any liens, charges, encumbrances, claims, mortgages, arrests and/ or foreclosures; and

5. The Vessel shall not be replaced nor substituted by any other vessel.

This letter of undertaking is true, accurate, valid, enforceable and shall remain in effect from the date of this letter until the end of CFT Period, and if Tenderer is awarded the contract for this CFT ("**Contract**"), then until the Contract comes into force and effect.

For and on behalf of *(Ship Owner Name)*,

_____
(Name)
(Position)

Attachment I: Certificate of Registry

LETTER OF UNDERTAKING FOR CANDIDATE VESSEL

(Form of Letter of Undertaking for Candidate Vessel and Confirmation for Vessel Condition – Version for bidders that are vessel owner to bid)

Letterhead of Tenderer

PTTEP Energy Development Company Limited
Energy Complex Building A, Floors 6, 19-36
555/1 Vibhavadi Rangsit Road, Chatuchak,
Bangkok 10900, THAILAND

Reference Document No: *(•)* **Date:** *(•)*

SUBJECT: LETTER OF UNDERTAKING FOR CANDIDATE VESSEL AVAILABILITY AND CONFIRMATION ON VESSEL CONDITION

Dear Sirs,
Reference is made to Call for Tender No. THC22-5272 - The Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61 (**"CFT"**), we, *(Tenderer Name)*, the owner of the "*(Candidate Vessel Name)"* vessel ("**Vessel**") hereby represent, warrant and undertake, as follows:

1. We are the legal owner of the Vessel as indicated in the attached certificate of registry (Attachment I).

2. We hereby grant our irrevocable consent for our Vessel to be the donor vessel to bid for the CFT throughout the CFT period, which is 8 months between 30th of November 2022 and 31st July 2023, and any extension of the CFT period ("**CFT Period**").

3. We hereby grant free and full access to PTTEP Energy Development Company Limited (**"PTTEP ED"**), its affiliates, and/or their respective authorized representatives (e.g. third party inspection company) the right to inspect the Vessel upon request(s), subject to advance notice.

4. The Vessel is in good working condition suitable for providing the services as specified in the CFT without any liens, charges, encumbrances, claims, mortgages, arrests and/ or foreclosures; and

5. The Vessel shall not be replaced nor substituted by any other vessel.

This letter of undertaking is true, accurate, valid, enforceable and shall remain in effect from the date of this letter until the end of the CFT Period, and if we are awarded the contract for this CFT ("**Contract**"), then until the Contract comes into force and effect.

For and on behalf of *(Tenderer)*,

_____
(Name)
(Position)

Attachment I: Certificate of Registry

PART II

FORM OF CONTRACT

PTTEP ENERGY DEVELOPMENT COMPANY LIMITED

CONTRACT NO. THC22-5272

WITH

……

FOR

PROVISION OF G1FSO AND CALM BUOY SYSTEM LEASE AND OPERATE FOR G1/61

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THIS CONTRACT is made and entered into this …… day of ……. 20...,

between

PTTEP ENERGY DEVELOPMENT COMPANY LIMITED (hereinafter referred to as "**COMPANY**"), a company organized and existing under the laws of Thailand, having its registered office at Energy Complex Building A, Floors 6th, 19th – 36th, 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand, acting as an "Operator" for all operations carried on the "Block G1/61";

of the one part,

and

……., (hereinafter referred to as "**CONTRACTOR**"), a company organized and existing under the laws of ……, having his registered office at ……,

of the other part.

WITNESSETH

WHEREAS, the COMPANY in support of its hydrocarbon activities, desires to have the WORK performed under the terms and conditions of this CONTRACT; and

WHEREAS, the CONTRACTOR represents that he possesses the necessary know-how, experience, capability and availability and has qualified and experienced PERSONNEL with sufficient facilities, premises and equipment and is properly financed to perform the WORK and is willing to do so on the terms and conditions set out hereinafter.

NOW, THEREFORE, the PARTIES agree as follows:

Article 1 - Object of the CONTRACT

The COMPANY hereby entrusts the CONTRACTOR and the CONTRACTOR hereby agrees to perform the performance of the CONTRACT which are G1FSO and CALM Buoy System Lease and Operate for G1/61 as more particularly described in the CONTRACT.

Article 2 - Definitions and Interpretation

2.1 Definitions

In the CONTRACT, the following words and expressions have the following meanings except where the context otherwise requires:

AFFILIATE in relation to any person means any entity which controls, is controlled by, or is under common control with, such person. For the purpose of this definition, "control" means the power to dictate and conduct the policy of any such person or, when such person is a company, the power to dictate and conduct the policy of such company through the direct or indirect control of more than fifty per cent (50%) of the shares or voting rights in such company. Notwithstanding the foregoing, PTT Public Company Limited is not considered as an AFFILIATE of the COMPANY.

AGREEMENT means the present document comprising its recital and articles 1 to 25 hereof.

APPLICABLE LAWS means all and any statutes, decrees, ordinances, rules, regulations, by-laws, notices, circulars, guidelines, specifications codes, orders, directions, other laws and conventions in effect from time to time, and any amendments or re-enactments thereto of any government (or any subdivision thereof), any federal, state, provincial, or local government authority, any part thereof, and any department, authority, instrumentality, agency, bureau, judicial body or tribunal, having jurisdiction over the PARTIES, the performance of the CONTRACT and/or any area or location where the CONTRACTOR has to perform the WORK, and which have the force of law. For the purpose of this CONTRACT, APPLICABLE LAWS is deemed to include International Convention for the Prevention of Pollution from Ships (MARPOL).

CALM BUOY means catenary anchor leg mooring buoy together with its mooring legs and anchoring system to be supplied and installed by the CONTRACTOR, to which the FSO will be moored at the DESIGNATED WORK AREA. The CALM BUOY shall include the provision of risers with associated system, loading hoses and mooring connecting between the FSO and the CALM BUOY, details as per described in Exhibit A.

CHANGE ORDER has the meaning given in Annex 7.

CHARTER COMMENCEMENT DATE means the scheduled date specified in Exhibit A when the FSO and the CALM BUOY have been installed, hooked-up, pre-commissioned and commissioned at the DESIGNATED WORK AREA and the CONTRACTOR has furnished to the COMPANY a copy of the Classification Certificate and the entire FSO and the CALM BUOY are in accordance with the CONTRACT and in all aspects ready to receive the PRODUCT in accordance with the requirements of the CONTRACT.

CHARTER PERIOD means the charter period defined in sub-article 3.3 including all extensions, and subject to early termination in accordance with any provision of the CONTRACT.

CLAIM(S) means all claims, damages, liabilities, losses, demands, liens, encumbrances, causes of action of any kind, obligations, costs, judgments, interest, and awards (including, without limitation, legal counsel fees and costs of litigation if awarded as part of the judgment in favor of the person asserting the CLAIM), whether created by law, contract, tort, or otherwise, arising out of, related to, or in any way connected with this CONTRACT or the performance of it.

CLASS means Lloyds Register, American Bureau of Shipping, Bureau Veritas, Det Norske Veritas or any other member of the International Association of Classification Societies with which the FSO and the CALM BUOY are from time to time classed.

COMPANY GROUP means the COMPANY, any COMPANY OTHER CONTRACTORS, CO-VENTURERs, their respective AFFILIATEs, and each of their PERSONNEL.

COMPANY OTHER CONTRACTORS means
(a) any person (other than a member of the CONTRACTOR GROUP) that is a party to a contract with the COMPANY and which is in any way connected to, or in proximity with, the CONTRACTOR's performance of the CONTRACT; and
(b) that person's subcontractors at any tier.

COMPANY REPRESENTATIVE is defined in sub-article 4.1.1.

COMPANY SUPPLIED EQUIPMENT means equipment and/or material supplied by the COMPANY and installed on the FSO or to be supplied by the COMPANY in accordance with the scope of the WORK.

CONFIDENTIAL INFORMATION means any information and documents (in any form and of whatever nature) obtained under, or relating in any way to, the CONTRACT, the affairs of the COMPANY, including all information and data obtained by the CONTRACTOR from the COMPANY GROUP or otherwise in the performance of the WORK.

CONSEQUENTIAL LOSS means any indirect, incidental or consequential loss or damage resulting from, or arising out of, the performance or non-performance of the CONTRACT, including loss of profit, loss of use, loss of revenue, loss of anticipated profit, loss of production, business interruption or loss of contract.

CONTRACT means this signed AGREEMENT together with the following Annexes and Exhibits, which are attached hereto and made part hereof, and any future amendments thereto.

Annex 1	-	Mutual Indemnity and Waiver of Recourse Agreements
Annex 2	-	Form of Bank Guarantee
Annex 3	-	Form of Parent Company Guarantee
Annex 4	-	Form of INITIAL ACCEPTANCE CERTIFICATE
Annex 5	-	Form of PROVISIONAL ACCEPTANCE CERTIFICATE
Annex 6	-	Form of FINAL ACCEPTANCE CERTIFICATE
Annex 7	-	CHANGE ORDER
Exhibit A	-	Scope of the WORK, Requirements and SPECIFICATIONS
Exhibit B	-	Commercial Terms
Exhibit C	-	Work Time Schedule
Exhibit D	-	COMPANY's Guideline and Requirement Documents
Exhibit E	-	COMPANY's SSHE Requirements
Exhibit F	-	CONTRACTOR's Documents

CONTRACTOR GROUP means the CONTRACTOR, any SUBCONTRACTOR, their respective AFFILIATEs and each of their PERSONNEL.

CONTRACTOR PERSONNEL means any person (including the Master, Officers and Crews of the FSO) employed or engaged by the CONTRACTOR or any SUBCONTRACTOR or any of their AFFILIATEs for any purpose connected with the performance of the CONTRACT.

CONTRACTOR REPRESENTATIVE is defined in sub-article 4.2.1.

CO-VENTURER means any person with whom the COMPANY has entered into a joint operating agreement or any other similar form of contract in respect of which the CONTRACT is being performed.

DEMOBILIZATION means the transportation of the FSO and/or the CALM BUOY from the DESIGNED WORK AREA after REDELIVERY in accordance with article 5.5.

DESIGNATED WORK AREA means the location nominated by the COMPANY for the placement of the anchor configuration of the FSO and the CALM BUOY where the CONTRACTOR shall install the FSO and the CALM BUOY.

EFFECTIVE DATE is defined in sub-article 3.1.

ESTIMATED CONTRACT VALUE means the estimate of CONTRACT value as specified and identified as such in Exhibit B.

FINAL ACCEPTANCE CERTIFICATE means a certificate issued by the COMPANY to the CONTRACTOR upon successful completion of the first offloading of the PRODUCT as determined by the COMPANY and upon completion of the events stipulated in section 7.17.3 of Exhibit A. The term FINAL ACCEPTANCE shall be construed accordingly.

FORCE MAJEURE means any event which causes or contributes to a PARTY's failure to fulfil any of its/his obligations under the CONTRACT, provided the event is beyond the reasonable control of the PARTY, is not attributable to their fault or negligence and could not have been foreseen or prevented by them exercising reasonable diligence, including government or authority orders that perniciously impact the COMPANY's operation and/or procurement functions, but does not include:

(a) a strike or any labor disruption affecting the performance of the CONTRACT by CONTRACTOR PERSONNEL;

(b) breakdown of any equipment of whatever nature unless caused by FORCE MAJEURE;

(c) a contractual commitment between the CONTRACTOR and a third party;

(d) an act or omission of any member of the CONTRACTOR GROUP; or

(e) any financial distress on the part of the CONTRACTOR, or any member of the CONTRACTOR GROUP.

FSO means a floating storage and offloading unit including inter alia all materials and equipment to be incorporated therein which are designed and supplied by the CONTRACTOR in accordance with the requirement of the CONTRACT, but excluding the COMPANY's property, following its conversion to a floating, storage and offloading tanker; the FSO is to be located at the DESIGNATED WORK AREA and is to be capable of receiving PRODUCT from the PLEM(s) and storing and exporting PRODUCT to an offloading tanker, all as more particularly described in Exhibit A.

GOVERNMENT means any federal, national or local authority, or their agencies and instrumentalities having jurisdiction over the WORKSITE.

GROSS NEGLIGENCE for the purpose of this CONTRACT and notwithstanding the APPLICABLE LAWS means such acts, wanton, reckless conduct, carelessness or omission as constitutes in effect an utter disregard for their harmful, foreseeable and avoidable consequences. The GROSS NEGLIGENCE is deemed to include willful misconduct which means an intentional, knowing-conscious or reckless act or omission, the pernicious results of which are detrimental to the interest of the other PARTY.

INITIAL ACCEPTANCE CERTIFICATE means a certificate issued by the COMPANY to the CONTRACTOR pursuant to section 7.15 of Exhibit A. The term INITIAL ACCEPTANCE shall be construed accordingly.

LAY-UP means the delay in departure of FSO before the CHARTER COMMENCEMENT DATE from the SHIPYARD or other location where the FSO is located, as instructed by the COMPANY according to sub-article 16.1.1(a).

LOCAL STRIKES means strikes, lockouts or labour disputes limited to CONTRACTOR PERSONNEL or originated within CONTRACTOR PERSONNEL before any extension to other companies.

MARINE SPREAD means all marine vessels, derrick or crane barges, work boats, diving support vessel, tugs, anchor handlers and associated equipment required by the CONTRACTOR to perform preparatory offshore works prior to and during the flexible pipes/risers and mooring installation and tow/transport from SHIPYARD, installation, disconnection and demobilization of the FSO and the CLAM BUOY at the offshore site or DESIGNATED WORK AREA pursuant to the CONTRACT.

NOTICE is defined in sub-article 20.1.

PARTIES means the COMPANY and the CONTRACTOR.

PARTY means the COMPANY or the CONTRACTOR.

PERSONNEL means officers, directors, agents, employees, consultants, servants, representatives, licensees and invitees.

PLEM means an acronym for the Pipeline End Manifold supplied by the COMPANY and shall mean the piping manifold which provides the sea-connection point of the flexible riser up to the CALM BUOY receiving flanges.

PRODUCT means crude oil having the characteristics shown in the crude oil data and/or produced water as specified in Exhibit A.

PROVISIONAL ACCEPTANCE CERTIFICATE means a certificate issued by the COMPANY to the CONTRACTOR pursuant to section 7.16.2 of Exhibit A. The term PROVISIONAL ACCEPTANCE shall be construed accordingly.

REDELIVERY means the return of FSO and/or the CALM BUOY to the CONTRACTOR at the DESIGNATED WORK AREA at the end of the CHARTER PERIOD in accordance with article 5.5.

RELEVANT FIELD means oil or gas field(s) which the COMPANY elects to produce from and tie-back to the FSO pursuant to the CONTRACT.

SHIPYARD means CONTRACTOR's appointed yard as notified by the CONTRACTOR to the COMPANY, at which the CONTRACTOR will undertake the FSO and the CALM BUOY fabrication, construction and onshore-commissioning activities in accordance with Exhibit A.

SPECIFICATIONS means the description and specifications and requirements for the FSO and the CALM BUOY as defined in the Exhibit A and the CONTRACT.

SUBCONTRACTOR means any person that the CONTRACTOR engages to perform any part of the CONTRACT on behalf of the CONTRACTOR and its subcontractor of any tier.

THIRD PARTY means a person other than a member of either the COMPANY GROUP or the CONTRACTOR GROUP.

TIME CHARTER RATE means the rates of payment payable to the CONTRACTOR by the COMPANY as specified in Exhibit B.

VAT is defined in sub-article 10.1.1.

WORK means all works, services or activities to be performed by the CONTRACTOR or the SUBCONTRACTOR under this CONTRACT as required in Exhibit A, which include the provision by the CONTRACTOR of the FSO and the CALM BUOY and the CONTRACTOR PERSONNEL together with all necessary and/or incidental supplies, base facilities and works as may be inferred therefrom, and all other obligations imposed on the CONTRACTOR under the CONTRACT.

WORKSITE means any area, site or location where the CONTRACTOR has to perform all or part of the WORK in accordance with the CONTRACT includes the DESIGNATED WORK AREA and the CONTRACTOR's onshore facilities (if any).

2.2 Interpretation

2.2.1 In the CONTRACT, headings are for convenience only and do not affect interpretation.

2.2.2 No rule of construction applies to the disadvantage of a PARTY because that PARTY was responsible for the preparation of, or seeks to rely on, this CONTRACT or any part of it.

2.2.3 This CONTRACT has been executed in the English language, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this CONTRACT.

2.2.4 In order to prevent any misunderstanding, the terms "he", "him" and "his" are used in relation to the CONTRACTOR, whereas the terms "it" and "its" are used in relation to the COMPANY.

2.2.5 Unless the contrary intention appears, a reference in the CONTRACT to:

(a) a document includes any variation, amendment or replacement of it and any annexure, schedule or exhibit attached to it or incorporated into it by reference;

(b) an article or sub-article is a reference to an article or sub-article of the AGREEMENT;

(c) the word "person" includes an individual, a firm, a body corporate, a partnership, a joint venture, an unincorporated body or association, or any government and each of their successors and permitted assigns;

(d) words in the singular include the plural and vice versa;

(e) "days" or "month" means "consecutive calendar days" or "consecutive calendar months", it being understood that all dates and time periods referred to in the CONTRACT relate to Gregorian calendar;

(f) "require", "request", "submit", "answer", "notify", "instruct", "state", "inform", "agree", "approve", "advise" and the like shall be deemed to be completed by the expression "in writing";

(g) the words "include", "including", "included", "for example", "such as" and the like are deemed to be completed by the expression "but not limited to"; and

(h) any particular law, statute, order, decree, rule or regulation of any government authority includes any consolidation, re-enactment, amendment or replacement of it for the time being in force.

2.2.6 For the purposes of interpretation, should there be any conflict, discrepancy, inconsistency or ambiguity between any of the documents forming the CONTRACT, and unless expressly provided otherwise under the AGREEMENT, priority shall be given in the order of precedence in which documents appear, i.e. the articles of the AGREEMENT take precedence over the rest of documents forming the CONTRACT, followed by the Annexes thereto and then the Exhibits. The priority of the Annexes and the Exhibits shall be construed in the order of precedence set out in the definition of CONTRACT.

Article 3 - EFFECTIVE DATE and Duration

3.1 EFFECTIVE DATE and CONTRACT Duration

Notwithstanding the signature of the CONTRACT, this CONTRACT shall come into force on (To be Confirmed by COMPANY) (hereinafter referred to as "**EFFECTIVE DATE**") and shall continue in force until the end of the CHARTER PERIOD, unless it is earlier terminated by a PARTY in accordance with its terms.

3.2 CHARTER COMMENCEMENT DATE

Subject to PROVISIONAL ACCEPTANCE CERTIFICATE issued to the CONTRACTOR, the CONTRACTOR shall deliver the FSO and the CALM BUOY at the DESIGNATED WORK AREA on the CHARTER COMMENCEMENT DATE as specified in Exhibit A.

3.3 CHARTER PERIOD

Subject to the termination provision, the CHARTER PERIOD shall be a period of 5 (five) years commencing from the actual CHARTER COMMENCEMENT DATE.

3.4 Right to Extend

3.4.1 The COMPANY shall be entitled to extend the CHARTER PERIOD for any period up to 60 (sixty) months. The right to extend shall be subject to a written notice given by the COMPANY to the CONTRACTOR not less than one (1) month before the end of the CHARTER PERIOD.

3.4.2 During the extended CHARTER PERIOD, the terms and conditions of this CONTRACT, including rates and prices for the extended CHARTER PERIOD specified in Exhibit B shall apply.

Article 4 - COMPANY REPRESENTATIVE and CONTRACTOR REPRESENTATIVE

4.1 COMPANY REPRESENTATIVE

4.1.1 The COMPANY may, by notice to the CONTRACTOR, appoint a person (hereinafter referred to as "**COMPANY REPRESENTATIVE**") that may exercise or perform the COMPANY's functions, discretions, powers or rights under the CONTRACT, except for the amendment of any provisions of the CONTRACT. The COMPANY may replace the COMPANY REPRESENTATIVE at any time.

4.1.2 The COMPANY REPRESENTATIVE shall have the right to delegate specific tasks to one or more persons designated by it and belonging either to the COMPANY or to other entities, including certifying or inspecting agencies.

4.1.3 The COMPANY REPRESENTATIVE shall have the full right and authority on behalf of the COMPANY to issue instructions with respect to the CONTRACT, reject or disapprove of any part of the WORK which does not conform to this CONTRACT, and to decide on all matters or questions which may arise relating to the performance of the WORK and his decision shall be final and conclusive.

4.1.4 The COMPANY REPRESENTATIVE shall be entitled to inspect all WORK performed hereunder and to witness and to check all tests on the FSO and the CALM BUOY. Except as stated in Exhibit A, the presence of and the inspection by the COMPANY REPRESENTATIVE shall not relieve the CONTRACTOR from the CONTRACTOR's obligations and duties and shall not prejudice the COMPANY's rights under this CONTRACT.

4.1.5 The COMPANY REPRESENTATIVE shall consult with the CONTRACTOR REPRESENTATIVE in order to schedule the delivery of COMPANY SUPPLIED EQUIPMENT or for planning and coordinating the WORK, and all instruction(s) given by the COMPANY REPRESENTATIVE consistent with the provisions of the CONTRACT shall be deemed those of the COMPANY and shall be complied with by the CONTRACTOR.

4.2 CONTRACTOR REPRESENTATIVE

4.2.1 Within 7 (seven) days after the EFFECTIVE DATE, subject to the COMPANY's approval, the CONTRACTOR shall, by notice to the COMPANY, appoint at least one (1) experienced and competent representative to supervise the performance of the CONTRACT (hereinafter referred to as "**CONTRACTOR REPRESENTATIVE**").

4.2.2 The CONTRACTOR REPRESENTATIVE may exercise or perform any rights or obligations of the CONTRACTOR under the CONTRACT, except for the amendment of any provisions of the CONTRACT.

4.2.3 Matters within the knowledge of the CONTRACTOR REPRESENTATIVE are deemed to be within the knowledge of the CONTRACTOR.

4.2.4 The COMPANY may direct the CONTRACTOR at any time, and for any reason, to remove the CONTRACTOR REPRESENTATIVE. The CONTRACTOR shall, at his own cost, comply with that direction and nominate a replacement as soon as possible for the COMPANY's approval, which approval shall not be unreasonably withheld or delayed.

4.2.5 The CONTRACTOR REPRESENTATIVE shall be the person who has supervisory authority over the WORK and with whom the COMPANY REPRESENTATIVE may plan and co-ordinate the performance of the WORK with. Notices concerning operations which are transmitted to the CONTRACTOR through the CONTRACTOR REPRESENTATIVE will be deemed, for the purpose of this CONTRACT, to have been sufficiently given to the CONTRACTOR.

Article 5 - Performance of the CONTRACT

5.1 Independent Contractor

5.1.1 The CONTRACTOR warrants and represents that he possesses the necessary know-how, he is fully experienced and technically competent to perform the WORK and that he is properly financed, organized and equipped to perform such WORK.

5.1.2 The CONTRACTOR shall conduct his operations in a lawful manner and shall exercise all care and diligence to prevent any actions or conditions which could result in a conflict with COMPANY's best interests.

5.1.3 Notwithstanding any provisions in the CONTRACT, the CONTRACTOR is an independent contractor with respect to the CONTRACT and shall exercise independent control, management and supervision in the performance of the CONTRACT. The CONTRACTOR is not the COMPANY's agent or partner in any way.

5.1.4 Nothing in the CONTRACT implies, directly or indirectly, that any of the CONTRACTOR PERSONNEL are agents, servants or employees of the COMPANY. All of the CONTRACTOR's responsibilities under the CONTRACT, including those concerning the CONTRACTOR PERSONNEL, shall be undertaken in the name of the CONTRACTOR and not in the name of the COMPANY.

5.1.5 The CONTRACTOR shall be responsible for all costs and expenses resulting from his independent status including salaries, bonuses, insurances, taxes and social welfare contributions of any kind related to the CONTRACTOR PERSONNEL.

5.2 Compliance with APPLICABLE LAWS

5.2.1 The CONTRACTOR shall be responsible for obtaining and maintaining, at his sole cost, in compliance with all APPLICABLE LAWS, all GOVERNMENT authorizations necessary for the performance of the WORK, for the CONTRACTOR PERSONNEL, the FSO, the CALM BUOY, and the MARINE SPREAD including all visas, residence permits, work permits, clearance certificate, all applicable licenses, approval and permits. The COMPANY may provide assistance, but not be obliged to the CONTRACTOR in obtaining such authorizations but the CONTRACTOR shall be responsible to inform the COMPANY with sufficient time in advance of such requirement and shall remain solely liable for the delay or failure in obtaining such authorizations.

5.2.2 The CONTRACTOR shall in all respects observe, be bound and comply with all APPLICABLE LAWS with respect to performance of the CONTRACT, his operations, the CONTRACTOR PERSONNEL, the FSO and/or property employed by him hereunder. The CONTRACTOR shall also ensure that SUBCONTRACTORS and the CONTRACTOR PERSONNEL shall comply with all APPLICABLE LAWS.

5.2.3 In the case of the COMPANY being considered a government agency under applicable laws, it has therefore obligated to comply with certain laws including but not limited to the anti-corruption laws of Thailand, the CONTRACTOR where applicable shall comply with all applicable laws. It is the sole responsibility of the CONTRACTOR to familiarize himself and fully comply with the laws.

5.3 CONTRACTOR's General Obligations

5.3.1 The CONTRACTOR shall perform the WORK in accordance with the requirements of the CONTRACT, with COMPANY's instructions and operations programme, with good oil and gas field and marine industry practices, in a good, safe and workmanlike manner, consistently with his status as an independent contractor, all with due diligence and care.

5.3.2 The CONTRACTOR shall perform the WORK in a timely manner, without unnecessary delays or interruptions, with the degree of skill and care appropriate to a highly skilled contractor competent and experienced in work and projects of the same nature of the WORK.

5.3.3 Unless specified in Exhibit A, the CONTRACTOR shall provide all CONTRACTOR PERSONNEL, the CALM BUOY, the FSO and any other items necessary to perform the WORK.

5.3.4 The CONTRACTOR shall operate and maintain the FSO and the CALM BUOY and provide the WORK required by the CONTRACT during the CHARTER PERIOD including during weekends and public holidays in accordance with the CONTRACT.

5.3.5 The CONTRACTOR shall comply with, and ensure that the CONTRACTOR PERSONNEL comply with, any lawful and reasonable direction or instruction given by the COMPANY in respect of the WORK (including complying with relevant COMPANY's SSHE Requirements specified in Exhibit E and COMPANY's Rules and Regulations).

5.3.6 The CONTRACTOR shall remain solely responsible for complying with all his obligations and shall not be relieved from any of his obligations or liabilities under the CONTRACT, notwithstanding any action(s) and/or omission(s) of the COMPANY such as:

(a) any approval, acceptance, acknowledgement, or issuance of any certificate by the COMPANY and/or any inspecting entity;
(b) any comment whatsoever or absence of comment by the COMPANY;
(c) the presence or absence of any COMPANY REPRESENTATIVE during the performance of any operation such as tests or inspections; and/or
(d) any payment made by the COMPANY.

5.4 <u>Delivery of the FSO and the CALM BUOY</u>

5.4.1 At the CHARTER COMMENCEMENT DATE , the CONTRACTOR shall make the FSO, the CALM BUOY and the CONTRACTOR PERSONNEL in accordance with the requirements of the CONTRACT available to the COMPANY at the DESIGNATED WORK AREA as specified in Exhibit A, ready for continuous operations and in accordance with the requirements of the CONTRACT, including the acknowledgement of customs clearance of the FSO (where applicable), her conformity with the relevant APPLICABLE LAWS and the approval by the COMPANY of the FSO and the CALM BUOY verified through commissioning pursuant to Exhibit A. The FSO shall also be free of cargo, with clean tanks and otherwise ready in all respects to load and commence a voyage or otherwise commence performance of the WORK.

5.4.2 The CONTRACTOR shall be deemed to have complied with delivery of the FSO and the CALM BUOY when the FSO is securely moored to the CALM BUOY and loading hoses connection at the DESIGNATED WORK AREA on the CHARTER COMMENCEDATE DATE and have complied with the requirement of this CONTRACT. Such delivery shall be evidenced by the issuance of the PROVISIONAL ACCEPTANCE CERTIFICATE.

5.4.3 The FSO and the CALM BUOY shall be delivered (safely afloat at specified co-ordinates) to the DESIGNATED WORK AREA free and clear of all liens, charges and encumbrances in the applicable classification and rating of the FSO's Classification Society and in compliance with APPLICABLE LAWS. All CONTRACTOR PERSONNEL which are operating crews including production and catering personnel will be boarded on the FSO after it has been securely moored unless agreed otherwise between the COMPANY and the CONTRACTOR.

5.5 REDELIVERY and DEMOBILIZATION

5.5.1 Unless the charter of the FSO and the CALM BUOY under this CONTRACT shall previously have been terminated by loss of the FSO and/or the CALM BUOY or otherwise, the COMPANY shall redeliver the FSO and the CALM BUOY at the DESIGNATED WORK AREA as specified in Exhibit A, at the expiration of the CHARTER PERIOD (including any extensions thereto). Upon REDELIVERY of the FSO and the CALM BUOY, no TIME CHARTER RATE of any nature whatsoever shall thereafter be due from the COMPANY. The CONTRACTOR shall remove the FSO, the CALM BUOY and its associated mooring and riser systems as described in Exhibit A and as required by APPLICABLE LAWS.

5.5.2 The CONTRACTOR shall prior to REDELIVERY, offload all pumpable the PRODUCT from the FSO and delivery the PRODUCT to the COMPANY in accordance with the normal offloading procedure under this CONTRACT. The COMPANY shall make any necessary arrangement to receive the said PRODUCT.

5.5.3 The COMPANY shall not be responsible to accept any quantity of PRODUCT which is not pumpable remaining on board of FSO at time of REDELIVERY and the said remaining quantity of PRODUCT shall not be charged to the CONTRACTOR.

5.5.4 Proper disposal and/or clean-up of the FSO following WORK under this CONTRACT, including any decontamination or remediation of crude oil cargo tanks and equipment required shall be the responsibility of the CONTRACTOR.

5.5.5 The CONTRACTOR shall remove the FSO and the CALM BUOY with its mooring, riser and association and disconnect up to the PLEM at the CONTRACTOR's responsibility. Costs of disconnection and removal for REDELIVERY are specified in Exhibit B. It is further agreed that the CONTRACTOR shall be responsible for all removal, and towage costs, and the COMPANY shall have no further obligation after such REDELIVERY.

5.5.6 After REDELIVERY, the CONTRACTOR shall transport the FSO from DESIGNATED WORK AREA. Subject to the COMPANY's notification, prior to such REDELIVERY, the CONTRACTOR shall remove all COMPANY SUPPLIED EQUIPMENT (if any) from the FSO and return to the COMPANY at DESIGNATED WORK AREA, on condition that the CONTRACTOR shall take all reasonable care to avoid causing damage to the COMPANY SUPPLIED EQUIPMENT.

5.5.7 The disconnection, towage and transportation should be done in accordance with the COMPANY's Marine Standard and General Marine Instruction and processes. The CONTRACTOR shall provide the demobilization and abandonment procedures for COMPANY's approval at least ninety (90) days prior to end of CHARTER PERIOD or any extension thereof or any period required by the APPLICABLE LAWS or the GOVERNMENT.

5.5.8 The CONTRACTOR agrees to promptly remove the FSO and CALM BUOY from the DESIGNATED WORK AREA, subject however to delays reasonably incurred due to weather.

5.5.9 The CONTRACTOR shall, at the time of issuing the Redelivery Certificate, take over and pay the COMPANY for the fuel (according to the documented prices) on board the FSO as jointly measured by the PARTIES.

5.6 Transportation

5.6.1 The CONTRACTOR shall make all the necessary arrangements and shall bear all the costs and expenses for the transportation of his spare parts, tools, ancillary equipment and consumables, necessary for carrying out the operations, between their point of origin and COMPANY's base or the port designated by the COMPANY.

5.6.2 The CONTRACTOR shall make all the necessary arrangements and shall bear all the costs and expenses for the transportation of CONTRACTOR PERSONNEL between their point of origin and COMPANY's base or the port designated by the COMPANY.

5.6.3 When provided by the COMPANY, means and types of transport shall be at the discretion of the COMPANY. The COMPANY shall not be liable at all with respect to its involvement in the transportation of CONTRACTOR's spare parts, tools, ancillary equipment and consumables and CONTRACTOR PERSONNEL. The role of the COMPANY is limited to the procurement of the relevant transport/handling services from recognized carriers.

5.7 Inspections

5.7.1 Prior to the CHARTER COMMENCEMENT DATE, the CONTRACTOR shall provide the COMPANY with copies of the certificates listed (FSO Entry Permit) in Exhibit A.

5.7.2 The COMPANY shall have the right to send the COMPANY REPRESENTATIVE and/or representative(s) of the COMPANY and/or surveyor(s) from third party inspection companies who shall prior to or after the CHARTER COMMENCEMENT DATE have at all times access to the FSO and the CALM BUOY or the WORKSITE for the purpose of inspecting the FSO and the CALM BUOY or the WORK in order to judge whether the FSO and the CALM BUOY and/or the performance of the WORK are in accordance with the provisions of the CONTRACT. The CONTRACTOR agrees to remedy immediately at his sole costs and expenses any defect evidenced by such inspection(s). The aforesaid shall also apply in respect of the WORKS carried out and/or materials supplied by SUBCONTRACTOR.

5.7.3 The CONTRACTOR shall carry out commissioning of any equipment on the FSO and the CALM BUOY under the COMPANY REPRESENTATIVE's supervision in accordance with the requirements of the CONTRACT as specified in Exhibit A. The CONTRACTOR agrees to immediately remedy at his sole cost and expense any defect evidenced by such tests.

5.7.4 In the event of non-conformity of the FSO and/or the CALM BUOY prior to the CHARTER COMMENCEMENT DATE, the COMPANY shall have the right to postpone the CHARTER COMMENCEMENT DATE until such time as the CONTRACTOR, at his own cost, has remedied the non-conformity of the FSO and/or the CALM BUOY or to terminate this CONTRACT without any indemnity.

5.7.5 Although the COMPANY shall be entitled to inspect the FSO and/or the CALM BUOY, it shall be the responsibility of the CONTRACTOR as an independent contractor, to use only equipment fit for their use and any failure or acceptance of any COMPANY REPRESENTATIVE to inspect or reject any defective piece of equipment, shall not relieve the CONTRACTOR from any of his obligations under the CONTRACT.

5.7.6 The CONTRACTOR shall be responsible for ensuring that all inspection and testing of the FSO and the CALM BUOY is provided as required by APPLICABLE LAWS. In addition, the CONTRACTOR shall provide inspection and testing which it deems necessary, independent of that provided by the COMPANY, pursuant to the following articles, to discover any deviations from the SPECIFICATION, or any defective equipment, materials or workmanship, in time to avoid delay in the delivery of the FSO and CALM BUOY.

5.7.7 All of the workmanship and materials, while same are in process of fabrication, erection, conversion, installation, and performance, may be inspected by the COMPANY and/or COMPANY REPRESENTATIVE at COMPANY's option, subject to reasonable notice and so as not to impede or delay the WORK. Any inspection by the COMPANY and/or COMPANY REPRESENTATIVE shall in no way alter or diminish the CONTRACTOR's responsibilities, obligations, and liabilities under this CONTRACT, except where the CONTRCTOR complies specifically with the COMPANY's instructions.

5.7.8 The CONTRACTOR shall provide to the COMPANY, at no cost, all reasonable facilities, including space, support services, utilities, test specimens, certified documents, or other means of ascertaining that the materials and workmanship used are in accordance with the Exhibit A.

5.7.9 Throughout the CHARTER PERIOD or any extension thereof, the CONTRACTOR shall be responsible to inspect and maintain or restore with due diligence the condition of the FSO and the CALM BUOY so that the FSO and the CALM BUOY will be suitable and fit to perform the WORK. The CONTRACTOR shall be solely responsible to ensure the necessary inspection of the FSO and the CALM BUOY by the Classification Society and any other regulatory bodies concerned is carried out and duly recorded.

5.7.10 The COMPANY shall be permitted access to the FSO (including but not limited to the FSO's machinery, material, equipment, appurtenances and outfitting) and the CALM BUOY, at any and all proper times during the CHARTER PERIOD, or any extension thereto to conduct inspections as it may consider necessary provided however;

a. that this exercise shall not in any way reduce the CONTRACTOR REPRESENTATIVE's authority over, or responsibility to the COMPANY or THIRD PARTY for the FSO and/or the CALM BUOY and every aspect of the FSO's operation, or increase the COMPANY's responsibility to the CONTRACTOR or THIRD PARTY for the same, and
b. that the COMPANY shall not be liable for any act, neglect or default by itself, its servant or agents in the exercise of the said right.

5.8 <u>Not used</u>

5.9 <u>Not used</u>

5.10 <u>Responsibilities of the Master of the FSO</u>

5.10.1 Compliance with Instructions

The Master shall comply with the lawful instructions of the COMPANY REPRESENTATIVE for the direction of operations, provided that such instructions do not exceed the scope of the WORK and the capability of the FSO.

5.10.2 Performance of Operations

The Master shall be entitled to reject any instruction which, in the performance thereof, would threaten the safety of the FSO or her Crews. When such right is exercised, the Master shall inform the COMPANY REPRESENTATIVE at the earliest opportunity.

5.10.3 Logs and Reports

The Master shall accurately record in the ship's log, times, events, instructions, operations requested and carried out, periods of FSO's unavailability rounded off to the nearest quarter of an hour, etc. The log shall be kept in duplicate. One daily copy, signed by the Master, shall be supplied at the earliest opportunity to the COMPANY REPRESENTATIVE, together with the detailed reports. Such reports shall be the basis for the establishment of invoices.

5.11 Duties of Crew

The Crew, under the supervision of the Master, shall perform the following services with diligence and promptness:

(a) operation of FSO's equipment and machinery; and

(b) any duties as per operation requirements or related to scope of the WORK set out in Exhibit A.

5.12 Not used

5.13 Accommodation and Catering

5.13.1 Unless otherwise specified in Exhibits, the CONTRACTOR shall provide food and accommodation for the COMPANY GROUP's PERSONNEL, other than the CONTRACTOR PERSONNEL.

5.13.2 The cost of bedding and catering services for COMPANY GROUP's PERSONNEL shall be included in TIME CHARTER RATE as specified in Exhibits B.

5.14 Twenty-Four (24) Hours Service

The Master, Officers and Crews of the FSO shall render all WORK on a continuous twenty-four (24) hours/day by day and by night and at such times and according to such schedules as the COMPANY may require. The COMPANY shall not be responsible for any overtime payment.

5.15 Major Repairs and/or Dry Docking of the FSO

5.15.1 The CONTRACTOR represents and undertakes that the FSO is in good working conditions and is not scheduled to undergo any overhaul and/or dry docking which would interrupt the operations herein contracted for during the CHARTER PERIOD and extended CHARTER PERIOD.

5.15.2 Throughout the CHARTER PERIOD and extended CHARTER PERIOD and at his own costs and expenses, the CONTRACTOR shall maintain the FSO in good working conditions, carry out any necessary repairs and maintain the classification of same.

5.15.3 The FSO shall not be dry docked for any planned maintenance for the ten (10) years as specified in Exhibit A.

5.15.4 Should there be any dry-docking required by the CLASS during CHARTER PERIOD or any extension thereof, the CONTRACTOR shall provide the COMPANY with a suitable replacement vessel during the interim period to ensure that production operations continue without undue interruptions.

5.16 Not used

5.17 CONTRACTOR to provide

5.17.1 From the EFFECTIVE DATE until the end of the CHARTER PERIOD or extended CHARTER PERIOD as the case may be, the CONTRACTOR shall provide and pay for all requirements as specified in Exhibit A.

5.17.2 The CONTRACTOR shall provide on board the FSO at his costs and expenses oil spill dispersant equipment, the COMPANY providing and paring for oil spill dispersant in line with applicable provisions and regulations of any governmental authorities with respect to environmental control.

5.18 COMPANY to provide

5.18.1 During the CHARTER PERIOD or extended CHARTER PERIOD as the case may be, the COMPANY shall provide and pay for all requirements as specified in Exhibit A.

5.18.2 Not used.

5.18.3 The COMPANY shall take over and pay the CONTRACTOR for the following as on board the FSO on the actual CHARTER COMMENCEMENT DATE fuel (according to the documented prices) as jointly measured by the PARTIES.

Notwithstanding sub-articles 5.5.9 and 5.18.3, the COMPANY shall have the right to set off the costs of fuel and fresh water that it has to pay pursuant to sub-article 5.18.3 with the costs of fuel and fresh water that the CONTRACTOR has to pay pursuant to sub-article 5.5.9 at any time during the CHARTER PERIOD or extended CHARTER PERIOD or at the time of issuing the Redelivery Certificate.

5.19 Not used

5.20 COMPANY SUPPLIED EQUIPMENT

5.20.1 Subject to sub-article 5.20.3 and Exhibit A, the COMPANY shall be responsible at its own cost and risk for the design, engineering, fitness for purpose, fabrication, supply, performance, operation, maintenance and provision of consumables and resources required for maintenance, servicing and repair or replacement, sparing, maintenance of manufacturer's warranties, inspection, testing, approval, certification, and calibration by the governmental authorities, of

(a) All COMPANY SUPPLIED EQUIPMENT referred to in the scope of WORK; and
(b) Any specialized or ancillary equipment which may be required as a result of any change in COMPANY's operational requirements as referred to in sub-article 5.18.

5.20.2 The CONTRACTOR shall be responsible, for all costs incurred by the CONTRACTOR in obtaining approval from CLASS, governmental authorities and the FSO's insurer for installation on the FSO of any specialized or ancillary equipment as referred to in sub-article 5.18 and Exhibit A.

5.20.3 The CONTRACTOR shall provide routine maintenance work in relation to COMPANY SUPPLIED EQUIPMENT on the terms and conditions set out in Exhibit A.

5.20.4 Title to all COMPANY SUPPLIED EQUIPMENT and other equipment referred to in sub-article 5.20.1 shall remain vested in the COMPANY at all time.

5.21 Delivery of Documents and Property

At the end of the CHARTER PERIOD or extended CHARTER PERIOD as the case may be, the CONTRACTOR shall immediately deliver to the COMPANY all correspondence, documents, specifications and all other papers and property belonging to the COMPANY which may be in his possession or under his control.

5.22 Local Resources

In the performance of the WORK, to the extent practical and lawful, the CONTRACTOR shall ensure that he and/or his SUBCONTRACTOR use local resources (including labor, materials, equipment and services) that are available in the country where the WORK will be performed, provided that prices (including transportation and taxes), qualities and delivery conditions remain competitive.

5.23 Flag and Registry

5.23.1 In the performance of the CONTRACT, the CONTRACTOR and the CONTRACTOR PERSONNEL shall comply fully with all APPLICABLE LAWS and regulations of the country of the FSO's flag and registry, the country of the WORKSITE, and the Kingdom of Thailand in force during the term of the CONTRACT.

5.23.2 Any change of flag and/or registry of the FSO requested by the CONTRACTOR during the CHARTER PERIOD shall first be approved by the COMPANY in writing, approval of which shall not be unreasonably withheld.

5.23.3 In case the COMPANY and/or the CONTRACTOR are required by APPLICABLE LAWS to use the FSO registered under Thai Flag, the CONTRACTOR shall proceed with all necessary registrations with the Marine Department of Thailand or any other government bodies, or proceed for any necessary actions in order to comply with APPLICABLE LAWS at CONTRACTOR's cost. To avoid doubt, if APPLICABLE LAWS set forth time limit for the foregoing, the CONTRACTOR shall complete such registrations or actions within the time limit.

If the CONTRACTOR fails to comply with the abovementioned, the COMPANY shall be entitled to terminate the CONTRACT as specified under sub-article 15.2.

5.24 Bunker

5.24.1 Bunkers shall be provided and paid by the following persons during the following period:

(a) The CONTRACTOR:

i) Prior to actual CHARTER COMMENCEMENT DATE;
ii) After REDELIVERY

(b) The COMPANY: throughout the CHARTER PERIOD except for the provisions of off-hire as per specified in sub-articles 15.1.

5.24.2 The COMPANY shall accept and pay for all bunkers certified in the delivery certificate to be on board the FSO at actual CHARTER COMMENCEMENT DATE, and the CONTRACTOR shall pay for all bunkers certified in the redelivery certificate to be on board the FSO at REDELIVERY. In each case, the price shall be the actual cost price paid for the bunkers of each grade last supplied to the FSO before actual CHARTER COMMENCEMENT DATE or REDELIVERY, as the case may be.

5.24.3 The grade of bunkers to be supplied to the FSO during the CHARTER PERIOD shall be as per specified in Exhibit A. If, during the CHARTER PERIOD, the CONTRACTOR requires the FSO to be supplied with more expensive bunkers, and there has been no change in the operating conditions required of the FSO to necessitate such change, the CONTRACTOR shall be responsible for the additional costs incurred.

5.24.4 The CONTRACTOR shall use all reasonable endeavor, without impeding the safety or efficiency of the FSO's operation and without departing from approved operating procedures, to operate the FSO in a fuel-efficient manner and on compliance with the CONTRACT, but the Master shall retain the absolute discretion to depart from such provisions if at any time he considers the safety of the FSO or his crew is impaired.

5.25 <u>Option to Purchase</u>

5.25.1 The COMPANY shall have an option to purchase the FSO and/or CALM BUOY any time after PROVISIONAL ACCEPTANCE by sending thirty (30) days advance notice to the CONTRACTOR. The COMPANY shall pay the CONTRACTOR at lump sum fee set out in Exhibit B, in which case any VAT or other similar type of transaction taxes that the CONTRACTOR may incur with respect to the sale shall be for the account of the CONTRACTOR.

5.25.2 The title of the FSO and/or the CALM BUOY will be transferred and the FSO and/or the CALM BUOY shall be delivered by the CONTRACTOR and taken over by the COMPANY upon the CONTRACTOR's receipt of the payment.

5.25.3 The CONTRACTOR guarantees that the FSO and the CALM BUOY, at the time of delivery, is free from all encumbrances and maritime liens or any debts whatsoever or any existing mortgage. Should any CLAIMS be made against the FSO and the CALM BUOY, the CONTRACTOR hereby undertakes to defend and indemnify the COMPANY against all consequences of such CLAIMS. Any taxes, notarial, consular and other charges and expenses connected with the purchase and registration under the COMPANY's flag shall be for the COMPANY's account. Any taxes, consular and other charges and expenses connected with closing of the CONTRACTOR's register, shall be for the CONTRACTOR's account.

5.25.4 The CONTRACTOR shall, at the time of delivery, hand to the COMPANY all certificates from flag state, coastal state and other regulatory bodies and classification certificates (for the FSO's hull, engines, outfitting and all association in accordance with SPECIFICATION specified in Exhibit A, the CALM BUOY, anchors, mooring chains, risers and associated system and etc.) as well as all plans, records, technical, as-built drawings, specification, Operating & Maintenance Manuals and documentation relevant of the FSO and the CALM BUOY, which may be in the CONTRACTOR's possession.

5.25.5 The FSO and the CALM BUOY with everything belonging to them shall at the CONTRACTOR's risk and expense until they are delivered to the COMPANY.

Article 6 - The FSO and the CALM BUOY

6.1 The FSO and the CALM BUOY

6.1.1 The CONTRACTOR shall, at his own costs, convert and modify the FSO and the CALM BUOY in accordance with the SPECIFICATIONS. No change can be made to such SPECIFICATIONS without obtaining the COMPANY's prior written approval.

6.1.2 The COMPANY shall have the right to send the COMPANY REPRESENTATIVE to the SHIPYARD and/or the facilities of the CONTRACTOR GROUP to inspect the FSO during the course of her conversion or fabrication to satisfy the COMPANY that conversion and fabrication are in accordance with all SPECIFICATIONS. The COMPANY REPRESENTATIVE shall monitor compliance with all SPECIFICATIONS and requirements under this CONTRACT. The CONTRACTOR shall rectify any deficiencies noted by the COMPANY REPRESENTATIVE prior to the COMPANY's final acceptance.

6.1.3 The CONTRACTOR guarantee to COMPANY that:

(a) the FSO and the CALM BUOY shall conform to the SPECIFICATIONS as specified in Exhibit A and this CONTRACT;
(b) the FSO and the CALM BUOY shall function properly, meet all safety, operability and performance criteria set out under this CONTRACT;
(c) the FSO and the CALM BUOY shall be fit for the purposes and uses intended and capable of being operated in accordance with the requirements of this CONTRACT and the SPECIFICATIONS;
(d) the WORK performed at the SHIPYARD by the CONTRACTOR and/or the SUBCONTRACTOR shall be in accordance with good engineering and construction practices; and the FSO, the CALM BUOY, materials, equipment, components and systems used in the conversion and modification to the FSO and the CALM BUOY shall be of suitable quality for the purposes and uses intended and shall be free from defects and deficiencies save for the COMPANY SUPPLIED EQUIPMENT.

6.1.4 The CONTRACTOR shall ensure, at his own cost, that the FSO and the CALM BUOY comply, throughout the CHARTER PERIOD and extended CHARTER PERIOD, with the SPECIFICATIONS specified in Exhibit A, with the administrative provisions set down in the CONTRACT and with any national or international law or regulation applicable to the FSO and/or her operations.

6.1.5 Unless specified otherwise in Exhibits, at the date of actual CHARTER COMMENCEMENT DATE, the FSO and the CALM BUOY:

(a) shall be in CLASS and flag as applicable;
(b) shall be in every way ready to load, store and offload production of the COMPANY as described in Exhibit A;
(c) shall be tight, staunch, strong, in good order and conditions, and in every way fit for the WORK, with her machinery, boilers, hull and other equipment (including but not limited to hull stress calculator and radar) in a good and efficient state;

(d) shall have on board all certificates and documents required from time to time by any APPLICABLE LAWS to enable her to perform the WORK required by the CONTRACT without delay (copies of which certificates shall be provided to the COMPANY at its request); and

(e) shall have been modified in accordance with the description in the scope of WORK (subject to any variations thereto agreed between the PARTIES).

6.1.6 Rights and Powers to use the FSO and the CALM BUOY

The CONTRACTOR represents and warrants that he has full and lawful rights and powers to use the FSO and the CALM BUOY for the purpose of this CONTRACT.

6.1.7 Standards of Equipment and Maintenance of the FSO and the CALM BUOY

(a) To perform the WORK, the CONTRACTOR shall mobilize his FSO and the CALM BUOY fit to operate effectively at all times for the performance of the WORK and shall maintain same at all times throughout the CHARTER PERIOD and extended CHARTER PERIOD, in good operating condition with appropriate and uninterrupted valid certification and in accordance with APPLICABLE LAWS and CONTRACT requirements.

(b) The CONTRACTOR shall provide the COMPANY with the technical characteristics and whenever requested the operating manuals of the FSO.

(c) The CONTRACTOR shall mobilize and maintain the FSO and the CALM BUOY in such condition that she shall always be safe and ready for immediate use.

(d) The CONTRACTOR shall install, operate, maintain in satisfactory condition and regularly test his fire, life saving and all other safety equipment.

(e) Tools, pressure vessels, lifting gear, machinery and facilities subject to certifying authority approval shall be so approved prior to their use or deployment. All items subject to statutory examination shall be so examined prior to use and accompanied by valid certification available for inspection on request. All rotating or moving parts of equipment shall be adequately guarded to prevent accidental contact with all PERSONNEL.

(f) The CONTRACTOR shall promptly notify the COMPANY of any failure or malfunction of his FSO liable to materially affect the performance of the WORK.

(g) The CONTRACTOR shall assume responsibility for all and any delays to maintain and to immediately replace or repair any defective equipment and to supply necessary spare parts and/or consumables therefor.

(h) The CONTRACTOR represents and warrants that his FSO and the CALM BUOY are in good working condition and is not scheduled to undergo any overhaul which would interrupt the WORK herein contracted for during the CHARTER PERIOD and extended CHARTER PERIOD.

6.1.8 Maximum Capacity

The CONTRACTOR undertakes that the FSO including the CALM BUOY can be used safely to the maximum capacity as rated by the manufacturer and/or accepted by a recognized certification agency agreed by the COMPANY. Inability of the equipment to perform at such capacity shall entitle the COMPANY either to claim liquidated damages or to suspend the performance of the WORK under the off-hire provisions.

6.1.9 Operating Limits

(a) During the CHARTER PERIOD, the FSO shall be used for the purpose of loading, storing and offloading production of the COMPANY at the DESIGNATED WORK AREA.

(b) In additional, the FSO will be used for receiving the PRODUCT transferred by shuttle tanker with tanker size as specific in Exhibit A and shuttle tanker will be side-by-side mooring to the FSO, transferring from midship manifold of shuttle tanker and stored into the FSO's produced water tank. The PRODUCT shall be exported from the FSO for further reinjection at the COMPANT and using the FSO export facility to transfer PRODUCT thru export hose, the CALM BUOY and produced water riser to the COMPANY's subsea infrastructure.

(c) The CONTRACTOR shall exercise due diligence to ensure that the FSO is and remains safely moored at the CALM BUOY or safety employed elsewhere at or in the immediate vicinity of the WORKSITE, where the FSO can always lie safely afloat.

(d) Notwithstanding anything contained in this sub-article or any other provision of this CONTRACT, the COMPANY shall not be deemed to warrant of any mooring, berth or anchorage and shall be under no liability in respect thereof.

(e) The COMPANY shall cooperate with the CONTRACTOR and permit the CONTRACTOR to plan and implement a crude oil washing program in accordance with good cargo management practice throughout the CHARTER PERIOD with a view to minimizing PRODUCT residues on board the FSO at the time of REDELIVERY.

6.2 <u>Use of the FSO and the CALM BUOY</u>

6.2.1 General

(a) The COMPANY shall be entitled to use the FSO and the CALM BUOY in the agreed location specified in the CONTRACT provided that:

(i) they can remain safely moored and afloat;

(ii) due account is taken of the safety of the FSO and the CALM BUOY and their capabilities; and

(iii) the operations undertaken by the FSO and the CALM BUOY are lawful and in connection with COMPANY's activities.

(b) The FSO and the CALM BUOY shall mainly be used for the operations as provided for in Exhibit A. Nevertheless, the COMPANY reserves the right to use the FSO to perform other lawful marine operations compatible with FSO's capabilities and connected with COMPANY's petroleum activities without incurring any increase in the TIME CHARTER RATE.

(c) The COMPANY shall give the Master of the FSO instructions as to the time, place and nature of operations to be carried out by the FSO.

(d) During the CHARTER PERIOD and extended CHARTER PERIOD, the FSO and the CALM BUOY are for the exclusive use of the COMPANY.

6.2.2 Excluded Zones

Unless CONTRACTOR's consent be first obtained, the COMPANY shall not order the FSO and/or the CALM BUOY to go or continue to any place or on any voyage nor use them in any service which would bring them within a zone which is dangerous as the result of any actual or threatened act of war, hostilities, warlike operations, acts of piracy or of hostility or malicious damage against the FSO or the CALM BUOY or any other vessel or its cargo by any person, body or state whatsoever, revolution, civil war, civil commotion or the operation of international law, nor expose the FSO or the CALM BUOY in any way to any risks or penalties whatsoever consequent upon the imposition of sanctions, nor require the FSO to carry any goods that may in any way expose the FSO to any risks of seizure, capture, penalties or any other interference of any kind whatsoever by the belligerent or fighting powers or parties or by any government or ruler.

In the event of insurance premiums, the wages of the CONTRACTOR PERSONNEL or the cost of provisions and/or stores for deck and/or engine room being increased by reason of or during the existence of any of the matters mentioned in sub-article 6.2.2, the amount of such increase shall be paid by the COMPANY along with the relevant monthly invoice.

6.3 Not used

6.4 Duty to Maintain

6.4.1 Throughout the CONTRACT duration, the CONTRACTOR shall, whenever the passage of time wear and tear or any event requires steps to be taken to maintain the FSO and the CALM BUOY in or restore them to, the conditions stipulate in this CONTRACT, exercise due diligence so to maintain in restore the FSO and the CALM BUOY.

6.4.2 If the CONTRACTOR is in breach of his obligations under sub-article 6.4.1, the FSO and/or the CALM BUOY shall be off-hire, and no further TIME CHARTER RATE shall be due, until the CONTRACTOR has so demonstrated that it is exercising such due diligence.

6.4.3 Notwithstanding the provisions of this sub-article 6.4, the FSO shall not be drydocked during the CHARTER PERIOD without the prior written consent of the COMPANY.

6.5 Actual or Constructive Total Loss of the FSO and the CALM BUOY

6.5.1 Actual or Constructive Total Loss

In the event of loss or damage to the FSO and/or the CALM BUOY occurring during the CHARTER PERIOD caused by any reason whatsoever, which the CONTRACTOR has declared to its insurers to constitute an actual or a constructive total loss of the FSO (as defined in the FSO Hull & Machinery Insurance Policy) and/or the CALM BUOY, this CONTRACT shall be deemed terminated by the COMPANY as of the date of the said loss or if the time of such loss is uncertain, then the date the FSO and/or the CALM BUOY was last heard from.

6.5.2 Removal of the FSO and the CALM BUOY

If the COMPANY requires the removal of the FSO and the CALM BUOY, being a constructive or actual total loss, due to a requirement under APPLICABLE LAWS or

government authority, or the FSO or the CALM BUOY is otherwise causing an obstruction and/or interfering with the COMPANY's operations or proposed operations in the DESIGNATED WORK AREA, the CONTRACTOR shall at its cost remove the FSO and the CALM BUOY (or its wreck and debris) from the DESIGNATED WORK AREA and he shall dismantle and remove, if the COMPANY so requests, the subsea system at the COMPANY's expense.

6.5.3 No Termination Payments

For the avoidance of doubt and notwithstanding any other provision in this CONTRACT, the CONTRACTOR shall not be entitled to and the COMPANY shall not be required to make any payment under the termination provision of this CONTRACT in event of an actual or constructive total loss of the FSO and/or the CALM BUOY. Any TIME CHARTER RATE paid by the COMPANY in advance pursuant to the CONTRACT and not earned shall be returned to the COMPANY immediately.

Article 7 - CONTRACTOR PERSONNEL

7.1 The CONTRACTOR PERSONNEL shall be fully trained, competent, skilled, experienced and in sufficient number with respect to a normal and efficient performance of the WORK. The CONTRACTOR shall maintain records and certificates of all such training and shall provide them upon COMPANY's request.

7.2 The CONTRACTOR PERSONNEL shall, within their field of specialization, cooperate with COMPANY's PERSONNEL and COMPANY OTHER CONTRACTORS so as to secure optimal working efficiency.

7.3 The CONTRACTOR shall:

(a) ensure that no language problem arises between and among the CONTRACTOR PERSONNEL and COMPANY's PERSONNEL (working language shall be English);

(b) organize CONTRACTOR PERSONNEL's relief in accordance with COMPANY's instruction;

(c) ensure that all CONTRACTOR PERSONNEL have carried out relevant training courses for the position they occupy or work assignment and have been certified in this respect by a recognised agency acceptable to the COMPANY;

(d) ensure that all CONTRACTOR PERSONNEL shall hold relevant valid certificates required by APPLICABLE LAWS; and

(e) ensure that none of CONTRACTOR PERSONNEL shall stay on the FSO for a maximum period imposed by APPLICABLE LAWS.

7.4 CONTRACTOR's key PERSONNEL shall be fully qualified and experienced in the position which they occupy. The CONTRACTOR shall submit for prior approval by COMPANY, the names and resumes of his key PERSONNEL and shall not change any of them except in cases of serious illness or injury, or definitive resignation of such key PERSONNEL. In such cases, the CONTRACTOR shall submit for prior approval by the COMPANY the names and resumes of his proposed substitute key PERSONNEL.

7.5 Replacement of CONTRACTOR PERSONNEL

7.5.1 In the event of default, shortcoming, illness, injury, professional inadequacy, serious misconduct or error, or negligence, or non-compliance with discipline or safety regulations by any of the CONTRACTOR PERSONNEL, the CONTRACTOR shall promptly replace at his own expense, whether requested by the COMPANY or not, such CONTRACTOR PERSONNEL.

7.5.2 The same provision shall apply where the behavior of any of the CONTRACTOR PERSONNEL is likely to jeopardize the relations between the COMPANY and any government authorities or COMPANY OTHER CONTRACTORS.

7.5.3 Subject to sub-articles 7.5.1 and 7.5.2, the CONTRACTOR shall obtain prior approval from the COMPANY for any replacement of the CONTRACTOR PERSONNEL or to any modification to his/her assignment of work.

7.6 Labor Relations

The CONTRACTOR shall in the performance of the CONTRACT:

(a) assume sole responsibility for, and manage all aspects of, labor relations;

(b) ensure that the rates of pay and conditions of employment specified in any APPLICABLE LAWS, for all PERSONNEL engaged by the CONTRACTOR GROUP in relation to the CONTRACT, are always observed in full; and

(c) keep the COMPANY fully and promptly informed of labor relations problems or issues which affect or are likely to affect the performance of the CONTRACT.

Article 8 - Safety, Security, Health and Environment

The CONTRACTOR shall strictly comply and ensure the compliance of all member of the CONTRACTOR GROUP with the SSHE requirements as specified in Exhibit E and herein below. Prior to the CHARTER COMMENCEMENT DATE, the PARTIES shall use their best endeavor to develop a bridging document with respect to the performance of the CONTRACT. When the bridging document is finalized and agreed, the PARTIES shall comply with such document. Notwithstanding the sub-article 2.2.6, should there be any discrepancy between the SSHE requirements, the bridging document and this article 8, the order of precedence shall be as follows:

(i) SSHE requirements;
(ii) the bridging document; and
(iii) article 8

8.1 General

8.1.1 The CONTRACTOR shall be responsible for ensuring on the FSO at his own cost the safety and welfare of all PERSONNEL involved in the performance of the WORK.

8.1.2 The CONTRACTOR shall take all necessary associated measures with respect to health, safety, environment protection and security in relation with the performance of the WORK and shall inform the COMPANY of such measures.

8.2 Compliance with APPLICABLE LAWS relative to Safety and Environment

In accordance with sub-article 5.2, the CONTRACTOR shall in particular comply, and ensure compliance by all member of the CONTRACTOR GROUP, with all APPLICABLE LAWS relative to safety and environment and COMPANY's SSHE requirements as specified in Exhibit E.

8.3 CONTRACTOR's Safety Organization

8.3.1 The CONTRACTOR shall ensure that his functional organization and corresponding resources satisfy the requirements mentioned in sub-articles 8.1 and 8.2.

8.3.2 The CONTRACTOR shall appoint a safety representative for the CONTRACT who shall be responsible on behalf of the CONTRACTOR for all safety aspects including for identification of potential hazards associated with the performance of the WORK, the preparation of the safety procedures, and the control of their implementation. The safety representative shall perform a monthly safety inspection of the FSO and supplementary COMPANY's equipment.

8.3.3 The CONTRACTOR shall provide the COMPANY with copies of the CONTRACTOR's safety procedures and safety manuals which shall be displayed on the FSO and/or made available to all the PERSONNEL on board the FSO.

8.4 CONTRACTOR PERSONNEL's Safety Awareness and Training

8.4.1 In order to enhance safety performance and to avoid delays while performing the WORK, the CONTRACTOR, before the commencement of the WORK, shall carry out and provide to the COMPANY a worksite survey to assess working and safety conditions and to identify hazards.

8.4.2 During the course of the performance of the WORK, the CONTRACTOR shall ensure that the safety awareness of the CONTRACTOR PERSONNEL is continuously maintained and enhanced.

8.4.3 The CONTRACTOR shall ensure that no smoking takes place in the non-smoking areas.

8.5 Prohibited Substances

The CONTRACTOR agrees that no alcoholic beverages or illegal drugs are permitted on the FSO. The CONTRACTOR shall ensure that his SUBCONTRACTOR and CONTRACTOR PERSONNEL are made aware of and fully comply with this prohibition.

8.6 Safety Training

The CONTRACTOR shall ensure that all CONTRACTOR PERSONNEL have carried out basic safety training courses for the position they occupy including firefighting techniques and any other safety courses as required by any relevant governmental authorities and have been certified in this respect by an internationally recognised agency acceptable to the COMPANY and/or to any relevant governmental authorities. Certificates shall be made available to the COMPANY upon its request.

8.7 Handover of Safety Information

The CONTRACTOR shall ensure that all relevant information concerning safety with respect to the performance of the WORK are properly handed over from shift to shift and at the time of the periodical relief's of the CONTRACTOR REPRESENTATIVE and formally recorded.

8.8 Provision of Personal Protective Equipment

The CONTRACTOR shall provide CONTRACTOR PERSONNEL involved in the performance of the WORK with all items of equipment and clothing necessary for the safe and healthy conduct of the WORK. Such items shall be maintained in good condition or replaced and shall be worn as indicated by notices, instructions and good oil and gas field practices.

8.9 Packing and Cargo Handling

The CONTRACTOR shall comply with the COMPANY's specification and all applicable transport, packing and labeling regulations associated with both cargo handling/lifting equipment and means of shipment.

8.10 Safety Register

The CONTRACTOR shall maintain a safety register recording the results and dates of all the safety meetings and exercises and the periodical tests of his safety equipment performed on the FSO. The safety register shall be made available to the COMPANY upon its request.

8.11 Medical Services and First Aid Facilities

8.11.1 The CONTRACTOR shall be responsible for providing medical services and first aid facilities for all PERSONNEL on the FSO with one certified first-aider and medical equipment (fully equipped sick bay).

8.11.2 The CONTRACTOR shall authorize the COMPANY to perform at any time audits of such medical services and first aid facilities.

8.11.3 In the event of accident or search and rescue involving any of the CONTRACTOR PERSONNEL, the COMPANY hereby undertakes to make all reasonable efforts, provided however that in any case the COMPANY shall not assume any responsibility for such assistance:

(a) to provide first aid on the FSO pursuant to APPLICABLE LAWS and safety regulations in force,

(b) to provide or allow to be used any available communication means, and

(c) to provide or allow to be used, any transportation vehicles/craft available for the search and rescue and carrying of casualties from the FSO to the nearest hospital.

The costs of such search and rescue operations, transportation and hospital services performed for the CONTRACTOR PERSONNEL, shall be reimbursed to the COMPANY by the CONTRACTOR.

The decision to evacuate the CONTRACTOR PERSONNEL as a result of illness or injury shall be taken by the CONTRACTOR REPRESENTATIVE.

8.12 Hazardous or Toxic Materials

Prior to the commencement of the WORK, the CONTRACTOR shall submit for the COMPANY's review, written procedures (including manufacturer's safety data sheets and any other hazard information, transportation procedures, storage precautionary measures for such hazardous or toxic materials) for any WORK involving the handling or use of hazardous or toxic materials. Such review shall in no way be construed as relieving the CONTRACTOR of any of his obligations, responsibilities and liabilities under the CONTRACT or at law, including but not limited to obtaining relevant licenses and permits prior to commencement of WORK. Failure to comply with this requirement shall entitle the COMPANY to reject the said materials.

8.13 Housekeeping

The CONTRACTOR shall ensure that good housekeeping is maintained at all times on the FSO in respect of the performance of the WORK. Due regard shall be paid to living quarters' cleanness, tidiness and disposal of waste.

8.14 Cleaning-up of the WORKSITE

8.14.1 Throughout the performance of the WORK, the CONTRACTOR shall keep the FSO, its access, egress and surroundings, tidy, clean and free from obstructions resulting from the performance of the WORK.

8.14.2 Upon completion of the performance of the WORK on the WORKSITE, or termination of the CONTRACT, the CONTRACTOR shall promptly remove from such the WORKSITE any surplus of materials, wreck and debris, resulting from the performance of the WORK.

8.14.3 If the CONTRACTOR fails to satisfy the above requirements, the COMPANY, following appropriate notification to the CONTRACTOR, shall have the right to perform (or have performed) clean-up operations at the CONTRACTOR's expense, at any time.

8.15 Accident, Near Miss and Dangerous Occurrence and Anomaly Reports

8.15.1 The CONTRACTOR shall immediately report to the COMPANY all accidents, near misses, other dangerous occurrences and anomalies resulting in or having the potential to cause personnel injury or death, property damages or loss and shall provide the COMPANY with copies of report made to and/or required by any government authority and/or the flag state of the FSO.

8.15.2 The CONTRACTOR shall inform the COMPANY by the quickest and most expedient method available of any signs which might indicate a dangerous situation for all PERSONNEL present on the FSO, the environment, the FSO, COMPANY GROUP's property and equipment and shall take immediately all measures consistent with standards, good marine and oilfield practices and/or in accordance with safety and environment APPLICABLE LAWS.

8.16 Health - Medical Examination

The CONTRACTOR shall ensure prior to the commencement of the WORK and for the duration of the CONTRACT including the CHARTER PERIOD and extended CHARTER PERIOD that all CONTRACTOR PERSONNEL employed for the performance of the WORK are medically fit for the job they are assigned to. Medical fitness certificates issued by a recognized authority shall be made available to COMPANY upon its request.

8.17 Environmental Protection

8.17.1 At all time during the performance of the WORK, the CONTRACTOR shall take all necessary measure in order to prevent and/or to limit within the levels authorized by APPLICABLE LAWS and/or the COMPANY's SSHE requirements (Exhibit E), any discharge from any source under his care, custody or control whatsoever into the atmosphere, the ground and any body of water of any substance which might cause pollution or be deleterious to life or environment such as smoke, dust, oil, radioactive products or other atmospheric, ground or liquid pollutants.

8.17.2 Subject to sub-article 13.5, the CONTRACTOR shall be responsible for disposal of all waste emanating from the FSO and/or from any source under his care, custody or control during the performance of the WORK. The CONTRACTOR shall provide the COMPANY with a written statement of how and where such waste has been disposed of.

8.18 COMPANY's Alcohol and Drug Policy

8.18.1 The CONTRACTOR acknowledges that he has been advised and is subject to, and agrees that he shall advise the CONTRACTOR PERSONNEL that they are subject to the following:

(a) it is the policy of the COMPANY that the use, sale, transfer, purchase, possession, and/or presence in one's system of a controlled substance(s) or of alcoholic beverages by any person, and/or the presence of firearms on any WORKSITE or the COMPANY's property is prohibited;

(b) entry onto any WORKSITE and/or the COMPANY's property constitutes consent to (i) an inspection of one's person, personal effects and vehicle at any time while entering, on, or leaving the COMPANY's property, and (ii) laboratory or onsite testing (by witnessed urinalysis or otherwise) of the chemical in one's system to confirm the absence of any controlled substances, and/or alcohol content, if such testing is requested by the COMPANY;

(c) any person who is found in violation of the aforesaid policy, or who refuses to permit such inspection, or submit to such testing, shall be removed from the COMPANY's property and/or the WORKSITE, and may be barred at the discretion of the COMPANY; and

(d) all CONTRACTOR PERSONNEL shall be subject to such testing.

8.18.2 The CONTRACTOR shall allow access during normal business hours to his offices, property, and records for the COMPANY and/or any governmental representative with appropriate jurisdiction for the purpose of maintaining compliance with any relevant laws and regulations relating to such testing.

8.19 Security

The CONTRACTOR shall co-operate with the COMPANY on all security matters and shall promptly comply with any security requirement. The CONTRACTOR shall immediately report to the COMPANY any incidents with respect to security matters on the FSO and/or the CALM BUOY including losses, thefts, vandalism and/or unexplained disappearances.

8.20 Safety Equipment

The CONTRACTOR shall install, operate, maintain in first class condition and regularly test his fire fighting, life saving and all other safety equipment.

8.21 Safety Briefing Video

The CONTRACTOR is obligated to present the safety induction to all passengers. The safety induction must be conducted via safety briefing video which shall be prepared at CONTRACTOR's cost.

Article 9 - Financial Conditions

9.1 CONTRACT price

9.1.1 In full consideration of the performance of the WORK, the COMPANY shall pay the CONTRACTOR the amounts due and calculated according to the applicable rates and fees set out in this article 9 and Exhibit B.

9.1.2 Unless expressly provided otherwise in the CONTRACT, all rates and prices stated in the CONTRACT are:

(a) fixed and firm and shall not be subject to any adjustment, revision or escalation during the CONTRACT term; and

(b) deemed to be inclusive of everything necessary for the complete performance of the CONTRACT.

9.1.3 The CONTRACTOR shall not be entitled to receive any remuneration hereunder during any period of suspension of the performance of the WORK resulting from LOCAL STRIKES.

9.2 Rates

9.2.1 TIME CHARTER RATE

The CONTRACTOR shall be remunerated for the performance of the WORK at the TIME CHARTER RATE as specified in Exhibit B, except as otherwise specified in the CONTRACT.

9.2.2 Reduced rates

(a) LAY-UP rate

This rate shall apply during any LAY-UP period or should the performance of the WORK be laid up by the COMPANY as per sub-article 16.1.1 (a). The LAY-UP rate shall be as specified in Exhibit B.

(b) Other reduced rates as specified in Exhibit B.

9.2.3 In the event where two or more rates can be applied during any given period, the lowest rate shall apply.

9.3 Lump-Sum Fees

9.3.1 Disconnection and Demobilization Fees

Unless otherwise specified in Exhibits A and B, the disconnection fees for REDELIVERY shall be construed as the only remuneration, to the exclusion of any other indemnity, to be paid by the COMPANY for any and all operations and services carried out by the CONTRACTOR during the REDELIVERY.

The CONTRACTOR shall be at his own cost responsible for the demobilization fee for all operation and services carried out by the CONTRACTOR after the REDELIVERY.

9.3.2 Other Fees

Other lump sum fees, if any, for the performance of any part of the WORK shall be specified in Exhibit B.

9.4 Expenditure

Any expenditure of whatever nature incurred by the CONTRACTOR in connection with this CONTRACT for which responsibility has not been assumed in this CONTRACT by the COMPANY shall be for the account of the CONTRACTOR.

9.5 Bank Guarantee

9.5.1 The CONTRACTOR shall, within thirty (30) days after the EFFECTIVE DATE, provide the COMPANY with an irrevocable bank guarantee (in the form set out in Annex 2) payable on first demand of the COMPANY to guarantee his performance, obligations and liabilities under the CONTRACT. The COMPANY shall not be obliged to make any payments to the CONTRACTOR under the CONTRACT until it has received the bank guarantee pursuant to this sub-article 9.5.

9.5.2 The bank guarantee shall be issued by a bank or a bank branch located in Thailand and approved by the COMPANY.

9.5.3 The CONTRACTOR hereby agrees that the bank guarantee shall remain valid and undertakes to extend the validity hereof until the completion of the performance of the CONTRACT or the date on which this CONTRACT has been terminated pursuant to its terms whichever occurs first, plus one hundred and twenty (120) days in view to allow claim under the bank guarantee, if any. Should at any time and for any reason such bank guarantee expires or is proven unenforceable, the COMPANY shall be entitled to suspend any and all payments to the CONTRACTOR until the CONTRACTOR has provided the COMPANY with a new and satisfactory bank guarantee.

9.5.4 The bank guarantee shall be established in the same currency as the CONTRACT prices and its amount shall be equal to 10% of the annual ESTIMATED CONTRACT VALUE.

9.5.5 In the event that the CONTRACT is amended increasing the ESTIMATED CONTRACT VALUE, the CONTRACTOR shall ask the bank to increase the value of the bank guarantee (or to issue an additional bank guarantee) to cover the portion of the ESTIMATED CONTRACT VALUE that is increased within the reasonable period as specified by the COMPANY.

9.5.6 The COMPANY will only make a claim under the bank guarantee if the CONTRACTOR fails to perform any of his obligations or to fulfil any liability arising out of, or in connection with, the CONTRACT.

9.6 Parent Company Guarantee

9.6.1 Form of Parent Company Guarantee

The CONTRACTOR shall provide a Parent Company Guarantee from the ultimate parent company of the CONTRACTOR in the specific form set out in Annex 3.

9.6.2 Rights of COMPANY in case of Unsatisfactory Parent Company Guarantee

Should the CONTRACTOR fail, within thirty (30) days from EFFECTIVE DATE or within such longer period as the COMPANY may agree, to provide a satisfactory Parent Company Guarantee in accordance with the provisions of sub-article 9.6, the COMPANY shall not be obliged to make any payments to the CONTRACTOR until the CONTRACTOR has provided such satisfactory Parent Company Guarantee and the COMPANY shall have the right at any time, without prior notification and without any liability whatsoever, to suspend and/or terminate this CONTRACT under the provisions of sub-article 15.2.

Should, at any time and for any reason, the Parent Company Guarantee prove not to be enforceable, the COMPANY shall be entitled to suspend any and all payments to the CONTRACTOR until the CONTRACTOR has provided the COMPANY with a new and satisfactory Parent Company Guarantee.

9.7 Liquidated Damages

9.7.1 The CONTRACTOR acknowledges that time is of essence under the CONTRACT and hereby guarantees the timely performance of the CONTRACT, including but not limited to compliance with the CONTRACT requirements and conformity with the relevant APPLICABLE LAWS. The CONTRACTOR's failure to perform its obligations under the CONTRACT will entitle the COMPANY to liquidated damages payable by the CONTRACTOR to the COMPANY as specified in Exhibit B.

9.7.2 If the CONTRACTOR claims an extension of time for the CHARTER COMMENCEMENT DATE, then to the extent that the delay was caused by any act, default or omission of the COMPANY or a FORCE MAJEURE occurrence (other than a FORCE MAJEURE occurrence arising after the CHARTER COMMENCEMENT DATE), the CONTRACTOR shall be entitled to such extension of time as the COMPANY acting reasonably assesses and directs.

9.7.4 All amounts of liquidated damages for which the CONTRACTOR may become liable are agreed as a genuine pre-estimate of the losses which may be sustained by the COMPANY in the event that the CONTRACTOR fails to meet the relevant obligation and are not a penalty. Payment of such liquidated damages shall not relieve the CONTRACTOR from any of his obligations or liabilities under the CONTRACT or at law. The COMPANY reserves its right to call upon such amount from bank guarantee, demand such amount from the CONTRACTOR and/or deduct such amount from the payment(s) made to the CONTRACTOR.

Article 10 - Taxes

10.1 Responsibility of the CONTRACTOR

10.1.1 Except for Value Added Tax (hereinafter referred to as "**VAT**") which the CONTRACTOR is required under applicable laws and sub-article 10.1.2 to charge on the provision of WORK of this CONTRACT, the CONTRACTOR shall assume full responsibility and liability for payment of all taxes, duties, stamp duties, levies, charges, fiscal contributions, and other charges, including but not limited to employment taxes, taxes imposed by trade union contracts, contributions for unemployment and redundancy, old age benefits, welfare funds, pensions, annuities and disability allowances, withholding taxes, personal income taxes, property taxes, capital gain taxes, turnover taxes and/or corporate taxes (including penalties and interest thereon) for which the CONTRACTOR is liable and/or that are from time to time imposed on or assessed against the CONTRACTOR by:

(a) any government authorities; and/or

(b) any fiscal or other authority whatsoever,

in each case in respect of or arising out of:

(i) the CONTRACTOR PERSONNEL (whether or not such taxes, levies, charges and contributions are measured by wages, salaries, benefits, expenses and/or other remunerations);

(ii) the performance or non-performance of the CONTRACT by the CONTRACTOR; and/or

(iii) the income, profits, dividends, turnover and gains of the CONTRACTOR arising directly or indirectly out of the performance of the CONTRACT.

The CONTRACTOR shall ensure that any SUBCONTRACTOR shall comply with this sub-article 10.1.

10.1.2 When the CONTRACTOR is registered in Thailand for **VAT**, he will invoice the COMPANY accordingly for the WORK. The CONTRACTOR shall provide the COMPANY with a copy of his VAT registration certificate on or before the issuance of the first tax invoice to the COMPANY. Failing to provide such certificate will entail withholding of payment of invoices.

10.1.3 The CONTRACTOR shall be liable for and shall indemnify, defend and hold harmless each member of the COMPANY GROUP from and against all CLAIMS arising out of, related to or in connection with, any of the taxes, duties, levies, charges, fiscal contributions and other charges (including penalties and interest thereon) which by the terms of this sub-article 10.1 the CONTRACTOR is liable for or which may be imposed on him or assessed against him (including any applicable reporting or procedural requirements).

10.1.4 Except for VAT imposed on the CONTRACT price that is payable by the COMPANY to the CONTRACTOR, the CONTRACTOR represents and warrants that he has taken into account in establishing the rates and fees set out in the CONTRACT, all taxes, duties, levies, charges, fiscal contributions and other charges for which he is liable or which may be imposed on him as provided by this sub-article 10.1.

10.2 Statutory Deductions

10.2.1 Where under the provisions of any APPLICABLE LAWS, the COMPANY is required to deduct any amount, whether as tax or howsoever called, the COMPANY shall deduct the specified amount or rate from any amount payable to the CONTRACTOR. The COMPANY shall pay over or deal with any amount so deducted in accordance with APPLICABLE LAWS.

10.2.2 The COMPANY shall hand over to the CONTRACTOR receipts evidencing payment of such withholding within one (1) month upon requested by the CONTRACTOR.

10.2.3 Where the CONTRACTOR claims to be exempted from any statutory deductions pursuant to APPLICABLE LAWS, he shall inform the COMPANY and provide any necessary documentation to support his case, including certificate of exemption from the relevant authority. The COMPANY may act on the information given at its discretion and shall not be liable to the CONTRACTOR or any other person or body in the event that the COMPANY applies the statutory deduction according to the APPLICABLE LAWS.

Article 11 - Import, Export and Re-export

11.1 The CONTRACTOR shall comply with all applicable customs requirements and procedures to obtain customs clearance for the importation, exportation or re-exportation of all of his FSO, the CALM BUOY, equipment, consumable, spare parts, and belongings of the CONTRACTOR PERSONNEL. With respect to such procedures the CONTRACTOR shall under his own responsibility, prepare, issue and submit the documents required in due time to customs authority and/or to the COMPANY, as the latter may so instruct.

11.2 The CONTRACTOR shall be liable for and shall indemnify, defend and hold harmless each member of the COMPANY GROUP from the consequences of any error or omission in documents prepared and/or submitted by the CONTRACTOR, resulting in failure of customs authorities to provide timely authorizations.

11.3 The CONTRACTOR shall bear at his sole cost, risk and liability and the COMPANY shall not reimburse customs duties, port dues, brokerage fees and other similar import or export/ re-export charges imposed on all of his FSO, the CALM BUOY, equipment, consumable, spare parts, and belongings of the CONTRACTOR PERSONNEL. The COMPANY will advise the CONTRACTOR about any possible exemption, remission, refund or rebate of such charges to which the CONTRACTOR is entitled to, subject to compliance with APPLICABLE LAWS and COMPANY's instructions.

11.4 The CONTRACTOR shall not use for any purpose other than the COMPANY's operation, nor sell scrap, materials or all of his FSO, the CALM BUOY, equipment, consumable, spare parts, and belongings of the CONTRACTOR PERSONNEL imported under the COMPANY's name, inside Thailand. At the end of the WORK, the CONTRACTOR shall re-export such scrap, materials or all of his FSO, the CALM BUOY, equipment, consumable, spare parts, and belongings of the CONTRACTOR PERSONNEL imported under the COMPANY's name for the performance of the WORK hereunder, out of Thailand in accordance with the APPLICABLE LAWS. The CONTRACTOR shall be liable for and shall indemnify, defend and hold harmless each member of

the COMPANY GROUP from and against all CLAIMS arising out of, or in any way connected with, the failure of the CONTRACTOR to comply with the foregoing provisions.

Article 12 - Invoicing, Payment and Audit

12.1 Issuance of Invoices

12.1.1 Unless otherwise specified in Exhibit B, the CONTRACTOR shall invoice the COMPANY:

(a) if the WORK exceeds one month in duration, then monthly; or

(b) otherwise, at the completion of the WORK.

12.1.2 Notwithstanding sub-article 12.1.1, the CONTRACTOR shall be entitled to invoice the COMPANY for demobilization fees according to sub-article 9.3.2 on or after the actual REDELIVERY.

12.1.3 All invoices shall be supported by appropriate documentation and duly approved by the COMPANY REPRESENTATIVE.

12.1.4 The CONTRACTOR shall send separate invoices for mobilization fee, daily rates, demobilization fee, and additional service charges.

12.2 Content of Invoices and Billing Procedure

Unless otherwise advised by the COMPANY in writing, the CONTRACTOR shall submit complete set of invoices together with supporting documents in accordance with the specified procedure in Exhibit B.

12.3 Payment

12.3.1 All payments payable under the CONTRACT shall be made:

(a) in the currency set out in Exhibit B; and

(b) by bank transfer to a bank account advised by the CONTRACTOR.

12.3.2 All properly established invoices received by the COMPANY in its office from the 1st to the 15th of each month will be paid within the 15th of the following month, and all properly established invoices received by the COMPANY in its office from the 16th to the end of the month, will be paid within the end of the following month. If the last day for payment falls on a Saturday, Sunday, public holiday or bank holiday, the payment shall be made on the next working day.

12.3.3 Notwithstanding sub-article 12.3.1(a),

(a) payments made under, or in connection with, the CONTRACT are subject to applicable banking and currency control regulations of the relevant government. Should any conversion of currencies be required for such payments, the basis for such conversions shall be the average of closing buying rates “Sight Bill” and selling rates, announced by the Bank of Thailand two (2) working days before the payment date; and

(b) subject to sub-article 12.3.3(a), payment for reimbursements of costs and expenses under the CONTRACT shall be made in the currency originally paid by the CONTRACTOR unless otherwise agreed.

12.3.4 Any payment by the COMPANY is made on the condition that the COMPANY reserves the right to subsequently challenge the validity of any invoiced amounts. In particular, the COMPANY's:

(a) payment for, or acceptance of, any WORK;

(b) payment of, or objection or failure to object to, any invoice; or

(c) payment or settlement in resolution of any dispute,

or any combination thereof shall not be construed as the COMPANY's acceptance of:

(d) unsatisfactory or defective WORK; or

(e) the accuracy or justification of the CONTRACTOR's invoices,

and shall not constitute a waiver of the COMPANY's rights pursuant to the CONTRACT or otherwise at law.

12.4 Deduction of Money due

The COMPANY may deduct any debt or money due from the CONTRACTOR to the COMPANY under the CONTRACT from any monies that may be, or may become, payable to the CONTRACTOR by the COMPANY pursuant to the CONTRACT. The COMPANY shall give the CONTRACTOR notice of its intention to deduct or set off any monies as aforesaid, and shall furnish the CONTRACTOR with reasons therefore. This sub-article 12.4 does not limit the COMPANY's right to recover these amounts from the CONTRACTOR in any other way. This provision shall survive expiration or termination of this CONTRACT.

Payment due to the CONTRACTOR may be withheld by the COMPANY on account of unsatisfactory performance of the CONTRACT, the filing of claims against the COMPANY caused by acts or omissions of the CONTRACTOR or failure of the CONTRACTOR to pay amounts when due for labor or materials used by the CONTRACTOR in performing the WORK or amounts due to the SUBCONTRACTOR for the WORK. The COMPANY shall release such withheld payment to the CONTRACTOR when such default by the CONTRACTOR has been rectified and satisfied by the COMPANY.

12.5 Disputed Invoices

12.5.1 If the COMPANY disputes all or part of any invoice, it shall return the invoice to the CONTRACTOR specifying in writing the reasons for its rejection within three (3) weeks of the receipt of the invoice.

12.5.2 The CONTRACTOR may then either:

(a) send back any revised invoice to the satisfaction of the COMPANY;

(b) issue a credit note to the satisfaction of the COMPANY referring to the disputed invoice; or

(c) send back an invoice covering the non-disputed part. The invoice for the disputed part may be sent, as the case may be, after the settlement of the dispute.

12.6 Limit of Time for Invoicing

The COMPANY reserves the right to refuse any invoices submitted by the CONTRACTOR more than three (3) months after the date at which he should have been invoiced in accordance with the CONTRACT.

12.7 CONTRACTOR's CLAIMS

Any possible CLAIM of the CONTRACTOR shall be submitted at the time of the occurrence of the originating event and at the latest within one (1) month of the commencement of such event, failing which the CONTRACTOR shall be debarred from any entitlement to submit such a CLAIM.

12.8 COMPANY's Right to audit

12.8.1 The CONTRACTOR shall keep proper books, records and accounts of the CONTRACT during the CONTRACT term and for a period of five (5) years following the termination or expiration of the CONTRACT, as the case may be.

12.8.2 The COMPANY may conduct an audit of such books, records and accounts for verification of any sum payable under CONTRACT. The CONTRACTOR shall assist the COMPANY in conducting an audit by granting access, at all reasonable times, to the books, records and accounts maintained by the CONTRACTOR.

12.8.3 Should the audit shows that any sums have been improperly paid by the COMPANY to the CONTRACTOR, such sums shall be reimbursed to the COMPANY by the CONTRACTOR within thirty (30) days following such discovery.

Article 13 - Liability and Indemnity

13.1 Liability for Breach of APPLICABLE LAWS

The CONTRACTOR shall be solely liable for, and shall indemnify, defend and hold harmless each member of the COMPANY GROUP from and against, all CLAIMS and/or all other consequences resulting from the breach of APPLICABLE LAWS by any member of the CONTRACTOR GROUP.

13.2 Personal Injury

13.2.1 The CONTRACTOR shall be solely liable for, and shall indemnify, defend and hold harmless, each member of the COMPANY GROUP from and against all CLAIMS that relate to personal injury (including illness, death or disease) to any:

(a) member of the CONTRACTOR GROUP regardless of cause, including negligence, breach of duty or other fault of any member of the COMPANY GROUP; and

(b) THIRD PARTY to the extent attributable to the negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP.

13.2.2 The COMPANY shall be solely liable for, and shall indemnify, defend and hold harmless, each member of the CONTRACTOR GROUP from and against all CLAIMS that relate to personal injury (including illness, death or disease) to any:

(a) member of the COMPANY GROUP regardless of cause, including negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP; and

(b) THIRD PARTY to the extent attributable to the negligence, breach of duty or other fault of any member of the COMPANY GROUP.

13.3 Property Damage

13.3.1 The CONTRACTOR shall be solely liable for, and shall indemnify, defend and hold harmless, each member of the COMPANY GROUP from and against all CLAIMS that relate to loss of, or damage to:

(a) the FSO, the CALM BUOY and any other property or equipment owned, hired or leased by any member of the CONTRACTOR GROUP, regardless of cause, including negligence, breach of duty or other fault of any member of the COMPANY GROUP; and

(b) any property of any THIRD PARTY to the extent attributable to the negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP.

13.3.2 The COMPANY shall be solely liable for, and shall indemnify, defend and hold harmless, each member of the CONTRACTOR GROUP from and against all CLAIMS that relate to loss of, or damage to:

(a) any property (including the PRODUCT) or equipment (other than the FSO and the CALM BUOY) owned, hired or leased by any member of the COMPANY GROUP, regardless of cause, including negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP; and

(b) any property of THIRD PARTY to the extent attributable to the negligence, breach of duty or other fault of any member of the COMPANY GROUP.

13.3.3 GENERAL AVERAGE shall be adjusted in Bangkok, Thailand by a recognized GENERAL AVERAGE ADJUSTER, which shall be mutually appointed by the PARTIES, according to the last edition of York/Antwerp Rules at the date of the CONTRACT.

However the CONTRACTOR on behalf of interests concerned with the FSO, the COMPANY on behalf of interests concerned with cargo, waive any right of claiming contribution to GENERAL AVERAGE expenses and/or sacrifices against the other PARTY; this waiver is not to be construed as applicable to awards claimed by salvors and related costs which shall be apportioned in proportion to salved values or as provided by salvage arbitrators.

13.4 CONSEQUENTIAL LOSS

Without prejudice to any liquidated damages or other compensation provisions stipulated for delay, non-performance, mis-performance or otherwise under this CONTRACT:

(a) the COMPANY shall be solely liable for, and shall indemnify, defend and hold harmless each member of the CONTRACTOR GROUP from, CONSEQUENTIAL LOSS incurred by any member of the COMPANY GROUP as a result of, or in any way connected with, the performance or non-performance of the CONTRACT, regardless of cause, including negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP; and

(b) the CONTRACTOR shall be solely liable for, and shall indemnify, defend and hold harmless each member of the COMPANY GROUP from, CONSEQUENTIAL LOSS incurred by any member of the CONTRACTOR GROUP as a result of, or in any way connected with, the performance or non-performance of the CONTRACT, regardless of cause, including negligence, breach of duty or other fault of any COMPANY GROUP.

13.5 Pollution

13.5.1 Notwithstanding sub-articles 13.2.2(b) and 13.3.2(b) and subject to sub-articles 13.2.2(a) and 13.3.2(a), the CONTRACTOR shall be solely liable for, and shall indemnify and hold harmless, each member of the COMPANY GROUP against all CLAIMS that relate to any pollution, contamination or environmental damage (including clean-up costs) caused by leaks, spills or other distribution, dissemination or discharge of pollutants, contaminants, flora and fauna pests, and foreign bodies, particles and materials emanating on or from the FSO (including the CALM BUOY) and any other property or equipment owned, hired or leased by any member of the CONTRACTOR GROUP at DESIGNATED WORK AREA or other premise of the CONTRACTOR GROUP including CLAIMS for pollution clean-up and environmental damage caused by the escape of hydrocarbons (including PRODUCT), bunker oil, chemicals, dopes, waste or other noxious substances emanating from the CONTRACTOR GROUP's property including the FSO and the CALM BUOY, regardless of cause, including negligence, breach of duty or other fault of any member of the COMPANY GROUP.

13.5.2 Notwithstanding sub-articles 13.2.1(b) and 13.3.1(b) and subject to sub-articles 13.2.1(a) and 13.3.1(a), the COMPANY shall be solely liable for, and shall indemnify and hold harmless, each member of the CONTRACTOR GROUP against all CLAIMS that relate to any pollution, contamination or environmental damage (including clean-up costs) caused by leaks, spills or other distribution, dissemination or discharge of pollutants, contaminants, flora and fauna pests, and foreign bodies, particles and materials from any reservoir in the RELEVANT FIELDS, installation, facility or other property or equipment (other than the FSO and the CALM BUOY) owned, hired or leased by any member of the COMPANY GROUP, including that which may result from fire, blowout, cratering, seepage or any other uncontrolled flow of oil, gas or water from a well owned or operated by the COMPANY, regardless of cause, including negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP.

13.5.3 Without relieving the CONTRACTOR of any of his obligations under the CONTRACT, if the CONTRACTOR fails to timely undertake, control or remove any pollution, contamination or environmental damage that is the responsibility of the CONTRACTOR under sub-article 13.5.1, the COMPANY may take part to any degree it deems reasonably necessary in the control and removal of such pollution, contamination or environmental damage and the CONTRACTOR shall reimburse the COMPANY for the actual documented costs and expenses incurred by the COMPANY in doing so.

13.5.4 The CONTRACTOR shall be responsible for the raising, decontamination, removal, disposal of and when appropriate the raising, removal, destruction, lighting or marking of any wreck from the FSO and/or the CALM BUOY where required by and in accordance with the APPLICABLE LAWS or by order of any lawful authority having jurisdiction over the area where the FSO and/or the CALM BUOY are placed.

The CONTRACTOR shall indemnify, defend and hold harmless the COMPANY against all CLAIMS arising out of, in relation to or in connection with a failure to comply with the obligations under this sub-article 13.5.4.

13.5.5 Notwithstanding sub-articles 13.2.1(b), 13.2.2(b), 13.3.1(b), and 13.3.2(b), the COMPANY shall be solely liable for, and shall indemnify, defend, and hold harmless each

member of the CONTRACTOR GROUP from and against, all CLAIMS from THIRD PARTY in respect of loss of or damage to any THIRD PARTY's property or injury or death caused to THIRD PARTY due to fire, blow-out, cratering or pollution or any other manifestation emanating from a well owned and/or operated by the COMPANY.

13.6 Intellectual Property

The CONTRACTOR shall be solely liable for, and shall indemnify and hold harmless, each member of the COMPANY GROUP from and against all CLAIMS arising out of any actual or alleged infringement or violation of any THIRD PARTY's intellectual property rights (including patent, licence, copyright or any other intellectual or industrial property rights) concerning WORK, any process, method or items used or supplied by any member of the CONTRACTOR GROUP under the CONTRACT.

13.7 Wells and Reservoirs

The COMPANY shall be solely liable for, and shall indemnify, defend and hold harmless each member of the CONTRACTOR GROUP from and against, all CLAIMS in respect of loss of or damage to any underground reservoir or formation or damage to, or loss of a well and for regaining control of a well owned by the COMPANY and/or operated by the COMPANY which has experienced blow-out, uncontrolled well flow or cratering and for cost of re-drilling of a well owned by the COMPANY and/or operated by the COMPANY, regardless of cause, including negligence, breach of duty or other fault of any member of the CONTRACTOR GROUP.

13.8 GROSS NEGLIGENCE

Except for sub-article 13.4,

(a) the exclusions, limitations and indemnities given by the COMPANY under the CONTRACT shall not apply to the extent that there is GROSS NEGLIGENCE by any member of the CONTRACTOR GROUP; and
(b) the exclusions, limitations and indemnities given by the CONTRACTOR under the CONTRACT shall not apply to the extent that there is GROSS NEGLIGENCE by any member of the COMPANY GROUP.

13.9 Holding Harmless

13.9.1 If a member of the COMPANY GROUP is subject to any CLAIM for which the CONTRACTOR is liable under this article 13, then the other CONTRACTOR shall indemnify, defend and hold harmless that member of the COMPANY GROUP.

13.9.2 The CONTRACTOR shall be responsible for the defense of any CLAIM brought against any member of the COMPANY GROUP in respect of which the CONTRACTOR is liable under this article 13 and shall satisfy any judgment against any member of the COMPANY GROUP resulting therefrom. The COMPANY shall be entitled to but not obliged to participate in the defense of any CLAIM to which it or any member of the COMPANY GROUP is a party without relieving the CONTRACTOR of his responsibility for the defense of that CLAIM. Upon receiving a notice of any CLAIM brought against it or any member of the COMPANY GROUP, the COMPANY shall promptly deliver the full particulars of that CLAIM to the CONTRACTOR and shall render all reasonable assistance that the CONTRACTOR requests in the defense of the CLAIM.

13.9.3 Sub-articles 13.9.1 and 13.9.2 shall apply mutatis mutandis in the case of a CLAIM against a member of the CONTRACTOR GROUP in respect of which the COMPANY is liable under this article 13.

13.10 Waivers of Recourse and Indemnities

The CONTRACTOR shall sign the counterpart of the "Mutual Indemnity and Waiver of Recourse Agreement" (Version for the CONTRACTOR) attached hereto as Annex 1.A. The CONTRACTOR shall also obtain from his SUBCONTRACTOR, the signature of like counterparts of the "Mutual Indemnity and Waiver of Recourse Agreement" (Version for CONTRACTOR's SUBCONTRACTOR) attached hereto as Annex 1.B.

13.11 Labour Claims

All CONTRACTOR PERSONNEL are under exclusive direction and control of CONTRACTOR. Accordingly, the CONTRACTOR shall be solely liable for, and shall indemnify, defend and hold harmless each member of the COMPANY GROUP from and against, all CLAIMS that relate to employment or labour disputes in connection with the CONTRACTOR PERSONNEL.

Article 14 - Insurance

14.1 Policies and Limits

The CONTRACTOR shall at his own cost and expense obtain or cause to be obtained from insurers acceptable to the COMPANY the following insurances, it being understood that the risks may be covered by insurance policies in a different way than the one indicated below provided that all such risks are properly covered:

14.1.1 CALM BUOY and FSO Modification/Conversion, Hook up, Installation and Offshore Commissioning Period

(a) **Construction All Risk Insurance (CAR Insurance)** covering the WORK during the course of construction for the physical loss and/or physical damage of the FSO and CALM Buoy System and any liability arising. This CAR insurance shall be in effect to include design, engineering, procurement, fabrication, transit, installation, hook-up and offshore commissioning. CAR Insurance should be effective until FINAL ACCEPTANCE CERTIFICATE is issued.

(b) **Workmen's Compensation Insurance** to comply fully with the limits and provisions of APPLICABLE LAWS and agreements made with employees.

(c) **Employer's Liability Insurance** to include coverage for legal expenses anywhere in the world, with a limit of not less than USD 3,000,000 per occurrence or the limit required by APPLICABLE LAWS, whichever is higher.

(d) **Automobile Public Liability Insurance** (If Applicable) to cover all automobiles and automotive equipment employed, if any, by the CONTRACTOR for not less than the amount required by the APPLICABLE LAWS or USD 1,000,000 combined single limit per occurrence, whichever is higher.

(e) **Hull and Machinery Insurance** for CONTRACTOR GROUP's vessels, if any, used in the performance of the construction work covering the full value of each vessel.

(f) **Protection and Indemnity Insurance**, including, but not limited to, coverage for crew liability, third party bodily injury and property damage liability, collision liability, pollution liability and coverage for cost of removal of wreck and/or debris with a member of the International Group of Protection and Indemnity clubs or the equivalent in respect of CONTRACTOR GROUP's vessels employed by CONTRACTOR.

(g) Any other insurances as may be required by the APPLICABLE LAWS.

14.1.2 Operation & Maintenance Period

(a) **Workmen's Compensation Insurance** to comply fully with the limits and provisions of APPLICABLE LAWS and agreements made with employees.

(b) **Employer's Liability Insurance** to include coverage for legal expenses anywhere in the world, with a limit of not less than USD 3,000,000 per occurrence or the limit required by APPLICABLE LAWS, whichever is higher.

(c) **Automobile Public Liability Insurance** (If Applicable) to cover all automobiles and automotive equipment employed, if any, by the CONTRACTOR for not less than the amount required by the APPLICABLE LAWS or USD 1,000,000 combined single limit per occurrence, whichever is higher.

(d) **Hull and Machinery Insurance** covering to their full value of the FSO, their equipment and appurtenances, employed by the CONTRACTOR.

(e) **Protection and Indemnity Insurance**, including, but not limited to, coverage for crew liability, third party bodily injury and property damage liability, collision liability, pollution liability and coverage for cost of removal of wreck and/or debris with a member of the International Group of Protection and Indemnity clubs or the equivalent in respect of the FSO supplied by the CONTRACTOR hereunder for no less than USD 500,000,000. For the FSO not owned by the CONTRACTOR, the CONTRACTOR shall obtain charterer's liability insurance if not otherwise covered by the other Liability Insurances.

(f) **All Risks Insurance** covering the full value of the CONTRACTOR equipment and other property employed by the CONTRACTOR including, but not limited to, CALM BUOY, mooring anchors and subsea risers.

(g) Any other insurances as may be required by the APPLICABLE LAWS.

14.1.3 Disconnection and Demobilization of the CALM BUOY and the FSO

The CONTRACTOR shall at his own cost and expense obtain or cause to be obtained maintain Decommissioning Liability Insurance of the FSO and the CALM BUOY and any other insurance as may be required by the APPLICABLE LAWS.

The above insurances shall be maintained in full force and effect throughout the duration of this CONTRACT including any extension periods thereof.

14.2 Special Provisions

14.2.1 The CONTRACTOR adheres that insurances certificates shall comply with the following requirements:

(a) For all insurances:

(i) waive their rights of subrogation

CONTRACTOR's insurances shall contain provisions whereby the insurers waive their rights of subrogation against the COMPANY GROUP, other parties bound by the "Mutual Indemnity and Waiver of Recourse Agreements" referred to under article 14 and their respective insurers in accordance with the liabilities assumed by the CONTRACTOR under the provision of article 14.

(b) For liabilities insurances except Workmen Compensation and Employer Liability Insurance:

(i) Additional insured parties

To the extent of liability assumed or indemnified given by CONTRACTOR herein, the CONTRACTOR shall include the COMPANY GROUP as additional insured parties in the liability insurance policies listed in sub-articles 14.1, except Protection and Indemnity Insurance which the COMPANY GROUP shall be included as "co-assured" or "protective co-assured" or "additional assured" with respect to operations conducted under the CONTRACT.

(ii) Primary Insurance

The liability insurance policies are primary insurance, to the extent of the liabilities assumed by CONTRACTOR under the CONTRACT, for all additional insured parties. And other insurance carried by COMPANY and its CO-VENTURER, shall not be caused upon to contribute or participate on the basis of contributing, concurrent, double insurance or otherwise.

(iii) Cross Liabilities

The liability insurance policies shall contain a cross liability clause so that the COMPANY and the CONTRACTOR are regarded as the third parties to each other.

14.2.2 The limits specified in sub-article 14.1.1 and 14.1.2 are minimum requirements and not limits of liability. They should not be construed as COMPANY's consent to substitute its financial liability in excess of the limits specified above except as otherwise agreed in the CONTRACT.

14.2.3 All deductibles applicable to CONTRACTOR's insurances with or without the specific consent of the COMPANY shall be for the account of the CONTRACTOR.

14.2.4 As soon as the CONTRACTOR is aware of any circumstance which may engage the responsibility of the COMPANY and which may give rise to a CLAIM under his liability insurances, including Employer's Liability Insurance, the CONTRACTOR shall give written notice of such circumstance to his insurers with copy to the COMPANY. Such notification shall make reference to the provision that the COMPANY is an additional assured in respect of CLAIMS made against the COMPANY GROUP arising out of liabilities accepted by the CONTRACTOR under the CONTRACT.

14.2.5 The CONTRACTOR represents and warrants that all insurances pertaining to the CONTRACT comply with this article 14.

14.2.6 The provision of insurance certificates to COMPANY shall not fix the COMPANY with the contents thereof and shall not be a defense to any CLAIMS by the COMPANY against the CONTRACTOR GROUP.

14.2.7 Articles 13 and 14 shall be applicable to CONTRACTOR's SUBCONTRACTORS. The CONTRACTOR shall ensure that each SUBCONTRACTOR is properly insured for its liabilities.

Such insurance shall be compatible with the terms of articles 13 and 14 hereof where appropriate and shall in particular take into account the application of the Mutual Indemnity and Waiver of Recourse Agreement in the case of each SUBCONTRACTOR.

Any deficiency in the coverage, amounts, policy limits or provisions of any SUBCONTRACTOR's insurance shall be the sole responsibility of the CONTRACTOR.

14.3 Before the commencement of the WORK under the CONTRACT, the CONTRACTOR shall furnish the COMPANY with certificates of insurance and thereafter renewals thereof to comply with the requirements set out in this article 14.

Article 15 - Off-Hire and/or Termination of the CONTRACT attributable to CONTRACTOR's Default

15.1 Off-Hire

15.1.1 The FSO shall be off-hire and the TIME CHARTER RATE shall not be due and payable to the CONTRACTOR in the event that there is a substantial reduction in loading or offloading operations of the FSO due to reasons attributable to the CONTRACTOR including, but not limited to, the following:

(a) mechanical breakdown of the FSO system, including the components of the export system, machinery or boilers, or storage capacity, the CALM BUOY and Mooring and Riser Systems, or Risers resulting from a defect in the equipment or materials of the FSO or any similar cause preventing the efficient working of the FSO;
(b) collision, stranding, fire or accident caused by or contributed to by the CONTRACTOR GROUP;
(c) detention of the FSO and/or the CALM BUOY by authorities in country or abroad in consequence of legal action against the FSO and/or the CALM BUOY or the CONTRACTOR (unless brought about by the negligence of the COMPANY);
(d) requisition of the FSO and/or the CALM BUOY by any government or governmental authority;
(e) failure to comply with the terms of this CONTRACT including the COMPANY's environmental and safety requirements and applicable safety laws and regulations;
(f) any other cause (unless resulting from any act or omission of the COMPANY GROUP) which renders the FSO and/or the CALM BUOY incapable of efficiently performing the WORK;
(g) strike, refusal to perform the WORK or other breach of orders or neglect of duty on the part of the CONTRACTOR PERSONNEL;
(h) the FSO disconnecting from the CALM BUOY without the COMPANY's approval except where such disconnection is in the Master's absolute discretion, required in the interests of the safety of the FSO, CONTRACTOR PERSONNEL, and COMPANY GROUP's PERSONNEL working at the DESIGNATED WORK AREA;

(i) due to failure of the CONTRACTOR to conduct his operations of the FSO and/or the CALM BUOY in a diligent, skillful and workmanlike manner including, but not limited to failure to furnish or to maintain the FSO and/or the CALM BUOY in good and suitable condition for the intended use. The COMPANY shall give the CONTRACTOR written notice in which the COMPANY shall specify the causes of its dissatisfaction and the CONTRACTOR shall commence to remedy expeditiously and continuously the matters complained of within two (2) days after receipt of the said notice; or

(j) wreckage or total loss or constructive total loss of the FSO and/or the CALM BUOY system

The TIME CHARTER RATE shall cease to be due or payable from the commencement of such reduction in production until the FSO and the CALM BUOY are again ready to resume full production as verified by the COMPANY. Notwithstanding the above, this sub-article 15.1.1 shall not apply where failure is due to COMPANY SUPPLIED EQUIPMENT.

15.1.2 Without prejudice to any other rights under the CONTRACT, in the event that there is any defect or any breakdown in the equipment or materials or any similar of the FSO and/or the CALM BUOY whether or not it causes preventing the efficient working of the FSO and/or the CALM BUOY, the CONTRACTOR shall, within three (3) days after receiving a written notice of the COMPANY, provide a plan to rectify or remedy such defect or breakdown to the COMPANY to review and agree. If the CONTRACTOR fails to i) provide the plan within the period notified by the COMPANY or ii) rectify or remedy the defect or breakdown in accordance with the agreed plan, the FSO shall be off-hire and the TIME CHARTER RATE shall not be due and payable to the CONTRACTOR until the defect or breakdown has been remedied in accordance with the agreed plan.

15.1.3 Any lost time during which the FSO and/or the CALM BUOY is off-hire as provided in sub-articles 15.1.1 and 15.1.2 shall count as part of the CHARTER PERIOD and shall not result in any extension of the CHARTER PERIOD.

15.1.4 The cost of any extra fuel consumed while the FSO is off-hire shall be borne by the CONTRACTOR.

15.1.5 The off-hire pursuant to this sub-article 15.1 shall not relieve the CONTRACTOR from any of his obligations under the CONTRACT.

15.2 <u>Termination of the CONTRACT attributable to the CONTRACTOR's Default</u>

15.2.1 Without prejudice to any other rights under the CONTRACT, the COMPANY shall have the right to terminate whole or part of the CONTRACT:

(a) if the CONTRACTOR fails to comply with sub-article 5.4 within one hundred and eighty (180) days after the CHARTER COMMENCEMENT DATE specified in sub-article 3.2;

(b) if the CONTRACTOR fails, neglects or refuses to carry out any part of the WORK required under the CONTRACT;

(c) if the CONTRACTOR has not remedied his deficiency within a reasonable period of time;

(d) if the FSO or the CALM BUOY's off-hire lasts more than thirty (30) days;

(e) if the CONTRACTOR, in COMPANY's opinion, through act or omission, seriously delays or impedes the progress of the performance of the WORK or endangers COMPANY's operations or is likely to bring the COMPANY into disrepute;

(f) if the CONTRACTOR commits any breach of any provision of the CONTRACT;

(g) in case of CONTRACTOR GROUP's GROSS NEGLIGENCE;

(h) if the CONTRACTOR becomes bankrupt or insolvent, makes a composition or arrangement with his creditors, has a winding up order made against him, has a resolution for voluntary winding up passed (excluding for the purposes of amalgamation or reconstruction), or has a provisional liquidator, administrator, receiver or manager appointed by a court of law;

(i) if the CONTRACTOR seizes his business function which affects performance of the WORK;

(j) if any member of the CONTRACTOR GROUP fails to comply with article 21;

(k) if the CONTRACTOR fails to provide bank guarantee and parent company guarantee within thirty (30) days from the EFFECTIVE DATE or if thereafter fails to maintain bank guarantee and parent company guarantee in accordance with sub-articles 9.5 and 9.6; and/or

(m) if anytime once after the EFFECTIVE DATE until on the Key Date for the vessel arrival to SHIPYARD specified in Exhibit C, the candidate vessel to be converted to FSO is not the same candidate vessel as specified in the Certificate of Registry attached in Exhibit F.

15.2.2 If on the happening of an event of default as set out in sub-article 15.2.1, the COMPANY shall be entitled to declare in writing a default by the CONTRACTOR (a "**NOTICE OF DEFAULT**") and the COMPANY shall be entitled, if the CONTRACTOR has failed to demonstrate its plan or proposal and commence any remedy measure within fifteen (15) days to the satisfaction of the COMPANY and the default has not been remedied within thirty (30) days of receipt of the NOTICE OF DEFAULT or any later date as agreed by the COMPANY after reviewing the CONTRACTOR's plan or proposal to remedy the default, to terminate this CONTRACT without the termination fee. Such termination shall be without prejudice and not to the exclusion of any other legal remedies which the COMPANY may have with respect to the default by the CONTRACTOR.

Subject to the provisions of this CONTRACT any losses, costs, damages and expenses suffered or incurred by the COMPANY as a result of the CONTRACTOR's default, including the additional costs in hiring the third party to perform the WORK in excess of the amount the COMPANY would have paid to the CONTRACTOR for the WORK, shall be recoverable in law by the COMPANY as a debt from the CONTRACTOR or may call upon the bank guarantee and/or enforce the parent company guarantee, or may be deducted by the COMPANY from any monies due or which may become due to the CONTRACTOR, including payment of any purchase price of the CALM BUOY. For the avoidance of doubt, the COMPANY shall have the right to terminate this CONTRACT immediately upon the occurrence of the events of default under sub-articles 15.2.1 (a), (c), (d), (g), (h), (i), (j), (k) or (m).

15.2.3 In the event of termination under sub-article 15.2.2, the COMPANY shall pay the CONTRACTOR for the WORK performed up to the date of termination and accepted by the COMPANY. The COMPANY shall have the right, at its sole option, to complete (or have completed by a third party) any and all outstanding WORK. In calculating the amount of payment due upon termination and for the avoidance of doubt:

(a) no mobilization fee or any other amounts shall be payable to the CONTRACTOR in the event that the mobilization of the FSO under the CONTRACT has not been completed at the date of termination; and

(b) no demobilization fee shall be payable in any event, and the CONTRACTOR shall remain responsible for the demobilization, at his own cost, the FSO and CONTRACTOR PERSONNEL from the DESIGNATED WORK AREA within seven (7) days from the receipt of the notice of termination by the CONTRACTOR; and

(c) the CONTRACTOR shall comply with article 8 and with the safety requirements under this CONTRACT; and

(d) all COMPANY GROUP's property and equipment shall be returned in good condition, normal wear and tear excepted.

15.2.4 The COMPANY shall be entitled to an amount equal to ten per cent (10%) of the annual ESTIMATED CONTRACT VALUE by calling upon the bank guarantee and/or deducting from monies due to be paid to the CONTRACTOR, and/or demanding directly such amount from the CONTRACTOR, and shall retain such amount until the actual loss incurred by the COMPANY as a result of the CONTRACTOR's breach of CONTRACT has been assessed.

After the actual loss has been assessed, the COMPANY shall:

(a) refund to the CONTRACTOR the retained amount in excess of the actual loss incurred by the COMPANY without any interest; or

(b) demand from the CONTRACTOR the actual loss incurred by the COMPANY in excess of the retained amount.

The actual loss shall include additional costs in hiring the third party to perform the outstanding WORK in excess of the amount which the COMPANY would have paid to the CONTRACTOR for the WORK.

Article 16 - LAY-UP and/or Suspension and/or Termination of the CONTRACT at COMPANY's Convenience

16.1 LAY-UP and Suspension at COMPANY's Convenience

16.1.1 The COMPANY shall have the option exercisable on thirty (30) days written notice to the CONTRACTOR of
(a) LAY-UP
(b) suspension of the performance of the WORK for all or any part of the CHARTER PERIOD.

16.1.2 If the COMPANY exercises the suspension as per sub-article 16.1.1 (b), the COMPANY shall pay the CONTRACTOR at the TIME CHARTER RATE according to Exhibit B, and if the COMPANY desires the FSO and the CALM BUOY to resume the WORK, the CONTRACTOR will, upon receipt of written notice from the COMPANY to such effect, immediately take steps to restore the FSO and the CALM BUOY to service as promptly as reasonably possible.

16.1.3 In the event all INITIAL ACCEPTANCE CERTIFICATES are approved by the COMPANY, as the FSO and the CALM BUOY are ready to commence sailing to offshore site in order to meet the CHARTER COMMENCEMENT DATE, the COMPANY may, subject to sub-article 16.1.1(a) instruct the CONTRACTOR not to sail-away the FSO

and/or the CALM BUOY and the FSO and/or the CALM BUOY shall be considered as being LAY-UP in which case the COMPANY shall pay the CONTRACTOR at the LAY-UP rate according to Exhibit B for LAY-UP period and all other reasonable documented costs resulting from the postponement of sail-away. However, unless otherwise mutually agreed by the PARTIES, the COMPANY shall not be obliged to pay for non-committed or non-mobilized components of the MARINE SPREAD or for any costs that CONTRACTOR may reasonably avoid or defer. In such an event the CHARTER COMMENCEMENT DATE shall be adjusted with due regard to the length of the LAY-UP delay as determined by the COMPANY.

Notwithstanding the foregoing, in case the FSO and/or the CALM BUOY is LAY-UP, the FSO and/or the CALM BUOY shall be installed at the DESIGNATED WORK AREA upon receipt of thirty (30) days written notice from the COMPANY. The CONTRACTOR will immediately take steps to restore the FSO and/or the CALM BUOY to service as promptly as reasonably possible. Subject to the COMPANY's approval, the COMPANY shall reimburse the CONTRACTOR for any direct documented costs and expenses incurred by it as a result of breaking LAY-UP and resuming the WORK.

16.1.4 Any period of LAY-UP or suspension of the WORK shall not result in any extension of the CHARTER PERIOD.

16.2 Relocation

The COMPANY shall have the right to relocate the FSO and/or the CALM BUOY at any time to any other location; provided that the CONTRACTOR shall be fully compensated for additional documented costs (if any) of the CONTRACTOR at the new location and the COMPANY shall pay the costs and expenses in connection with such relocation. If such other location is within the territorial waters of a country other than Thailand, references to the "Government" and "Thailand" in this CONTRACT shall be deemed to be references to the government of such other country and to such other country, respectively, mutatis mutandis. Prior to the relocation of the FSO and/or the CALM BUOY, the PARTIES shall mutually agree in good faith terms and conditions with respect to the relocation and all the operations of the FSO and/or the CALM BUOY at any other safe location outside DESIGNATED WORK AREA.

16.3 Termination of the CONTRACT at COMPANY's Convenience

16.3.1 At the COMPANY's sole discretion, the COMPANY shall have, at any time, the right to terminate part of the WORK or terminate this CONTRACT, subject to sixty (60) days prior notice. For the avoidance of doubt, in case of termination of the WORK during the extended CHARTER PERIOD, the COMPANY shall provide prior notice for termination subject to period of extended CHARTER PERIOD, in which case the CONTRACTOR shall promptly forward to the COMPANY all reports and other documents related to the performance of the WORK.

16.3.2 In the event of termination as per sub-article 16.3.1, the CONTRACTOR shall be remunerated by the COMPANY for the WORK performed up to the date of termination and the termination fee as specified in Exhibit B. Such payments shall constitute the sole and full compensation payable by the COMPANY for such termination.

Article 17 - FORCE MAJEURE

17.1 If either PARTY hereto is prevented, hindered or delayed from performing all or any of its/his obligations hereunder as a result of FORCE MAJEURE, such prevention, hindrance or delay shall not be considered as a breach of this CONTRACT and that PARTY shall be relieved from such obligations for the duration of such FORCE MAJEURE event (but for no longer period), provided however that there is a direct relation between the prevention, hindrance or delay in the performance of such obligations and FORCE MAJEURE event.

17.2 The PARTY claiming a FORCE MAJEURE event shall promptly notify the other PARTY, with evidence of the occurrence of the related event and shall give prompt notice once the end of FORCE MAJEURE event is foreseeable. The CONTRACTOR shall immediately suspend the performance of the WORK as affected by FORCE MAJEURE event and maintain all safety, security and protective measures insofar as possible.

17.3 In the event of the FORCE MAJEURE, the PARTIES shall do their utmost effort to remedy the situation, notify the other PARTY after the FORCE MAJEURE event has ended and resume performance of its/his obligations under the CONTRACT as quickly as possible. No remuneration to the CONTRACTOR shall be paid from the time the performance of the WORK is prevented by the FORCE MAJEURE event to the time the performance of the WORK is resumed.

17.4 In the event of FORCE MAJEURE preventing operations beyond ninety (90) days or if in COMPANY's reasonable opinion the FORCE MAJEURE conditions are anticipated to last more than ninety (90) days, either PARTY shall be entitled to terminate this CONTRACT by notice to the other PARTY, without having to pay any indemnity or demobilisation fee, with effect at the date at which the appropriate written notice of termination has been received by the other PARTY and neither PARTY shall have any claim against the other.

Article 18 - Confidentiality

18.1 The CONTRACTOR shall treat the CONFIDENTIAL INFORMATION as confidential and shall not disclose the CONFIDENTIAL INFORMATION to any person without the prior written consent of the COMPANY.

18.2 The CONTRACTOR shall only use, reproduce or copy the CONFIDENTIAL INFORMATION solely for the purpose of facilitating the performance of the CONTRACT.

18.3 The obligations under sub-articles 18.1 and 18.2 do not apply to the CONFIDENTIAL INFORMATION that:

(a) is or becomes available to the public domain through no fault of the CONTRACTOR;

(b) was in the possession of the CONTRACTOR prior to the CONTRACT and that was not subject to any obligation of confidentiality; or

(d) was received from a third party whose possession of such CONFIDENTIAL INFORMATION is lawful and who is under no obligation of confidentiality.

18.4 The CONTRACTOR may, without the prior written consent of the COMPANY, disclose the CONFIDENTIAL INFORMATION:

(a) to the SUBCONTRACTOR and the CONTRACTOR PERSONNEL that reasonably require it for the performance of the CONTRACT, provided the CONTRACTOR shall ensure that the recipients of the CONFIDENTIAL INFORMATION take all necessary measures to protect the confidentiality of the CONFIDENTIAL INFORMATION and comply with this article 18; or

(b) in order to comply with APPLICABLE LAWS.

18.5 All information provided by the CONTRACTOR to the COMPANY that the CONTRACTOR wishes to remain confidential shall be clearly marked as being confidential. The COMPANY is nevertheless entitled to use and disclose such information to THIRD PARTY to the extent necessary for the execution and maintenance of the COMPANY's operations in connection with which the WORK is to be performed or if required by APPLICABLE LAWS.

18.6 The CONTRACTOR agrees that, in the event of the CONTRACTOR GROUP's breach, or threatened breach of, the confidentiality provisions of the CONTRACT, the COMPANY would be irreparably and immediately harmed and that monetary damages recoverable under the CONTRACT would be inadequate. Accordingly, in addition to any other remedy to which the COMPANY may be entitled at law or in equity, and notwithstanding any other provision in the CONTRACT:

(a) the COMPANY is entitled to an injunction (without the posting of any bond and without proof of actual damages) to prevent breach, or threatened breach of, or to compel specific performance of, this article 18;

(b) the CONTRACTOR shall not oppose the granting of an injunction; and

(c) the CONTRACTOR will reimburse the COMPANY for all costs, including reasonable legal fees, incurred by the COMPANY.

18.7 The obligations of the PARTIES under this article 18 survive for five (5) years after the CONTRACT terminates or expires, or any longer period required by the relevant governmental authorities. For the avoidance of doubt, the obligations under this article in relation to sub-surface information shall survive the termination and expiration of the CONTRACT.

Article 19 - Subcontracting, Assignment, Novation and Sublet

19.1 Subcontracting

19.1.1 The CONTRACTOR shall not subcontract:

(a) the whole of the CONTRACT; or

(b) any part of the CONTRACT without the prior written approval of the COMPANY, which approval shall not be unreasonably withheld or delayed. No such approval to subcontract shall be asked for nor given to the CONTRACTOR if the CONTRACTOR has not obtained from a potential subcontractor and remitted to the COMPANY a signed copy of the Mutual Indemnity and Waiver of Recourse Agreement attached hereto as Annex 1.B.

19.1.2 The COMPANY's approval of any SUBCONTRACTOR does not create any contractual relationship whatsoever between the COMPANY and the SUBCONTRACTOR.

19.1.3 Any subcontract by the CONTRACTOR (whether with or without the COMPANY's approval) shall not relieve or absolve the CONTRACTOR from full responsibility for the provision of the CONTRACT or from his obligations or liabilities under the CONTRACT.

19.1.4 Acts, defaults and omissions of a SUBCONTRACTOR (including PERSONNEL of such SUBCONTRACTOR) shall be deemed to be acts, defaults and omissions of the CONTRACTOR.

19.2 Assignment and Novation

19.2.1 Subject to sub-article 19.2.2, a PARTY shall not assign or transfer any of its/his rights or obligations under the CONTRACT without the prior written consent of the other PARTY, which consent shall not be unreasonably withheld or delayed.

19.2.2 The COMPANY may, at any time, assign or transfer any of its rights or obligations under the CONTRACT to any of its AFFILIATEs or the CO-VENTURERs (if applicable) without the prior written consent of the CONTRACTOR, provided the assignee gives an undertaking to be bound by the terms and conditions of the CONTRACT in all respects as if the assignee has been a party to the CONTRACT from the beginning.

19.3 Sublet

The CONTRACTOR hereby consents the COMPANY to sublet the FSO and the CALM BUOY, subject to prior written consent by the CONTRACTOR which shall not be unreasonably withheld or delayed, at any time, to any of its AFFILIATEs or the CO-VENTURERs. Any sublet of the FSO and the CALM BUOY does not relieve or absolve the CONTRACTOR from full responsibility for the provision of the CONTRACT or from his obligations or liabilities under the CONTRACT.

Article 20 - Notice

20.1 All notices or communications of any kind (hereinafter referred to as "**NOTICE**") to be given under this CONTRACT shall be:

(a) in writing in the English language; and

(b) delivered or sent by prepaid registered post, or by email to the address, or email address as specified in sub-article 20.2 or to such other address, or email address as a PARTY notifies to the other PARTY.

20.2 The address and email address of each PARTY are:

(a) COMPANY:

Address. PTTEP ENERGY DEVELOPMENT COMPANY LIMITED
Energy Complex Building A, Floors 6th, 19th-36th,
555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand
Email: ……..
Phone: ……..
Attention: ……..

(b) CONTRACTOR:

Address: ……..
Email: ……..
Phone: ……..
Attention: ……..

20.3 Unless a later time is specified in it, a NOTICE takes effect from the time it is received.

20.4 A NOTICE is deemed to be received:

(a) if sent by prepaid registered post, within three (3) working days of posting unless the contrary is proved; or

(b) if sent by email, when the sender receives an automated message confirming delivery or two (2) hours after the time sent (as recorded on the device from which the sender sent the email) unless the sender receives an automated message the email has not been delivered.

Article 21 - Business Ethic and Human Rights

21.1 Business Ethic

21.1.1 The PARTIES shall uphold the highest standards of business ethics in the performance of the CONTRACT. Honestly, fairness and integrity shall be paramount principles in the dealings between the PARTIES.

21.1.2 Neither PARTY shall knowingly involve itself/himself in any business in connection with, or use information arising from, the CONTRACT, in any manner which conflicts with the interests of the other PARTY.

21.1.3 Each PARTY, with regard to the WORK or other matters which are the subject of the CONTRACT:

(a) warrants that it/he, and the other member of the COMPANY GROUP or the CONTRACTOR GROUP (as applicable), has not made, offered or authorized; and

(b) agrees that it/he, and the other member of the COMPANY GROUP or the CONTRACTOR GROUP (as applicable), shall not make, offer or authorize,

any payment, gift, promise or other advantage, whether directly or through any other person or entity, to, or for the use or benefit of, any person holding a legislative, administrative or judicial office, or any person employed by or acting on behalf of a public agency, public enterprise, public international organization or political party, or any political party official or candidate for office, or any other individual or entity, where such payment, gift, promise or advantage would violate the above warranty or agreement or APPLICABLE LAWS.

21.2 Human Rights

In the performance of the CONTRACT, the PARTIES shall comply with:

(a) United Nations Global Compact's ten principles in the areas of human rights, labor, environment and anti-corruption;

(b) Universal Declaration of Human Rights; and

(c) International Labor Organization's Declaration on Fundamental Principles and Rights at Work which covers four fundamental principles and rights at work.

21.3 Audit and Investigation

21.3.1 The CONTRACTOR shall ensure that all member of the CONTRACTOR GROUP shall fully comply with the obligations set forth in this article 21. The CONTRACTOR shall allow the COMPANY to audit or investigate any related information or documentation to ensure the compliance of this article 21 by the CONTRACTOR.

21.3.2 The CONTRACTOR shall promptly notify the COMPANY upon learning of any investigation or any legal proceeding initiated against any member of the CONTRACTOR GROUP by any authorities resulting from the breach of this article 21.

Article 22 - Change Orders

22.1 Process of Chang Order

The process of Chang Order shall be specified in Annex 7 – CHANGE ORDER.

22.2 Change in APPLICABLE LAWS and rules applicable to the WORK

If any change in the APPLICABLE LAWS, any rules of the CLASS or other relevant rules from the GOVERNMENT, the CLASS, or regulatory bodies having jurisdiction over the WORK or the CONTRACT which modifies the requirements materially affecting the WORK and that will make performance of the WORK materially burdensome than the requirements specified in the CONTRACT, the CONTRACTOR shall be entitled to initiate a change procedure as per sub-article 22.2; provided, however, that in the event of any improvement, requirements, structural changes or new equipment becoming necessary for the continued operation of the FSO and/or the CALM BUOY by reason of new CLASS requirements or by compulsory legislation with authority to regulate activities related to the design, construction, equipment or operation of the FSO and/or the CALM BUOY in force on the EFFECTTIVE DATE, or know as at or after the EFFECTIVE DATE to be coming into force within 5 (five) years of the EFFECTIVE DATE, such improvement, requirements, structural changes or new equipment as may be required shall solely be the expense of the CONTRACTOR.

Article 23 - INITIAL ACCEPTANCE CERTIFICATE, PROVISIONAL ACCEPTANCE CERTIFICATE and FINAL ACCEPTANCE CERTIFICATE

23.1 INITIAL ACCEPTANCE CERTIFICATE

The CONTRACTOR shall fabricate, convert, modify the FSO and the CALM BUOY in accordance with SPECIFICATIONS and requirements of the CONTRACT and, before the CHARTER COMMENCEMENT DATE, exercise due diligence to make the FSO and the CALM BUOY and in every respect ready in hull, machinery, equipment, and personal accommodation for service as a floating storage and offloading vessel for receiving, storage and offloading hydrocarbon production under this CONTRACT. The FSO and the CALM BUOY shall be presented to the COMPANY by the CONTRACTOR for the FSO and the CALM BUOY INITIAL ACCEPTANCE CERTIFICATE at SHIPYARD where the FSO and the CALM BUOY are converted and fabricated as stipulated in section 7.15 of Exhibit A. At such presentation, the FSO and the CALM BUOY shall be properly documented in accordance with the APPLICABLE LAWS, and the requirements of CLASS.

Each INITIAL ACCEPTANCE CERTIFICATE shall be generally in the form as per Annex 4 hereof.

23.2 PROVISIONAL ACCEPTANCE CERTIFICATE

The CONTRACTOR shall install and commission the FSO and the CALM BUOY in accordance with Exhibit A, CLASS requirements, and installation and commissioning plans pre-approved by the COMPANY. The FSO and the CALM BUOY shall be presented to the COMPANY by the CONTRACTOR for PROVISIONAL ACCEPTANCE CERTIFICATE at DESIGNATED WORK AREA designed by the COMPANY following installation and commissioning.

The COMPANY and the CONTRACTOR agree that the PROVISIONAL ACCEPTANCE CERTIFICATE is achieved upon the completion of those events stipulated in section 7.17.2 of Exhibit A. The CHARTER PERIOD shall commence accordingly.

The PROVISIONAL ACCEPTANCE CERTIFICATE shall be generally in the form as per Annex 5 hereof.

23.3 FINAL ACCEPTANCE CERTIFICATE

The FSO and the CALM BUOY shall achieve the FINAL ACCEPTANCE CERTIFICATE upon successful completion of the first offloading of the PRODUCT as determined by the COMPANY and upon completion of the events stipulated in section 7.17.3 of Exhibit A.

The FINAL ACCEPTANCE CERTIFICATE shall be generally in the form as per Annex 5 hereof.

23.4 Timing for INITIAL ACCEPTANCE CERTIFICATE and PROVISIONAL ACCEPTANCE CERTIFICATE

23.4.1 INITIAL ACCEPTANCE CERTIFICATE

The FSO and the CALM BUOY shall be presented for INITIAL ACCEPTANCE CERTIFICATE in accordance with sub-article 23.1 herein and key milestones set out in Exhibit C. The CONTRACTOR shall give the COMPANY not less than sixty (60) days' notice of anticipated INITIAL ACCEPTANCE CERTIFICATE date. The CONTRACTOR shall keep the COMPANY closely advised of the progress of conversion the FSO and fabrication of CALM BUOY and in particular reasons for any significant delay and any mitigation. The FSO and the CALM BUOY sail away date shall be in accordance with the key date set out in Exhibit C.

23.4.2 PROVISIONAL ACCEPTANCE CERTIFICATE

The FSO and the CALM BUOY shall be presented for PROVISIONAL ACCEPTANCE CERTIFICATE at the DESIGNATED WORK AREA designed by the COMPANY accordance with sub-article 23.2 and key date set out in Exhibit C. The CONTRACTOR shall give the COMPANY not less than sixty (60) days' notice of the anticipated PROVISIONAL ACCEPTANCE CERTIFICATE date. The CONTRACTOR shall keep the COMPANY closely advised of the progress of FSO and CALM BUOY transportation to location designed by the COMPANY, installation and commissioning, and in particular reasons for any significant delay and any mitigation. The transportation to such location for installation should be done in accordance with the COMPANY General Marine Instructions for G1/61 Operating Area.

Article 24 - Governing Law and Dispute Resolution

24.1 Governing Law

The CONTRACT shall be governed by and construed in accordance with the substantive laws of Thailand to the exclusion of any conflict of laws principle that may require the application of any other law.

24.2 Dispute Resolution

24.2.1 The PARTIES shall attempt to resolve any dispute or difference arising out of or relating to this CONTRACT through negotiations between representatives of the PARTIES, who have authority to settle the same.

24.2.2 If the dispute is not resolved by negotiation, the dispute may be referred to arbitration by any PARTY subject to sending seven (7) days prior notice to the other PARTY. The seat of arbitration shall be Bangkok, Thailand. The language of the arbitration shall be English. The arbitration shall be governed by the Arbitration Rules of the Thai Arbitration Institute, Office of the Judiciary applicable at the time of submission of the matter to arbitration and the conduct of the arbitration thereof shall be under the auspices of the Thai Arbitration Institute.

24.2.3 Nothing in this article 24 shall be construed as prohibiting a PARTY from applying to a court for interim injunctive relief.

24.2.4 The commencement of dispute resolution proceedings shall not cause any stoppage or delay in the performance of CONTRACT.

24.2.5 The award of the arbitral tribunal shall be final and binding. Judgment on the award of the arbitral tribunal may be entered and enforced by any court of competent jurisdiction.

Article 25 - Miscellaneous Provisions

25.1 Entire Agreement

The CONTRACT contains the entire agreement between the PARTIES with respect to the performance of this CONTRACT and supersedes all previous oral and written agreements, representations, warranties, understandings and negotiations made between the PARTIES prior to the execution hereof.

25.2 Obligations of the PARTIES

The obligations of the PARTIES shall not be limited to those set out in the CONTRACT when APPLICABLE LAWS enforce other obligations, provided however that, as far as legally permissible, the CONTRACT shall always take precedence over any APPLICABLE LAWS with which it conflicts or which is expressly excluded by the CONTRACT.

25.3 Waiver

A right created under the CONTRACT or at law may only be waived in writing, signed by the PARTY giving the waiver, and:

(a) a PARTY's failure to enforce, or delay in enforcing, any of its/his rights under the CONTRACT does not constitute a waiver of those rights;
(b) a waiver of a right on one or more occasions does not operate as a waiver of that right on other occasions; and
(c) an exercise of a right does not prevent any further exercise of that right or of any other right.

Notwithstanding the 3rd paragraph of Section 381 of Thai Civil and Commercial Code, the CONTRACTOR agrees that failure by the COMPANY to reserve its right for liquidated damages under the CONTRACT on acceptance of the WORK from the CONTRACTOR will not prejudice or affect COMPANY's right to claim such liquidated damages later.

25.4 Severability

If any provision (or part thereof) of, or pursuant to, this CONTRACT, is or becomes unlawful, void, or unenforceable, the legality, validity or enforceability of any other part of that provision or any other provision shall not be affected but shall continue in full force and effect.

25.5 General Provision relating to Indemnities

Each indemnity under the CONTRACT is a continuing obligation, separate and independent from the other obligations of the PARTIES, and survives the termination or expiration of the CONTRACT.

25.6 Amendments

No amendment to the CONTRACT is valid unless made in writing and executed by the authorized representatives of the PARTIES.

25.7 Survival

Termination or expiration of the CONTRACT shall not release the PARTIES from obligations, which expressly or by their nature survive the termination or expiration of the CONTRACT.

IN WITNESS WHEREOF, the PARTIES have caused this CONTRACT to be executed by their duly authorized representatives on the date first above written.

For CONTRACTOR		**For COMPANY**	
Signature:	_____	Signature:	_____
Name:	_____	Name:	_____
Position:	_____	Position:	_____
Witnessed by:		Witnessed by:	
Signature:	_____	Signature:	_____
Name:	_____	Name:	_____

Annex 1

Waiver of Recourse and Insurance Agreements

Annex 1.A - Mutual Indemnity and Waiver of Recourse Agreement (Version for the CONTRACTOR)

Annex 1.B - Mutual Indemnity and Waiver of Recourse Agreement (Version for the CONTRACTOR's SUBCONTRACTOR)

Annex 1.A

Mutual Indemnity and Waiver of Recourse Agreement
(Version for the CONTRACTOR)

Whereas .... (hereinafter referred to as "**COMPANY**") has entered into the contract .... dated ...../...../..... with .... (hereinafter referred to as "**UNDERSIGNED PARTY**") regarding the performance of services for COMPANY's operations in connection with, related to, or in support of .... (hereinafter referred to as "**OPERATIONS**");

and whereas the COMPANY and the UNDERSIGNED PARTY may have entered into, or shall enter into, contracts or agreements with other contractors for the performance of services in connection with, related to, or in support of the OPERATIONS and certain of said other contractors have signed, or may sign, counterparts of like mutual Agreements (all the signatories of such Agreements relating to the OPERATIONS being hereafter designated as "**SIGNATORIES**");

and whereas the SIGNATORIES wish to organize their relationship in order to avoid entirely disputes as to their liabilities for damage or injuries to their respective property or employees;

Now, therefore, the UNDERSIGNED PARTY, in consideration of the reciprocal covenants of the other SIGNATORIES, agrees with them that:

1. The UNDERSIGNED PARTY shall indemnify, hold harmless, and waive all rights of recourse it may have against the other SIGNATORIES and their insurers for damage to or loss of property it owns, or has in its possession by virtue of an arrangement made with an entity which is not a SIGNATORY, and for any indirect or consequential losses resulting from such damage or loss even in case of negligence of other SIGNATORY.

2. The UNDERSIGNED PARTY shall have no liability whatsoever for damage to or loss of property in its possession by virtue of an arrangement made with other SIGNATORY.

3. The UNDERSIGNED PARTY waives all rights of recourse against and shall indemnify and hold the other SIGNATORIES and their insurers harmless from and against any loss or liability (including legal expenses) arising out of any claim or cause of action for loss of or damage to property of its personnel and injuries to or disease or death of its personnel, regardless of the cause of or reason for said damage, loss, injuries, disease or death and even if caused by negligence of other SIGNATORY.

4. The UNDERSIGNED PARTY undertakes to obtain from its insurers a waiver of rights of subrogation against all other SIGNATORIES and their insurers in accordance with the provisions of this Agreement governing the mutual liability of the SIGNATORIES with regard to the OPERATIONS.

5. Notwithstanding paragraphs 1, 2 and 3, in the event any property of the UNDERSIGNED PARTY or of its personnel is lost or damaged in the course of transportation by aircraft or in the event of injury to or disease or death of its personnel on board the aircraft or in the course of any of the operations of embarking or disembarking and a SIGNATORY is the carrier, the UNDERSIGNED PARTY shall be entitled to compensation from such SIGNATORY in accordance with applicable national law or international conventions.

6. The UNDERSIGNED PARTY shall, except with prior written approval of the COMPANY, have those of its subcontractors who are involved in the OPERATIONS to become SIGNATORIES and shall forthwith furnish the COMPANY with the original counterpart of this Agreement executed by its subcontractors.

7. This Agreement shall enure to the benefit of and become binding upon the UNDERSIGNED PARTY as to any other SIGNATORY upon the later of the date of execution by the UNDERSIGNED PARTY and the date of execution of a counterpart hereof by such other SIGNATORY.
Conversely this Agreement shall be binding upon the UNDERSIGNED PARTY only with respect to contractors and subcontractors who have become SIGNATORIES prior to the occurrence giving rise to a claim.

8. Any contractor, consultant or subcontractor, etc., performing services for the COMPANY or another SIGNATORY in connection with the OPERATIONS who has not entered into a formal contract for the performance of such services may nevertheless become a SIGNATORY by signing a counterpart hereof which shall, as to the subject hereof, govern the relationship between such new SIGNATORY and the other SIGNATORIES and also by extension its relations with the COMPANY.

9. This Agreement may be executed in any number of counterparts as necessary but all such counterparts shall together constitute one legal instrument.

10. The performance and the interpretation of this Agreement shall be governed by the Laws of Thailand.

This Agreement is entered into this ..... day of .....

Signed for the UNDERSIGNED PARTY by		Witnessed for the CONTRACTOR by	
Signature:	…….	Signature:	…….
Name:	…….	Name:	…….

Annex 1.B

Mutual Indemnity and Waiver of Recourse Agreement
(Version for the SUBCONTRACTOR)

Whereas .... (hereinafter referred to as "**CONTRACTOR**") has entered into the contract .... dated ...../...../..... with .... (hereinafter referred to as "**COMPANY**") regarding the performance of services for COMPANY's operations in connection with, related to, or in support of .... (hereinafter referred to as "**OPERATIONS**");

and whereas the CONTRACTOR has subcontracted wholly or partly the performance of such services to .... (hereinafter referred to as "**UNDERSIGNED PARTY**");

and whereas the COMPANY, the CONTRACTOR, and the UNDERSIGNED PARTY may have entered into contracts or agreements with other contractors for the performance of services in connection with, related to, or in support of the OPERATIONS and certain of said other contractors have signed, or may sign, counterparts of like mutual Agreements (all the signatories of such Agreements relating to the OPERATIONS being hereafter designated as "**SIGNATORIES**");

and whereas the SIGNATORIES wish to organize their relationship in order to avoid entirely disputes as to their liabilities for damage or injuries to their respective property or employees;

Now, therefore, the UNDERSIGNED PARTY, in consideration of the reciprocal covenants of the other SIGNATORIES, agrees with them that:

1. The UNDERSIGNED PARTY shall indemnify, hold harmless, and waive all rights of recourse it may have against the other SIGNATORIES and their insurers for damage to or loss of property it owns, or has in its possession by virtue of an arrangement made with an entity which is not a SIGNATORY, and for any indirect or consequential losses resulting from such damage or loss even in case of negligence of other SIGNATORY.

2. The UNDERSIGNED PARTY shall have no liability whatsoever for damage to or loss of property in its possession by virtue of an arrangement made with other SIGNATORY.

3. The UNDERSIGNED PARTY waives all rights of recourse against and shall indemnify and hold the other SIGNATORIES and their insurers harmless from and against any loss or liability (including legal expenses) arising out of any claim or cause of action for loss of or damage to property of its personnel and injuries to or disease or death of its personnel, regardless of the cause of or reason for said damage, loss, injuries, disease or death and even if caused by negligence of other SIGNATORY.

4. The UNDERSIGNED PARTY undertakes to obtain from its insurers a waiver of rights of subrogation against all other SIGNATORIES and their insurers in accordance with the provisions of this Agreement governing the mutual liability of the SIGNATORIES with regard to the OPERATIONS.

5. Notwithstanding paragraphs 1, 2 and 3, in the event any property of the UNDERSIGNED PARTY or of its personnel is lost or damaged in the course of transportation by aircraft or in the event of injury to or disease or death of its personnel on board the aircraft or in the course of any of the operations of embarking or disembarking and a SIGNATORY is the carrier, the UNDERSIGNED PARTY shall be entitled to compensation from such SIGNATORY in accordance with applicable national law or international conventions.

6. The UNDERSIGNED PARTY shall, except with specific written approval of the COMPANY, have those of its subcontractors who are involved in the OPERATIONS to become SIGNATORIES and shall forthwith furnish the COMPANY with the original counterpart of this Agreement executed by its subcontractors.

7. This Agreement shall enure to the benefit of and become binding upon the UNDERSIGNED PARTY as to any other SIGNATORY upon the later of the date of execution by the UNDERSIGNED PARTY and the date of execution of a counterpart hereof by such other SIGNATORY.
Conversely this Agreement shall be binding upon the UNDERSIGNED PARTY only with respect to contractors and subcontractors who have become SIGNATORIES prior to the occurrence giving rise to a claim.

8. Any contractor, consultant or subcontractor, etc., performing services for the COMPANY or another SIGNATORY in connection with the OPERATIONS who has not entered into a formal contract for the performance of such services may nevertheless become a SIGNATORY by signing a counterpart hereof which shall, as to the subject hereof, govern the relationship between such new SIGNATORY and the other SIGNATORIES and also by extension its relations with the COMPANY.

9. This Agreement may be executed in any number of counterparts as necessary but all such counterparts shall together constitute one legal instrument.

10. The performance and the interpretation of this Agreement shall be governed by the Laws of Thailand.

This Agreement is entered into this ..... day of .....

Signed for the UNDERSIGNED PARTY by		Witnessed for the CONTRACTOR by	
Signature:	…….	Signature:	…….
Name:	…….	Name:	…….

Annex 2

Form of Bank Guarantee

Annex 2

Form of Bank Guarantee

I. We, the Undersigned (1) …… (hereinafter referred to as "**GUARANTOR**"), established at (2) …… represented by (3) ……, have taken notice of the Contract No. (4) …… ((5) ……) effective on the (6) …… day of …… 20… (hereinafter referred as "**CONTRACT**"), between (7) ……, a company registered under the laws of Thailand, with its registered office at Energy Complex Building A, Floors 6th, 19th – 36th, 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand (hereinafter referred to as "**COMPANY**") and (8) ……., a company registered under the laws of ……., whose registered office is at (9) ……, (hereinafter referred to as "**CONTRACTOR**").

II. The GUARANTOR hereby irrevocably guarantees that in the event of any default or failure on the part of CONTRACTOR to abide by its obligations, indemnities and liabilities under the CONTRACT, the GUARANTOR undertakes on behalf of CONTRACTOR to pay to COMPANY any sum or sums not exceeding …… This guarantee is given at the request of CONTRACTOR made to the GUARANTOR in accordance with the CONTRACT.

III. Each demand by COMPANY for payment under this guarantee shall be made in writing (including telex or cable) to the following address:

(10) ……..,
……..,
……..

The GUARANTOR shall promptly notify COMPANY of any change in the above address.

IV. Each demand under paragraph III above shall indicate the breach of CONTRACTOR's obligations under the CONTRACT or CONTRACTOR's failure to fulfil any obligations, indemnities or liability arising out of, or in connection with, the CONTRACT.

V. The GUARANTOR shall make payment hereunder on COMPANY's demand within fifteen (15) days after the date of receipt of COMPANY's demand. The obligation of the GUARANTOR under this guarantee includes a guarantee of payment and not of collection.

VI. The amount of this guarantee as established pursuant to paragraph II above shall be reduced by the amount of any payments made by GUARANTOR to COMPANY hereunder.

VII. No alteration in the terms of the CONTRACT made by agreement between CONTRACTOR and COMPANY nor any failure by COMPANY to insist on proper performance of the CONTRACT or to pursue all remedies available to it against CONTRACTOR shall in any way release the GUARANTOR from all or any part of its liabilities under this guarantee.

VIII. This guarantee shall remain valid from the effective date of the CONTRACT until …… (hereinafter referred as "**EXPIRY DATE**"). All claims hereunder should be received by the GUARANTOR within one hundred and twenty (120) days after the EXPIRY DATE and unless such claims are received within one hundred and twenty (120) days after the EXPIRY DATE, all rights of COMPANY under this guarantee shall be forfeited.

IX. This guarantee shall be interpreted in accordance with the laws of the Kingdom of Thailand.

X. The GUARANTOR represents that this guarantee has been established in such forms and with such content that it is fully and freely enforceable against the GUARANTOR in the manner provided in all paragraphs above.

XI. The benefit of this bank guarantee may be assigned by COMPANY.

XII. If any provision (or part thereof) of, or pursuant to, this guarantee, is or become unlawful, void, or unenforceable, the legality, validity or enforceability of any other part of that provision or any other provision shall not be affected but shall continue in full force and effect.

(Date) ....

(Common Seal of Signature of the GUARANTOR or such other formality as may be required under the law to render a unilateral promise binding on the GUARANTOR).

(1) Name of the bank proposed by CONTRACTOR and approved by COMPANY
(2) GUARANTOR's address
(3) GUARANTOR's authorized representative
(4) CONTRACT's number
(5) CONTRACT's title
(6) Effective date of the CONTRACT
(7) Name of COMPANY
(8) Name of CONTRACTOR
(9) CONTRACTOR's address
(10) Bank address for notices

Annex 3

Form of Parent Company Guarantee

Annex 3

Form of Parent Company Guarantee

1. With reference to CONTRACT reference number ..... having a CONTRACT DATE the …… day of …… between ……. *(a)* (hereinafter referred to as "COMPANY") and …….(*b*) (hereinafter referred to as "CONTRACTOR") for the above subject and in consideration of the same, we, ……. *(c), as* .....*(b)*.....'s ultimate holding company (hereinafter referred to as "GUARANTOR"), whose registered address is ....., do hereby enter into the following unconditional and irrevocable undertakings with COMPANY and its associates or CO-VENTURERS in the Consortium, if any,:

   1.1 the CONTRACTOR shall perform all his obligations contained in the said CONTRACT, and

   1.2 If the CONTRACTOR shall in any respect fail to perform the said obligations contained in the said CONTRACT or commits any breach thereof, we shall ourselves, or through a THIRD PARTY (agreed upon by the COMPANY) other than CONTRACTOR, perform on the simple demand by the COMPANY or take whatever steps may be necessary to achieve performance of the obligations under the CONTRACT of the CONTRACTOR, and shall defend, indemnify and hold harmless COMPANY and its associates or CO-VENTURERS in the Consortium, if any, against any loss, damages, costs and expenses, for which the CONTRACTOR may be liable there under, howsoever arising from the said failure or breach.

2. We shall not be discharged or released from our undertakings hereunder by any waiver or forbearance by COMPANY whether as to payment, time, performance or otherwise.

3. This Guarantee shall be unconditional, irrevocable, without benefit of discussion and shall continue until all CONTRACTOR's obligations under the CONTRACT have been performed, notwithstanding:

   - Any alterations or additions to or deletions from the CONTRACT and/or
   - Any modifications in the shareholding relationship between us and CONTRACTOR and/or
   - Any assignment in accordance with the CONTRACT.

4. The obligations guaranteed by the GUARANTOR and the liabilities assumed by GUARANTOR under this Guarantee shall under no circumstances be greater than those of the CONTRACTOR under the CONTRACT.

5. The execution, delivery and performance of this Guarantee have been and remain duly authorized by all necessary corporate action and do not contravene any provision of law or of the GUARANTOR's constitutional documents or any contractual restriction binding on the GUARANTOR or its assets.

6. This Guarantee shall be governed by and be construed in accordance with the laws of Thailand. Any disputes which cannot be resolved amicably arising in connection with the present Guarantee shall be finally settled by arbitration in accordance with the Arbitration Rules of the Thai Arbitration Institute, Office of the Judiciary, applicable at the time of submission of the dispute to arbitration. The conduct of the arbitration thereof shall be in English language and shall be under the auspices of the Thai Arbitration Institute.

Yours faithfully,

For and on behalf of ……*(c)*……..

Signed: ..... *(d)*

Name:

Title:

Date:

(a) Name of the COMPANY

(b) Name of the CONTRACTOR

(c) Name of the CONTRACTOR Parent Company (ultimate holding company)

(d) Common seal and signature of the CONTRACTOR's ultimate holding company or such formalities as may be required under the law or articles of association to render a unilateral promise binding on CONTRACTOR's ultimate holding company. Each page (other than signature page) shall be duly initialed.

Annex 4

Form of INITIAL ACCEPTANCE CERTIFICATE

Annex 4

Form of INITIAL ACCEPTANCE CERTIFICATE

CONTRACT NO :

CONTRACT TITLE :

CONTRACTOR :

Effective Date of this Certificate: ……

1. In accordance with sub-articles 23.1, 23.4.1 and Exhibit A, requirements and SPECIFICATIONS of the CONTRACT, the COMPANY is satisfied the CONTRACTOR has completed the conversion of the FSO and fabrication of the CALM Buoy in accordance with the CONTRACT and in every respect ready in hull, machinery and equipment for service as floating storage and offloading vessel for receiving, storage and offloading crude oil under this CONTRACT and accordingly issues the INITIAL ACCEPTANCE CERTIFICATE effective from the Effective Date above.
2. Issuance of this INITIAL ACCEPTANCE CERTIFICATE shall not relieve the CONTRACTOR from his obligations under the CONTRACT and APPLICABLE LAWS, which expressly or by their nature survive this the issue of this certificate.
3. This INITIAL ACCEPTANCE CERTIFICATE is issued without prejudice to the COMPANY's rights under the CONTRACT and at law, and shall not be deemed to constitute a waiver of any rights and remedies the COMPANY has under the CONTRACT and APPLICABLE LAWS. The COMPANY hereby reserves the right to exercise any and all such rights and remedies, including to apply liquidated damages.

Issue for and on behalf of **PTTEP Energy Development Company Limited**

NAME :

POSITION :

DATE OF SIGNATURE :

Annex 5

Form of PROVISIONAL ACCEPTANCE CERTIFICATE

Annex 5

PROVISIONAL ACCEPTANCE CERTIFICATE

CONTRACT NO :

CONTRACT TITLE :

CONTRACTOR :

Effective Date of this Certificate: ……

1. In accordance with sub-articles 23.2, 23.4.2 and Exhibit A, requirements and SPECIFICATIONS of the CONTRACT, the COMPANY is satisfied the CONTRACTOR has completed Performance Testing of the FSO and CALM BUOY in accordance with all requirements of this CONTRACT and the FSO and CALM BUOY are in CLASS and ready to receive, store and export the crude oil in accordance with the required quantity in Exhibit A, requirements and SPECIFICATIONS of the CONTRACT and accordingly issues the PROVISIONAL ACCEPTANCE CERTIFICATE effective from the Effective Date above.

2. Issuance of this PROVISIONAL ACCEPTANCE CERTIFICATE shall not relieve the CONTRACTOR from his obligations under the CONTRACT and APPLICABLE LAWS, which expressly or by their nature survive this the issue of this certificate.

3. This PROVISIONAL ACCEPTANCE CERTIFICATE is issued without prejudice to the COMPANY's rights under the CONTRACT and at law, and shall not be deemed to constitute a waiver of any rights and remedies the COMPANY has under the CONTRACT and APPLICABLE LAWS. The COMPANY hereby reserves the right to exercise any and all such rights and remedies, including to apply liquidated damages.

Issue for and on behalf of **PTTEP Energy Development Company Limited**

NAME :

POSITION :

DATE OF SIGNATURE :

Annex 6

Form of FINAL ACCEPTANCE CERTIFICATE

Annex 6

Form of FINAL ACCEPTANCE CERTIFICATE

CONTRACT NO :

CONTRACT TITLE :

CONTRACTOR :

Effective Date of this Certificate: ……

1. In accordance with sub-article 23.3 and Exhibit A, requirements and SPECIFICATIONS of the CONTRACT, the COMPANY is satisfied the Contractor has completed the first offloading of the crude oil of the FSO in accordance with all requirements of this CONTRACT and accordingly issues the FINAL ACCEPTANCE CERTIFICATE effective from the Effective Date above.

2. Issuance of this FINAL ACCEPTANCE CERTIFICATE shall not relieve the CONTRACTOR from his obligations under the CONTRACT and APPLICABLE LAWS, which expressly or by their nature survive this the issue of this certificate.

3. This PROVISIONAL ACCEPTANCE CERTIFICATE is issued without prejudice to the COMPANY's rights under the CONTRACT and at law, and shall not be deemed to constitute a waiver of any rights and remedies the COMPANY has under the CONTRACT and APPLICABLE LAWS. The COMPANY hereby reserves the right to exercise any and all such rights and remedies, including to apply liquidated damages.

Issue for and on behalf of **PTTEP Energy Development Company Limited**

NAME :

POSITION :

DATE OF SIGNATURE :

Annex 7

Form of CHANGE ORDER

Exhibit A

Scope of WORK and SPECIFICATIONS of the FSO

Exhibit B

Commercial Terms

Exhibit B

Commercial Terms

Memo CLG
OGP_Signed Versior

Exhibit C

Work Time Schedule

Exhibit C

Work Time Schedule

Exhibit D

COMPANY's Guideline and Requirement Documents

Exhibit D

COMPANY's Guideline and Requirement Documents

Exhibit E

COMPANY's SSHE Requirements

Exhibit E

COMPANY's SSHE Requirements

Exhibit F

CONTRACTOR's Documents

Exhibit F

CONTRACTOR's Documents

PTTEP ENERGY DEVELOPMENT COMPANY LIMITED

EXHIBIT A

SCOPE OF WORK, REQUIREMENTS AND SPECIFICATIONS

OF

THE PROVISION OF G1FSO AND CALM BUOY SYSTEM LEASE AND OPERATE FOR G1/61

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1. INTRODUCTION

PTTEP Energy Development COMPANY Limited (hereinafter referred to as "COMPANY") is required a G1FSO and CALM Buoy System for G1/61 block in Platong Field located in Gulf of Thailand to replace an existing turret moored FSO vessel namely "Pattani" (PFSO) in 2024. The G1FSO is located approximately 3.6 km south-east of Platong Central Processing Platform (PLCPP), receiving crude oil from PLCPP via 8" pipeline and returning produced water to PLCPP via 5" pipeline. The water depth at lowest astronomical tide (LAT) is approximately 72.8 meters.

The existing PFSO, risers and mooring system are due for decommissioning by 2024 and the existing subsea pipelines and PLEMs are abandoned and leave in place for further decommissioning plan.

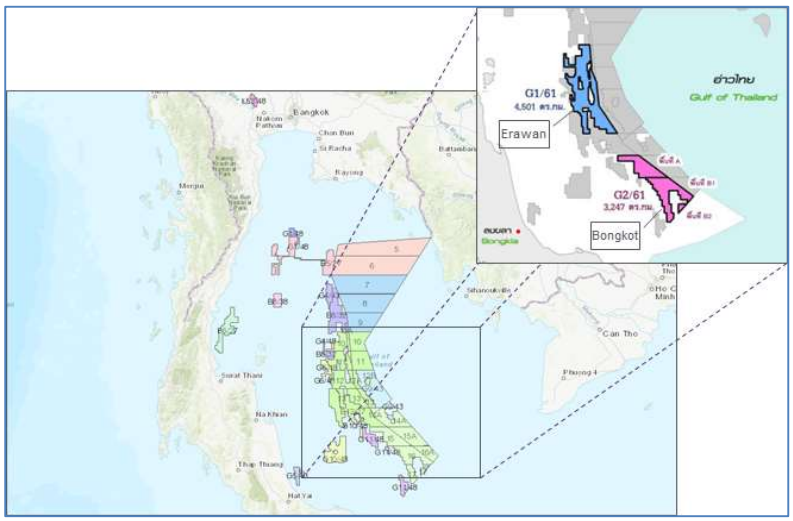

Figure 1.2: Offshore Block G1/61

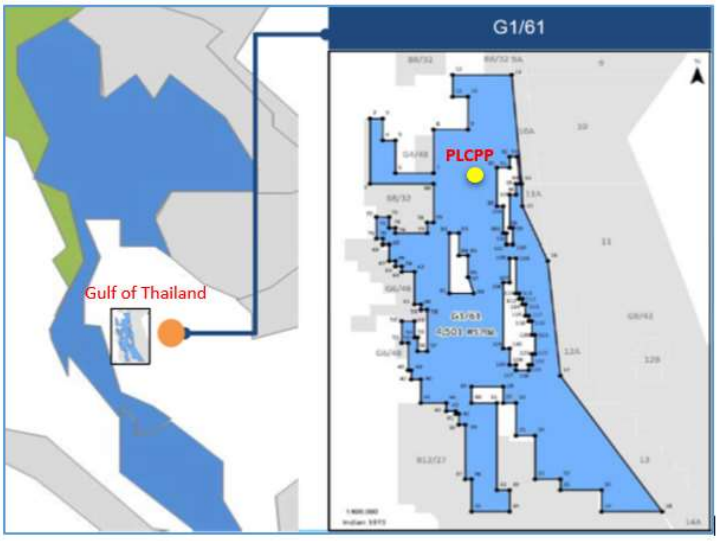

Figure 1.2: Platong Field Location

1.1. Outline Specification

This outline specification is for the FSO and CALM Buoy System to be owned and operated by the CONTRACTOR. The intent and functional requirements are as follows:

- Shall achieve 10 years of service life in the field without dry-docking,
- Storage capacity, production rate and offloading rate specified herein shall be met.
- Efficient operation with high reliability and safety shall be met.

The major activities involved in providing the FSO and CALM Buoy System are design, classification, procurement, repair, refurbishment, fabrication, conversion as acceptable, CALM Buoy and FSO suitable for the service life, inspect, testing, commissioning, towing, transportation, installation, start-up, operation, maintenance, and other requirements as listed in the Scope of Work.

The functional specification contained in this Scope of Work has been prepared for the FSO and CALM Buoy System which will be connected to the Pipeline End Manifold ("PLEM") provided by COMPANY.

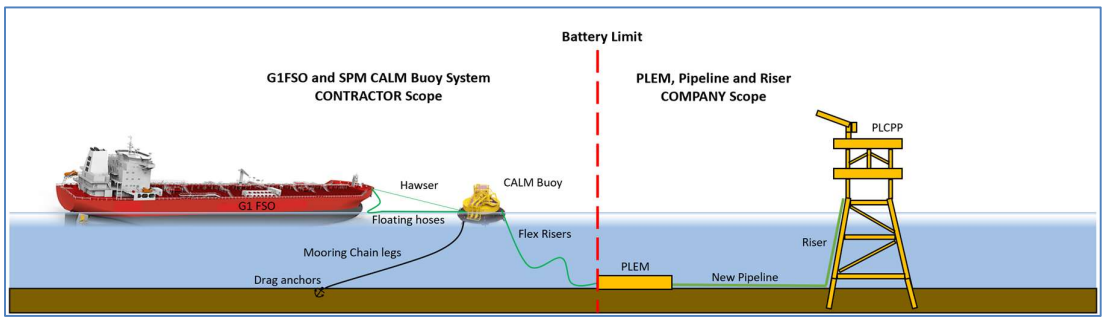

Figure 1.3: Project Battery Limit

The specification herein is an outline specification, operation, maintenance and many details are not mentioned herein. CONTRACTOR shall provide a complete system that meets the COMPANY's requirements. CONTRACTOR is responsible for providing the CALM Buoy fabrication, FSO demolishment, refurbishment, life extension and conversion specification to meet these functional requirements and the operation maintenance requirements.

1.2. Work Time Schedule

- FSO and CALM Buoy shall be completed offshore commissioning and fully function no later than 18 months from Contract Effective Date.
- The CONTRACTOR shall prepare and submit a Detailed Work Time Schedule covering all Work phases, including engineering, procurement, construction, onshore commissioning, operation readiness, Initial Acceptance (Sail Away), transportation, offshore installation, offshore commissioning, Provisional Acceptance (Start Up), Final Acceptance and until hand over to operation and maintenance period.

2. SCOPE OF WORK

The FSO shall include accommodation, hull, piping, outfitting, marine system, safety & fire fighting, electrical, instrument & communication, process utilities, side-by-side mooring & fender system, material handling, corrosion protection, refrigeration, HVAC system, crude oil metering system, floating hoses system, tandem offloading system; and, the CALM Buoy System including buoy body, all outfitting, mooring, anchors, subsea risers, floating hoses and hawsers per Section 6.3. The scope shall include, but not be limited to;

- Design engineering,
- Procurement and subcontracting,
- Construction, modification, fabrication,
- Demolishment,
- Refurbishment,
- Life extension,
- Conversion,
- Preservation,
- Onshore commissioning,
- Load Out, Towing and transportation
- Hook up and installation
- Offshore commissioning
- Operation and Maintenance

CONTRACTOR shall be responsible for last offtake all pumpable cargo that will occur at the end of CHARTER PERIOD. The Risers, loading & offloading hoses shall be flushed until Total Petroleum Hydrocarbon (TPH) less than 15 ppm prior to FSO and CLAM Buoy disconnection as required by applicable laws. FSO and CALM Buoy system shall be disconnected and removed for REDELIVERY at DESIGNED WORK AREA.

All activities after last offtake for FSO and CALM Buoy disconnection and removal safely at DESIGNED WORK AREA shall be performed by CONTRACTOR and reimbursed by COMPANY per Exhibit B.

The FSO and CALM Buoy disconnection and removal Project Execution Plan (PEP), detail engineering, procurement, and offshore execution procedure shall be submitted for COMPANY approval prior commencement the Work.

2.1. G1FSO and CALM Buoy System

CONTRACTOR shall be responsible for equipment and material for the entire from downstream of the PLEM to the offloading hose flange and hawsers and everything between the full width of hull and its fenders and everything from top of accommodation and masts to the bottom of the bilge keel shall be included in CONTRACTOR's scope, except for the item specifically identified in COMPANY scope such as COMPANY SUPPLIED EQUIPMENT. Receipt, installation support and integration support of COMPANY SUPPLIED EQUIPMENT shall be CONTRACTOR's scope.

COMPANY intends for CONTRACTOR to provide turnkey fully functional FSO and CALM Buoy that are fully furbished and ready for safe and reliable operation in Platong Field

This scope of Work only covers the period from EFFECTIVE DATE , delivery and acceptance of the FSO and CALM Buoy System prior to CHARTER COMMENCEMENT DATE, operation and maintenance until REDELIVERY. The CONTRACTOR shall perform all Work in a safe, reliable, and efficient manner in accordance with the CONTRACT, Specifications and Exhibits. The CONTRACTOR shall provide all consumable and non-consumable parts or material and labor required for supplying a fully functional and ready to use FSO and CALM Buoy System as per agreed schedule. To achieve this, the CONTRACTOR shall complete the following major Work activities, in addition, any other Work activities not specified below but necessary for supplying a fully functional and ready to use FSO and CALM Buoy System shall also be carried out.

- CONTRACTOR shall, at their own costs, fabricate CALM Buoy, convert and modify the candidate vessel in accordance with the specifications and requirements attached to this Contract. No change can be made to such specifications and requirements without obtaining COMPANY's written consent
- The COMPANY shall have the right to send their representatives to the construction shipyard and facilitates of the CONTRACTOR, suppliers, or subcontractors to inspect the vessel and CALM Buoy during the course of their conversion and fabrication to satisfy COMPANY that conversion and fabrication in accordance with all Exhibits to this CONTRACT.
- COMPANY's representatives shall monitor compliance with all Exhibits to this CONTRACT. CONTRACTOR shall rectify any deficiencies noted by COMPANY's Representatives prior to the Initial Acceptance (Sail Away)
- The CONTRACTOR guarantee to COMPANY that:
  - the FSO and CALM Buoy shall conform to the specifications and requirements
  - the FSO and CALM Buoy shall function properly, meet all safety, operability and performance criteria set out under the CONTRACT
  - the FSO and CALM Buoy shall be fit for the purposes and uses intended and capable of being operated in accordance with the requirements of this CONTRACT
  - the work performed by shipyard and its subcontractor shall be in accordance with good engineering and construction practices and
  - the FSO and CALM Buoy, materials, equipment, components, and systems used in the conversion and modification to the vessel shall be of suitable quality for the purposes and uses intended and shall be free from defects and deficiencies save for COMPANY SUPPLIED EQUIPMENT
- Keep COMPANY informed of all Work activities, Work progress, schedule and other as per this CONTRACT and Specifications. It is COMPANY's intent to monitor and approve the Work during the entire period of this CONTRACT to ensure COMPANY requirements are met and Work is completed on agreed schedule.
- Supply all required documents as per approved Master Document Lists in a timely manner for COMPANY review and approval as reasonable as mutual agreed per Section 7.10.
- Use a COMPANY approved candidate vessel and a COMPANY approved Shipyard for demolishment, refurbishment, life extension, conversion, fabrication, and preservation to FSO and CALM Buoy system suitable for Platong Field as per CONTRACTOR's proposal as specify in Exhibit F CONTRACTOR documents.

- CONTRACTOR shall fully assess condition of the COMPANY approved candidate vessel and shall fully fabricate CALM Buoy System to define the demolishment, refurbishment, life extension, conversion, fabrication and preservation required to convert the vessel and fabricate the CALM Buoy to suitable for Platong field operations and develop the demolishment, refurbishment, life extension, conversion, fabrication and preservation specification. All related documents shall be furnished to COMPANY as reasonable as mutual agreed for review and approval per Section 7.10
- CONTRACTOR is responsible for all consumable and non-consumable parts or materials (exclude COMPANY SUPPLIED EQUIPMENT) required for the demolishment, refurbishment, life extension, conversion, fabrication, and preservation of the vessel to the FSO and CALM Buoy system.
- CONTRACTOR shall develop design modifications and repair plans to the vessel (Demolishment, refurbishment, life extension, conversion, fabrication, and preservation Specification),develop design fabrication of CALM Buoy (Fabrication Specification)
- CONTRACTOR shall procure new equipment necessary for modification and new replacement equipment for existing equipment, convert, fabricate, and repair or refurbish the vessel and CALM, fully test and commission as per COMPANY approved plans, procedures, and execution.
- Perform constructability and Safety Studies as required including HAZOP, Hazard Identification Study (HAZID), Escape, Evacuation and Rescue Analysis (EERA), vent gas dispersant study, Quantitative Risk Assessment (QRA), Non-Hydrocarbon Hazard Analysis (NHHA), etc. CONTRACTOR shall participate and provide information for support COMPANY assurance process i.e. Project Technical Review (PTR), etc.
- CONTRACTOR or its COMPANY approved subcontractor shall be responsible for CALM Buoy system including its interface equipment with the PLEM, vessel hull, risers, mooring chains, mooring hawser, floating hoses as follows:
    - Approved mooring system subcontractor shall design, procure, construct, test and commission in the COMPANY approved CALM Buoy System fabrication yard.
    - Modify the bow of the vessel (or hull), design, modification and fabricate the mooring arrangement, hawser load monitoring and emergency quick release integration support structure in accordance with COMPANY approved documents per section 7.10
    - Verify the design of COMPANY integrated system including crude oil loading and produced water reinjection system at Platong CPP, PLEM and Pipelines are suitable for the intended service and ensure FSO and CALM Buoy System interfaces with COMPANY integrated system
    - Design, procure, construct, inspect, test, preserve, and ship mooring chains and risers to Thailand
    - Design, procure and integrate the CALM Buoy system with the FSO by CONTRACTOR as per COMPANY approval.
    - All consumable and non-consumable such as grease, oil, spare parts and tools for CALM Buoy System, etc. shall be provided by COMPANY approval.
    - All interfaces with COMPANY and other COMPANY's CONTRACTORs shall be included in CONTRACTOR's scope and CONTRACTOR shall collaboratively work with all parties to satisfactorily meet the intent of providing a fully functional FSO and CALM Buoy system

- Develop documents for FSO and CALM Buoy installation at Platong field and testing plan, procedures for the mooring system for COMPANY review and approve and use by installation CONTRACTOR.
- All installation marine spread and testing gear such as winches shall be provided and installed on FSO and CALM Buoy by CONTRACTOR.
- CONTRACTOR shall be responsible in offshore installation and commissioning of the FSO and CALM Buoy system, riser, and mooring system.
- CONTRACTOR shall submit for COMPANY review and approval all activities and documents related to all the FSO and CALM Buoy system Work per Section 7.10.
- CONTRACTOR shall provide FSO and CALM Buoy motion and excursion data in a timely manner to its moorings & risers subcontractor for the moorings & risers design and fabrication. Design, fabrication, and supply of the moorings & risers are within the CONTRACTOR's scope of Work. CONTRACTOR shall verify the loads on the PLEM to ensure these are within acceptable limits. Risers configuration shall be located out of provision area for temporary pig launcher and pig receiver at PLEM.
- All tools and parts necessary for commissioning and start up entire FSO and CALM Buoy system shall be provided by the CONTRACTOR, and it shall be provided in additional to the normal spare parts and tools.
- CONTRACTOR shall take receipt of COMPANY SUPPLIED EQUIPMENT and handle it as per its intended purpose.
- Carry out the onshore yard testing commissioning of the FSO and CALM Buoy and confirm that the FSO and CALM Buoy complies with its intended performance and service.
- Tow and transport the FSO and CALM Buoy from the shipyard to the Platong field and prepare the FSO and CALM Buoy in Thailand ready for installation condition. CONTRACTOR shall give adequate notice to COMPANY prior to vessel Sail Away from shipyard and delivery of the FSO and CALM Buoy System on Worksite as per agreed schedule.
- All local regulatory permitting i.e. inward & outward clearance (CIQ), safety equipment (import & usage), radio equipment/frequency (import, usage & establishment), hazardous substance import, hydrocarbon solvent import/usage etc. shall be ready prior FSO & CALM Buoy (including installation marine spread) sail way/mobilization. All permits are under fully responsible by CONTRACTOR. Import/export compliance and custom clearance shall be followed in accordance with CONTRACT Article 11 – Import, Export and Re-export.
- Installation of the FSO and CALM Buoy system including hook up of mooring, risers, loading hoses and offloading hose in Platong Field.
- PLEM valves isolation and subsea operation for riser installation and commissioning is under CONTRACTOR responsibility
- Commissioning and startup of the FSO and CALM Buoy System in Platong field. All local regulatory permitting for travel and mobilize to COMPANY's shore base in Songkhla Province shall be CONTRACTOR's responsibility. Import/export compliance and custom clearance shall be followed in accordance with CONTRACT Article 11 – Import, Export and Re-export.
- FSO and CALM Buoy must be surveyed and verified by officers of the flag state administrations, or their recognized classification societies nominated surveyors so that relevant certificates can be issued to establish that the FSO and CALM Buoy are designed, constructed, maintained, and managed in compliance with the requirements of IMO Conventions, codes, and other instruments. The classification societies are to be provided

an assurance of professional integrity and the maintenance of high professional standards complying with the International Association of Classification Societies (IACS). Provide all certificates as per normal industry practice. All correspondence between regulatory body and CONTRACTOR shall be made available to the COMPANY in a timely manner.

- After the FSO and CALM Buoy System are installed, they shall be commissioned by CONTRACTOR with all the necessary personal, vendors and regulatory bodies supplied by CONTRACTOR. Upon successful testing and commissioning the FSO and CALM buoy shall be ready for uninterrupted operations at any rate from zero to maximum design rate.
- Provide all documents such as operating manuals, plans, terminal manual, test and inspection records, drawings, equipment manuals and data sheets, etc.

CONTRACTOR shall provide necessary periodic reports and status of the FSO and CALM Buoy to COMPANY. COMPANY's request for any adjustment to quality, schedule or safety performance shall be carried out by CONTRACTOR.

CONTRACTOR shall use acceptable quality makers, suppliers and vendors as approved by COMPANY.

CONTRACTOR shall be responsible to ensure interfaces with COMPANY, CONTRACTOR's subcontractors or vendors in all areas such as classification, regulatory, technical, schedule, quality, performance, and overall integration of all components, and shall be carried out in timely manner and fully completed FSO and CALM Buoy System shall be one integrated unit ready for its intended service in Platong field.

CONTRACTOR shall identify by develop interface and responsibility matrix for manage all CONTRACTOR group work interfaces and interfaces between CONTRACTOR group, COMPANY, and COMPANY-identified other parties pursuant to the Work for COMPANY's review and approval as a part of Project Execution Plan (PEP).

CONTRACTOR shall cooperate with COMPANY and the other parties in managing the interfaces and shall report all interfaces between CONTRACTOR group and COMPANY or the other parties for COMPANY's review and approval.

2.2. Operation and Maintenance

The subject of this CONTRACTOR's scope of Work is related to operation and maintenance of the FSO and CALM Buoy system, which is to be a FSO containing oil storage and related marine and utility systems moored by CALM Buoy.

All activities related to the safe operation and maintenance of the FSO and CALM Buoy system to assure the facility uptime is not impacted due to improper application of sound operational control and maintenance regimes, and such that the entire facility may be operated in a safe, reliable, efficient, and environmentally responsible manner. CONTRACTOR shall provide the specific operation & maintenance philosophy/procedure for COMPANY approval.

CONTRACTOR shall be responsible for Operation and Maintenance (O&M) management, administration, supply of personal and the like to perform operation activities related to all processed crude storage tank management and marine system onboard the FSO and CALM Buoy including the human monitoring, infield personal support, hotel management and all as further describe with the scope of Work.

CONTRACTOR shall be responsible for the protection, preservation, and maintenance of the entire FSO and CALM Buoy facility which for the purpose of maintenance, the boundary of responsibility is generally defined as, but not limited to:

- From the first flange of PLEMs connection to all inlet (crude oil) streams and outlet (produced water) to the FSO CALM Buoy through the end of the offloading hose.
- The complete monitoring of CALM Buoy, mooring and riser systems
- All marine systems including but not limited to the load computers, utilities, safety of life systems, power generation, firefighting, and the like.
- All structure and appurtenances

CONTRACTOR O&M management and administration scope comprises all personal, systems, services, functions, equipment, materials and the like to manage the successful completion of the FSO O&M Work. The scope shall include, but not limited to:

- Personal management, payroll, employment, travel and subsistence and the cost like for CONTRACTOR personal directly or indirectly engaged in the performance of O&M Work.
- Management of all subcontractor activities and personal engaged in any portion or the part of O&M Work.
- General management, general services and administrative services
- All license fees and usage of proprietary information.
- Taxes and duties related to the O&M Work, as required in the CONTRACT.
- Logistic support for CONTRACTOR personal to/from COMPANY supply base
- Travel, meals, accommodations, visa, and Work permits.

CONTRACTOR shall be responsible for all SSHE management on board the FSO and CALM Buoy including the development and implementation of effective SSHE management system. The SSHE management system shall align with COMPANY SSHE management requirements and all local and statutory requirements.

CONTRACTOR shall develop bridging documents with COMPANY that will describe the interface between COMPANY's and CONTRACTOR's safety management system for COMPANY approval.

CONTRACTOR shall develop procedure and software, approved by COMPANY, to provide daily, weekly, and monthly operation reports

CONTRACTOR shall designate, in writing, the FSO master as CONTRACTOR site representative onboard the FSO. The FSO master shall be single point of contact for COMPANY site representative in managing the day-to-day operation of the FSO and CALM Buoy system.

CONTRACTOR shall designate an onshore CONTRACTOR representative located in Thailand who will be the point of contact for COMPANY representative.

CONTRACTOR shall prepare a manpower and staffing plan incorporate the following specific requirements for:

- Recruiting, training, and employment of the personal necessary to man the FSO.
- COMPANY shall approve CV of FSO key personal to be employed on the FSO.

- CONTRACTOR shall establish a competency assessment/training matrix and improvement program to be administered for all personal working offshore. COMPANY will monitor and audit the program as required to ensure competent personal are being employed on site. The training matrix shall be reviewed and modified from time to time as required whenever any fundamental change in operations and again agreed by CONTRACTOR and COMPANY.
- CONTRACTOR will be responsible for personal transportation to COMPANY supply base in Songkla for all CONTRACTOR personal. This includes the necessary travel documents, in transit lodging and meals, while at COMPANY supply base waiting on COMPANY provided transportation. COMPANY will provide transportation from the supply base to site from normal crew change and as required throughout FSO operations and maintenance including but not limited to support crew, vendor assistance or agent and/or visitor.

CONTRACTOR shall provide key personal and assign to be responsible for the direct performance of the O&M Work.

CONTRACTOR shall provide logistic management services as noted below:

- Monitor and control to coordinate the importation, storage and onwards transportation of all CONTRACTOR supplied materials as well as the transportation, housing and boarding of all CONTRACTOR personal
- Provide visa, Work permits and/or any other travel or Work documents required for CONTRACTOR personal to allow them entry into Thailand and working at site on a rotational basis.

COMPANY shall support providing temporary storage of all CONTRACTOR's material and equipment during transit at COMPANY warehouse.

COMPANY will provide materials transportation and personal transportation including CONTRACTOR's subcontractor from COMPANY supply base to DESIGNED WORK AREA, based on normal schedule by the COMPANY. Any special run of supply vessel to the base shall be back charge to the CONTRACTOR.

COMPANY shall arrange for the transportation and disposal of wastes, to include toxic wastes, which may be generated on site. The wastes from the FSO and CALM Buoy must be well segregated otherwise the cost of segregation and associate shall be back charged to the CONTRACTOR.

COMPANY shall provide weather forecasting services as required for operation at DESIGNNED WORK AREA.

COMPANY shall provide medivac transportation, as appropriate for the situation, between the field and supply base. CONTRACTOR will be responsible for all CONTRACTOR personal medivac once they have arrived at supply base, to include local medical care and onwards transportation as required.

COMPANY shall provide an offshore support vessel within five hundred (500) meter vicinity to assist FSO and CALM Buoy O&M inter alia hawser and offloading hose maintenance, FSO and CALM Buoy side hull inspection etc. and to support during emergency.

CONTRACTOR shall be responsible for sourcing, purchasing, expending, clearing customs and transportation to COMPANY supply base of all materials, spare parts, and consumables necessary in the operation of the FSO and CALM Buoy. COMPANY will provide transportation from COMPANY supply base to site based on COMPANY normal return run.

CONTRACTOR shall prepare a procurement and contract management plan addressing all activities, technology, and software necessary to complete to O&M Work. Import/export compliance and custom clearance shall be follow in accordance with CONTRACT Article 11 – Import, Export and Re-export.

CONTRACTOR shall provide accommodations, meals, husbandry services and offices for COMPANY personal on the FSO as follows:

- CONTRACTOR shall provide a five (5) man office to COMPANY supervisory personal use.
- CONTRACTOR shall provide normal site offices supplied, such as stapler, hole punch, file folders, ring binders and the like.
- A copy machine shall be provided for COMPANY use. The copy machine shall have all the copier feathers to copy and/or print normal size paper.
- A telephone extension for each COMPANY personal onboard
- COMPANY shall require of one (1) x single person cabin and two (2) x 2 person cabins.
- Meals, accommodation, and husbandry cost for COMPANY personal will be included to the Time Charter Rate.

The operation shall be strictly in accordance with all applicable International Chamber of Shipping (ICS) publications and in particular with the Oil Companies International Marine Forum (OCIMF) and International Safety Guide for Oil Tankers & Terminals (ISGOTT), particularly sections which are applicable to the operation. CONTRACTOR shall take due cognizance of these documents and shall embody all aspects which are applicable to the safe and proper Operation of the FSO and CALM Buoy in CONTRACTOR's operating practices and procedures.

All facilities on the FSO and CALM Buoy System will incorporate operational and maintenance requirement and these will be determined during the detailed engineering design phase. The underlying premise will be based on the application of Reliability and Safety principles ensuring proven cost-effective and reliable. The FSO will be fully manned at all times to perform routine production and maintenance tasks.

Spare part levels will be determined via a Maintenance Strategy Review process identifying critical components essential to the required 100% uptime and safe operation. Operations and Maintenance procedures will be developed.

3. ABBREVIATIONS

The following abbreviations can be found in this document.

Table 1: Abbreviations

ACRONYM	DESCRIPTION
API	American Petroleum Institute
BOD	Basis of Design

ACRONYM	DESCRIPTION
BS&W	Basic Sediment & Water
CALM	Catenary Anchor Leg Mooring
CCTV	Closed Circuit Television
COT	Cargo Oil Tank
CPP	Central Processing Platform
DWT	Deadweight
ESD	Emergency Shutdown
FSO	Floating Storage and Offloading
GOT	Gulf of Thailand
HAZID	Hazard Identification
HAZOP	hazard and operability study
H2S	Hydrogen Sulfide
ICCS	Integrated Control and Safety Systems
IMO	International Maritime Organization
MGO	Marine Gas Oil
MOC	Management of Change
MSDS	Material Safety Data Sheet
MWS	Marine Warranty Surveys
O&M	Operation & Maintenance
PLEM	Pipeline End Manifold
POB	Personnel On-board
PPM	Parts Per Million
PSV	Pressure Safety Valve
PTR	Project Technical Review
PW	Produced Water

ACRONYM	DESCRIPTION
PWIP	Produced Water Injection Pump
QA	Quality Assurance
QC	Quality Control
SSHE	Safety, Security, Health and Environment
TBD	To be designed
TSS	Total Suspended Solids
UWILD	Underwater Inspection in Lieu of Dry-Docking
WAT	Wax Appearance Temperature

4. REGULATIONS, CODES AND STANDARDS

4.1. Classification

The FSO including hull, machinery, equipment, outfitting, mooring system, floating hoses system at bow loading station, tandem offloading hose system and the CALM Buoy System including CALM Buoy, mooring anchors, subsea risers shall be classed by recognized classification society complying with International Association of Classification Societies (IACS) which either ABS, DNV, BV or LR.

CONTRACTOR shall provide a classification plan to ensure that the proposed classification for the supplied both FSO and CALM Buoy are the most cost-effective solution since EFFECTIVE DATE until end of CHARTER PERIORD based on the candidate tanker's and/or CALM buoy's original class.

The FSO and CALM Buoy shall also comply the provision of underwater inspection in lieu of Dry-Docking Survey or similar notation subject to respective classification notation.

Applicable Class rules, Statutory Regulations, Laws and guides which shall be the latest version at the time of EFFECTIVE DATE shall be applied.

4.2. Rules, Regulations, Codes and Standards

The FSO and CALM Buoy System shall comply with the latest versions of following rules and regulations in effect at the time of the at the time of Effective Date. CONTRACTOR can propose alternate rules and regulations for COMPANY’s consideration but shall clearly demonstrate regulatory justification and equivalency in intent and level of safety, risk, and marine practice.

Any changes mandated by the rules in existence at the date of contract or known to be in print and approved with implementation within 5 years of contract date shall be applied. (Refer, to

the latest version of the Lloyd's Register publication, March 2022, titled "Future IMO and ILO Legislation"

4.2.1. Rules and Regulations

At time of departure from the shipyard and throughout the service life, the FSO vessel will be flagged as propose from CONTRACTOR for COMPANY approval

The FSO shall comply with the latest versions of the following rules and regulations in effect at the time of EFFECTIVE DATE:

- The Maritime Regulations of the registered country
- The International Convention on Load Lines, 1966 with the protocol of 1988, and its amendments
- The International Convention for the Safety of Life at Sea, 1974, with Protocol of 1978, and all amendments thereto in effect at the time of CONTRACT signing as applicable to FSO and CALM Buoy and as directly referenced by other codes/regulations including IMO Resolution MSC.151(78). Consolidated edition 2021 including 1996 and 1997 amendment.
- IMO MODU Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989, and all Amendments, as applied by Classification Society to an FSO and as required by Flag State.
- International Convention for the Prevention of Pollution from Ships (MARPOL), 1973 (Annexes I, IV, V, & VI) with Protocol of 1978 and its amendments."
- International Convention on Tonnage Measurement, 1969
- Laws, standards and regulations of Coastal state (Thailand) Rules and Regulations, as applicable.
- IMO Resolution MSC.158(78). Adoption of amendments to the Technical Provisions for Means of Access for Inspections
- ILO Convention No.92, Accommodation of crews, ILO Convention No.133, Accommodation of Crews (Supplementary Provisions), Convention, ILO Convention No.147, concerning Minimum Standards in Merchant Ships
- ILO Maritime Labour Convention, 2006 Regulation 3.1 Accommodation and recreation facilities and 3.2 Food and catering (for mandatory requirement)
- United Nations Convention On The Laws of The Sea (UNCLOS)
- International Convention for the Control and Management of Ships' Ballast Water and Sediments
- International Safety Management Code (ISM Code) and all Amendments thereto in effect at the time of EFFECTIVE DATE as applicable on an FSO
- The International Ship and Port Facility Security Code (ISPS Code) and all Amendments, thereto in effect at the time of EFFECTIVE DATE as applicable on an FSO
- International Tele-Communications Union (ITU) Radio Regulations 1982

4.2.2. Codes and Standards

CONTRACTOR shall perform the Work in accordance with classification society requirements, national rules and regulation. Regardless of whether they are referenced directly

or indirectly, CONTRACTOR shall apply all of the codes and standards invoke by classification society rules and guideline.

In additional, the design, fabrication, transportation, installation, commissioning, operation and maintenance of the FSO and CALM Buoy System shall comply with the latest editions of the industry codes, standards, references and recommended practices as following;

- API (American Petroleum Institute)
- ASME (American Society of Mechanical engineering)
- ANSI (American National Standards Institute)
- SSPC (Steel Structure Painting Council)
- OCIMF (Oil Companies International Marine Forum) as applicable for FSO and CALM buoy operations
- Standard for equipment employed at the mooring of ships at SPMs
- Guideline for the purchasing and testing of SPM hawsers
- Ship measurement deadweight or displacement
- Ship to Ship transfer guide (Petroleum)
- Guide on Marine Terminal Fire Protection and Emergency Evacuation
- SPM hose system design commentary
- Safety in oil tankers
- Clean seas guide for oil tanker SPM hose ancillary equipment guides marine hose handbook
- Prevention of oil spillages through cargo pump room sea valve, 1991
- Information paper on pump room safety, September 1995 (Ch.3 recommendations for equipment fitting – new ships)
- Recommendations for equipment employed in the mooring ships at single point moorings 2007
- Mooring equipment guideline 2008
- Standard for oil tanker manifold and associated equipment

Should any inconsistency among above standards develop, the most stringent one shall prevail.

Equivalent recognized standards such as JIS, KIS, Society of Naval Architects and Marine Engineers (SNAME), etc., may be acceptable as equivalent substitutes as approved by COMPANY.

4.2.3 Fees

All fees associated with Marine Warranty Survey, Classing, Flagging and certifying the FSO and CALM Buoy System shall be borne by CONTRACTOR.

5 FUNCTIONAL REQUIREMENTS

5.1 General

The FSO and CALM Buoy System shall be fully functional and complete in all respects as necessary to receive stabilized crude from Platong Central Processing Platform (PLCPP), store

it in the cargo tanks and periodically export sales quality product via an export system. FSO shall also be capable of separating the drop-out water in the cargo tanks and the produced water will be pumped back (using dedicated produced water pump) to PLCPP through the produced water riser or exported to a vessel via mid-ships manifold.

FSO shall be used for receiving the produced water transferred from adjacent fields by either coastal tanker or supply vessel side-by-side operation and returned the subject produced water back PLCPP by FSO facility

FSO and CALM Buoy shall be design for operational safely in accordance with SSHE Contract Requirement, COMPANY provided Risk Assessment Report (TH-G1_FSO-FE-PL-GEN-RPT-0002.C1), Project Technical Review (PTR) 2 Close-Out Report (TH-G1_FSO-FE-PL-GEN-RPT-0003.C1). HAZOP, HAZID, safety studies and QRA shall be conduct and incorporate to FSO and CALM Buoy design, construction, transportation, hook-up, installation, commissioning and though operation and maintenance by CONTRACTOR with participation with COMPANY. The assessment deliverable and close out report is to be issued for COMPANY review and approval per Section 7.10. All recommendation and action from these studies to FSO and CALM Buoy system design, construction, transportation, hook-up, installation, commissioning and though operation and maintenance shall be taken under CONTRACTOR cost. COMPANY shall be responsible to the recommendation and action related to COMPANY's facilities e.g PLEM, subsea pipeline and PLCPP.

Metric (SI) Units shall be adopted for designing, conversion and fabrication of hull, machinery and related equipment unless otherwise stated in the Specifications.

All documents and drawings which shall be submitted to the COMPANY shall be prepared in English.

5.1.1 Design Condition

The design life of the FSO and CALM Buoy System will be 10 years from first oil offshore in Platong Field and continuously operated for 10 years without dry-docking.

Production (oil import) shall be maintained in all-weather condition up to and including the 50-year return period

The hull shall be designed for all the condition that it will encounter during field operations, construction, testing, inspection, maintenance, repair, transportation from shipyard to site where FSO and CALM Buoy will moor and installed.

The CALM Buoy shall moor the FSO on location and allow for 360-degree weathervane in all environmental condition. The CALM Buoy mooring system shall be designed for:

- **Design Environmental Condition (DEC):** The Design Environmental Condition (DEC) is to be based on wind, wave, and current data for the 100-year RP environment in Cyclone environment in this configuration, the CALM Buoy system is to be analyzed while the FSO is disconnected.
- **Design Operating Condition (DOC):** The Design Operating Condition (DOC) is to be based on wind, wave, and current data for the 50-year RP environment in non-Cyclone environment. In this configuration, the CALM Buoy system is to be analyzed while the FSO is connected via a hawser arrangement.

- **Offloading Condition:** The offloading condition is to be based on environmental data for 1-year RP in Non-Cyclone environment. In this configuration, FSO remains connected to CALM Buoy, while the tandem offloading tanker will be connected to FSO via offloading hawser.

The below table summarizes the design condition matrix that will be utilized in the design Works of the CALM Buoy System.

Table 2: Design Condition Matrix

Design Condition	Environmental Condition	FSO Connection	Intact Condition	Damage Condition *(Note [1])*
DEC	100yr –RP (Cyclone Cond)	No	6 Mooring Lines Intact	1 mooring line disconnected
DOC	50yr-RP (Non-Cyclone Cond)	Yes	6 Mooring Lines Intact	1 mooring line disconnected
Offloading	1yr- RP (Non-Cyclone Cond)	Yes	6 Mooring Lines Intact	-

Note:[1] *Under damage condition, the most loaded line and second most loaded line (identified in the intact simulations) successively broken for all configurations.*

5.1.2 Reliability

The FSO and CALM Buoy shall be designed for 10 years without dry docking with no planned production downtime. All systems within the FSO and CALM Buoy shall be designed with reliability and sufficient redundancy built in to allow for maintenance without FSO shutdown or provide sufficient margin in design life, that the potential of failure is minimized.

The design of the FSO and CALM Buoy system components shall be based on the following environmental performance criteria.

Table 3: Environmental Performance Criteria

Design Feature	Performance Criteria
Hull Structural Design	Designed to the classification rule
CALM Buoy and Mooring Design	100% uptime at maximum design for 100-year return period conditions

Design Feature	Performance Criteria
Offloading system functional design	100% uptime at maximum design offloading rate for 1 year return period conditions
Marine equipment operational uptime	100% uptime at maximum design throughput for 100-year return period conditions

5.1.3 Critical Systems

Based on the reliability and integrity of ongoing FSO operations in Gulf of Thailand, Table 4 is the lists typical structures and equipment that have been identified as critical system. Specific requirements such as Asset Integrity Management, Maintenance, Inspection and Operation Procedures related to critical system shall be identified in the Bridging Document.

Additionally, detail specification and drawing will be submitted for COMPANY review and approval in accordance with Section 7.10

Table 4: Critical Systems

FSO		
1	**Structure**	Entire Ship Hull & Superstructure Include Cargo Tanks, Slop Tanks, Machinery Space Hull Plate
2	**Cargo and Inert Gas Systems**	Cargo system including slop tank, Tank Pressure and Vacuum (PV), Loading Computer
		Inert Gas System
		Cargo Piping
		Cargo Safety Instruments
		Cargo Tandem, Offloading Hoses and hawser system
3	**F&G System**	Ventilation System Interlocks to Fire and Gas Systems
		Fire Water System include Pumps, Fire Water Distribution Piping
		Deluge System Controls, Nozzles, Piping
		Fire Suppression System: Engine Room Aqueous Film Forming Foam (AFFF)Foam System, Controls, Piping, Nozzles
		AFFF Foam Proportioning System

		Main Deck Fire Monitor, Controls, Nozzles, Piping
		Audible/Visual Alarm System Circuits and End Devices
		Fire and Gas Detection System (FGS)
4	**Main Power Generation**	Emergency / Black Start Compressor
		Main Switch Gear and Busses
		Feed Breaker MSB to ESB
5	**Emergency Power Generation**	Emergency Generator and Starting System
		Emergency Switchboard and MCC Feeders
		Emergency MCC's and Distribution Boards
		Emergency Electrical Load Devices
6	**Telecommunication System**	Communication System, including Navigation and collision avoidance aid
7	**UPS System**	Batteries: Fire, Gas, ESD, ICSS, Communication System
		UPS: Fire, Gas, ESD, ICSS, Communication System
8	**Integrated Control and Safety System (ICSS)**	Shut Down System, ESD
		Safety Instrumented System (SIS)
9	**Boiler**	Boiler Steam Containment Shells, Drums, Tubes, Piping/PSVs
		Combustion Control system, Instruments and Control Devices
10	**Others**	Emergency Lighting
		Cranes
		Lifeboats
		Passive Fire Protection, including Fire Walls, Doors and accessories
		SCBA Air quality testing

FSO Mooring		
11	**Mooring System**	Moorings (Mooring Hawser connected with FSO and CALM Buoy)
		Hawser Tension Monitoring and QRH System
CALM Buoy, Moorings and Risers System		
12	**CALM Buoy Systems**	Fluid Swivel
		Rotation Assembly 360-degree weathervane
		Floating Hoses for Crude Oil Loading and PW Reinjection
		Crude Oil and Produced Water Risers
		Mooring Chains and Anchors
		LSA and FFE

5.2 Site Data

5.2.1 FSO, CALM Buoy and PLEM Location

Bellows are indicative location based on COMPANY's FEED study. Interface detail design review activities during detail engineering between COMPANY and CONTRACTOR shall be conducted to finalize the location, specification, and arrangement of PLEM, Risers, Mooring Chains and CALM Buoy.

The center of the CALM Buoy is located at:

- 766 135.49m E
- 1 068 935.93m N

The center of PLEM is located at:

- 766 075.49m E
- 1 069 039.86m N

Refer to EXA-A4 for Field Layout.

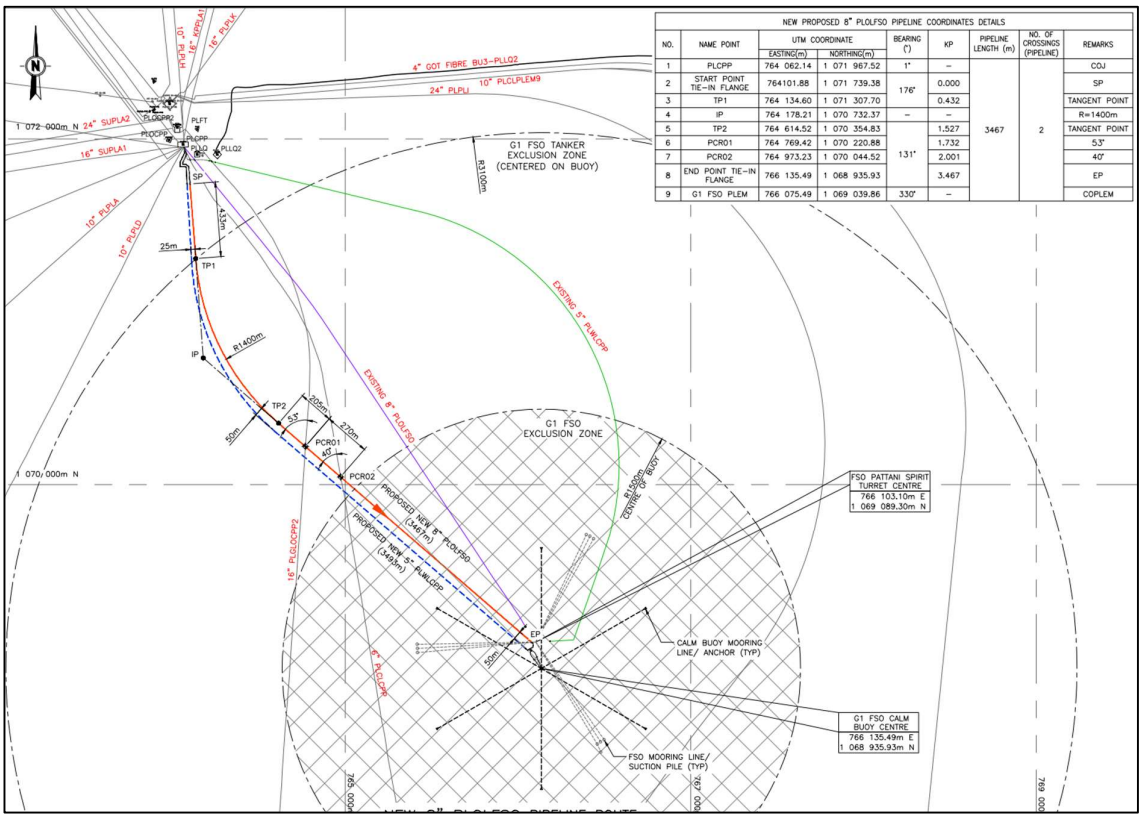

Figure 5.1: Field Layout

5.2.2 Water Depth

Water depth at the proposed FSO location is 72.8 m. below LAT.

5.2.3 Site Environmental Criteria

Refer to EXA-A5 for Metocean Data.

5.2.4 Marine Growth

Refer to EXA-A5 for Metocean Data. Marine growth and its control in piping, sea-chests needs to be considered in the design.

5.2.5 Geotechnical Data

Refer to EXA-A6 for Geotechnical Data.

5.3 Zero Overboard Discharge Policy

Except for the systems identified below there is a zero overboard policy in the Gulf of Thailand. The exceptions to this rule are:

- Rainwater draining from deck
- Fire or Deluge water draining from the deck

- Output from the sewage treatment plant
- Cooling water discharge
- Ballast Water collected in the Gulf of Thailand
- Boiler feed water
- Emergency bilge suction from machinery space
- Inert gas scrubbing water and deck water seal discharge

All areas of the main deck including Chemical Tote Tanks will have the capability to capture and contain spilled hydrocarbons and prevent them from over boarding. These need not be routed to closed drains.

5.4 G1FSO Functional Requirements

5.4.1 Loading Station

Refer to COMPANY's Risk Assessment Report (TH-G1_FSO-FE-PL-GEN-RPT-0002.C1), Loading Station shall be located at FSO main deck port or starboard side nearby Bow area.

5.4.2 Crude and Produced Water Properties

Depending on characteristic of well feed streams and operating conditions and of crude oil processing system on the CPP, the quality of oil may vary during normal. During upset conditions, the production rate on the CPP will be reduced to ensure oil processing can meet the required product specification.

Refer to EXA-A7 for Crude and Produced Water Properties.

5.4.3 Crude Oil Offloading Properties and Rates

Table 5: Crude Oil Offloading Properties and Rates

Crude Oil Offloading	Min	Max
Departure Temperature (Deg C)	51	60
Departure Flow Rate (m3/hr)	500	3000
API (°)	34	46
BS&W	0.0%	0.5%

5.4.4 Produced/ Drop-out Water Export Properties and Rates

Table 6: Produced/ Drop-out Water Export Properties and Rates

EXPORT to CPP	Min	Normal	Max
Departure Pressure (bar)		13.4	19[1]
Departure Temperature (Deg. C)	20.5	40	76.67
Departure Flow Rate (bpd)		3500	5000
TSS (mg/L)	0		30
Oil Content (ppm)			<2000
Particle Size (microns)	0		20

Note:[1] *Maximum departure pressure will be confirmed by COMPANY during details design phase, which to be considered maximum surge pressure*

5.4.5 Midship Manifold Loading Rates

Table 7: Midship Manifold Loading Rates

Fluid	Design Rate (m3/hr)
Fresh Water	30
IFO/MGO	240
Produced Water	240

5.4.6 Midship Manifold Offloading Rates

Table 8: Midship Manifold Offloading Rates

Fluid	Design Rate (m3/hr)
Fresh Water	50
MGO	80
Produced Water/Drop-Out Water	240

5.4.7 Fuel Oil Specification

The fuel oil for the FSO operation local supplied by COMPANY. FSO machinery system shall be capable to use with Low Sulphur Intermediate Fuel Oil (IFO) 180 cst for primary fuel. MGO shall be use for secondary fuel.

All responsibility including but not limited to the bunkering plan, bunkering documents, oil record book, tank storage, heating system, transfer system, separation system, filtration, changeover procedure, viscosity control, sludge disposal, safety precaution, etc shall be responsible by CONTRACTOR meet with MARPOL, SOLAS, IMO and statutory requirements.

IFO and MGO specification to be used for the design is ISO8217 (Petroleum Product (Class F) Specification Marine Fuels). The ISO category of IFO and MGO are RME and DMA respectively.

5.4.8 Chemical Treatment, Injection and Monitoring

The following chemicals shall be assumed to be injected at the FSO. CONTRACTOR shall provide the storage space, injection systems for these chemicals. And the chemical injection location shall be provided for the following tanks and pipeline:

- Slop tanks
- Produced water tanks.
- Produced water reinjection pipeline

For crude oil pipeline, chemical injection will be performed at PLCPP before exporting into the pipeline through FSO.

Chemicals shall be injected at stripping header and/or produced header which can be connecting to the bottom of slop tank and dual propose tanks (produced water tanks) and produced water reinjection pipeline from FSO through subsea riser and pipeline until back to PLCPP.

Chemicals shall be provided by COMPANY. Chemicals shall be loaded onboard in tote tanks. Provisions for FSO handling, laydown & storage area, securing and transferring chemicals from these tanks to chemical injection skid shall be arranged by CONTRACTOR.

Provisions for the proper simultaneous storage onboard of eight (8) tote tanks or drums shall be provided. For ensuring adequate space is provided for the tote tank, CONTRACTOR shall assume that each tote tank capacity of up to 2,900 liters and has a preliminary footprint of 1995 mm x 1995 mm with an overall height of 2185 mm and a maximum weight of 4,680 kg.

Table 9: Chemicals Injection Guideline

Chemical Name	Chemical type	Manufacturer	Dosing Type	Dosing Rate
Biocide	Glutaraldehyde Quaternary ammonium compounds	Nalco Champion Clariant Baker Hughes Suez MI Swaco Schlumberger	**Slop & Dual Purpose Tanks:** Intermittent/batching **Pipeline:** Continuous	**Slop & Dual-Purpose Tanks :** 500-1000 ppm **Pipeline:** 400ppm (subjected to biocide efficiency)

Chemical Name	Chemical type	Manufacturer	Dosing Type	Dosing Rate
Corrosion inhibitor (liquid phase, water soluble)	Imidazoline based with active compound 10-30%	Nalco Champion Clariant Baker Hughes Suez	Continuous	20-100 ppm

Noted: *The devices to monitor the efficiency of chemical treatment and corrosion rate such as bio-probe and side-stream shall be installed on the downstream of crude oil riser on FSO for monitoring the efficiency of chemical treatment during the operation. The probe shall be able to take the samples from top, middle, and bottom of the pipe. The examples of monitoring devices are shown in EXA-A8.*

5.4.9 Minimum Storage Capacity

The FSO shall have a required minimum storage excluding slop tanks of not less than 600,000 bbls. This cargo storage capacity includes produced water (Dual Purpose Tanks). The required minimum storage to be calculated at 98% of tank capacity. The capacity of the slop tanks, fuel oil, MGO, fresh water and distilled water shall be finalized based on the candidate vessel during detail engineering.

Table 10: Minimum Storage Capacity

Fluid	Required Storage Capacity	Specific Gravity
Crude Oil	The required minimum storage excluding slop tanks is 600,000 bbls	Refer to EXA-A7
Crude Oil/ Produced Water (2 x Dual Purpose Tank)		
Slops	TBD	1.0250 @ 15° C
Fuel Oil / MGO	TBD	Refer to Section 5.4.7
Fresh water	TBD	1.0000 @ 15° C
Distilled water	TBD	1.0000 @ 15° C

Noted: *TBD-To be designed by CONTRACTOR for COMPANY approval (To be filled according to CONTRACTOR's Proposal)*

The FSO shall be supplied the consumable liquids during operation by the suitable vessel or in-field supply vessels using the manifold-hose reel or lifted off-board in tote tanks. Means to fill the COMPANY provided tote tanks on the FSO shall be provided by CONTRACTOR.

The FSO shall provide a reliable diesel bunkering system for MGO transfer to, or from, the MGO storage tank on the FSO to the supply boat.

5.4.10 Cargo Loading and Storage

The floating hose loading station shall be located nearby the bow of FSO. The floating hose length, size and specification shall be design by CONTRACTOR which can be referred to EXD-A2.

Process fluids received from the PLCPP via CALM Buoy will be directly loaded into the FSO cargo tanks. Dedicated two (2) pairs of cargo tank loading headers from main deck shall be provided.

Auto sampler shall be located on the upstream of cargo loading header on main deck.

The water drop-out or free water will be cut from the bottom of each of the storage tanks and transferred to the dirty slop tank or dual-purpose CO/PW tanks. Means of skimming oil from slop tanks at top layer shall be provided.

The production fluids will make up a single parcel and so further segregation once onboard will not be required.

The Wax Appearance Temperature (WAT) of the crude oil is relatively high and so heating will have to be provided for all cargo oil tanks including dual purpose tanks as well as slop tanks. The storage temperature of the crude shall be maintained above the WAT and below the design temperature limit of the tank coating at all times.

The cargo loading system shall be fitted with Emergency Shut Down (ESD) features, including combined automatic and manual activation capability. The cargo loading header shall contain a mechanically and hydraulically operated ESD valve designed to be operated remotely by the ESD system. The ESD minimum function, when activated, shall be to shut cargo loading by close the shutdown valves (SDVs).

Surge caused by pipeline slugging in the producing fields. This must be included in the ranges of FSO piping hydraulics. Surge analysis shall be conducted. Equipment with engineering safeguard (SDV, PAHH and PSV) shall be designed and provided to withstand the surge pressure for FSO operational safety.

5.4.11 Cargo Offloading

Cargo parcels will be offloaded from the FSO to tankers with a maximum size of 120,000 DWT tandem mooring, the maximum parcel size will be estimated 48,000m3 (300,000 barrels). A 48,000m3 parcel shall be offloaded in no more than 24 hours including hookup to completed pumping of cargo. The discharge rate for the offloading operation is 3,000 m3/hr.

Arrangements shall be provided, including bypass to the metering skid with removable spool, to allow the backloading of cargo/produced water from tankers to the FSO

A proper hawser storage shall be provided for the storage of hawser when not offloading. Hawser shall meet OCIMF guidelines. The hawser shall be provided with an Emergency Quick Release System and a Hawser Tension Monitoring System with recording capability and status lights at the aft deck. Mean of load cell dismantling for manufacturer calibration shall be provided.

Hawser size and length shall be suitable for mooring the range of tankers as specified elsewhere in this Specification. Exact hawser size shall be determined by CONTRACTOR and shall be submitted to COMPANY for approval. Hawser shall be a grommet-mooring polypropylene hawser of single-braided construction, with galvanized thimbles on both ends, lace-on floats, dedicated shackles, or equivalent construction meeting OCIMF recommendations.

Hawser shall use multicore construction with a polyester protective band cover or equivalent construction meeting the OCIMF Guidelines for purchasing and testing of SPM hawsers.

A hawser load-monitoring system shall be provided by CONTRACTOR and shall include load monitoring cells with a local amplifier at hawser connection to stopper.

- Provisions shall be made to record and archive loads.
- Remote read-out panel in the CCR that contains a hawser high-tension alarm shall be provided.
- Local readout and load readout in cargo offloading monitoring office shall be provided
- Hawser shall be fitted with a quick-release facility, local actuation (not near hook), and remote actuation from the CCR

A COMPANY's 40-60te BP tug (subject to shuttle tanker size) will be available to assist in the berthing and hold back on the tanker during offload operations.

Cargo shall be offloaded through a single floating hose string meeting the recommendation of OCIMF as applicable.

Hose shall be designed for maximum pressure in offloading system and comply with the requirement of OCIMF Tandem Mooring and Offloading Guidelines for Conventional Tankers at F(P)SO facilities, OCIMF Guide to Manufacturing and Purchasing Hoses for Offshore Moorings for offloading hoses.

A marine breakaway coupling shall be provided for offloading hose. The marine break away coupling shall be of double closure type. Control closure shall be provided for both sides of the coupling.

Additional redundancy for offloading will be allowed for by means of making various hose sections (rail and tail) spares. Mean of flush the hose with water from the slop tank shall be made.

Offloading hose assembly platform and storage rack shall be provided by CONTRACTOR to facilitate for the operation and maintenance of the hose.

The cargo export system shall be fitted with Emergency Shut Down (ESD) features, including combined automatic and manual activation capability. The cargo offloading header shall contain a mechanically and hydraulically operated ESD valve designed to be operated remotely by the ESD system.

The ESD minimum function, when activated, shall be to stop cargo pumps and close the offloading shutdown valves (SDVs)

- The effect of hydraulic surge in the system shall be calculated, minimized, and shall be included in the design Working pressure of the shutdown system.
- Equipment shall be designed to withstand the surge pressure of shall be protected by a surge protection valve

5.4.12 Drop-Out/ Produced Water

Drop-out/ Produced water separated in the cargo tanks and then slop tanks will be exported to the PLCPP through the produced water export floating hose, CALM Buoy and riser. In the event downtime is experienced on the produced water riser or swivel the water shall be offloaded to a dedicated coastal tanker or supply vessel through the FSO midship manifold. Export rates can be found in Section 5.4.6 Midship Manifold Offloading Rate

Provision should also be made for the FSO to receive produced water from other fields via a dedicated coastal tanker or supply vessel.

The Side-by-Side berthing alongside (Starboard) mooring of supply boat and tanker for transferring fuel oil and fresh water as well as produced water transfer from coastal tanker or supply vessel. The transferring of produced water from other fields will be held typically every four to six months, each transferring requires two to three times of tanker berthing.

A dedicated storage tank shall be provided to enable storage of produced water prior to batch water being returned to the field facilities via the water return pipeline. The size of the tank shall be agreed between CONTRACTOR and COMPANY, based on the available space for tanks within the FSO.

The produced water reinjection pump shall be sized based on the design limitations of the PLCPP processing facilities, CALM Buoy components, export floating hoses, risers and the COMPANY provided subsea PLEM and pipeline as defined. The pump shall have a variable speed drive (VSD) to allow variation in flowrates returning to the field facilities and in case both crude oil and produce water floating hose shall be flushed for FSO to disconnect and evacuate from offshore field.

Due to the potential for bacteria growth during storage of the produced water, chemical dosing of the produced water shall be required. For the dosing, 2 x 100% pumps with a maximum flow of 84 gpd and a chemical storage tank shall be supplied. The final design pump capacity and injection location shall be determined by CONTRACTOR during detailed engineering.

CONTRACTOR shall provide an oil-in-water meter and control device to ensure the limit is not exceeded. Prior to return of produced water to Wellhead Platform, CONTRACTOR shall take measurements to confirm the oil-in-water content.

No seawater is allowed to be mixed with the produced water for return to Wellhead Platform unless suitable treatment and filtration is agreed with COMPANY. Produced water may be used for tank washing, as required for tank entry.

5.4.13 Field Vessels

The data in the table below shall be used as the typical dimensions of all field supply vessels that shall be used to support the FSO after installation. Provision of fenders for alongside berthing to protect side shell damage are required.

Table 11: Vessels Dimensions

Vessel Type	Typical Dimensions
Field Supply Vessels	LOA: 70.0 m Beam: 14.0 m Draft: 5.0 m Gross: 1,255GT
Coastal Tanker (Side-by-Side berthing)	Max. vessel displacement: 10,900 tones Max. Length Overall (LOA): 120 m. Breadth: 20 m. Depth: 12 m. Draft: 8 m.

5.5 Vibration And Noise

5.5.1 Vibration

The FSO shall be designed as far as practicable to limit the vibration to levels that will:

- Not result in discomfort or annoyance to operating crew and COMPANY personal
- Not damage or cause malfunction of the machinery, equipment and the FSO structure during all the FSO operating condition

Considering the above, the vibration shall be kept below the levels specified in ISO 6594:1984 "Guideline for the Overall Evaluation of Vibration in Merchant Ships". If vibration levels are exceeded, they shall be corrected.

CONTRACTOR shall carry out vibration checks in accordance with specifications and regulatory body requirements

Vibration shall be measured in accordance with ISO 4867/4868 and "Guideline Notes on Acceptable Vibration Levels and Their Measurement" by Lloyd's Register of Shipping.

5.5.2 Noise

For personal protection and safety, low noise equipment and noise isolation measures shall be utilized as far as practicable throughout the FSO and such as measures shall be proposed. CONTRACTOR shall pay careful attention and non-conformance will need to be corrected prior to FSO delivery and acceptance

5.6 Materials

All equipment and material procured/installed during the conversion of the vessel to FSO and fabrication of CALM Buoy shall be new, sound proven in its performance and suitable for use in marine floating vessel environment. All such equipment and material shall be of highest reliability and quality meeting recognized marine standards, safe, easily maintainable and of long-life expectancy to meet the functional design requirement for this FSO and CALM Buoy.

Any equipment or system important and critical to the FSO and CALM Buoy performance, shall have a backup equipment or system.

Firefighting gases and form to be environmentally friendly. Material and system contents shall be free from Halon, PCB's, CFC, refractory ceramic fiber, asbestos, and lead containing paint shall not use anywhere.

Freshwater system components shall be lead free. If copper is used in fresh water, it shall be such that it will not dissolve with water, and it shall not be soldered with lead.

5.7 FSO Hull Design

The following apply to the FSO hull and interface to the CALM Buoy system. The FSO demolishment, refurbishment, life extension and conversion design.

5.7.1 Hull Inspection and Refurbishment

Candidate vessel age shall be not more than 25 years old at the time of CHARTER COMMENCEMENT DATE at DESIGNATED WORK AREA mentioned in Section 1.2 above.

CONTRACTOR shall provide these documents describe a philosophy and conversion activities to be adopted during the conversion of the Candidate Vessel into G1FSO to ensure adequate hull structural performance during their entire service life.

- Global Strength & Fatigue Evaluation Report
- Steel Renewal and Assessment Report
- Hull Inspection and Steel Renewal Philosophy
- Blasting and Painting Specification
- Tank testing philosophy

CONTRACTOR shall provide candidate vessel class survey status report, certificate of registry, trading history, SIRE inspection, Q88 and hull inspection report. The Condition Assessment Program (CAP) report shall be provided.

CONTRACTOR shall establish candidate vessel's hull inspection report in detail ascertain structural condition, coating, histories of crack, anomaly, and repair through the tracking of opened items in Classification survey reports and owners maintain records.

CONTRACTOR shall provide vessel's integrity through the design life based on the calculated analysis results and observed inspection histories.

5.7.2 Hull Structural Design – General

The FSO shall be ship double hull construction. Tanks shall be capable of being loaded and discharged simultaneously, in any order, and capable of any filling level. Cargo specific gravity of 1.025 shall be used for the strength assessment of cargo tank structure and other tanks including, slop tanks, and produced water tanks. The highest cargo specific gravity of 0.820 shall be used for the fatigue assessment of cargo tank structures.

The nature and particulars of still water loading conditions to be analyzed for design purposed for COMPANY review and approval per Section 7.10.

If vessel towed to site, tow speed of 5 (five) knots shall be used for design purposes.

5.7.3 Strength and Fatigue Assessment

Loading and response of the FSO shall be calculated, and FSO structure strength shall be shown to be adequate with regard to strength and fatigue including the new interface structure to the hull.

An analysis procedure that includes the new interface structure design to the hull. Document shall be developed by CONTRACTOR and submitted for COMPANY approval

5.7.4 Protection of Hull Against Accidental Damage

The structural arrangements shall be designed with due consideration to the possibility of accidental events, particularly during birthing/unberthing of supply and/or coastal tanker, during tandem and side-by-side offloading with an export tanker during usage of the cranes. Ship collision study shall be performed.

A fendering system shall be provided by the CONTRACTOR. The fendering system and mooring arrangement shall be adequately designed to ensure structural safety during supply boat, diving support vessels or side-by-side berthing of export tanker and shall be adequate to withstand the impact of supply boats, and bunker barges. Protrusion shall not extend outside the hull boundary except those specifically allowed by COMPANY

5.7.5 Sea Chest

Design of sea chests and overboard discharges is important to the FSO's ability to stay on-station.

Sea chests shall be designed to facilitate onsite underwater inspection and maintenance of sea chest valves, as required during the performance of UWILD. Means shall be provided to blank the sea chests or sea opening.

CONTRACTOR shall provide sea chests which shall be subject to approval by Class and COMPANY. All sea water system shall be maintainable without shutting down the FSO. Before opening the side shell valves, the system shall be drainable to ensure that the blank is leak proof and the machinery room will not flood.

5.7.6 Crane Foundations

The foundations shall be made integral with the hull structure and shall integrate efficiently with the hull structure. The foundations shall be designed so that the crane pedestals can be welded to the foundation.

A structural analysis shall be provided for all crane foundation designs to confirm the structural integrity of crane foundation. Analysis methodology and results shall be submitted to COMPANY for approval

5.7.7 Equipment and Outfit Mooring Fittings

The preliminary layout and plan for all deck equipment shall be submitted to COMPANY for approval. During the detailed design, an arrangement plan, and details of fittings shall be submitted for COMPANY review and approval per Section 7.10. These are composed of but not limited to:

- Bollards, panama chocks, closed chocks, cross bitts, and eye plates for mooring
- Mooring supply boats, diving support vessels, workboats, bunker barges alongside the FSO
- Handling fenders during deployment, operation, and retrieval
- Mooring export tanker in tandem
- All fitting required for the FSO tow from shipyard to Platong field, if require
- All fitting required for installing and hookup of the FSO at Platong field

The above fitting shall be made of steel plates or cast steel and have sufficient strength of the described service. Safe Working loads shall be based on OCIMF criteria and clearly marked on the fittings

Closed chocks shall be of a large radius type and have the opening large enough for mooring line terminal tackles such as shackles.

Cross bits shall have a minimum safe working load of 10 MT.

The surface of mooring fitting shall be finished smooth for use with synthetic mooring lines and any rough/sharp edges shall be eliminated.

Design load rating for all mooring fitting shall be clearly welded near the fitting contrast painted as per COMPANY approval

5.7.8 Tow Fitting (if require)

A preliminary list and specification of all fittings, winches, windlass, anchors, towing brackets, towing ropes, and all other equipment necessary for towing shall be provided for COMPANY review and approval per Section 7.10.

During detailed design, CONTRACTOR shall prepare and submit, for COMPANY and marine warranty surveyor approval, a plan for towing the FSO to Platong field.

Calculation shall be provided stating the maximum expecting towing force. These loads shall be incorporated in the structural design of FSO

5.7.9 Fittings for CALM Buoy Mooring Arrangement

The mooring arrangement with the CALM Buoy shall be designed in accordance with the philosophy of the OCIMF Recommendations for Equipment Employed in the Mooring of Ships at Single Point Moorings. A detailed analysis shall be conducted to establish the maximum expected mooring loads induced according to design conditions.

The connection of the FSO to the CALM Buoy shall be made with dual connection hawsers. The sizing of the connection hawsers and the connection points shall be designed in accordance with Class requirements.

Each connection hawser shall be designed to withstand the full load of the FSO so that the other connection hawser shall be fully redundant. Each connection hawser shall incorporate a load monitoring device with a read-out in the Central Control Room (CCR).

Tension monitoring equipment shall be installed, local and remote readouts in CCR with adjustable alarm, recording devise in the CCR.

5.7.10 Fittings for Tandem Mooring Arrangement

The tandem mooring arrangement with the export tanker shall be designed in accordance with the philosophy of the OCIMF Recommendations for Equipment Employed in the Mooring of Ships at Single Point Moorings. A detailed analysis shall be conducted to establish the maximum expected mooring loads induced by the largest tanker scheduled to be berthed in tandem.

A QRH (Quick Release Hook) to secure the FSO chafe chain end of the mooring assembly for the export tanker, with local and remote control, capable of releasing under any expected mooring load up to the maximum rating of the fitting provided. The QRH shall have a minimum safe Working load of 250 MT and tested to 375 MT. The safety factor shall be 3 as a minimum, based on the yield strength. The QRH shall also be fitted with a load cell, local and remote readouts in aft control center and CCR with adjustable alarm, recording devise in the CCR and equipped with load status light at poop deck. Load cell shall be dismantle-able for manufacturer calibration every 5 years.

Center panama chock of 200 MT safe Working load for towing direction, including transverse (90 degrees).

5.7.11 Transfer Ladders and Baskets

Two pilot ladders with deployment and retrieval equipment shall be fitted close to the accommodation house.

CONTRACTOR shall provide two (2) personal baskets with all necessary fittings to connect to the FSO crane and to safety operate the basket. The basket shall be capable of transferring eight (8) persons in each basket. Work vests for use when using the basket, shall also be provided for all passengers.

5.7.12 Fender Systems – for Supply Boats and Diving Support Vessels

CONTRACTOR shall develop a fendering system design with details of components and submit for COMPANY's review and approval per Section 7.10.

All fenders will be CONTRACTOR furnished. CONTRACTOR to provide fender handling equipment using davits or cranes.

All fenders shall be capable of being deployed and recovered without assistance of a line handling boat.

An adequate number of deck fittings, i.e. bollards, closed chocks, pad eyes and cleats, shall be provided to rig the fenders along both side of the hull. All fitting shall be rated for the maximum expected loads and loading ratings shall be marked with weld beads on the deck adjacent to the fitting and contrast painted.

Fenders shall comply with following standards:

- Four (4) pneumatic fenders will be provided for bunker barge mooing on the starboard side of the vessel. The fenders will be a minimum of 5.5 m in length and 2.5 m in diameter. These fenders can be used on the port side for supply boat mooring and shall be handled by deck crane from and to port side and starboard side of FSO without their own dedicated handling davits.
- Each fender shall have its own lifting strop and pennant which will be recoverable from the deck by the deck crane of FSO. Suitable bollards shall be provided to secure the pennants

both on port side and starboard side deck. The fenders shall be of aircraft or car tyre net construction with an integral sleeve which will protect the side shell coating from shackle and chain when fender is compressed.

- Four (4) sets of storage and maintenance cradles with its own bumper bars shall be provided.

5.7.13 Fuel/Water Connections

CONTRACTOR shall supply all hoses used for fuel bunkering to in-field service vessels, portable water bunkering and produce water loading/offloading. All dry brake system transfer hose (TODO) and reducer connections are to be located at midships manifolds (port and starboard), with manifold flange sizes as followings:

- IFO/MGO – Base on flow rate
- Produced Water – Based on flow rate
- Portable water bunkering – 2.5”

5.7.14 Draft Gauges

Remote reading draft gauge of a pressure transducer type with readout in the CCR and are accessible for maintenance. Transducers shall be located; one (1) forward, one (1) aft and two (2) amidships, port and starboard. The draft gauge should be arrange provided for easy servicing.

Underwater marking and sea opening plugging capability shall be provided for each the draft gauges

5.7.15 Name Plates and Markings

Name plate and marking shall be provided in accordance with marine practice.

CONTRACTOR shall provide and install nameplates, notices and markings for identification, safety, warning, etc., that meet the requirements of SOLAS, IMO Classification Society and COMPANY.

All nameplates, identification signs and machinery characteristic label plates shall be written in the English language. All caution plates, warning and safety signs, valve identification plates, instructional plates, and other operational type of signs shall be in dual language – English and Thai. Escape and emergency signs shall be self-illuminating and in dual language.

All fastening of labels, sign, directional marks, etc., shall be of suitable material for the type of structure where mounted and shall be finished to match the labels, markers, etc.

All nameplates and marking shall be accurate in placement, content, grammar, language, and spelling.

All markings shall have adequate illumination to be visible at all times without the need for a flashlight

5.7.16 Miscellaneous Marking and Labeling

Bulkhead positions and tank identification marks on each side of bulkheads shall be outlined by weld beads and painted on the shell. All hydrocarbon (fuel, lubricating oil, etc.) tanks shall be clearly marked.

The following marking shall be outlined by weld beads and painted:

- Tugboat pushing marks, P/S;
- Pilot ladder mark., P/S
- Cargo manifold marks aft.

Tank numbers marking shall be marked by weld beads on tank coaming and manhole covers.

For underwater survey in lieu of dry-docking and to assist divers during underwater surveys CONTRACTOR shall mark locations of all sea chests, longitudinal and transverse bulkheads, tank boundaries and other location as required by Classification Society and COMPANY. All markings shall be bordered by weld beads and coated in a light contrasting color. Markings shall be on the side shell and bottom shell, both port and starboard. Color photographs of markings shall be included as part of the finished plans. Markings shall be of non-leaching coating.

Fuel tanks shall be marked at its boundaries, and "DO NOT WELD" marks shall be put as directed by COMPANY.

All piping shall be color coded as per CONTRACTOR standard.

COMPANY and CONTRACTOR logos may be provided and installed on the accommodation house forward bulkhead. COMPANY funnel marking shall be painted in the funnel.

5.7.17 Workboat

CONTRACTOR shall provide a Workboat and cradle. CONTRACTOR shall also provide fully competent crew to operate the Workboat. The Workboat shall be powered by an engine using diesel (MGO) fuel. Workboat shall be Norsafe Magnum 750 Large Console or equivalent. Space should be allocated on deck within crane radius for Workboat handling. Crane shall be rated for Workboat operations with personal onboard. Mean of secondary lifting line shall be provided when lifting the boat with person on board.

5.7.18 Mooring Ropes

CONTRACTOR shall provide all mooring ropes

5.7.19 Line Throwing Apparatus

CONTRACTOR shall provide the line throwing apparatus ropes

5.7.20 Keys and Locks

All private spaces, cabins, Workshops, stores and offices shall be provided with individual locks and keys made of stainless steel (SUS 316). All furniture shall also be provided with locks and keys.

All key safe shall be provided in the following locations for Working keys:

- CCR
- FSO's master offices
- COMPANY representative's office

5.7.21 Mechanical Interlocks

A master key cabinet for all mechanical interlock devices throughout the FSO and CALM Buoy e.g. PSVs, emergency overrides, etc. shall be provided.

5.7.22 Isolation Keys

All keys relating to mechanical, electrical or valve isolations applied in compliance with lockout/tagout procedures shall be located in a purpose-built lockout isolation box.

5.7.23 Mooring Winches

Existing mooring winched shall be retained and refurbished to aid for the berthing of supply vessels and bunker vessels. Winch speed control shall be set up to 15 m/min for the rated load.

The mooring winches shall be designed in compliance with OCIMF recommendations and suitable for handling synthetic mooring lines.

The winch breaks shall be designed as below:

- The designed break holding power to be 80% of the minimum breaking load (MBL) of the mooring rope but to be set a 60% and adjustable between 60% and 80% later on.
- A winch break test kit designed to the OCIMF guidelines to be provided.

5.7.24 Anchor Handling Winch/Windlass

Anchor and anchor handling winch/windlass may be retained at CONTRACTOR discretion.

5.8 Material Handling and Lifting Arrangement

5.8.1 General

All material handling, lifting plan and drop object study covering existing and planned equipment shall be designed based on CONTRACTOR's material handling philosophy, shall cover functional, operation and maintenance requirement of FSO and CALM Buoy System. The plan shall be submitted to COMPANY for review and approval per Section 7.10

Stores, provisions and spare parts to and from supply boats, including 20' fully-loaded container. Landing and stored area for the container with suitable reinforcements of the main deck, and means to lock container in place, shall be provided.

5.8.2 Offshore Crane

The minimum one midship crane, man riding, in accordance with API 2C specification shall be provided. The Safe Working Load (SWL) shall be determined based on CONTRACTOR's material handling philosophy.

Materials handling philosophy shall be submitted for COMPANY approval.

Offshore crane shall handle a personnel transfer basket and certified for personnel transfer by Classification Society. The personnel transfer basket shall be supplied by the CONTRACTOR.

5.9 Accommodation

The accommodation shall be designed in accordance with IMO, Classification and Flag State requirements.

Accommodation shall design based on a Personnel On Board (POB) meet CONTRACTOR's operation and maintenance philosophy and requirement for COMPANY's review and approval per Section 7.10.

Accommodations including the outfitting, furnishings, common spaces (e.g. lounges, gymnasium, etc.) shall be to standard ensuring operator quality of life and comfort in properly considered.

The laundry, mess and galley shall be sized and planned in consultation with CONTRACTOR's specialist offshore catering. The galley shall be fully equipped to prepare meals to serve all CONTRACTOR and COMPANY POB, with a food storage capacity to provide meals for the full complement over a 14 days period.

One (1) x single person cabin shall be provided for one (1) COMPANY representative to be work full time onboard FSO, and two (2) x 2 person cabins shall be provided for four (4) COMPANY personnel and Thailand Regulator Representative to be onboard FSO during offloading period.

The accommodation arrangement, heating, ventilation, and air condition (HVAC) shall be designed as a "Restricted Smoking" facility. This means that smoking shall be permitted only in designed areas, and air from these spaces shall NOT be recirculated or infiltrate any other smoke free areas. Cabins shall be designed as smoke free.

5.9.1 Cabins and Clinic

Size and style of cabins and lavatories should meet normal marine standards. A drawing of existing accommodation block with modification shall be submitted for COMPANY approval.

A certified clinic shall be provided.

5.9.2 COMPANY Office

CONTRACTOR shall provide sufficient office space with workstation five (5) COMPANY personals inside accommodation nearby FSO CONTRACTOR office for effective day to day communication and collaboration.

5.9.3 IT Network and Telecommunication

FSO internal network and telecommunication shall be provided for COMPANY representative as follow;

- FSO telephone set 1set in COMPANY Representative office
- FSO telephone set 1set in COMPANY Representative cabin
- VHF/UHF marine Handheld radio 1 set
- Intercom/Paging station 1 set
- Wire/ Wireless for internet connection (using FSO network service)

CONTRACTOR shall design and provide IT infrastructure system for COMPANY review and approval. The scope of work shall be included, but not limited to the following:

- IT network and IP phone connection
    - Cisco 4G router (2.1 GHz) with all required base and Security license packages for communicating with existing PLCPP 4G IT network connection. The 4G router shall

be provided with 1/2-inch Heliax cable, Jumper cable, connector and 4G Antenna support pole that shall be used for this system. Additional spare cable shall be provided. (2 EA using + 2 EA spare).

- WiMAX/Wireless board band system shall be provided as a backup link. Outdoor CAT6 marine grade is minimum specification for indoor and outdoor device connection. Spare outdoor LAN cable shall be provided. (1 EA using +1 EA spare)
- Equipment Rack, 19inch 42 U standard Rack shall be provided for equipment installation. Cable patch panel and cable management shall be provided as per normal fabrication.
- Uninterrupted Power Supply (UPS) and associated battery shall provide an alternative power supply and so rated that can supply the IT and communication equipment to be in serviced operation at the required periods.
- Wire/Wireless network connection
  - POE layer 3 network switch 24 ports (Cisco) with all required base and security license packages shall be provided for wire (LAN) network connection. Network Switch supply power over network cable with minimum power class 0 (zero).
  - Network cable, CAT6A is minimum standard LAN cable shall be used for LAN network connection. LAN cable test report shall be provided to COMPANY to verify and approval.
  - Number of LAN outlets shall be recommended by COMPANY.
  - WiFi6 standard Access point shall be provided for wireless connection. COMPANY representative office and his/her cabin area are the required service coverage area.
  - Location of LAN outlet shall be finalized during detail engineering.
- Cisco IP phone set and Printer shall be provided and installed by COMPANY at DESIGNED WORK AREA

- Digital Trunk Radio base station (PLCPP communication)
  - CONTRACTOR shall provide outdoor antenna support (1set) and 1/2-inch Heliax cable (1EA) for digital trunk radio base station installation at COMPANY Representative office.
  - Digital Trunk Radio Base station and Antenna shall be provided and installed by COMPANY at DESIGNED WORK AREA

5.9.4 Cargo Control Room (CCR)

The FSO Cargo Control Room shall be the primary location for all centralized and emergency controls. The CCR shall be outfitted with all centralized and emergency control stations and be equipped with the necessary mimic panels for localized controls.

Arrangement of CCR shall be submitted for COMPANY approval

Navigation panel with radar shall be provided in CCR. All weather instruments shall have a display in CCR

The FSO telecommunication center shall be located as part of, or immediately adjoining the CCR. The telecommunication center shall be equipped with the following minimum equipment

- Radio Communication

  - UHF Marine Fixed Station x 1
  - UHF Marine Portable x 1
  - VHF Marine Fixed Station x 1
  - VHF Marine Portable x 2
- GMDSS
  - Inmarsat C x 1
  - MF/HF DSC (NBDP) x 1
  - NAVEX x 1
  - VHF DSC x 1
  - AIS x 1
- Navigation Aids
  - Radar x 1
- PAGA/Paging System
  - FSO General Alarm (GA) and Public Address (PA)system
  - Telephone system for PAGA
- Communication
  - PAGA, intercom or PAGING system
  - VSAT system
  - Interface for COMPANY IT network and communication
  - Interface for PABX system and IP phone
- CCTV system

5.9.5 Commissary Spaces

The FSO shall fitted with commissary spaces suitable for the POB. The following facilities are indication standard ensuring operator quality of life and comfort in properly considered.

- A galley and a main mess room
- Dry and refrigerated provision stores
- A suitable air condition dry provision storeroom. An electric dumbwaiter may be provided to move res between the dry and refrigerated provisions stores and the galley, mess, and pantries.
- An efficient means of transferring provision from the supply boats to the dry and refrigerated provisions storerooms shall be provided

5.9.6 Public Spaces

CONTRACTOR to propose a layout for public spaces that should meet the general intent of standard ensuring operator quality of life and comfort as listed below:

- Lounge
- Changing room
- Exercise room

- Prayer room
- Public toilet
- Laundry
- Smoking room

5.9.7 Provisioning

During normal operations, the FSO shall receive provisions for the crew and offload waste on a weekly basis

Standard ten-foot provision containers will be used in the field to transfer stores with each container having a maximum weight of ten (10) tons.

5.9.8 Corrosion Protection and Coatings

Corrosion protection is critical for 10-year life without drydocking of FSO. CONTRACTOR shall pay special attention to the coating specification to ensure long life of the FSO.

CONTRACTOR shall submit complete painting schedule, painting application procedure, quality assurance and quality control procedures. This shall include required surface preparation, cleanliness, anchor pattern, and application conditions regarding the curing time, over coat ability, temperature, and humidity, and testing procedures.

CONTRACTOR shall design the coating system taking into consideration the long-life requirement and Platong fluid properties. Paint maker shall propose appropriate costings for the intend service. Selection of coating shall be submitted for COMPANY approval.

The following are suggested coating for the FSO for CONTRACTOR guideline and it does not include all spaces. CONTRACTOR shall use this for guideline and propose a comprehensive coating proposal that is cost effective and meets the intended function.

- Hull exterior, below water line
  - Aluminum – Pigmented pure epoxy, 450 microns in 3 coats (including tie coat)
  - Fluoropolymer foul release A/F, 200 microns
- Hull exterior, above water line
  - Aluminum – Pigmented pure epoxy, 350 microns in 2 coats
  - Fluoropolymer, 100 microns in 2 coats
- Weather decks (Main and deckhouse decks, raised platforms, superstructure tops)
  - Aluminum – Pigmented pure epoxy, 350 microns in 2 coats
  - Fluoropolymer, 50 microns
- Deck house and deck store (Main and deckhouse decks, raised platforms, superstructure tops)
  - Epoxy anti-corrosive, 250 microns in 2 coats
  - Polyurethane, 100 microns in 2 coats
- Ballast water tanks
  - Aluminum – Pigmented pure epoxy, 350 microns in 2 coats
- Cargo, slop and produced water tanks
  - Aluminum – Pigmented pure epoxy, 350 microns in 2 coats

The cargo tanks are to be coated for the bottom 2 meters of the cargo tanks and top 3 meters of the cargo tank.

Slop tanks and produced water tanks are to be fully coated

5.10 Ventilation, Air Conditioning and Refrigeration

CONTRACTOR shall propose comprehensive ventilation, air conditioning and refrigeration systems for FSO. HVAC system will be reliability required for POB.

HVAC system shall try as far as practicable to achieve the POB and design requirements specified herein. CONTRACTOR shall list all spaces in an all-inclusive table stating the number of the space and the services provided for each space. The table shall include air conditioning, package air conditioning, spot cooling, mechanical ventilation, natural ventilation, whether are supplied or exhausted, space volume, and the number of air changes per hour.

CONTRACTOR shall furnish design calculations, refurbishment, and modification drawings, testing documentation, and load balancing data for heating, ventilating and air conditioning system including detail maintenance instruction and part list for all equipment associated with these systems. Design calculation shall include resulting system noise.

Mechanical equipment that is susceptible to failure in the system shall have redundancy to ensure full uptime of the system at full design capacity.

Supply air shall be constant volume with ducted supply and return air. Duct Work shall be low velocity.

Air conditioning, ducts, equipment, etc., shall be insulated and isolated from structure, joiner Work and hangers to prevent condensation.

System should be designed to prevent interconnection of dissimilar space. Intakes shall be located to prevent ingress from exhausts, smokestacks, cargo area, tank vents, or other possible sources of contamination.

5.11 Cargo Handling System

5.11.1 General

The specification herein is an outline specification, and many details are not mentioned herein. CONTRACTOR shall provide a complete system that meets the functional requirements of this FSO and CALM Buoy system.

A cargo handling system capable of receiving, distributing, decanting, and offloading production fluids shall be provided. The cargo handling system will also require the capability to polish the oil in the cargo tanks by transferring the settled water in the cargo tanks to the slop tanks.

Slop tanks will require the capability to decant the oily water in the slops and transfer the water back to the PLCPP or to the produced water tanks. The oil will be exported through a tandem offloading arrangement.

The Cargo system shall be arranged to allow for back loading of Cargo from a tandem moored tanker. The bypass line downstream of the metering skid shall have a physical isolation such that it meets regulatory requirements.

5.11.2 Oil Loading Headers

The oil production product shall be received from the CALM Buoy and distributed to the cargo tanks by two (2) pairs distribution header located on the main deck.

5.11.3 Oil Offloading Headers

The oil parcel shall be capable of being exported from the FSO by both tandem and side by side offloading. A metering system will be provided for fiscal metering.

CONTRACTOR shall propose offloading arrangement for COMPANY approval

5.11.4 Metering System

A Metering System sized for the offloading rates as specified in Section 5.4.3 shall be provided. The unit shall meet requirement of the Kingdom of Thailand Regulations. Supply and installation of the Metering System shall be CONTRACTOR's scope.

Crude Fiscal Metering Specification shall be as following:

- The FSO shall have one custody transfer metering unit installed on the Upper Deck of the FSO. The platform shall be designed as a three-dimensional frame structure for supporting the metering skid.
- The Crude Oil Meters System shall be integrated skid which consists of major components which are Automatic Sampler System, 3 nos of Metering Streams and Bi-directional Pipe Prover Loop. The skid is located in a hazardous area classified as Class 1, Div 1, Group D, T3.
- The meter skid has three (3) meter runs designed for 3 x 50% offloading capacity; two (2) meter runs dedicated as online and one (1) meter run dedicated as standby.
- A static mixer is provided as loosen item for installing at the inlet of the meter skid to ensure proper mixing of the crude (homogeneous), prior to draw off the mixing crude via crude oil sampler probe to the fast loop of quality measurement and sampler collection.
- Flow meter shall have international & national legal metrology approvals for custody transfer application.
- The meters shall be calibrated in accordance with international standard and also local regulatory as required by the Department of Mineral Fuels (DMF), Ministry of Energy, Thailand.
- Crude Metering Unit shall be consisted of;
    - 3 - Metering runs, each run to be equipped with Turbine type meter
    - 1 - Bi-directional pipe prover
    - 1 - Remote control and monitoring panel
    - Metering unit is to be equipped with a set of automatic sampler with two portable containers, densitometer and Water-Cut Analyzers including sampler flow monitoring (flow meter and flow switch)
    - A remote control and monitoring panel with a printer is to be provided in the central control room.

Surge protection shall also be provided. Unit shall be protected against pressure due to expansion from heat caused within the dead legs of the unit.

Metering System shall be protected by water deluge system.

Using of shelters and sun shields protection; The Department of Mineral Fuels (DMF) has experience of metering skids being sited in some of the most exposed locations possible on

offshore installations. These have occasionally been in open, rather than closed modules. CONTRACTOR is reminded that extremes in ambient or sunlight and UV exposure conditions can have a practical effect on measurement integrity, particularly in areas where assumed values of temperature are used. CONTRACTOR shall consider the siting of metering skids, where possible, so that their exposure to extreme ambient conditions is minimized. The use of shelters and sun shields shall be applied for whole metering skid.

Minimum requirements for the metering system are given in EXA-A9.

5.11.5 Crude Receiving Sampler Station

An Automatic Sampler System shall be provided and installed on the upper deck at the incoming pipeline in order to collect the daily representative sampler. The automatic sampler shall be designed to be able to operate in the flow or time base collection method. To ensure the sampler collection shall represent the daily incoming crude oil; the necessary equipment such as flow meter, sampler container, etc. shall be required.

5.11.6 Produced Water and Slops Offloading Header

The produced water handling system shall be configured such that the export of the produced water can be facilitated through CALM Buoy. The produced water and slop shall also be exported using the mid ship manifold on the port and starboard side of the FSO. Dry brake system transfer hose (TODO) shall be provided by CONTRACTOR.

Produce water pump (1 x 100%) system engineering design, procurement, conversion, installation, and pre-commissioning shall be completed meet with classification requirement at shipyard prior FSO sail away (Initial Acceptance).

Produce water pump system operation, and maintenance shall be under CONTRACTOR responsibility. CONTRACTOR shall provide 1 x 100 % replacement completed set spare motor, pump and associated consumable material onboard ready for maintenance without impact to produce water offloading operation.

5.11.7 Fuel Handling

Dedicated fuel loading and offloading system shall be provided. The fuel oil shall complete segregation from the crude oil, produce water, and slop handling systems. A certified flowmeter shall be provided to measure both the loading and offloading of the fuel oil. Dry brake system transfer hose (TODO) shall be provided by CONTRACTOR.

5.11.8 Cargo Pump Room

The cargo pump room shall comply with OCIMF recommendations. Cargo pump room shall meet the safety features as specified herein and necessary modification shall be made to ensure full compliance of these features. Pump shall be capable of handling crude oil properties as specified in section 5.4.3. The cargo pump room shall have the following important safety and operational features:

- Cargo pump room gas detection
- Cargo pump room machinery temperature monitoring
- Cargo pump room machinery vibration monitoring
- Cargo pump seal leakage monitoring
- Cargo pump room bilge alarms
- Cargo pump room CCTV and telephone

- Cargo pump room ventilation
- Pump room access and equipment handling

CONTRACTOR shall propose details of all the above features for COMPANY approval.

5.11.9 Tank Heating System

Heating coils shall be provided in all slop tanks, dual purpose tanks and crude oil tanks for heating. Heating coils should have capacity to heat up cargo oil and sea water from 44°C to 66°C in 96 hours at ambient conditions.

A detailed specification of current heating coils and system, and any modification or refurbishment proposed shall be submitted by CONTRACTOR.

5.12 Inert Gas System (IGS) and Venting System

5.12.1 General

The inert gas system including primary and secondary mean venting system shall be designed in accordance with SOLAS, Classification requirements, OCIMF recommendation, ISGOTT and shall be provided in accordance with the FSO loading, storage and offloading including safe operation & maintenance purpose.

The permanent fixed inert gas system shall be provided for the cargo, produced water, and slops tanks. The ballast tanks shall be fitted the capability to be temporary connected to the inert gas system in an emergency with a non-permanent hose connection.

CONTRACTOR's tank inert, washing, purging and gas freeing O&M philosophy shall be undertaken in accordance with the safe operation & maintenance guidance contained in OCIMF and ISGOTT.

5.12.2 Design Conditions

The inert gas system shall be capable of providing 125% of the volumetric flow rate of the maximum discharge capacity of the cargo handling system during simultaneous export operation of a cargo parcel and the produced water parcel. The inert gas system should be capable both inert gas and fresh air for the tank gas freeing process.

5.12.3 The Inert Gas Source

The inert gas system shall be provided with a source of inert gas from flue gas.

5.12.4 Inert Gas System

Details of existing inert gas system, including distribution system and level of system redundancy are to be submitted by the CONTRACTOR.

5.12.5 Inert Gas Distribution System

The header shall be fitted with the capability of receiving inert gas and fresh air, downstream of the deck seal. All of the cargo tank produced water tank and slop tanks shall have permanent fixed connections to each of the inert gas distribution system headers.

5.12.6 Inert Gas Distribution System Pressure Protection

The inert gas distribution system shall be provided with over pressure and under pressure protection system in accordance with SOLAS, Classification requirements and OCIMF recommendation.

5.12.7 Tank Vent Masts

Vent masts for the venting system shall have an elevation of at least 10 meters above the deck. Location and elevation of the vent shall be demonstrated by vent dispersion study. Vent masts shall be located as far away as practical from the accommodations to prevent the passage of gas to the accommodation. The manual vent shall be fitted with flame arrestors.

Servicing of one vent mast at a time shall be possible without affecting the system operations.

Permanent fixed means of access to the flame arrestors shall be provided with vertical ladders with safety cages and platforms.

A flow meter shall be provided in the cargo venting system to measure the volume of vented gas. A sampler port shall be provided to allow operator to collect the vent gas sampler to analysis in periodically. The vent gas flow rate (from flow meter) and analysis results should be input to the ICSS system in order to real-time calculated and report the HC vent volume and non-HC vent gas volume.

A fire extinguishing system shall be provided in the vent riser and shall be capable of local and remote activation.

Vent mast shall be provided with lightening protection to protect electric equipment and prevent vent riser fires.

5.12.8 Tank Cleaning System

A permanent fixed tank cleaning system shall be provided for the cargo, produced water, and slops tanks. The tank cleaning system shall have the ability to perform the crude oil wash, hot seawater wash, and ambient temperature seawater wash. The tank washing system is only required to perform one type of washing at a time.

5.13 Tank Gauging System

5.13.1 Cargo, Slop and Produced Water Tanks

For the cargo tank, the automatic tank gauging shall be designed in accordance with the API MPMS 17.

Each cargo, produced water and slop tank shall be fitted with a tank gauging system as follows:

- One radar type level sensor provided with
  - Three temperature sensors (One for the lower, middle, and upper third of the tank) and high/low temperature alarm
  - One vapor space pressure sensor with high/low pressure alarm
- One resistance type level sensor
- One independent float type high-high level gauge and alarm
- Standpipes provided with vapor lock
- Portable oil water interface meter connection
- Portable Ullage Temperature Interface (UTI) detector

Each slop tank should be fitted with permanent oil-water interface meter

5.13.2 Ballast and Peak Tank

Each ballast and peak tanks shall be fitted with a tank gauging system as follows:

- One electro-pressure type level measuring sensor
- One hydrocarbon gas detection
- Standpipe, which do not need to have vapor locks

5.14 Level Based Measurement System

The primary custody transfer system shall utilize Metering System. As a back-up to the Metering System, FSO shall be provided with a Level Based Measurement System (LBMS). The LBMS may also be certified as the official custody transfer system and can be used for documentation during cargo offloading to export tankers, as a backup to the Metering System.

This system shall account for the volume and weight of exported oil with the highest practical level of accuracy and reliability without depending on a dedicated meter.

CONTRACTOR shall propose detailed specification of the LBMS for COMPANY approval

5.15 Tank Tables

All tanks used for the custody transfer by LBMS shall have their measurements confirmed and certified by independent verification authority and certified by Classification. All tank level measurements from various sources shall be calibrated with the tank tables. Tables shall be provided with corrections for list, trim, temperature and other factors that would impact the accuracy of the level. Tank tables shall be provided in table format for manual calculation of quantity based on tank level and other variables such as list and trim. These shall be included in the LBMS, Loading Computer and control system for use by the computers to automatically calculate the quantities based on tank level and corrected for all other variables.

Innage and ullage tank tables shall be supplied for all tanks.

5.16 Tank Sampling System

Means of sampling each cargo tank slop tank, produced water tank, and any other cargo related tanks shall be provided. The system should be as manufactured by Tank System A.S. or Marine Moisture Control Co. Inc. (or equivalent) and shall be based on “closed tank” principles without breaking the vapor space barrier on the tank

5.17 Bilge Alarm and Pumping System

A complete bilge monitoring, pumping and remote alarm system shall be provided for all spaces that can accumulate water and need monitoring.

5.18 Valve Control

Unless specifically mentioned as manually operated, all cargo oil, stripping and ballast system valves in tanks, pump room and on deck shall be operated hydraulically from local deck mouthed control stations and electro-hydraulically from CCR. All valves shall have open and shut position indication in CCR through the control system. All valve used in throttling service shall also have actual position indication and position for such valves shall be accurately controllable from the control system as well as locally.

5.19 Hydraulic System

Hydraulic power pack and system shall meet the functional intent of FSO. CONTRACTOR shall propose detailed specification for COMPANY approval

5.20 Control Air System

Dry, clean and oil-free control air with dew point of -20°C shall be provided for control system. Control air piping throughout the vessel shall be 316 stainless steels.

5.21 Deck Drain

A permanent fixed deck drainage and containment system shall be provided. The cargo area shall be completely enclosed by a coaming at the deck edge. Overboard scuppers and scupper plugs shall be provided to enable the drainage of non-oily water from the deck. A means to collect and transfer oily water from the deck to the slop tanks shall be provided. All manifolds, vent and overflow lines which could pass oily substances to the main deck shall be provided with save-alls. Any equipment containing diesel, lubricating oil, hydraulic fluid or any substance which would create an oily sheen on the surface of the water shall be surrounded by a coaming to prevent direct overboard discharge.

5.22 Laboratory

CONTRACTOR shall provide a free-standing laboratory outside the Hazardous Area and accommodation. The Laboratory and all associated equipment shall meet Class and all Regulatory Body requirements.

CONTRACTOR shall propose the detail specification of Laboratory for COMPANY approval.

The Laboratory shall be air conditioned by an independent ventilation system. Laboratory firefighting systems are to be provided in accordance with SOLAS requirements.

Equipment to be provided in the unit is as follows:

- Heated Oil Test Centrifuge
- Water Bath Model WBC15 (POWER 220V 50HZ)
- RVP Testing Set (MINIVAP VPXpert)
- Pour Point Bath
- At a minimum, the following laboratory equipment shall be provided:
    - Independent air conditioner
    - Independent vent system
    - Independent drain system led to min. 1 m3 independent drain tank
    - Fume cupboard
    - Fume Hood for sampler preparing
    - Localize exhausted for AAS-GF
    - One (1) refrigerator of minimum 450 litter capacity
    - One (1) Work table of chemical resistant surface with a sink, a hot and a cold water supply, a distilled water supply
    - One (1) sink of chemical resistant surface with a hot and a cold water supply, vent hood with a blower.
    - One (1) Work table of approx. 1.8 m x 0.9 m with chemical resistant surface
    - One (1) steel desk with one (1) chair
    - One (1) 4-drawer filing cabinet
    - One (1) emergency shower with eye wash close to laboratory space
    - All the electric equipment and fixtures in the laboratory space shall be explosion proof type or intrinsically safe.
    - Vacuum Gas Stainless Steel Cylinders (20 x 300 cc for vent gas sampler)

- Sampler mixer/circulation pump (supply together with Auto Sampler in metering system)

In addition, sufficient laboratory equipment shall be installed to perform the following;

Table 12: Laboratory Lists

Quantity	Description of Outfitting
BS&W	D4007 – Centrifugal Method
Density, Specific Gravity	ASTM D1298 – Hydrometer Method
Vapor Pressure	ASTM D6377 – $VPCR_4$
Salt Content	ASTM D3230 – Electrometric Method
Sulfur	ASTM D4294 – Energy Dispersive X-Ray Fluorescence Spectroscopy
Pour Point	ASTM D97 – Test Method for Pour Point
Oil Content in Water	ASTM D3921 – Test Method for Oil in Water (Infrared Spectroscopy)
Mercury content	Lumex Mercury Analyzer integral with Pyrolyzer (315M or equivalent)
Arsenic content	AAS-GF (provided by Agilent) Refer to manufacturer data for Laboratory Procedure.
Organic Chloride	ASTM D5808
Inorganic Chloride	ASTM D6470

Fittings and chemicals necessary for the test shall also be provided. All fittings shall be properly stored. All chemicals shall be stored in safe containers and in a cool, dry and well-ventilated cabinet(s).

5.23 Safety Systems

This section has an outline specification of the safety system, System shall comply with regulatory body requirement and as specified herein for guidance to CONTRACTOR for proposing detailed specification for COMPANY approval.

5.23.1 Fire Fighting

A dry main type of fire main shall be installed. In additional to the firefighting equipment and systems required by class and flag stage, the following specification shall also apply:

- A fixed permanent water-spray system shall be fitted at the tandem offloading stations

5.23.2 Fire and Gas Detection

A fire and gas detection system shall be fitted. The fire detection system shall be per class and administration requirements and shall contain additional fire detection in way of the CALM Buoy and the offloading stations, Gas detection shall be provided at ventilation inlets, at CALM Buoy

5.23.3 Life Saving Appliances and Arrangements

All lifesaving appliances and arrangements shall meet regulatory body requirements.

A man-overboard recovery system (SOLAS Approved) shall be provided on the rescue boat.

5.23.4 Totally Enclosed Motor Propelled Survival Craft (TEMPSC)

Platform davit type lifeboats shall be fitted near the accommodations. At least 100% requires lifeboat capacity shall be provided on each side of the vessel. The assumed 100% capacity for the lifeboats shall match the maximum POB. Lifejacket storage containers shall be provided at the muster station

5.24 Machinery

5.24.1 Machinery Plant Configuration

COMPANY prefers that the power plant for generating electrical power be based on diesel generator system.

Machinery plant suitable for the safe and reliable operation of the FSO shall be proposed by CONTRACTOR.

The plant shall consist of the following:

- Station Keeping and Heading Control Engine (Main Engine as primary, CONTRACTOR may be proposed alternative means engine for COMPANY approval).
- Marine Boilers
- Diesel Generator (Liquid fuel)
- Electric Switch Board and Distribution Systems
- Automation and Control Systems
- Safety Systems (Fire and Gas Detection)
- Fire Water Pumps
- Auxiliaries Equipment such as Pumps, Air Compressors, HVAC, Sewage Plant
- Workshop and Storeroom

CONTRACTOR shall ensure the adequate redundancy is provided that ensure all equipment and systems can be maintained and inspected without shutting the plant down or reducing the operational throughput.

CONTRACTOR shall ensure that equipment and systems have adequate isolation arrangements for maintenance and operation (e.g., valves, by-pass lines, blanks circuit breakers, etc.) to ensure maintenance can be performed safely without shutting down entire system.

Major machinery which requires regular routine maintenance (e.g., main engine, diesel generator boiler major overhauls) shall be overhaul prior to Delivery in order to avoid major maintenance during the start-up and commissioning period.

It is CONTRACTOR's responsibility to ensure functional requirements are met. CONTRACTOR shall be solely responsible for providing complete and operable packages in full accordance with all applicable industry code and standards, regulatory body requirement and COMPANY specification.

CONTRACTOR shall submitted marine system refurbishment philosophy which describe a philosophy and conversion activities to be adopted during the conversion of the Candidate Vessel into FSO to ensure adequate marine system (included ping, valves, tanks, pressure vessels, condenser, heat exchanger, centrifugal pump, reciprocating equipment, diesel engine, main engine, steam turbine equipment, fan equipment, boiler, electric motor, electric distribution, equipment, instrument and controls, deck machinery and fitting etc.) performance during their entire service life for COMPANY review and approval.

5.24.2 Vessel Motions

All equipment installed throughout the FSO that shall be designed to withstand FSO motions.

5.25 Electrical

5.25.1 General

CONTRACTOR shall provide a reliable electrical power generation and distribution system including generator, switchboard, distribution board, power transformer, motor control centers, AC or DC UPS system with associated battery, navigation aid system, cabling, and lighting, equipment earthing and lightning protection for the FSO.

CONTRACTOR shall also provide all instrumentation, communications systems, control, and safety systems necessary for the FSO.

CONTRACTOR shall perform all necessary Work which includes the complete design, procurement, installation, hook-up, commissioning, and maintenance of electrical, instrumentation, control and safety system and communication systems for FSO control and utilities system.

All electrical / instrument equipment and materials are to be constructed in accordance with the IEC standard , NEC code or an acceptable and relevant national or international standards permitted by IACS Classification Society (ABS, BV or equivalent) and its explosion protected equipment shall be verified and certified by Nationally Recognized Test labs (NRTL) in North America for example UL (Underwriter's Laboratory), FM (Factory Mutual), CSA (Canadian Standards Association) or approved testing authorities in Europe by an ATEX notified body or IECEx certified body.

5.25.2 Principal Particulars

CONTRACTOR shall provide a main power generation in N+1 Configuration where N is the minimum required number of generators. The additional generator will allow maintenance Work on the FSO without impacting the availability of electrical power generation capacity and an emergency source shall be supplied by an emergency diesel generator of batteries to support the essential or emergency services and black start loads.

CONTRACTOR should generate main electrical power at 3 phase and either 50 or 60 Hz that voltage and frequency generations and distribution shall be designed to suitably support the FSO customers and facility services .

CONTRACTOR shall allow power to be fed from the emergency switchboard to the main switchboard via manually operated bus tie.

5.25.3 Backout Recovery

CONTRACTOR shall provide electric systems which will recover safely and promptly from backout and emergency shutdown conditions. CONTRACTOR shall provide battery and UPS systems which remain online during power interruption. This system shall be disconnected only during total emergency shutdown.

UPS battery backup power for the different control and safety systems shall be provided for the required uptimes of these respective systems. In general, the fire and gas systems should have a longer UPS uptime than the control and safeguarding systems to allow prolonged detection of fire and gas in abnormal conditions like a power failure.

5.25.4 Power Management System

CONTRACTOR shall provide Power Management System (PMS) designed for automatic control and monitoring of the power generation and distribution system including load shedding to minimize the disturbance and instability of electrical system network upon loss of one of the operating generators or starting of large motor.

The voltages and frequency of electrical utility shall be selected suitable for process loads and FSO design.

5.25.5 Emergency Generator

CONTRACTOR shall arrange the emergency generator such that:

- It does not run in parallel with any other generators, except that it has provisions for momentary parallel operation (i.e., no power interruption during transfer) for load transfer between the emergency generator & main alternators for emergency generator start-up and testing.
- The feedback option shall be interlocked via a key switch lock and a warning nameplate with a brief description of the limits of operation.

5.25.6 Lightening Protection

Lightening protection shall be provided on all masts, vent posts, funnel top, radar mast and lamp post to protect electrical equipment, COMPANY SUPPLIED EQUIPMENT and prevent vent riser fires.

5.25.7 Instrument Control and Safety System (ICSS)

Instrument Control and Safety System (ICSS) shall be designed and installed by CONTRACTOR. ICSS shall consists of following list;

- Emergency Shutdown System (ESD),
- Process Safety System (PSS),
- Fire & Gas Detection System (FGS & GDS),
- Fire Detection System (FDS),
- Process Control System (PCS),
- Cargo monitoring system (CMS),
- Tandem Mooring Monitoring System (MMS)

- Environmental Monitoring System (EMS) (Wind, Temperature, Pressure, etc.).
- Hawser Load Monitoring System

5.25.8 Radar

CONTRACTOR shall supply a standard marine radar system for vessel tracking and weather.

6 CALM BUOY SYSTEM

6.1 General

This section is to establish the minimum technical and functional requirements for CONTRACTOR be met in the design engineering, procurement, construction, fabrication, testing, installation and supply of CALM Buoy, Moorings, Risers, Hawsers and Loading Hoses for FSO. The CALM buoy is expected to operate without full time personnel.

The CALM Buoy shall meet all the intended requisites of this specification with regards to regulatory, statutory, COMPANY and class requirements.

The CALM Buoy shall be designed and supplied to safely and reliability connect between the moorings, risers, hawsers, floating hoses and the FSO's loading, storage, tandem offloading and side by side operation achieve 10 years of service life at DESIGNED WORK AREA without dry-docking.

6.2 Reference

The documents referenced here are listed out as a requirement and guideline with expectation that CONTRACTOR responsible to perform the design according to the COMPANY's Scope of Work, Requirements and Specifications, COMPANY's Front End Engineering Design (FEED) and COMPANY's Existing Facilities Information

6.2.1 COMPANY's Scope of Work, Requirements and Specifications

- EXA Scope of Work, Requirements and Specifications
- EXA-A1 Design Basis for Pipeline, Flexible Riser & CALM Buoy Systems
- EXA-A2 Risk Assessment Report
- EXA-A3 PTR2 Close-Out Report
- EXA-A4 Field Layout
- EXA-A5 Metocean Criteria
- EXA-A6 Geotechnical Data
- EXA-A7 Crude Oil and Produced Water Properties

6.2.2 COMPANY's Front End Engineering Design (FEED) Guidelines

- EXD-A1 Front End Engineering Design – General
- EXD-A2 Front End Engineering Design – CALM Buoy & Mooring System
- EXD-A3 Front End Engineering Design – Flexible Riser System
- EXD-A4 Front End Engineering Design – Subsea Pipeline System
- EXD-A5 Front End Engineering Design – PLEM

6.2.3 COMPANY's Existing Facilities Information

- EXD-A6.1 PLCPP Crude Oil System P&ID
- EXD-A6.2 PLCPP Produced Water System P&ID

6.3 Work Scope

CALM Buoy System shall typically consist of but not limited to following components:

- A buoy body, comprising a fixed part (connected to the risers) and a rotating part (connected to the floating hoses)
- Mooring chains and their anchors to moor the buoy on the seedbed
- Risers connecting to the buoy body and PLEM
- Floating hoses connecting the buoy body to the FSO
- Hawsers to moor the FSO to the buoy
- All outfitting such as navigation aids, fluid swivel, boat landing, fenders, safety railings, fire extinguishers, lifesaving appliances, etc. shall be fully included in all respects for safely operate with FSO at DESIGNED WORK AREA.

CONTRACTOR responsible to deliver CALM Buoy in accordance with Section 2. The CALM Buoy System Front Engineering Design (FEED) documents are to be provided the base specification and guideline to CONTRACTOR's CALM Buoy detail design engineering, procurement, construction, transportation, installation, commissioning, and operation with FSO for COMPANY approval. As such specifications and guidelines set forth do not relieve CONTRACTOR of responsibility to perform all services in safe manner, meeting applicable rules, codes, specification, and standards.

It is the responsibility of the CONTRACTOR to develop and provide deviation detail and to obtain COMPANY review and approval of such detail prior to use. In summary, CONTRACTOR shall provide systems and products that shall meet all the intended requisites of this specification with regards to statutory, COMPANY and Class requirements.

CONTRACTOR is free to raise potential deviations/clarifications to the specification and guideline through the project approved Technical Query (TQ) process.

In case CONTRACTOR propose CALM Buoy redeployment, a buoy body, all outfitting, mooring chains, anchors and risers age shall not more than 5 years old at the time of CHARTER COMMENCEMENT DATE at DESIGNATED WORK AREA. The floating hoses and hawsers are not allowed CONTRACTOR to propose for redeployment in this CONTRACT. CONTRACTOR is responsible for providing the CALM Buoy demolishment, refurbishment, life extension and conversion specification documents to meet the guideline as reference in Section 6.2 and requirements of this CONTRACT. The documents for CALM Buoy redeployment shall be submitted to COMPANY as a part of proposal package. The documents are included but not limited to;

- Candidate CALM Buoy BOD, specification, system P&ID and GA Plan
- Latest updated class survey status
- Existing installation location history
- Historical inspection and maintenance report
- Condition Assessment Report

- CALM Buoy demolishment, refurbishment, life extension and conversion specification issued by their manufacture.

7 EXECUTION PLAN

7.1 Project Execution Plan (PEP)

CONTRACTOR shall submit a Project Execution Plan for COMPANY review and approval prior to execution of this Contract. PEP shall detail how and where CONTRACTOR shall perform the Work, including procedures and documents for project organization, communication, cost, schedule, procurement, and quality assurance control.

The Project Execution Plan will include the CONTRACTOR organization chart and Interface Management Plan. In addition, it shall include a detailed schedule including major milestones and critical path.

CONTRACTOR shall provide organizational charts showing COMPANY and CONTRACTOR reporting relationships, addresses, telephone numbers and email addresses. The organization charts shall identify the location of each person and how communications between COMPANY, CONTRACTOR and Subcontractor(s) and COMPANY's other CONTRACTORS are to be managed.

The PEP shall include but not limited to:

- Project Schedule from Contract Award until Final Acceptance
- EPCIC Project Management Team (PMT) Organization Capability
  - G1FSO PMT Organization Chart
  - CALM Buoy PMT Organization Chart
  - CV's the key personals
- G1FSO & CALM Buoy O&M Organization Capability
  - Onshore Organization Chart
  - Offshore Organization Chart
  - CV's the key personals
- Project Management, Interface Management, Control & Administrative
- Project Engineering, Procurement, Construction, Installation and Commissioning Management
- Project Quality Management Plan
- Project Safety, Security, Health and Environment (SSHE) Plan
- Project Operation Readiness and Plan

7.2 Project Schedule And Control

CONTRACTOR shall prepare and provide an integrated Detailed Work Time Schedule (Project Schedule) in sufficient detail, which is logically linked and clearly identifies the critical path tasks, within 30 days from Effective Date.

Project Schedule shall cover all WORK phases, including engineering, procurement, construction, onshore commissioning, operation readiness, Initial Acceptance (Sail Away),

transportation, offshore installation, offshore commissioning, Provisional Acceptance (Start Up), Final Acceptance and until hand over to operation and maintenance period.

CONTRACTOR shall provide a scheduler/planner and shall prepare and maintain a schedule of Contractor activities through all phases of the CONTRACTOR's work including preparation of documentation and submission of master document register.

7.3 Schedule Performance

Using Detailed Work Time Schedule (Project Schedule) as a basis, CONTRACTOR will develop tracking mechanism for major Work groups such as design engineering, procurement, fabrication, testing/shipyard pre-commissioning, transportation, installation, hookup and commissioning, and overall project for approval by COMPANY. Upon approval by COMPANY, baseline plan will be established against which actual progress, projected progress, and recovery plan, if required will be reported on a monthly basis.

7.4 Schedule Control

A narrative schedule analysis highlighting any slippage of activities, or progress shortfalls that could adversely affect the Work with particular reference to critical path, major milestones, or schedule float will be presented on a monthly basis. CONTRACTOR will take corrective actions in case of schedule slippage, or opportunity to optimize project schedule and communicate recovery plan to the COMPANY.

7.5 Assignment of CONTRACTOR Personal

CONTRACTOR shall designate a well-qualified and suitably FSO & CALM Buoy experienced Project Manager (subject to approval from COMPANY) to act as COMPANY's contact, and to oversee and coordinate CONTRACTOR's implementation of this CONTRACT. The Project Manager shall have the authority to act on behalf of CONTRACTOR and be responsible for and inform COMPANY on the agreed Project schedule, overall safety, quality, and efficiency of the Work.

For all other personal, CONTRACTOR shall provide FSO & CALM Buoy qualified and experience personal for execution of all Work scope. CONTRACTOR shall provide CVs of key PMT personals to COMPANY for review and approval. The PMT personals are included but not limited to:

- Project Manager and:
  - Project Service Personals (i.e. Project Engineer, Contract Engineer, Cost Controller, Schedule Controller/Planner, Document Controller, Project Administrative etc.)
- Engineering Manager and:
  - Discipline Engineer (i.e. Naval/Hull, CALM Buoy, Marine System, Mech/Piping, Mooring, Riser, Electrical, Instrument, HVAC, Accommodation etc.)
- Interface Manager
- Procurement Manager
- Construction Manager and:
  - Construction Engineer (i.e. Naval/Hull, CALM Buoy, Marine System, Mech/Piping, Electrical, Instrument, HVAC, Accommodation etc.)
  - Construction Inspector (i.e. Structure, CALM Buoy, Marine System, Mech/Piping, Electrical, Instrument, HVAC, Accommodation etc.)

- Commissioning Manager and:
  - Commissioning Engineer (i.e. CALM Buoy, Marine System, Electrical, Instrument, HVAC, Accommodation etc.)
- Transportation and Installation Manager
- Operation Readiness and Assurance Manager
- SSHE Manager
- QA/QC Manager
- Logistic Manager
- Etc.

CONTRACTOR shall provide organizational charts showing COMPANY and CONTRACTOR reporting relationships, addresses, telephone numbers and email addresses. The organization charts shall identify the location of each person and how communications between COMPANY, CONTRACTOR and subcontractor and COMPANY's other CONTRACTORs are to be managed.

7.6 Project Reporting, Schedule Updates and Meetings

CONTRACTOR shall submit progress reports and conduct minute progress meetings on a regular basis for all engineering, procurement, fabrication, installation, hook-up, testing, commissioning, and redelivery Work.

The project execution management reporting dashboard shall be regularly provided and updated to displays monitoring key performance indicators pertaining to the project. The dashboard shall display metrics for a project's overall performance, progress and highlight particular problems that require further attention.

The periodic nature of reporting system shall not relieve CONTRACTOR of its obligation to promptly report to COMPANY and matters that significantly affect the completion of the Work.

7.7 Weekly Reports

These reports shall be sent by email, on Friday every week. The reports shall include a concise narrative of; a) Work performed, b) anticipated one week look ahead activities, c) highlight of the safety incidences, d) problem areas, current or envisioned, their causes and means of recovery (e.g., schedule slippage), e) weekly equipment inspections result summary, and f) photographs that highlight the week's significant activities.

7.8 Monthly Reports

These reports shall be provided in electronic format by the 7th day of each calendar month. They will contain the following information, in addition to all the information referred to above:

- Executive summary: addressing CONTRACTOR's overall project performance (accomplishments compared with goals) and summarized progress forecasts.
- Discussion: addressing a general review of project status, milestones accomplished Work in progress, Work planned during next thirty days, critical path, project status, problem areas (including those identified by COMPANY) and plans, correction plans and open issues.
- Progress Analyses: including summary schedules and reports from the schedule package defined in coordination procedures. A comparison of actual versus planned progress,

including engineering, pre-fabrication, conversion and installation. Forecast of expected schedule and any special means to achieve the forecast.

- Communication Log: including Request for Information (RFI), Technical Query (TQ) Contract Change Log, ITCs, etc.
- Status of Class Approval and any highlighted concerns
- A list of all changes agreed within the month
- A comprehensive list of pending or potential changes, including the effects, if any, on cost and schedule
- Project photograph
- Drawing status and schedule of CONTRACTOR documentation. An annotated document list with review/approval status, including schedule for submittal of upcoming documents and COMPANY/CONTRACTOR documentation transmittal log.
- Procurement status showing the progress by order and presented by graph or bar chart against schedule requirements.
- Quality assurance activity through the end of the month prior and planned activity for the current month and upcoming next month.
- Major CONTRACTOR supplied material & traffic report including a summary log of all inspection and expediting reports
- Safety study updates and status
- CONTRACTOR shall report man-hours spend on the project, Worker injury rates, and statistics, and provide full investigation reports to COMPANY on a monthly basis for all Work and subcontractors.
- Notify any urgent action requires by COMPANY or CONTRACTOR

7.9 Progress Review Meetings

At a minimum CONTRACTOR and subcontractors shall conduct a monthly progress and administrative review meeting with COMPANY. Meeting may be teleconference or in person. The progress meeting may change to bi-weekly or weekly subject to any urgent action requires by COMPANY.

CONTRACTOR shall prepare minutes of meeting for the meeting. The minutes of meeting shall serve as a progress report, agenda for subsequent meetings, and a vehicle for assigning action items within the Project.

Minutes of meeting shall be issued to Company for review and approval the day following the meeting prior to general distribution and shall be issued for general distribution no later than two (2) days after the meeting.

The progress meetings shall discuss amongst other items Contractor's performance, Project SSHE performance, Subcontractor performance, the progress for the period prior rolled up to an agreed date prior to the meeting.

Action items generated during the meetings shall be carried forward throughout the progress of the Project and shall be attached to the minutes of meeting.

7.10 Document Review and Approval

7.10.1 General

Drawings, plans, diagrams, specifications, data sheets, procedures, manuals, design studies, calculation reports, test procedures and records, certification and other documentation as required by specification issued by CONTRACTOR are collectively referred as "Documents". All documents shall be in English

All correspondence to and from the classification, regulatory bodies and Marine Warranty Survey (MWS) shall be copied to the COMPANY or made available on request.

CONTRACTOR shall prepare all required document review and approval schedule to obtain all applicable classification and regulatory body, Marine Warranty Survey (MWS) and COMPANY review and approvals. CONTRACTOR is solely responsible for obtaining any classification, regulatory bodies and MWS approval

Notwithstanding COMPANY reviews, CONTRACTOR is solely responsible for completeness and quality, and for meeting all requirements, including technical specification, regulatory requirements, class requirements, industry codes and standards, and good Work practices in all disciplines. Unless explicitly stated, COMPANY review and approve, or lack of comments shall not imply satisfaction of this Contract or other requirements.

7.10.2 Master Document List

Within 30 days from EFFECTIVE DATE, CONTRACTOR shall provide Master Document List with a schedule for submission of each document to COMPANY for COMPANY information or review or approval as reasonable and mutually agreed.

CONTRACTOR shall submit to COMPANY an update of the Master Document List when new documents are added to the List or when documents are revised during project execution with each planned and actual dates for submission and review recorded therein.

7.10.3 Engineering Calculations and Studies

CONTRACTOR shall provide COMPANY with all design drawings, engineering studies and documentation in accordance with the Master Documents List and the specifications as the Work progresses to enable COMPANY to ascertain the soundness of the design and to verify/review CONTRACTOR's assumptions and calculations. All analyses, calculations and drawings shall be thoroughly checked and initiated before submittal to COMPANY.

CONTRACTOR shall submit for COMPANY information or review or approval, as reasonable and mutually agreed, copies of all engineering calculations, engineering studies, design basis reviews, computer models with all input, output and program documentation, and non-commercial vendor correspondence relating to the design and specification of the FSO and CALM Buoy equipment, system, piping. The calculations of all engineering disciplines are to be included. This also includes, but is not limited to, all calculations submitted to classification society. All computer program and designs shall be available for COMPANY use if so desired by COMPANY.

In addition to the above, the following engineering studies shall be performed:

- Hazard Identification (HAZID) to determine among various risks, the Major Accident Events and linkage to Safety Critical Element (SCE).
- Hazard and Operability (HAZOP)
- Vent dispersion study
- Safety Critical Element (SCE) Performance Standards covering design and operational requirements.

- Surge analysis of the offloading system- Complete hydraulic analysis for whole offloading system and fitted with pressure surge protection system.
- Ship collision study
- Full berthing analysis in both tandem and side by side berthing configuration shall be analyzed and completed with all operating condition.

7.10.4 Pre-Commissioning and Commissioning Manuals

CONTRACTOR shall provide pre-commissioning and commissioning dossiers for COMPANY approval sixty (60) days prior to commencement of any pre-commissioning/commissioning activities.

7.10.5 COMPANY Review and Approval

For each approval documents, one of the four codes described below will be returned to CONTRACTOR on a document comment sheet uniquely by the document number and revision. CONTRACTOR shall answer all comment sheets sent by COMPANY with similarly organized comment sheets.

Code Description:

- Code 1: Approved – No further COMPANY review required, provided no further revisions are made.
- Code 2: Approved with comments – Resubmit document addressing comments and proceed with the Work.
- Code 3: Not approved – Revise and re-submit for approval before proceeding with Work.
- Code 4: Receipt noted: COMPANY does not intend to approve/not approve the document submitted.

Comment sheets for documents submitted to COMPANY review and approval shall be sent to CONTRACTOR within 5 business days from the date of receipt by COMPANY with appropriate comments and approval code. Design review meetings between CONTRACTOR and COMPANY shall be scheduled as necessary to expedite the review and resolution process and to review design Work and plans in progress. These meetings shall be scheduled at a frequency rate determined by the type and level of design process.

Even when COMPANY returns codes 1,2,3 or 4 for documents, or does not response, this shall be not relieving the CONTRACTOR from fully complying with the COMPANY's specification and functional requirements under the Contract.

Changes on all document revisions shall be clearly identified by appropriate marks and references.

All major assembly layouts or final detailed assembly diagrams and equipment specifications shall be approved by COMPANY prior to start to fabrication by CONTRACTOR.

7.10.6 Project Assurance Reviews

CONTRACTOR shall co-ordinate for the following project assurance reviews as per requirement:

- Project Technical Review 3 (PTR #3) around 80% completion of Detailed Engineering phase (toward the end of detailed design);

- Project Technical Review 4 (PTR #4) approximately two months before completion of commissioning.
- Interface Workshops with CALM Buoy CONTRACTOR
- Operation Readiness Review
- Pre-Mobilization Review

7.11 Project Final Document Requirement

CONTRACTOR shall furnish all Final Documentation printed in English for the entire system supplied in accordance with the specifications. CONTRACTOR shall be responsible for preparing all documentation in a manner that will be easily read, followed, and understood.

Final documentation shall be clearly printed, and if reduced or not, no part shall be unreadable. If the final documentation contains photographs, they shall be reproduced to retain photographic quality.

Document for any COMPANY SUPPLIED EQUIPMENT shall be indexed and incorporated into final documentation by CONTRACTOR.

CONTRACTOR shall submit to COMPANY the Final Documentation within thirty (30) days of completion and delivery of the FSO and CALM Buoy System in Platong field.

The final documentation shall include:

- As-built drawings
- Start-up & operating and Maintenance Manual, including shutdown procedures
- Contingency and emergency plans
- Display plans

CONTRACTOR shall provide the final documentation (number of copies and locations) according to the following table, except quantities of certificates, which shall be as per specification.

Table 13: Final Documentation

Final Documentation	COMPANY's Offices	
	Hard Copy	**Electronic Copy (USB or External Hard Disk)**
As built drawing	2	2
Operations, Design & Conversion	2	2
Start-up, operating & maintenance manuals	2	2
Contingency and emergency plan	2	2
Display Plans	2	2

The final plans shall be logically indexed and boxed for easy retrieval. Multi page plans shall have sequential page numbers. Plan consisting of more than two pages shall begin with a table of contents.

CONTRACTOR shall update any changes to the final documentation as a result of changes during the offshore field commissioning.

7.12 Fabrication Standards and Enhancements

The CONTRACTOR shall develop the various details pertaining to the required quality control criteria and procedures consistent with the specifications, for review and approval by the COMPANY and the classification society.

CONTRACTOR shall submit to the COMPANY for review, as part of the package, standards to be used for the conversion of the FSO and the fabrication of CALM Buoy.

7.13 Quality Assurance and Quality Control

CONTRACTOR shall be responsible for all inspection and testing of equipment. Any involvement by COMPANY and regulatory body shall neither relieve the CONTRACTOR of complying with any and all expressed or implied specification, nor shall affect CONTRACTOR's warranty providing for satisfactory performance under conditions of reasonable service.

CONTRACTOR will undertake full responsibility for the Conversion, Operations, Maintenance, and services that are required to operate and maintain the FSO and CALM Buoy in maximizing operation reliability and to maintain the best practice operational and safety of FSO and CALM Buoy.

CONTRACTOR shall have established and operate a perennial "Corporate" Quality Management System (QMS) conforming to the requirements of the ISO9001 or ISO 29001: Standard (the latest revision) for all aspects of the project and implement control procedures to ensure that the quality is fully in compliance with the requirements of specifications, standards, codes and conditions.

CONTRACTOR shall pay particular attention to the control of its subcontractors and all relevant third party's personnel that should also be in line with ISO 9001 or ISO 29001 and shall ensure that the appropriate quality and documentation requirements of the CONTRACT are specified in the subcontract documents.

CONTRACTOR shall be fully committed to be in compliance with International Convention for the Safety of Life At Sea (SOLAS), International Security for Port and Ship (ISPS), The Occupational Safety, Health and Environment Act of the Kingdom of Thailand, International Safety Management (ISM), Ship Flag Registration and Classification Society.

CONTRACTOR shall provide all required under scope of work that may including , but not limit to, materials, equipment, personnel, supervision, and engineering and all other services required or necessary for the satisfactory performance and completion of the work relating to the conversion, operation and maintenance (O&M) of FSO and CALM Buoy facility.

CONTRACTOR shall be responsible for all inspection and testing of equipment. Any involvement by COMPANY and Regulatory Bodies shall neither relieve the CONTRACTOR of complying with any and all expressed or implied specifications; nor affect CONTRACTOR's warranty providing for satisfactory performance under conditions of reasonable service.

CONTRACTOR shall submit for COMPANY review, as part of the proposal package, the Quality Assurance and Quality Control (QA/QC) Plan covering all phases of work for the FSO.

Without prejudice to CONTRACTOR's obligations under the CONTRACT, COMPANY or its authorized representative shall have the right to inspect and perform any Non-Destructive Examination (NDE) or any other test deemed necessary, by COMPANY, in relation to any part of the Work. CONTRACTOR shall, at no additional cost to COMPANY, assist in the performance of such inspections and testing and shall furthermore, provide samples and related certificates as and when required by COMPANY.

CONTRACTOR shall structure its Quality Assurance and Quality Control procedures and practices for Pre-operation readiness assurance during all FSO and CALM Buoy Construction, Commissioning & Handing over and Operations phases of the Work in accordance with the Standards and Specifications provided.

Any part of the Work that requires remedial action on the part of CONTRACTOR as a result of COMPANY directed inspection and/or testing shall be repaired by CONTRACTOR at CONTRACTOR's cost and all such inspection and/or testing, if undertaken and paid for directly by the COMPANY, shall be back charged to the CONTRACTOR.

CONTRACTOR shall give fourteen (14) days prior Notice to COMPANY before any part of the FSO and CALM Buoy are covered up or made inaccessible. If CONTRACTOR has failed to give such Notice, it shall bear the additional costs for uncovering, controlling, inspections, additional inspection and/or testing and recovering the work if required by COMPANY.

The failure of COMPANY to inspect or test any part of the Work shall not excuse CONTRACTOR from the performance of its obligations under the CONTRACT. COMPANY shall be advised reasonably in advance of any prescribed test or inspection to be carried out by CONTRACTOR. CONTRACTOR shall provide COMPANY with the opportunity to attend any Classification Society inspections, tests and/or surveys.

CONTRACTOR shall develop and submit for COMPANY approval a comprehensive set of Inspection and Test Plans (ITP) for the scope of the conversion Work.

Prior to commencement of the Work, CONTRACTOR shall develop, maintain and operate to COMPANY's approval a Quality Assurance System for each phase of the Work as follows:

- CONTRACTOR shall adhere to the ISO 9001 or ISO 29001 Quality Systems, the model for quality & assurance in design, development, production, installation, and servicing as applicable. In the Operating and Maintenance phase of the Work, this will take the form of the IMO requirements (ISM Code) and be subject to periodic audits in line with the ISM Code. As part of the lead up process to the Charter Period, CONTRACTOR's operations staff shall be actively involved in preparing a detailed management systems framework and have populated this framework, and that of the computerized maintenance management system with the necessary operating and maintenance procedures, spares inventory requirements/ levels prior to the FSO and CALM Buoy leaving the conversion shipyard;
- CONTRACTOR shall implement, comply with and maintain throughout the Contract / Charter Period a quality assurance and quality control system (the "QA/QC System"), to be in accordance with Good Industry Practice, International Standards, flag registration and the International Safety Management (ISM) Code as well as the classification requirement. The QA/QC System shall cover all management activities in relation to the Floating Storage and Offloading (FSO), CALM Buoy and their operation, and include an SSHE programmed;
- CONTRACTOR shall provide a copy of its intended quality policy to be applied for this CONTRACT. This policy shall include all subcontractors, vendors, Suppliers, COMPANY vendors and all other parties involved in the execution of the Work and shall form part of CONTRACTOR's Quality Manual. The quality policy shall state the objectives, policy,

and commitment to quality, which CONTRACTOR shall apply and be endorsed by the CONTRACTOR's senior management.

CONTRACTOR shall develop a CONTRACT or Project Quality Plan covering all phases of the Work including but not limits to covering throughout the contract/ charter period of FSO and CALM Buoy during in Platong field. The quality plan shall also cover the FSO and CALM Buoy operation support base, warehouse, and logistics. The Quality Plan shall be based on CONTRACTOR's in-house Quality Plan and, in essence, for the Donor Vessel conversion / construction phase of the Work, a bridging document incorporating the Contractors additional controls over and above those contained in the shipyard subcontractor's Quality Plan. The Quality Plan shall incorporate, as a minimum, the following procedures and be available for COMPANY review within thirty (30) days of the CONTRACT EFFECTIVE DATE:

- Definition of the appropriate responsibilities to the Quality Manual including organization roles, O&M personnel, and job description as well as standard / work procedures;
- Assessment of subcontractors, Vendors and Suppliers;
- Reviews of enquiry and tender documents including procurement system, warehousing and freight forwarding system;
- Auditing, Reviewing and Monitoring of SUBCONTRACTORS, suppliers and CONTRACTOR's personnel;
- Co-ordination and Communication Procedures;
- Control and monitoring work activities;
- Environmental controls and plan for activities associated with FSO and CALM Buoy operations i.e. zero discharge management, oil spill response, hazardous material and waste management, etc.
- Review of Criticality ratings and material requisitions;
- Establishing, monitoring and collation of test records and dossiers;
- Handling, Storage, Packaging and Preservation of materials and equipment (including any COMPANY supplied equipment (if any)) for both onboard FSO and ashore premises;
- Inspection and Testing Requirements;
- Application of Criticality Ratings; and
- Competency assurance and training of personnel including emergency response training, drills and exercise.

CONTRACTOR shall require all parties involved in the Work including, but not limited to, subcontractors, vendors, suppliers, services, and personnel to perform the Work in accordance with the requirements of the Approved Quality Management System.

CONTRACTOR shall ensure, in the selection of any subcontractor, vendor or supplier that the subcontractor's, vendor's or supplier's proposed quality assurance standard is compliant with the quality assurance level applicable to the Work. The agreed quality assurance program of the subcontractor, vendor or supplier selected shall be to a recognized international standard in the shipbuilding/ship repair industry, offshore construction industry and the FSO and CALM Buoy operation and maintenance practices.

COMPANY retains, at any time, the right to undertake or appoint a third party to undertake a quality audit of CONTRACTOR, its subcontractors, vendors and suppliers, or any part of the Work if deemed necessary. CONTRACTOR and its subcontractor, vendor and supplier shall comply fully with any requirements of such third party and/or the requirements of COMPANY.

Costs of third-party audit will be borne by COMPANY; CONTRACTOR will be liable for all costs associated with modification or non-compliance. If as a result of third-party audit remedial action is required by CONTRACTOR, then costs of audit associated with remedial work will be borne by CONTRACTOR.

The subcontractor's and/or CONTRACTOR's vendors and suppliers shall be able to demonstrate, to COMPANY's satisfaction, a proven track record in the Work and/or services to be provided under this CONTRACT

7.14 FSO And CALM Buoy Tests and Trials

It is intent that the FSO and CALM Buoy will be mechanically complete, commissioned, and tested in accordance with industrial standards. Machinery after manufacturing shall be thoroughly shop-tested under actual operating conditions before the equipment leaves the manufacturer's shop. All systems shall be thoroughly tested to prove function, capacity, and safety devices are in operation when completed in the shipyard or fabrication yard to optimize offshore commissioning scope and schedule. Intention is that there is no carry over Work to be done at the DESIGNED WORK AREA during or after installation.

Completion, commissioning, inspection, testing and system acceptance shall be document via a System Acceptance Certificate (SAC) in accordance with industrial standard. Any deficiencies shall be determined as punch list and corrective action plan to be mutually agreed prior to the issuance of the SAC. At each stage, sufficient notice, as specified previously, shall be provided to allow COMPANY Representative to attend the test.

All test procedures shall be submitted to COMPANY for approval thirty (30) days prior to the test. The COMPANY shall approve the test procedure within fifteen (15) Working days from the receipt of the same. Test procedures and reports shall be submitted to the COMPANY at every stage in a timely manner.

Signed test records shall be provided to COMPANY both electronically as well as a bound booklet systematically indexed and arranged as part of "as built" documents. Records shall include measurements such as flow volume and mass, speed, power, head, throughput, efficiency, and specification compliance as appropriate. In additional, safety device functionality verification, noise level, vibration readings, alignment, operability, accessibility, maintainability, control, accurate data measurement, and lighting level data shall be included as appropriate.

In event that COMPANY SUPPLIED EQUIPMENT as listed in section 8.14 herein are decided to deliver to shipyard. CONTRACTOR shall visually examined and confirmed in good condition when received. Where applicable, all newly purchased COMPANY SUPPLIED EQUIPMENT shall be accompanied with factory acceptance test result and its punch list clearance report. Notwithstanding the above, for used of refurbished COMPANY SUPPLIED EQUIPMENT the COMPANY shall submit to CONTRACTOR, for reference, its status of functionality Any non-conformance shall be brought to COMPANY attention immediately.

The COMPANY SUPPLIED EQUIPMENT shall be installed and commissioned by the CONTRACTOR in the presence of COMPANY's vendor representative if COMPANY decide to deliver them to shipyard. Any repair or calibration of COMPANY SUPPLIED EQUIPMENT shall be to COMPANY's account unless fault is caused by CONTRACTOR.

CONTRACTOR shall submit Commissioning Execution Plan document for COMPANY review and approval for the test and trial standards for FSO and CALM Buoy. The purpose of the document is to set out the general requirements for the inspection and testing of the equipment in all relative disciplines. This shall form the basis for the documentation to be prepared and completed by CONTRACTOR commissioning team. The mechanical completion

and pre-commissioning process shall verify and document that all systems and facilities on the FSO and CALM Buoy are designed, converted and built to fulfil their purpose, meet specified requirements and are according to all applicable rules, regulations, class, code and standard.

CONTRACTOR shall submit FSO and CALM Buoy System load-out, transportation, hook-up, installation and commissioning management plan (included contingency plan due to weather condition) in accordance with the completion schedule of COMPANY provided subsea pipeline and PLEM installation tentatively end of July 2024.

7.15 FSO and CALM Buoy Initial Acceptance and Sail Away

CONTRACTOR shall give notice to COMPANY at least fourteen (14) working days prior scheduled sail away date for joint inspection. The notice shall include all punch list item identified in section above. Joint inspection of the FSO and CALM Buoy will be made by COMPANY and CONTRACTOR, at least seven (7) working days prior to the schedule departure (Sail Away) from the shipyard. CONTRACTOR and COMPANY shall agree to the readiness for sail away and extent of any further Work, inspection, testing, completion, cleaning, and correction of deficiencies that are to be completed prior to sail away. CONTRACTOR shall ensure that post the joint inspection any punch list items that are deferred until the provisional acceptance of G1FSO and CALM Buoy shall not interfere with the schedule use of FSO and CALM Buoy.

Prior to delivery of the FSO and CALM Buoy System shall be:

- Fully constructed, mechanically completed and pre-commissioned, seaworthy, and tested as per COMPANY approved CONTRACTOR's test and trial
- Stocked with all items that were planned to be completed prior to sail away, as follows: All specified consumable stores such as water, oils, greases, chemicals, rags, commissioning tools and spare parts, food, chandlery, and medicines shall be supplied and/or stowed prior to delivery. The FSO and CALM Buoy shall be fully equipped with all specified stores, spare parts and tools; thoroughly cleaned of all dunnage and dirt; with particular emphasis on the condition of all tanks, accommodations, machinery, loading and offloading system (hose and hawser).
- Commissioned with all hydrocarbon systems tested for leak and integrity to ensure that there will not be any leaks or safety incidence when reservoir fluids enter the FSO and CALM Buoy. Cargo tanks, cargo pipe Work shall be filled with dry inert gas. For avoidance of doubt, the commissioning activities conducted herein shall not require any hydrocarbon product.
- All operating and equipment manuals and/ or procedures shall be provided
- FSO and CALM Buoy shall be ready to put to use in its intended service without further completion and cleaning, except installation, testing and commissioning in the field.

COMPANY, class, marine warranty surveyor, and CONTRACTOR shall jointly make a final inspection of the FSO and CALM Buoy to ensure the FSO and CALM Buoy is fully constructed, preserved and ready for tow/transport with appropriate certification obtained, including short term (provisional) classification certificate issued by class, prior to sail away and all Works have been satisfactory completed, CONTRACTOR shall notify COMPANY upon completion of the corrective action plan for deficiencies identified in section 7.14. During the joint inspection, whereupon COMPANY shall verify completion and issue vessel initial acceptance certificate within three (3) days of receipt of such notification allowing for FSO and CALM Buoy sail away. COMPANY shall not approve sail away until all agrees Works have been satisfactorily completed and the existence of any major uncorrected deficiency affecting

the immediate, safe, reliable, efficient, and scheduled use of the FSO and CALM Buoy for their intended service will be cause for COMPANY to reject sail away pending the correction of deficiency. Delay in sail away resulting from such deficiency shall be CONTRACTOR's responsibility.

The COMPANY shall not unnecessarily withhold the approval for sail away. Mutually agreed minor punch list items (Work which is incomplete or not in accordance with design, but which does not prevent commissioning or operating activity) shall not prevent the issuance of Initial Acceptance Certificate.

COMPANY shall provide a minimum six (6) months written notification in the event the delay prolongs for more than one (1) year and the CONTRACTOR shall recommence obligations to proceed with activities post sail away until achievement of provisional acceptance. COMPANY and CONTRACTOR shall agree on the revision to the period for completion of each activity related to the milestones (Key Date).

7.16 Offshore Installation

7.16.1 General

The installation CONTRACTOR, hereafter referred as the CONTRACTOR, shall develop the detailed, step by step procedures for the safe Installation of the FSO and CALM Buoy, including load out, sea fastening and transportation to site.

The procedures shall be consistent with relevant marine operation guidelines and OCIMF recommendations.

The installation procedures, as well as marine spread characteristics, shall be submitted to COMPANY, Classification Society and Marine Warranty Surveyor for their review and approval prior to the commencement of Installation Works.

CONTRACTOR shall demonstrate in the procedures that the installation methodology and equipment he intends to use will be safe and adequate to perform the Installation Works. The criteria used, such as environmental/weather, as well as emergency contingencies in case of deteriorating weather conditions during critical phases of the installation, shall be clearly stated.

CONTRACTOR shall be liable for any damage occurring to the equipment during unloading, handling, transport, storage and installation of all pieces of equipment.

7.16.2 Marine Warranty Surveyor (MWS)

CONTRACTOR shall be responsible for engaging MWS. The MWS engaged by CONTRACTOR shall be responsible for the following as a minimum:

- Suitability and conditional survey of all CONTRACTOR marine spread proposed for the Work by Contractor.
- Review and approval all related engineering document and procedure for FSO and CALM Buoy Installation
- Inspection of offshore element of the Work
- Witness and approval of installation and offshore commissioning completion.

A Marine Warranty Surveyor (MWS) will be submitted for COMPANY approval. Witnessing and/or approval by the MWS will not relieve CONTRACTOR from any of his contractual obligations and responsibilities.

7.16.3 Main Equipment and Personal

The following main equipment and corresponding personnel shall be mobilized:

- Transportation or towing vessel to bring FSO and CALM Buoy from fabrication to installation site
- Derrick/work barge or suitable installation vessel with adequate lifting capacity
- Diving service, suitable for working at local water depth, equipped with all underwater tools necessary for handling and assembling the equipment described, as well as any contingency operations
- Position monitoring system
- Tension monitoring system
- Weather service.

Diving operations shall be performed in compliance with IMCA guidelines latest edition.

7.16.4 Handling and Storage

CONTRACTOR shall be liable for any damage occurring to the equipment during load out, handling, transport or storage, and repairs or replacement shall be made at his expense.

CONTRACTOR shall declare the existence of any damage occurring to the equipment and units under his responsibility, as well as the type of measure taken for repair or replacement of the equipment, especially the characteristics of the equipment ordered, and the time required for transport to the operations site.

During storage, handling operations and movements, both on land and at sea, CONTRACTOR shall observe all necessary precautions to prevent damage to the FSO and CALM Buoy hull. Examples of damage can be chafing of slings on painted surfaces or collisions, which shall be avoided by sheathing and fendering respectively.

For transfers from land to sea, either by lifting or launching, CONTRACTOR shall provide to COMPANY and Classification Society all supporting drawings and calculations to ascertain the strength adequacy of slings, pad eyes, under hull supports, adequacy of water depth, etc., as applicable.

Floating hoses and risers are pieces of equipment for which handling, and storage conditions are of major importance. In that respect, vendors and OCIMF recommendations shall be strictly followed.

The following general requirements are valid for all types of hoses and risers:

- Any lifting shall be carried out by means of a spreader bar, that only supports the weight of a single floating hose or a riser.
- The use of small-circumference wire shall be avoided, and, in particular, a floating hose or a riser shall never be lifted at a single point in the middle, or at the two ends alone. Similarly, any use of a forklift truck is prohibited.
- A hose and riser shall never be moved by translation motion that causes friction on a hard ground. In general, to avoid any damage, the floating hoses or the risers shall be kept in their packing during handling operations, unless damage to the packing itself is liable to affect them. Should the packing be damaged, it shall be repaired or dismantled (and replaced if necessary).
- In general, floating hoses or risers shall be stored in accordance with the rules specified in the OCIMF guides (“Guide for the Handling, Storage, Inspection and Testing of Hoses”), latest editions and according to the following indications.

- The floating hoses and risers shall not be stored on a quay harbor for a long time without protection against alternate effects of rain, sun and humidity.
- As in the case of handling operations, whenever possible the floating hoses or the risers shall be stored in their original packing or on pallets provided by the supplier, if these units have not undergone damage liable to affect the hose itself or a neighboring hoses and risers.

7.16.5 Installation Specification Requirements

Before starting the installation work, CONTRACTOR shall acquaint himself with detailed data related to the work site. The data shall include the exact geographic situation of the terminal, climatic and oceanographic conditions, soil characteristics, water depth, operating conditions (FSO and CALM Buoy size, type of product(s), characteristics of pipeline to be connected to the PLEM, site operating conditions and regulations, i.e., movements on site, radio communications, safety regulations, etc.).

Any information concerning temporary or permanent systems already located in the site (existing anchoring lines, risers, pipelines) and operations made in the field shall also be included, to avoid hindrance or damage to existing installations.

7.16.6 Transportation and Towing

In addition to securing approval of COMPANY, MWS and Classification Society, the FSO and CALM Buoy transportation equipment and procedure shall meet the approval of port authorities. Documents justifying this approval shall be supplied by CONTRACTOR in accordance with CONTRACT Article 11 – Import, Export and Re-export

For CALM Buoy, care will be taken to properly:

- Immobilize the moving parts, particularly the turntable/turret
- provide beacon
- provide navigation lights
- Close manholes guaranteeing tightness of the compartments
- Apply a counterweight ballast to ensure adequate trim of the buoy in the towing situation.
- When the transportation and towing operation is completed, the CALM buoy shall be inspected to check that it has not undergone any damage, both with respect to underwater and above-water surfaces and equipment, and to detect any infiltration of water into the compartments.

7.16.7 Mooring Chain and Anchor Installation

The anchor installation procedures shall ensure the final, accurate positioning of the anchors and, ultimately, of the buoy relative to the PLEM.

The procedures shall clearly indicate the tolerances or windows accepted for final anchors positioning.

The procedures shall also clearly indicate the expected behavior of the anchors during installation, such as expected drag distances, penetrations, rates of penetration, etc.

CONTRACTOR shall provide to COMPANY and MWS all relevant records obtained during the installation of each anchor, so as to ascertain the anchors as-installed condition (achieved penetrations, drag distance vs. resistance, etc.).

Each chain element shall be carefully laid on the barge deck or on a jetty, avoiding twisting. The chains shall be connected to the anchors by shackles.

During chain laying operations, sufficient tension shall be applied to avoid waviness of the chains on the seabed, and to ensure correct alignment. Chain twisting shall be avoided.

Each chain placed temporarily on the seabed shall be fitted with a device allowing its identification and recovery.

Each anchor line shall be tested before connection to the buoy to its maximum design load.

7.16.8 CALM Buoy Connection

The buoy is to be protected from damage due to sea induced movement between installation vessel and buoy. If fendering is used it must consider the buoy skirt extension.

The entire line hook-up program requires well planned and expedient operations to insure buoy stability.

The number of chain links to be adjusted shall be computed to obtain the chain tension angles as required.

After adjustment to final pretensions, all chain pretensions/angles shall be re-checked. The chain angular measurement shall be carried out with a suitable protractor, and the tide level at the time of angle measurements shall be recorded. Angle value shall lay within the tolerances given during design phase.

The relative horizontal distance between the PLEM and the center of the buoy shall be measured and shall lay within tolerances.

The touch-down points of the chains shall be recorded.

After pre-tensioning is completed and confirmed, the chain stopper handling gear is to be cleaned and stowed. Excess chain is to be passed through provided buoy skirt hole adjacent to chain stopper. Excess chain (chain above chain stopper) is to be cut off and discarded per detail designed.

7.16.9 Risers Installation

The riser installation procedures shall comply with the OCIMF guidelines in reference.

Also, vendor specific requirements shall be obtained prior to handling and assembly of risers in the field and complied with.

The procedures shall include hydro testing of the riser before connection to the buoy

On assembly, special care shall be paid to the correct positioning of the reinforced lengths of the riser end, as well as the marks serving to avoid twisting during subsequent connections to the PLEM and to the buoy.

Upon completion of riser installation, the riser configuration will be measured and compared with the design configuration, taking into account the fact that the riser is not filled with oil yet.

7.16.10 Floating Hoses Installation

The floating lines installation procedures shall comply with OCIMF guidelines and with vendor specific requirements. Procedures shall include preassembly checks of the equipment supplied and hydro testing of the floating line after it is assembled and before connection to the buoy.

The floating hoses installation is weather depending. It shall be only initiated if a convenient weather window is forecast.

Navigation lights shall be positioned once the hoses is connected.

7.16.11 Hawser Installation

The hawser makes up assembly and installation procedures shall comply with relevant OCIMF guidelines and vendor recommendations.

All components making up the hawser shall be checked prior to assembly and assembled in accordance with the designed arrangement, without adding, deleting, or replacing any element whatsoever.

CONTRACTOR shall make sure of the absence of any friction detrimental to the service life of the hawser and shall ensure that the buoyancy elements are sufficient and correctly positioned.

Special precautions shall be observed in the assembly, clamping and locking of the nuts on the shackles or of the threaded pins, in order to prevent loosening.

It is recommended that the hawser be attached to the buoy with hydrostatic and rotational tests. All navigation aids and signaling equipment will be mounted per detail design.

7.16.12 CALM Buoy Testing and Inspection

Before connecting the floating hoses to the buoy, the turntable component shall be rotated to ensure there are no hard spots or irregularities. A complete rotation shall be carried out in each direction. Measurement of the rotation torque shall be performed.

The lubrication system shall be checked for proper operation, by verifying in particular the correct filling of the pipes and all grease points, and usage of lubricants as specified by the manufacturer.

The navigation aids shall be tested for proper operation: beacon light, control circuits, batteries, fire extinguishers, life buoys, etc.

After installation of the CALM Buoy system and connections of all lines (risers and floating hoses), the entire CALM Buoy system (excluding PLEM) shall be hydrostatically tested to the Maximum Allowable Operating Pressure of the Buoy.

CONTRACTOR shall provide suitable end closures, valves and other equipment needed to perform the hydrostatic test and shall fill the system with clean sea water. The sea water shall be chemically treated per Company approved dosage with fluorescent dye.

The test procedure shall be submitted for COMPANY and MWS review and approval.

Site clearance verification and as-left survey report shall be provided for Final Document Submission.

7.17 Arrival, Provisional Acceptance and Final Acceptance

7.17.1 Arrival

The CONTRACTOR shall notify the COMPANY of the window within which the CONTRACTOR expects the FSO and CALM Buoy approval at the designed location at Platong Field (Worksite) in accordance with the following schedule:

- Ninety (90) days before the CONTRACTOR expects the FSO and CALM Buoy to arrive at Site, the CONTRACTOR shall notify the COMPANY of the fourteen (14) day window in which the FSO and CALM Buoy is expected to arrive.

- Forty (40) days before the CONTRACTOR expects the FSO and CALM Buoy to arrive at Site, the CONTRACTOR shall notify the COMPANY of the seven (7) day window within the fourteen (14) days window notified above, in which the FSO and CALM Buoy is expected to arrive.
- Fifteen (15) days before the CONTRACTOR expects the FSO and CALM Buoy to arrive at Site, the CONTRACTOR shall notify the COMPANY of the actual date within the seven (7) days window notified above, in which the FSO and CALM Buoy is expected to arrive.

For the avoidance of any doubt, the designed location will be located at safe area near to the COMPANY's Platong Field (Worksite).

7.17.2 Provisional Acceptance ("Start Up")

CONTRACTOR shall ensure that prior to notifying COMPANY that the FSO and CALM Buoy are "Ready to Receive Crude Oil", the FSO and CALM Buoy shall be moored at the COMPANY's DESIGNED WORK AREA, installed, hooked up to the Platong CPP, fully commissioned in class and provided with interim class certificates, and in all respects ready to receive crude oil.

After the FSO and CALM Buoy is installed, it shall be commissioned by CONTRACTOR with all the necessary personal, vendors and regulatory body approvals/certificates shall be supplied by CONTRACTOR. Upon successful testing and commissioning, the FSO and CALM Buoy shall be ready for uninterrupted operations at any rate from zero to maximum design rate as per this specification and all remaining deficiencies identified in section 7.14 and 7.15, including major (A safety hazard to personal operating the equipment) punch lists and minor punch lists are rectified.

After testing and commissioning activities the CONTRACTOR shall issue a Ready to Receive Crude Oil (RTRC) certificate.

Upon successful completion of the performance tests, which includes stable operation of the FSO and CALM Buoy System for a period of seventy-two (72) hours, to demonstrate compliance with the class requirements and FSO and CALM Buoy specification and requirement to COMPANY's satisfaction which shall not be unreasonably withheld, CONTRACTOR shall give notice to COMPANY requesting the COMPANY to verify and issue Provisional Acceptance Certificate. At this point COMPANY shall either issue corrective request or shall accept the FSO and CALM Buoy at DESIGNED WORK AREA and issue Provisional Acceptance Certificate.

Notwithstanding the above, in the event the CONTRACTOR is Ready to Receive Crude Oil and perform the performance test but is prevented to do so due to no reason attributable to the CONTRACTOR, the Provisional Acceptance shall be deemed to have been achieved and charter hire, warranty and initial charter period shall commence after 72 hours from the receipt of RTRC certificate.

7.17.3 Final Acceptance

The CONTRACTOR shall give the COMPANY not less than fifteen (15) days' notices of the anticipated Final Acceptance date.

Subject to crude availability from the field, and COMPANY schedule and appropriate export tanker for receiving crude, within thirty (30) days of CONTRACTOR receiving Provisional Acceptance Certificate, CONTRACTOR will demonstrate that the Custody Transfer Metering System has meet the requirements of the relevant Government Authority, and demonstrate the

performance of offloading system in accordance with the specification and requirement, by completing the first offtake of crude oil from the FSO to an export tanker.

Upon successful completion of the crude offtake operation and verification of the completion of all punch list items and Works in accordance with the Contract and FSO and CALM Buoy specification and requirements, and removal of all CONTRACTORs and subcontractors temporary facilities, commissioning personal and debris from the Worksite, the CONTRACTOR shall give notice to COMPANY requesting COMPANY to verify and issue Final Acceptance Certificate. Within seventy-two (72) hours of receiving such notice, the COMPANY shall either issue a corrective request, or shall issue Final Acceptance Certificate.

In respect of any repairs, replacements or defects which appear within 12 months or the extended guarantee period (as applicable) from the Final Acceptance made by COMPANY, the CONTRACTOR shall repair, replace, or remedy any defects

7.18 Fuel and Lubricants

All marine fuel, refrigerant, hydraulic oil, chemicals, commissioning parts, consumables and non-consumables needed for testing and up to the FSO and CALM Buoy delivery and acceptance at their shipyards and at Platong field shall be provided by CONTRACTOR at CONTRACTOR's expense. All refrigerant, hydraulic oil and chemicals for marine operations shall be fully stocked in storage tanks to the full tank capacities and these shall for CONTRACTOR's account.

All lubricating oils and greases needed for normal operations including that in sumps and system tanks shall be provided by CONTRACTOR at CONTRACTOR's expense until vessel's delivery and acceptance. All Working system fluids shall be for CONTRACTOR's account.

COMPANY shall reimburse CONTRACTOR only for fuel oil remaining onboard that is in storage tank at the time of delivery at DESIGNED WORK AREA once Provisional Acceptance Certificate is issued in accordance with Exhibit B.

7.19 COMPANY Representatives and Field Staff Services

7.19.1 General

COMPANY shall have the right to send COMPANY representative to the Work Sites. COMPANY representative shall always have free access to all Worksites and any other facilities where Work for the FSO and CALM Buoy are being performed. COMPANY field staff expenses shall be for account of COMPANY. Prior to contract award, CONTRACTOR shall provide major Worksite and activities at each site for COMPANY to estimate the cost of providing its staff at each Worksite location.

COMPANY representatives shall have the right to monitor and observe the FSO and CALM Buoy's construction/conversion progress including the right to participate as observer in all of the activities of CONTRACTOR or CONTRACTOR's representative under the contract, including but not limited to SSHE relates items, inspections, plan approval, attendance at trials, tests and inspection, meeting, and any Work related to the engineering, design, launch, testing, inspection, construction, trials and delivery of the FSO and CALM Buoy.

7.19.2 Secretarial Services

COMPANY personal shall have reasonable access to on-site secretarial and document control services provided by CONTRACTOR.

7.19.3 Office and Communication Facilities

CONTRACTOR shall provide office space for COMPANY staff at the fabrication and design office location. At least one (1) office for COMPANY's representative shall be private type with lockable doors. The offices shall have telephone lines, facsimile line, electronic mail lines, fast internet connection, Wi-Fi network, copy and print machines six (6) desktop computers with MS office, LCD screens and peripherals, facsimile machine, file space, kitchen (pantry) facility, western type toilet, four land transportation around Worksite, office furniture and associated equipment as generally common in the industry. Site team should also have the access to conference room with conference type of phone.

7.19.4 Ceremonies

CONTRACTOR shall provide facilities and support for arranging in accordance with the marine tradition of the naming ceremony. COMPANY shall have the right to name the FSO

8 OPERATION AND MAINTENANCE

8.1 Commencement and Appointment

With Effective Date stated in this Contract for commencement of The Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61 and continuing unless and until terminated, the COMPANY hereby appoint the CONTRACTOR and the CONTRACTOR hereby agree to act as the Manager of the FSO and CALM Buoy in respect of the Operation and Maintenance Services

The Operation and Maintenance Services provided under this Contract shall commence on the date the FSO and CALM Buoy System passes the Provisional Acceptance.

During the period of this Contract, the CONTRACTOR shall carry out the Operation and Maintenance Services in respect of the FSO and CALM Buoy in accordance sound ship management practice, including but not limited to compliance with all relevant rules and regulations. CONTRACTOR and the crew are not employees, agents, or representatives of COMPANY. CONTRACTOR has complete control, supervision, and direction over their equipment and personal, and over the manner and method of performance of the Operation and Maintenance Services. Any instructions or directions of any kind given by COMPANY do no relieve CONTRACTOR of their duties and obligation as CONTRACTOR.

8.2 CONTRACTOR's Obligations

The CONTRACTOR shall provide the Operation and Maintenance Services in accordance with sound ship management practice and to protect the interests of the COMPANY in all matters relating to the provision of services.

CONTRACTOR shall procure that all requirements of the Flag State and Coastal State (if required) are satisfied, and they shall assume the responsibility for the operation and maintenance of the FSO and CALM Buoy and taking over the duties and responsibilities imposed by the ISM Code and the ISPS Code. Where the ISM Code or ISPS Code refer to "COMPANY", it shall mean CONTRACTOR.

8.3 Technical Management

Unless otherwise stated in any other documents, the CONTRACTOR shall at their own expenses provide technical management which includes, but is not limited to, the following services:

- ensuring that the FSO and CALM Buoy complies with the requirements of the law of the Flag State
- ensuring compliance with the ISM Code
- ensuring compliance with the ISPS Code
- providing competent personal to supervise the maintenance and general efficiency of the FSO and CALM Buoy including the provision of work permits and visas for the CONTRACTOR's personal
- providing mooring master during offloading operation
- arranging the supply of necessary stores, spares and lubricating oils
- appointing surveyors and technical consultants as the CONTRACTOR may consider from time to time to be necessary
- supervising logistics administration requirements and physical delivery of the FSO and CALM Buoy under the Contract if the COMPANY so exercise their option to purchase the FSO and/or CALM Buoy under the Contract
- arranging for the supply of provisions unless provided by the COMPANY
- arranging for the sampling and testing of bunkers
- navigating operation, supplying, fueling activities aboard and whenever required, repairing the FSO and CALM Buoy during Charter Period, and paying all charges and expenses of every kind and nature whatsoever incidental to their operation of the FSO and CALM Buoy under this Contract, including annual Flag State fees and any foreign general municipality and/or state taxes
- arranging accommodation and victual for the crews, the CONTRACTOR's crews and COMPANY's personals who may be onboard from time to time
- managing and supplying chemicals to offshore location(s) or supply boat(s) as designed by COMPANY
- ensuring the FSO and CALM Buoy complies with good management practice for FSO and CALM Buoy engaged in FSO activities and
- preparation, disconnection and removal for demobilization of the FSO and CALM Buoy at REDELIVERY as defined in Contract
- arranging and supervising repairs and maintenance of the COMPANY SUPPLIED EQUIPMENT, if necessary.

8.4 Crew Management

The CONTRACTOR shall provide suitably qualified Crew who shall be paid by CONTRACTOR and who shall comply with the requirements of STCW as applicable.

The provision of such crew management services includes, but is not limited to, the following services:

- selecting, engaging, and providing for the administration of the crew, including, as applicable, payroll arrangements, pension arrangements, tax, social security contributions and other mandatory dues related to their employment payable in each crew member's country of domicile
- ensuring that the applicable requirements of the law of the Flag State in respect of rank, qualification and certification of the crew and employment regulations, such as crew's tax and social insurance, are satisfied

- ensuring all crew have passed a medical examination with a qualified doctor certifying that they are fit for the duties for which they are engaged and are in possession of valid medical certificates issued in accordance with appropriate Flag State requirements or such higher standard of medical examination as may be agreed with COMPANY. In the absence of applicable Flag State requirements the medical certificates shall be valid at the time when the respective crew member arrives onboard the FSO; and ensuring at all crew have complied with (a) the COMPANY's instruction, procedures, guidelines and policies concerning health, environmental, safety and information technology security practices, including the COMPANY's General Marine Instruction (GMI), (b) such other COMPANY's procedures to be followed in the performance of the Operation and Maintenance Services, and (c) all applicable healthy, environmental and safety laws and regulation
- ensuring that the crew shall have a common working language and a command of the English language of a sufficient standard to enable them to perform their duties safely
- arranging transportation of the crew, including repatriation
- training of the crew including those required by regulatory, statutory and COMPANY requirements
- ensuring that the crew, on joining the FSO, are given proper familiarization with their duties in relation to the FSO's SMS and ISM Code and that instruction which are essential to the SMS are identified, documented, and given to the crew prior to Sail Away.

8.5 Operation and Maintenance Philosophy

CONTRACTOR will undertake full responsibility for the Operation, Maintenance and services that are required to operate and maintain the FSO and CALM Buoy

Operation and Maintenance Philosophy will also describe the interfacing arrangement required between the COMPANY and CONTRACTOR to efficiency and safety manage the overall operations. This will include but not limited to Emergency Response Plan (ERP), operations and equipment status reporting and procurements.

CONTRACTOR shall fully commit to be in compliance with International Convention for the Safety of Life at Sea (SOLAS), International Security for Port and Ship (ISPS), The Occupational Safety, Health and Environment Act of the Kingdom of Thailand, International Safety Management (ISM), International Safety Guide for Oil Tankers & Terminals (ISGOTT) and Classification Society.

The CONTRACTOR shall provide all materials, equipment, personal, supervision, and engineering and all other services and things required or necessary for the satisfactory performance and completion of the Work except those items identified as COMPANY SUPPLIED EQUIPMENT.

CONTRACTOR provision of the Work will be:

- Compliance with all laws and regulations relevant to the performance of the operations
- Accordance with COMPANY and industry best practices and standard
- Develop maintenance system consistent with all manuals and instructions relating to the system, equipment and component of FSO and CALM Buoy
- Full compliance with those requirements relating to operation and maintenance of the FSO and CALM Buoy as set forth in Contract
- Full compliance with COMPANY policies and procedures such as SSHE requirements to the extent provided to the CONTRACTOR

CONTRACTOR will be responsible for providing and maintaining a safe and healthy work environment at DESIGNED WORK AREA for subcontractors and all other relevant third party's personal.

CONTRACTOR Operations and Maintenance Philosophy is summarized below:

- Committed to provide safe and conductive work environment for employees, COMPANY, and subcontractors
- FSO hawsers and loading hoses disconnection shall meet with design environmental criteria, operation & maintenance philosophy, and emergency evacuation plan. Loading hose shall be flushed prior disconnection
- Committed in maximizing the uptime reliability and to maintain operational excellence and safety of the FSO and CALM Buoy
- Meet COMPANY requirement in maintaining high standard of health, safety, and environmental protection
- Operate the facility with fit for purpose system, equipment, legal, contractual, and other critical production requirement
- Recruit quality candidates, provide appropriate training and monitor performance and improvement through an Operation & Maintenance system
- Develop and establish the communication protocol between CONTRACTOR and COMPANY during normal and emergency situation
- Managing the operation with the most cost effective through best practices, good maintenance program and technology know how
- To be incompliance with statutory and regulatory requirement for timely inspection of equipment
- To provide the most cost-effective maintenance service methods and techniques available
- To manage all preventive maintenance activities in the most effective manner
- To provide maintenance services in the safest possible manner eliminating harm to personal and damage equipment

All systems, equipment and components on the FSO and CALM Buoy System will be incorporated to operational and maintenance requirements, and these will be determined and optimized during the detailed engineering design phase. The underlying premise will be based on the application of Reliability and Safety principles ensuring proven cost-effective and reliable. Spare part levels will be determined via a Maintenance Strategy Review process identifying critical components essential to the required 100% uptime and safe operation.

8.6 Operation and Maintenance Requirement

The CONTRACTOR shall manage, control and maintain the FSO and CALM Buoy in accordance with Contract and with consideration of the following:

- CONTRACTOR shall propose and COMPANY shall jointly agree the initial organizational structure for marine and maintenance operations, in line with coastal state, flag and/or class requirements and standard oil field and/or international standard practices. The organizational structure shall be reviewed and modified from time to time as required whenever and fundamental chain in operations and again agrees by CONTRACTOR and COMPANY.

- The operation of the FSO and CALM Buoy, to include marine and maintenance operations shall be under the direction of the COMPANY, subject to the overall direction of the designed COMPANY Representative.
- CONTRACTOR shall be responsible for the technical engineering support associated with the operations and maintenance of the FSO and CALM Buoy
- CONTRACTOR shall be responsible for the operation and maintenance of the metering skid for custody transfer, to include verification accuracy in accordance to Thailand Government and Custom regulations and requirements. The COMPANY will be liaison and provide the CONTRACTOR assistance in complying with such regulations and requirements. CONTRACTOR shall develop Metering System Operation and Maintenance per EXA-A10.
- CONTRACTOR shall be responsible or the procurement of spare parts and consumables, marine lubricant and chemical needed in the daily operation of the FSO and CALM Buoy except fuel, lubricant, and chemicals for COMPANY SUPPLIED EQUIPMENT. This shall include CONTRACTOR responsibility for expediting and importation to the COMPANY supply base in Songkla.
- CONTRACTOR shall be responsible for the integrity of the FSO and CALM Buoy for maintaining class certification and insured through the service period of the FSO and CALM Buoy. The CONTRACTOR shall report the up-to-date version of class survey and certification status to COMPANY regularly
- CONTRACTOR shall be responsible for the integrity of the cargo system, to include cargo tanks, slop tanks, produce water tank and ballast water tank. FSO is able to take any cargo / ballast tank out of service for inspection and maintenance whilst maintaining production rate and allowing continued operations for all systems.
- CONTRACTOR shall be responsible for the stability of the FSO, CALM Buoy and the monitoring of hull stress.
- CONTRACTOR shall be responsible for the FSO and CALM Buoy inspections as required, as well as underwater hull, risers, and appurtenances inspection (UWILD). The inspection is determined at intervals specified by Class rules and will be under CONTRACTOR cost.
- CONTRACTOR shall be responsible for operating and maintaining all mooring equipment to include ropes, wires, chains, deck machinery, fender, hawser, lifting equipment etc. relating to mooring operations
- CONTRACTOR shall provide medical facility with certified occupational medic, associated equipment, medicines, and medical consumables as befitting a remote offshore location.
- CONTRACTOR shall be responsible for outfitting, operating and maintaining a suitably equipped laboratory facility capable analyzing crude oil and water samples as require for custody transfer operations and produced water disposal. Any additional analysis required by the COMPANY will be equipped in the lab as agreed between CONTRACTOR ad COMPANY
- The CONTRACTOR shall be responsible for maintaining the FSO and CALM Buoy including COMPANY SUPPLIED EQUIPMENT in good running order and, in the event that repairs to the FSO, CALM Buoy, Moorings, Risers, Loading Hoses, Offloading Hose and Hawsers are required, the CONTRACTOR shall be responsible for all arrangements and costs necessary to affect such repairs and return the FSO and CALM Buoy to full working order. In the event such replacement to the mooring hawser loading hose and offloading hoses is required by COMPANY, the costs for such replacement shall be for COMPANY's account.

- CONTRACTOR shall be responsible for maintaining a spare part store onboard the FSO.
- CONTRACTOR shall supply and maintain all equipment and consumables associated with catering and housekeeping, to include accommodation for COMPANY personals. The accommodation charge for COMPANY personal shall be included to Operation and Maintenance cost as part of the Time Charter Rate.
- CONTRACTOR to provide and maintain pollution control equipment onboard the FSO as require by MARPOL and/or Thailand regulations
- CONTRACTOR shall provide all necessary assistance and information allow COMPANY to develop the Terminal Handbook
- CONTRACTOR shall develop operation, maintenance manual and emergency response plan in collaboration with COMPANY and submit for COMPANY review and approval

The COMPANY may at any time after giving reasonable notice to the CONTRACTOR inspect or survey the FSO and CALM Buoy for any reason they consider necessary on instruct a duly authorized surveyor to carry out such inspection or survey on their behalf. The CONTRACTOR shall furnish COMPANY with full information regarding any casualties or other accidents or damage to FSO and CALM Buoy.

Whist in operation at the Platong Field, the COMPANY shall provide regular boat service to the FSO to enable the FSO to take fresh provisions, spares, water and any crew, subcontractors, and approved visitors. However, in determining whether to provide a boat, the COMPANY shall be entitled to take into consideration the number of persons and/or amount of goods requiring transport. COMPANY shall not be required to provide additional or supplementary boat service outside of its normal operating schedule. CONTRACTOR shall be responsible for any cost associated with such additional or supplementary service.

8.7 Maintenance Program and System

Maintenance of the FSO is a fundamental activity and an ongoing operation. A well planned and executed maintenance program will be a major factor in ensuring a high level of performance from the FSO and CALM Buoy.

During the project engineering, operation and readiness plan, a master register of equipment required to be maintained listing shall be developed and CONTRACTOR will ensure that all major and critical equipment are included into the register. The maintenance philosophy of individual equipment on the register will be determined and a maintenance program or regime for the equipment laid down. All maintenance tasks that are to be executed along with their associated implementation schedule are identified and derived through this pass.

In identifying of equipment criticality CONTRACTOR will categorize the equipment to be as per CONTRACTOR's Philosophy and Manual

CONTRACTOR shall develop and maintain, for the duration of the Charter Period, a CMMS for the inspection and maintenance of the FSO and CALM Buoy, their systems and equipment. The Computerized Maintenance Management system (CMMS) shall be subject to Classification Society approval

All equipment planned maintenance will be placed in the CMMS with maintenance procedure and intervals established for each one. The FSO responsibility personal for maintaining each piece of equipment will be assigned through the CMMS.

A work list and schedule of planned maintenance activities shall be produced on a daily basis and the results of the activities performed will be recorded on the system. Using the equipment history and conditional monitoring system, it will be possible over a period of time to analyses

the trends of equipment wear and failures. This information can be used to adjust the maintenance schedule, or to adjust design changes or modifications to the equipment.

The planned maintenance in the CMMS interacts with the inventory system ensuring that tight control over spare parts usage and inventory level are maintained. If any major discrepancies are fund, the FSO responsible personal shall initiate the steps required to ensure that they are remedied

Any maintenance or inspection activities which requires shutdown of the FSO loading operation shall normally be undertaken during COMPANY planned shutdown period of the Process Facilities, which may occur.

Notwithstanding the requirements above, the principal areas for inspection and maintenance are, but are not limited to, the requirements of Classification Society and shall be incorporated as such within the inspection and maintenance scheme.

8.8 Training

All the CONTRACTOR's personal engaged in the FSO's offshore operations are required to attend training as per COMPANY approved Training Matrix, as may be amend from time to time and mutually agreed between CONTRACTOR and COMPANY.

CONTRACTOR's personal shall attend recognized Basic Safety Training per Offshore Petroleum Industry Training Organization (OPITO), Tropical Basic Offshore Induction and Emergency Training (T-BOSIET) and Code of Practice for Safety Training in the Petroleum and Petrochemical Industries of the Petroleum Institute of Thailand. The CONTRACTOR shall be required to produce documentary evidence of such training acceptable to COMPANY, prior to mobilization of its personal. Thereafter, the CONTRACTOR's personal working offshore will be required to attend refresher courses as required to maintain the validity of their Training throughout the duration of this Contract.

COMPANY may request CONTRACTOR to undertake additional mandatory training (COMPANY Mandatory Training) at COMPANY's cost. All associated cost of CONTRACTOR's personal during attend COMPANY mandatory training course shall be paid by CONTRACTOR.

It is understood and agreed that all applicable insurance and indemnity provisions of this Contract shall remain in force during any onshore training attended by the CONTRACTOR's personal during Charter Period.

8.9 Inventories, Oil and Spares

CONTRACTOR shall provide at their costs all inventories, oil, spares, equipment and materials required for daily operations of the FSO and CALM Buoy and for any maintenance or repair of the FSO and CALM Buoy to be in good working condition.

CONTRACTOR shall supply any tools and spare parts required for CONTRACTOR's commissioning. Any parts consumed to correct guarantee deficiencies shall be replace by CONTRACTOR

Spare shall also meet regulatory body requirement, classification society recommendation, OCIMF recommendation, and offshore marine practice

Spare parts for all COMPANY SUPPLIED EQUIPMENT shall be COMPANY's responsibility unless separately agreed. Critical spare parts shall be maintained

In additional to the normal supply of tool and testing equipment, CONTRACTOR shall furnish and store all special tools required by manufacture's recommendations. Particular attention

shall be given to the special tool requirements for the critical equipment. All the consumable stores and spares parts shall be delivered onboard the FSO prior Sail Away to DESIGNED WORK AREA.

A complete inventory of the FSO and CALM Buoy's entire equipment, outfit including spare parts, appliances and of all consumable stores on board the FSO shall be made by the COMPANY in conjunction with the CONTRACTOR at Provisional Acceptance and again on REDELIVERY of the FSO and CALM Buoy as defined in the Contract.

8.10 Ship to Ship Transfer

CONTRACTOR warrants that Ship-to-Ship transfer operations shall always be carried out in compliance with the latest published edition of the Ship-to-Ship Transfer Guide for Petroleum, Chemicals and Liquefied Gases.

8.11 Operation and Maintenance Personal

CONTRACTOR or subcontractor shall provide competent Operation and Maintenance personnel with adequate skills and certificates for the performance of the Work, throughout the Charter Period, comprising key personnel, FSO Master, Safety Officer, Medic, Maintenance Supervisor, Maintenance Technician(s), Marine Supervisor, Marine Technician(s), Crane Operator(s), Mooring Master, and all respective supervisors offshore, as a minimum.

These key personnel shall have as a minimum five (5) years proven operation and maintenance experience in proposed positions specific to FSO and CALM Buoy. CONTRACTOR shall provide copies of CV for each of the above candidates for COMPANY prior review and approval.

8.12 Operation and Maintenance Responsibility Matrix

Refer to EXA-A11.

8.13 Major Subcontractor and Vendor List

CONTRACTOR shall propose the major subcontractors, vendors, and makers name list for all the FSO and CALM Buoy equipment and machinery per Table 14 in CONTRACTOR's proposal. In general, nominated vendors shall meet all functional requirements specified in specification. Prior to Contract award, an acceptable list of Vendors shall be mutually agreed between COMPANY and CONTRACTOR.

A list of subcontractors and vendors will be included in the CONTRACT Exhibit F. The intent is to make that list as comprehensive a listing as possible and it shall include all items and equipment that will be used on the FSO and CALM Buoy system. To facilitate completion of this list, CONTRACTOR shall provide a comprehensive list of long lead and major equipment, vendors and sub-contractor procurement plan in accordance with PEP and Project Schedule in CONTRACTOR's proposal.

Equipment manufactured by licensee shall be at least of the same quality and standard as licensor. All maker-supplied main equipment and sub-components such as cabling tubing, swathes, etc., shall be at least to the same standard as required by the specification and shall be of the same standard throughout the FSO and CALM Buoy.

Table 14: Name List Required Subcontractor and Vendor

Item	Description
1	Repair, Life Extension, Fabrication and Conversion Shipyard of Candidate Vessel and CALM Buoy
2	Naval Architecture & Marine Engineering
3	FSO & CALM Buoy Operation and Maintenance
4	CALM Buoy
5	Risers
6	Mooring Chain
7	Classification Society
8	Marine Warranty Survey
9	Paint and Coating
10	Boiler Refurbishment
11	Pedestal Crane – Diesel Type (API Certified)
12	Accommodation Refurbishment
13	Lifeboat and Davit
14	Custody Transfer Meter (LACT Unit)
15	Offloading Hose - Tandem Export
16	Breakaway Coupling - Offloading Hose
17	Mooring Hawser - Tandem Mooring
18	Quick Disconnection Chain Stopper/Quick Release Hook - Tandem Mooring
19	Floating Crude Oil Loading and Produced Water Export Hose
20	Breakaway Coupling – Floating Hose
21	Mooring Hawser - CALM Buoy Mooring
22	Quick Disconnection Chain Stopper/Quick Release Hook – CALM Buoy Mooring
23	Fenders - Pneumatic
24	Transfer Basket (Personal Transfer)
25	Produce Water Pump
26	Laboratory
27	Chemical Injection Skid

Item	Description
28	Cargo Loading Auto Sampler
29	Offshore Transportation, Hook Up, Installation and Commissioning

8.14 Company Supplied Equipment

It is intended that COMPANY supplies shall be minimum and limited to the items listed herein.

COMPANY SUPPLIED EQUIPMENT lists shall be provided to CONTRACTOR. Most of these shall be delivered at Platong field. CONTRACTOR shall receive these at DESIGNED WORK AREA, check to make sure it is in good condition, store it in well protected and maintained on FSO.

Table 15: Company Supplied Equipment

Item	Description
1	**IT network and IP phone connection**
1.1	1 x IP Cisco Phone (COMPANY Representative Office)
1.2	1 x IP Cisco Phone (COMPANY Representative Cabin)
1.3	1 x Multi-function printer in COMPANY Representative Office
2	**Digital Trunk Radio base station (PLCPP communication)**
2.1	1 x Digital Trunk Radio Base station (COMPANY Representative Office)
2.2	1 x Antenna (Monkey Island)
2.3	1 x Handheld Radio
3	**Oil Spill Response Kit**
3.1	2 x 10 10ft Containers weight approx. 5 MT each (Preliminary)

9 REDELIVERY AND DEMOBILIZATION

CONTRACTOR shall be responsible all works and services required to meet both the implicit and explicit intent of the Work including but not limited to the provision for the SSHE management, project management, administration service, detail engineering, procurement, subcontracting, fabrication, QA/QC inspection, marine spread modification, marine spread inspection, trial/testing as per COMPANY's General Marine Instruction and all other execution work relate to mobilization, demobilization, transportation, disconnection, towing and removal activities (including of all required personal, equipment, utility, fuel, material, rigging, tools, consumable, installation aids and survey spread) until work completion.

CONTRACTOR shall provide all the marine spread during FSO and CALM Buoy disconnection and demobilization. The marine spread shall include but not limited to personal, tools, equipment, material and etc.

CONTRACTOR shall be informed of the last offload all pumpable cargo that will occur at the end of CHARTER PERIOD. CONTRACTOR shall offload the maximum reachable cargo onboard to the export tanker or designed vessel provided by COMPANY.

The risers, loading hoses and offloading hoses shall be flushed until Total Petroleum Hydrocarbon (TPH) less than 15 ppm prior to FSO and CLAM Buoy disconnection as required by applicable laws. All FSO and CALM Buoy system including disconnection and removal shall be responsibility by CONTRACTOR unless this Work is designed to perform by COMPANY.

All of disconnection, removal and demobilization work package shall be submitted to COMPANY, Classification and Marine Warranty Survey (MWS) for review and approval

10 SAFETY, SECURITY, HEALTH AND ENVIRONMENTAL (SSHE)

CONTRACTOR shall have in place a Safety Management System (SMS) certified under the International Safety Management code and complied with COMPANY's SSHE requirement per Exhibit E.

CONTRACTOR shall develop bridging document describes how SSHE goal and objectives will be met between COMPANY and CONTRACTOR for hook up, installation, operation, and maintenance of FSO and CALM Buoy in COMPANY operational area

11 COMPANY PROVIDED DOCUMENTS

The following documents are attached and made a part of this Exhibit.

11.1 Scope of Work, Requirements and Specifications

Reference	Documents
EXA-A1	Design Basis for Pipeline, Flexible Riser & CALM Buoy Systems
EXA-A2	Risk Assessment Report
EXA-A3	PTR2 Close-Out Report
EXA-A4	Field Layout
EXA-A5	Metocean Criteria
EXA-A6	Geotechnical Data
EXA-A7	Crude Oil and Produced Water Properties
EXA-A8	Example of Corrosion Monitoring Devices
EXA-A9	Metering System Design and Requirements
EXA-A10	Metering Operation and Maintenance Requirements

Reference	Documents
EXA-A11	Operation and Maintenance Responsibility Matrix

11.2 Exhibit C - Work Time Schedule

Reference	Documents
EXC	Work Time Schedule

11.3 Exhibit D - COMPANY's Guideline and Requirement Documents

Reference	Documents
EXD-A1	**FRONT END ENGINEERING DESIGN (FEED) - GENERAL**
EXD-A1.1	Overall G1 FSO subsea and floating system schematic
EXD-A2	**FRONT END ENGINEERING DESIGN (FEED) - CALM BUOY & MOORING SYSTEM**
EXD-A2.1	Mooring Analysis Report
EXD-A2.2	Anchor Type Selection & Design Report
EXD-A2.3	CALM Buoy Preliminary Sizing, Hydrostatic & Stability Calculation
EXD-A2.4	Floating Hose between CALM and FSO Design Configuration report
EXD-A2.5	CALM Buoy Structural Analysis
EXD-A2.6	CALM Buoy & Outfittings MTO & Specification
EXD-A2.7	Mooring Chain MTO & Specification
EXD-A2.8	Hawser MTO & Specification
EXD-A2.9	Anchor MTO & Specification
EXD-A2.10	Floating Hose MTO & Specification
EXD-A2.11	Marine Breakaway Coupling Specification
EXD-A2.12	G1 FSO Mooring Layout
EXD-A2.13	CALM Buoy General Arrangement
EXD-A2.14	Mooring Chain & Anchor Arrangement Drawing
EXD-A2.15	Chain Leg Make-Up Drawing

Reference	Documents
EXD-A2.16	Hawser Arrangement Drawing
EXD-A2.17	Floating Hose Arrangement Drawing
EXD-A3	**FRONT END ENGINEERING DESIGN (FEED) - FLEXIBLE RISER SYSTEM**
EXD-A3.1	Flexible Riser Analysis Report
EXD-A3.2	Flexible Riser & Ancillaries MTO & Specification
EXD-A3.3	Flexible Riser & Ancillaries General Arrangement
EXD-A4	**FRONT END ENGINEERING DESIGN (FEED) - SUBSEA PIPELINE SYSTEM (CO & PW)**
EXD-A4.1	Crude Oil & Produced Water Pipelines Flow Assurance
EXD-A4.2	Pipelines Installation Feasibility
EXD-A4.3	Wall Thickness Calculation & Steel Grade Selection Report
EXD-A4.4	Pipeline On-Bottom stability Analysis
EXD-A4.5	Pipeline Allowable Free Span Report
EXD-A4.6	Pipeline End Expansion Analysis Report
EXD-A4.7	Pipeline Lateral Buckling Analysis (Level I)
EXD-A4.8	Pipeline Tie-In Spool Design & Riser Stress Analysis at PLCPP side
EXD-A4.9	Pipeline Tie-In Spool Design at PLEM side
EXD-A4.10	Pipeline Cathodic Protection Report
EXD-A4.11	Pipeline Material Datasheet
EXD-A4.12	PLEM Pig launcher and receiver Datasheet
EXD-A4.13	Detailed Pipeline Route Layout
EXD-A4.14	Pipeline Approach Details at PLCPP
EXD-A4.15	Pipeline Approach Details at PLEM
EXD-A4.16	Tie-in Spool Details & MTO Drawing at PLCPP
EXD-A4.17	Tie-in Spool Details & MTO Drawing at PLEM
EXD-A4.18	Pipeline Sacrificial Anode Details
EXD-A4.19	Pipeline Installation Storyboard
EXD-A4.20	Pipeline Cross Section & Field Joint Details

Reference	Documents
EXD-A4.21	Pipeline Induction Bends
EXD-A4.22	Pipeline Crossing General Arrangement
EXD-A5	**FRONT END ENGINEERING DESIGN (FEED) - PLEM**
EXD-A5.1	PLEM Design Revalidation Report
EXD-A5.2	PLEM Structural Design Report
EXD-A5.3	PLEM Foundation Design Report
EXD-A5.4	PLEM Material Take-Off
EXD-A5.5	PLEM General Arrangement
EXD-A5.6	PLEM Structural Details
EXD-A5.7	PLEM Lifting Arrangement
EXD-A5.8	PLEM Cathodic Protection Details
EXD-A5.9	PLEM Piping Arrangement
EXD-A6	**EXISTING FACILITIES INFORMATIONS**
EXD-A6.1	PLCPP Crude Oil System P&ID
EXD-A6.2	PLCPP Produced Water System P&ID
EXD-A7	**COMPANY REQUIREMENTS**
EXD-A7.1	General Marine Instruction

11.4 Exhibit E - COMPANY's SSHE Requirements

Reference	Documents
EXE	**SSHE CONTRACT DOCUMENT**
EXE-A1	**CORPORATE SSHE DOCUMENTS**
EXE-A1.1	Safety, Security, Health, and Environment (SSHE) Policy
EXE-A1.2	Audit and Review Standard
EXE-A1.3	Climate Change Management Standard
EXE-A1.4	Corporate Oversight of SSHE MS Standard
EXE-A1.5	Corporate SSHE Plan, SSHE KPI's and Performance Monitoring Standard
EXE-A1.6	Emergency and Crisis Management Standard

Reference	Documents
EXE-A1.7	Environmental Management Standard
EXE-A1.8	Incident Management Standard
EXE-A1.9	Life-Saving and Process Safety Rules Standard
EXE-A1.10	Management of Change Standard
EXE-A1.11	Occupational Health Management Standard
EXE-A1.12	Operational Safety Management Standard
EXE-A1.13	Process Safety Management Standard
EXE-A1.14	Safety Case Standard
EXE-A1.15	Security Management Standard
EXE-A1.16	SSHE Communication Standard
EXE-A1.17	SSHE Culture Management Standard
EXE-A1.18	SSHE Regulatory Compliance Standard
EXE-A1.19	SSHE Risk Management Standard
EXE-A1.20	SSHE Training and Competency Standard
EXE-A1.21	Arsenic Mercury and Benzene Procedure
EXE-A1.22	Chemical Management Procedure
EXE-A1.23	Environmental Performance Reporting Procedure
EXE-A1.24	Health Risk Assessment Procedure
EXE-A1.25	Lifting Operation Safety Procedure
EXE-A1.26	Medical Assessment of Fitness to Work for Domestic Offshore Workers
EXE-A1.27	Permit to Work Procedure
EXE-A1.28	SSHE Contractor Management Procedure
EXE-A1.29	Waste Management Procedure
EXE-A1.30	Work-Related Injury Illness Case Management Procedure
EXE-A1.31	Bow Tie Analysis Guideline
EXE-A1.32	Dropped Objects Prevention Safety Guideline
EXE-A1.33	Drugs and Alcohol Guideline
EXE-A1.34	Fitness to Work Guideline

Reference	Documents
EXE-A1.35	Hazard and Operability (HAZOP) Study Guideline
EXE-A1.36	Hazard Identification (HAZID) Study Guideline
EXE-A1.37	Incident Investigation Guideline
EXE-A1.38	Infectious Disease Outbreak Management Guideline
EXE-A1.39	Job Safety Analysis (JSA) Guideline
EXE-A1.40	Layer of Protection Analysis (LOPA) Guideline
EXE-A1.41	Loss of Primary Containment (LOPC) Reporting and Reduction Guideline
EXE-A1.42	Major Accident Event Prevention Tool Guideline
EXE-A1.43	Medical Emergency Management Guideline
EXE-A1.44	Medical Surveillance Management Guideline
EXE-A1.45	Naturally Occurring Radioactive Material (NORM) Management Guideline
EXE-A1.46	Pre-Start Up Audit Guideline
EXE-A1.47	Pressure Testing Guideline
EXE-A1.48	Project and Operational Technical Review Guideline
EXE-A1.49	Safety Critical Elements (SCE) Performance Standards Guideline
EXE-A1.50	Security Management Guideline
EXE-A1.51	Security Review and Audit Guideline
EXE-A1.52	Security Risk and Threat Analysis and Assessment Guideline
EXE-A1.53	Simultaneous Operations Guideline
EXE-A1.54	Site Medical and Health Care Services Guideline
EXE-A1.55	Vector Borne Diseases Management Guideline
EXE-A1.56	Working at Height Safety Guideline
EXE-A2	**PDD SSHE DOCUMENTS**
EXE-A2.1	Organizational Context and Planning
EXE-A2.2	Welding, Cutting and Grinding
EXE-A2.3	Non-Conformity, Corrective and Preventive Action
EXE-A2.4	SSHE Award and Recognition Guideline
EXE-A2.5	HAZARD Reporting and Communication

Reference	Documents
EXE-A2.6	Handling of Illegal Drugs or Substances Guideline
EXE-A2.7	SSHE Risk and Opportunity Management
EXE-A2.8	Tropical Cyclone Plan for Gulf of Thailand
EXE-A2.9	Environmental Aspect and Impact Evaluation
EXE-A2.10	Routine Job Card Procedure
EXE-A2.11	Hydrogen Sulfide (H2S) Management Procedure
EXE-A2.12	Hearing Conservation Program (HCP)
EXE-A2.13	Domestic Assets Fatality Management Procedure
EXE-A2.14	Stop Work Authority Guideline
EXE-A3	**G1 SSHE PROCEDURE DOCUMENTS**
EXE-A3.1	Permit To Work Instruction
EXE-A3.2	Lifting Operation Procedure
EXE-A3.3	Welding, Cutting and Grinding Procedure
EXE-A3.4	Inhibit Override Control
EXE-A3.5	Pressure Testing Procedure
EXE-A3.6	Electrical Isolation Procedure
EXE-A3.7	Process and Mechanical Isolation Procedure
EXE-A3.8	Emergency Response Plan
EXE-A3.9	Security Plan
EXE-A3.10	Handling Of Pressurized Cylinders and Industrial Gases Procedure
EXE-A3.11	Depressurizing Venting Draining and Flushing Procedure
EXE-A3.12	Confined Space Entry
EXE-A3.13	Personnel Transfer Procedure
EXE-A3.14	General Site SSHE Rules
EXE-A3.15	Tropical Cyclone Plan
EXE-A3.16	Radioactive Source Procedure
EXE-A3.17	Oil Spill Response Plan
EXE-A3.18	Personnel Induction and Onboarding

Reference	Documents
EXE-A3.19	Short Service Employee Procedure
EXE-A3.20	Portable Gas Detection Guideline

--- End of Exhibit-A ---

EXHIBIT B

COMMERCIAL TERMS

EXHIBIT B

COMMERCIAL TERMS

1. GENERAL TERMS

1) All prices and rates specified herein shall remain fixed and not subject to any price escalation throughout CHARTER PERIOD in the CONTRACT. All rates shall be included but not limited to meet with FSO Specification and Requirement which are set out in Exhibit A of the CONTRACT.

2) All Rates and prices exclude VAT shall be full compensation for all obligations and liabilities of the CONTRACTOR under the CONTRACT including but not limited to direct labor costs, allowance, bonuses, payroll burdens, overheads and profit, required for the design, fabrication, conversion, mobilization, marine spread, installation, hook-up, tie-in to PLEM and until completion commissioning of the FSO and CALM BUOY System (Provisional Acceptance) at DESIGNED WORK AREA including operation and maintenance activities, vessel repair, and other related ship management services throughout contract period.

3) Cost and expenses during REDELIVERY of the FSO and CALM BUOY System at DESIGNED WORK AREA shall not be included in the followings.

   a. TIME CHARTER RATE (as per table 3.1 in this Exhibit B), and

   b. Early Termination Fees (as per table 3.2 in this Exhibit B), and

   c. Option to Purchase (as per table 3.3 in this Exhibit B), and

   d. LAY-UP rate (as per table 3.4 in this Exhibit B)

   The REDELIVERY cost shall be reimbursed by COMPANY based on CONTRACTOR's proposal and approved documented cost by COMPANY. COMPANY shall reserve right for FSO and CALM BUOY System disconnection and removal by COMPANY.

4) All prices and rates are in United State Dollar (USD) unless otherwise required or approved by the COMPANY.

5) All additional WORK as requested by COMPANY shall be agreed later by both Parties where COMPANY shall reimburse CONTRATOR at agreed costs. CONTRACTOR shall provide such supporting documentation with its quotation in response to the proposal as the COMPANY requires under CHANGE ORDER process of Article 22 of the CONTRACT.

6) The CONTRACTOR shall be deemed to have satisfied himself as to the correctness and sufficiency of the price and the rates stated in Exhibit B, which rates and prices shall, except insofar as it is otherwise provided in the CONTRACT, cover all his risks, liabilities and obligations set out or implied by the CONTRACT and all matters and things necessary for the provision of the WORK according to the true intent and meaning of the documents comprising the CONTRACT.

2. ESTIMATED CONTRACT VALUE

The ESTIMATED CONTRACT VALUE for this CONTRACT shall be approximately ____ United State Dollar (___ USD)

The ESTIMATED CONTRACT VALUE shall be used for the purposes of calculating the amounts of bank guarantee, liquidated damages, stamp duty and/or any other calculation which requires an estimate of CONTRACT value. The ESTIMATED CONTRACT VALUE shall not create any contractual or non-contractual obligations between PARTIES, nor shall PARTIES rely on this ESTIMATED CONTRACTVALUE for any purposes other than those expressly described herein.

3. SCHEDULE AND TIME CHARTER RATES

3.1 TIME CHARTER RATE during CHARTER PERIOD and Optional Extension Period

Period Year	TIME CHARTER RATE (FSO) (USD/Day)	TIME CHARTER RATE (CALM BUOY) (USD/Day)	Total TIME CHARTER RATE (FSO + CALM BUOY) (USD/Day)
CHARTER PERIOD			
1st Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
2nd Year			
3rd Year			
4th Year			
5th Year			
Optional Extension Period			
6th Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
7th Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
8th Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
9th Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
10th Year	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

Remark:

- TIME CHARTER RATE shall be started on the date of issuing PROVISIONAL ACCEPTANCE CERTIFCATE (ACTUAL COMMENCEMENT DATE) until end of CHARTER PERIOD.
- TIME CHARTER RATE shall include the services for COMPANY's Group Personnel as specified in Section 5 of Exhibit A.

3.2 Early Termination Fees

CHARTER PERIOD		Early Termination Fee (FSO) (USD)	Early Termination Fee (CALM BUOY) (USD)
1st Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
2nd Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
3rd Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

CHARTER PERIOD		Early Termination Fee (FSO) (USD)	Early Termination Fee (CALM BUOY) (USD)
4th Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
5th Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

Remark:

- Early Termination Fees shall be started on the date of issuing PROVISIONAL ACCEPTANCE CERTIFCATE (ACTUAL COMMENCEMENT DATE) until end of CHARTER PERIOD.
- For each month of Early Termination Fee shall be valid in every calendar month anniversary. For example, for Month 1 of 1st year shall be valid from ACTUAL COMMENCEMENT DATE as 15th October 2025 until 14th November 2025 and Month 2 of 1st year shall be valid from 15th November 2025 until 14th December 2025.
- All rates in the above table shall be inclusive of all CONTRACTOR equipment and personnel as per FSO and CALM BUOY Project Scope of Work.

3.3 Option to Purchase

Period		Option to Purchase (FSO) (USD)	Option to Purchase (CALM BUOY) (USD)
1st Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
2nd Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
3rd Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

Period		Option to Purchase (FSO) (USD)	Option to Purchase (CALM BUOY) (USD)
4th Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
5th Year	Month 1	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 2	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 3	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 4	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 5	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 6	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 7	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 8	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 9	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 10	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 11	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*
	Month 12	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

Remark:

- FSO and CALM Buoy condition at time to purchase shall be in accordance with Article 5.25.4 of the CONTRACT.
- Option to Purchase Rates shall be started on the date of issuing PROVISIONAL ACCEPTANCE CERTIFCATE (ACTUAL COMMENCEMENT DATE) until end of CHARTER PERIOD.
- For each month of Option to Purchase Rates shall be valid in every calendar month anniversary. For example, for Month 1 of 1st year shall be valid from ACTUAL COMMENCEMENT DATE as 15th October 2025 until 14th November 2025 and Month 2 of 1st year shall be valid from 15th November 2025 until 14th December 2025.
- All applicable taxes excluding VAT in Thailand incurred from the purchase process shall be under CONTRACTOR.

3.4 LAY-UP Rate prior to Provisional Acceptance

With reference to definitions stated in the CONTRACT, LAY-UP means the delay in departure of FSO and CALM Buoy from the SHIPYARD or other location where the FSO and CALM Buoy is located as instructed by the COMPANY.

Period	LAY-UP Rate (FSO) (USD/Day)	LAY-UP Rate (CALM BUOY) (USD/Day)
Prior to Provisional Acceptance	*Proposed by CONTRACTOR*	*Proposed by CONTRACTOR*

Remark:

- Apart from LAY-UP Rate, COMPANY shall reimburse CONTRACTOR for other related costs from the postponement of sail-away at actual documented cost i.e., port fees, fuel, administration.

4. RATE FOR FOOD AND ACCOMMODATION OF ADDITIONAL COMPANY'S GROUP PERSONNEL

- For food and accommodation required for additional COMPANY's Group in Section 5 of Exhibit A on board the FSO shall be of provided at an international standard level of services as those provided to CONTRACTOR's senior personnel when making offshore visit, COMPANY shall pay CONTRACTOR according to the following rates:

Descriptions	Unit	Rates (USD)
Breakfast	per meal per person	*Proposed by CONTRACTOR*
Lunch	per meal per person	*Proposed by CONTRACTOR*
Dinner	per meal per person	*Proposed by CONTRACTOR*
Accommodation	per night per person	*Proposed by CONTRACTOR*

5. CHANGE ORDER

Refer to Article 22 of the CONTRACT – CHANGE ORDER, CONTRACTOR shall be paid for such costs and expensed by the following options as mutually agreed by the PARTIES subject to sub-Article 22.11 of CONTRACT – Payment for Change in the WORK.

- Roll over Rates subject to agreed period
- Lump sum One-time payment as per CONTRACTOR's proposal

6. REDELIVERY

During REDELIVERY period, CONTRACTOR shall be reimbursed for such costs and expenses at cost after mutually agreed with COMPANY. After the completion of REDELIVERY process, all incurred cost shall be under CONTRACTOR's responsibility.

7. BUNKERING REIMBURSEMENT COST

7.1 At the Date of Issuance PROVISIONAL ACCEPTANCE CERTIFICATE, COMPANY shall reimburse CONTRACTOR for all Bunkering costs (fuel) based on actual Remaining on Board (ROB) at the actual documented prices paid for the last of supply. Such prices are to be supported by paid invoices.

7.2 At the Date of Issuance REDELIVERY CERTIFICATE, CONTRACTOR shall reimburse COMPANY for all Bunkering costs (fuel) based on actual Remaining on Board (ROB) at the actual documented prices paid for the last of supply. Such prices are to be supported by paid invoices.

8. LIQUIDATED DAMAGES

The COMPANY shall be entitled to claim LIQUIDATED DAMAGES if the FSO and CALM BUOY System does not meet COMPANY's requirements at the CHARTER COMMENCEMENT DATE as specified in Exhibit A of the CONTRACT.

Without prejudice to any other rights the COMPANY may have under the CONTRACT or at law, if the CONTRACTOR fails to comply with CONTRACT requirement regarding customs clearance of the FSO and CALM BUOY (where applicable), conformity with the relevant APPLICABLE LAWS, and the PROVISIONAL ACCEPTANCE approval by the COMPANY of the FSO and CALM BUOY by the CHARTER COMMENCEMENT DATE as specified in Exhibit A of the CONTRACT (other than as a result of a FORCE MAJEURE occurrence or any act, default, or omission of the COMPANY), the LIQUIDATED DAMAGES at the rate of twenty percent (20%) of the TIME CHARTER RATE as specified in section 3.1 of Exhibit B shall be due and payable by the CONTRACTOR to the COMPANY for every day after such date to and including the earliest of:

- the actual Date of Issuance PROVISIONAL ACCEPTANCE CERTIFICATE; or
- the date of termination of the CONTRACT by the COMPANY,

The amount of these LIQUIDATED DAMAGES shall be limited to ten percent (10%) of ESTIMATED CONTRACT VALUE.

9. CONTENT OF INVOICES AND BILLING PROCEDURE

1. CONTRACTOR's invoices shall include:

   A. The number and title of the Purchase/Service Order;

   B. Full details of the [GOODS provided / SERVICES delivered] during the invoice period; and

   C. CONTRACTOR's bank account.

2. CONTRACTOR shall submit all invoices under the Purchase/Service Order via COMPANY's online invoice billing system as specified by COMPANY (hereinafter referred to as the "System"). It is CONTRACTOR's sole responsibility to familiarize himself and to ensure that he can access and use the System.

3. In order to fully comply with the record keeping requirement under Applicable Law, after CONTRACTOR has completed the invoice submission in the System, CONTRACTOR shall deliver hard copies of the below documents which shall be the exact same version as submitted via the System to COMPANY within 5 business days:

   A. Billing Cover Sheet as generated from the System;

   B. One copy of tax invoice (if any); and

   C. One complete set of invoice documents as follows:

   i. **For Purchase Order**

      1. Original invoice with CONTRACTOR's authorized signature and reference to Purchase Order, including CONTRACTOR's bank account details;
      2. Original tax invoice with CONTRACTOR's authorized signature;
      3. Original debit note and/or credit note with CONTRACTOR's authorized signature including one copy of such debit note / credit note (if any);
      4. One copy of delivery order with signature of COMPANY's personnel as a recipient;
      5. One copy of Purchase Order;
      6. Original receipt with signature of CONTRACTOR's personnel as a recipient (if any); and
      7. Other supporting documents as specified in Purchase Order (if any).

   ii. For Service Order

      1. Original invoice with CONTRACTOR's authorized signature and reference to Service Order, including CONTRACTOR's bank account details;
      2. Original tax invoice with CONTRACTOR's authorized signature;
      3. Original debit note and/or credit note with CONTRACTOR's authorized signature including one copy of such debit note and/or credit note (if any);
      4. Original delivery form or guarantee certificate or timesheet with name and signature of CONTRACTOR;
      5. One copy of Service Order which specifies scope or work, services, including payment term;
      6. Original receipt with signature of CONTRACTOR's personnel as a recipient (if any); and
      7. Other supporting documents as specified in Service Order (if any).

4. CONTRACTOR shall deliver the documents listed under Item 3 via either one of the following procedures:

   A. <u>By Hand</u>

Location: Energy Complex Building, 1st Floor, Car Park Building A (Parking 2)

Date & Time: Tuesday and Thursday during 09.00 AM - 12.00 PM
(excludes public holidays and COMPANY's holidays)

B. <u>Postal Service</u>

[Company Name]

For [Asset/Block]

Energy Complex Building A, Floors 6th, 19th - 36th,

555/1 Vibhavadi Rangsit Road,

Chatuchak, Bangkok 10900, Thailand

Attention: Payment Section (Invoice Billing)

5. In case that CONTRACTOR is not capable of using the System and would like to submit hard copies of invoice documents only, CONTRACTOR shall notify via email to AccountPayableTeam@pttep.com for COMPANY's acknowledgement at least 15 business days before the intended invoice submission date. Upon receiving of COMPANY's acknowledgement email, CONTRACTOR shall submit complete set of invoice documents as required under Item 3 above (except for Billing Cover Sheet in Item 3 A) to the address as prescribed in Item 4 accordingly.

6. Invoices submitted via the System shall be deemed as properly established invoice received by the COMPANY on the submission date in the System, provided COMPANY has verified that all the submitted information is complete and accurate and all billing procedures stated herein are fully complied with. For invoices submitted only with hard copies under Item 5, they will be deemed as properly established invoices received by the COMPANY only after COMPANY's verification of correctness and completeness of the submitted hard copies.

7. If CONTRACTOR has any enquiry or requires further information, please contact (+662) 537-5545 during office hours (09.00 AM – 05.00 PM) or email to AccountPayableTeam@pttep.com.

8. The information (name, address, tax registration ID) for invoice billing documents in relation to COMPANY is as follows:

COMPANY	Address	Tax registration ID
PTTEP Energy Development Company Limited (G1/61, G2/61)	Energy Complex Building A, Floors 6th, 19th - 36th, 555/1 Vibhavadi Rangsit Road, Chatuchak, Bangkok 10900, Thailand	0105561079971 Head Office

PTTEP ENERGY DEVELOPMENT COMPANY LIMITED

EXHIBIT C

WORK TIME SCHEDULE

OF

THE PROVISION OF G1FSO AND CALM BUOY SYSTEM LEASE AND OPERATE FOR G1/61

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1.0 INTRODUCTION

1.1 Purpose

This Exhibit describes the WORK TIME SCHEDULE and requirements for planning and scheduling. It shall be read together with the other CONTRACT and all exhibits, documents referenced and or referred to therein, irrespective of if such a exhibit and document are included in the signed CONTRACT or not.

1.2 Acronyms and Definitions

The following acronyms and words appearing in this Exhibit shall have the meaning assigned to them below or otherwise should the context require.

G1FSO	means a floating storage and offloading unit including inter alia all materials and equipment to be incorporated therein which are designed and supplied by the CONTRACTOR in accordance with the requirement of the CONTRACT, but excluding the COMPANY's property, following its conversion to a floating, storage and offloading tanker; the FSO is to be located at the DESIGNATED WORK AREA and is to be capable of receiving PRODUCT from the PLEM(s) and storing and exporting PRODUCT to an offloading tanker, all as more particularly described in Exhibit A.
CALM BUOY	means catenary anchor leg mooring buoy together with its mooring legs and anchoring system to be supplied and installed by the CONTRACTOR, to which the FSO will be moored at the DESIGNATED WORK AREA. The CALM BUOY shall include the provision of risers with associated system, loading hoses and mooring connecting between the FSO and the CALM BUOY, details as per described in Exhibit A.
COMPLETION DATE(CD)	shall have the meaning ascribed to such term in CONTRACT article xxx and is understood to mean the date on or before which COMPANY satisfactorily completes the Vessel conversion and CALM Buoy fabrication to meet FSO Specifications and Requirements which are set out in CONTRACT Exhibit A.
EFFECTIVE DATE (ED)	shall have the meaning ascribed to such term in CONTRACT article 2.1 which the CONTRACT comes into force.
CHARTER COMMENCEMENT DATE	shall have the meaning ascribed to such term in CONTRACT article 3.2.
KEY DATE	shall have the meaning ascribed to such term in CONTRACT article 2.1 and is understood to mean a date identified as such in Exhibit Con or before which the applicable conditions stated in Exhibit C are to be achieved.
OPERATION READINESS AND PLAN	Refer Exhibit C Section 4.4

WORK	means all activities of engineering, procurement, construction, commissioning and installation or operation & maintenance services to be performed and rendered by CONTRACTOR, all equipment, materials and tools to be supplied and facilities to be fabricated and completed as expressly set forth in this CONTRACT to fully and completely perform all obligations under this CONTRACTOR.
WBS	Work Break Down Structure
WORK TIME SCHEDULE	shall have the meaning "Project Schedule" ascribed to such term in CONTRACT article 2.1and is understood to mean collectively the EFFECTIVE DATE, KEY DATES and COMPLETION DATE(S).

Capitalized words in this Exhibit (but not in headings) shall have the meaning ascribed to them in Section 2.1 of the CONTRACT.

2.0 COMMENCEMENT AND PERFORMANCE OF THE WORK

The CONTRACTOR shall commence the WORK on the EFFECTIVE DATE and shall thereafter perform the WORK expeditiously using best endeavors, in a correct and timely manner as per the CONTRACT requirements. Time is of the essence and completion of the respective parts of the WORK and the applicable parts of the FSO and CALM BUOY, on or before the applicable required KEY DATES and or COMPLETION DATES, is of the utmost importance.

3.0 COMPLETION DATES

Applicable COMPLETION DATES are:

S/N	Description	COMPLETION DATE
CD1	CALM BUOY Initial Acceptance and Sail Away	*Proposed by CONTRACTOR*
CD2	FSO Initial Acceptance and Sail Away	*Proposed by CONTRACTOR*
CD3	Charter COMMENCEMENT DATE (Provisional Acceptance)	1 Oct 24
CD4	Final Acceptance	*Proposed by CONTRACTOR*

Note:

a) Company's subsea pipeline and PLEM installation will be tentatively completed by July 2022.

b) CONTRACTOR shall propose COMPLATION DATE of CD1, CD2 and CD3 respectively.

4.0 PLANNING AND SCHEDULING

4.1 Work Breakdown Structure

The CONTRACTOR shall propose a WBS to the COMPANY no later than fourteen (14) days after the EFFECTIVE DATE for approval.

The WBS shall be utilized to organize the planning. scheduling, monitoring, control and reporting of WORK activities in a structured hierarchical manner and shall be developed to the lowest level of activities required to establish the level 4 schedule.

4.2 60 Days Look Ahead Plan

Pending establishment and approval of the Detailed Work Time Schedule, a 60 Day Look Ahead Plan shall be used for planning, monitoring, reporting and control of early activities.

The 60 Day Look Ahead Plan shall comprise a simple categorized list of early CONTRACTOR documents and early activities, required start and finish dates, status (open, overdue, completed) plus remarks column, be in A4 Excel format and shall be updated and submitted to the COMPANY for approval on a weekly basis until the EPCIC Detailed Work Time Schedule is Approved by the COMPANY.

4.3 Detailed Work Time Schedule (Project Schedule)

The CONTRACTOR shall prepare and submit a Detailed Work Time Schedule covering all WORK phases, including engineering, procurement, construction, onshore commissioning, operation readiness, Initial Acceptance (Sail Away), transportation, offshore installation, offshore commissioning, Provisional Acceptance (Start Up), Final Acceptance and until hand over to operation and maintenance period.

The Detailed Work Time level 4 Schedule shall be submitted to the COMPANY no later than thirty (30) days after the EFFECTIVE DATE for approval.

c) schedule levels 1 to 4 in networked precedence logic linked chart and bar-chart formats,

   i) Level 1 summary “early start” bar chart, showing Key Milestones, Completion Dates, and main activities summarized by work package and work unit.
   ii) Level 2 shall be an all-activities bar chart sorted by Work Unit and Work Package.
   iii) Level 3 shall be a list of activities (subdivisions of level 2) and progress milestones to be utilized for measurement of physical progress,
   iv) Level 4 shall comprise the drawing register for engineering, the procurement schedule and job card register for construction, onshore commissioning, Initial Acceptance, Provisional Acceptance until Final Acceptance.. Each activity shall have planned and actual dates and be coded to allow linkage, aggregation and roll up to level 3..

d) early start and late finish “S curves” and resource histograms for each WORK phase,
e) critical activities report,
f) free float and total float reports,
g) details and explanation of scheduling assumptions,
h) any other relevant information.

The Detailed Work Time Schedule or Project Schedule when approved shall be updated from time to time in accordance with the requirements of Contract Exhibit A or when requested by the COMPANY.

4.4 Key Dates

Required KEY DATES not only “WORK activities” but also “Operation Readiness and Plan” from Detailed Work Time Schedule (Project Schedule) are as follows:

S/N	WORK Activities	Required Date
1	Issuance of CALM Buoy Purchase Order	*Proposed by CONTRACTOR*
2	Vessel Arrival to Shipyard	*Proposed by CONTRACTOR*
3	CALM Buoy Initial Acceptance (Sail Away)	*Proposed by CONTRACTOR*
4	CALM Buoy Installation Completion	*Proposed by CONTRACTOR*
5	FSO Initial Acceptance (Sail Away)	*Proposed by CONTRACTOR*
6	FSO On-Location	*Proposed by CONTRACTOR*
7	FSO Ready to Receive Crude Oil	*Proposed by CONTRACTOR*
8	Provisional Acceptance (Start Up)	1 Oct 24

OPERATION READINESS AND PLAN means the operation and maintenance process and schedule of preparing the custodians of an FSO and CALM BUOY after CONTRACT EFFECTIVE DATE by operation and maintenance team such that, at the point of engineering, construction, and commissioning until Final Acceptance, they are fully ready to assume operation and maintenance ownership of FSO and CALM BUOY. The ownership should include readiness to perform responsibility and capable to operate and maintenance FSO & CALM BUOY safely and efficiency in sustainable manner.

This plan does not regard "delivery" as mechanical completion of a project. The Operation Readiness and Plan project delivery meant a smooth handover a completed of FSO and CALM BUOY, which can achieve its design intent. This is also including the capability of the operation team, systems and information that are required to make the intent a reality

S/N	Operation Readiness and Plan	Required Date
1	Set up fully competent operation and maintenance teams for both onshore and offshore works	*Proposed by CONTRACTOR*
2	Develop operation & maintenance team ramp up plan for participate into each project phase since design engineering, construction, and commissioning until ready for offshore operation.	*Proposed by CONTRACTOR*
3	Develop operating and maintenance procedures, safety management systems, training, and competency assurance	*Proposed by CONTRACTOR*
4	Prepare and procure specialized services, equipment, tools, spare parts, and consumables for CMMS population	*Proposed by CONTRACTOR*
5	Set up onshore infrastructure, including warehousing and logistics support requirements	*Proposed by CONTRACTOR*
6	Coordinate third party services such as catering and marine support services	*Proposed by CONTRACTOR*

S/N	Operation Readiness and Plan	Required Date
7	Project operation readiness included pre-mobilization completion prior FSO & CALM BUOY Initial Acceptance	*Proposed by CONTRACTOR*

The above list of KEY DATES may, subject to Company approval prior CONTRACT EFFECTIVE DATE, be further developed during preparation of the Detailed Work Time Schedule (or Project Schedule) based on the CONTRACTOR's proposed Project Schedule as commented by the COMPNY during tender evaluation.

4.5 Vendors and Subcontractors

The CONTRACTOR shall cascade the Exhibit C requirements to Vendors, and Subcontractors and shall integrate the plans, schedules, resource planning from Vendors, and Subcontractors into the CONTRACTOR's planning, scheduling, monitoring, control and reporting project control activities and system.

Interdependencies shall be fully incorporated into Detailed Work Time Schedules. WORK items and operations by Vendors, Suppliers and Subcontractors shall be identified as such in Detailed Work Time Schedules.

4.6 Preliminary Master Document Lists

The Preliminary Master Document Lists are to be submitted for COMPANY approval.

5.0 PROGRESS MEASUREMENT AND REPORTING

The CONTRACTOR shall monitor and report progress of the Work in full conformity with Exhibit A and otherwise as per CONTRACT requirements.

PTTEP

PTT Exploration and Production Public Company Limited

SSHE CONTRACT REQUIREMENT

CONTRACT Number: THC22-5272

CONTRACT TITLE

Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61

SSHE CONTRACT MODE: 2 and 3

SSHE CONTRACT RISK: HIGH

APPROVAL DOCUMENT

Line Management of Contract Holder (N+1)				
Name	**Position Title**	**FG/Div/Dep**	**Signature**	**Date**
Sakon Rungwichitsin	Manager	PPD/P1		

Contract Holder				
Name	**Position Title**	**FG/Div/Dep**	**Signature**	**Date**
Apichart Whungkhunnatham	Senior Engineer	PPD/P1		

Company Site Representative				
Name	**Position Title**	**FG/Div/Dep**	**Signature**	**Date**
Phongpipat Trakunsoonthorn	Marine Engineer	OLG/O		
Apichart Whungkhunnatham	Senior Engineer	PPD/P1		

Remark:

In case service contract provides to various assets, at least one company site representative is responsible for each asset.

For some contracts, Company Site Representative may not be identified as appropriate which depends on the nature of work or Company organization chart, thus Contract Holder shall sign this box.

Contract SSHE Representative				
Name	**Position Title**	**FG/Div/Dep**	**Signature**	**Date**
Peerati Mesamarn	SSHE Engineer	PDD		

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GENERAL SSHE REQUIREMENT

1. INTRODUCTION

Company manages SSHE in accordance with its Safety, Security, Health and Environment Management System (SSHE-MS). All work must therefore be carried out in accordance with the intent and spirit of the Company's SSHE Commitment and Policy.

Contractors undertaking work on the Company's behalf shall work to the same, if not higher, SSHE standards. Sub-contractors are also required to meet the same standards, and Contractors are made responsible for ensuring their Sub-contractors comply with the Company SSHE Policy and SSHE Contract Requirement.

Since the Company and Contractors personnel are the most important resources, Contractor will continually strive to achieve the ultimate goal of Target Zero from this point onward, where **"Nobody gets hurt and everybody returns home safely".**

2. KEY REQUIREMENTS

Company's activities involve the production and processing of hydrocarbons. Both the operation and materials involved are hazardous, and SSHE controls are in place to manage these hazards. Without prejudice to the applicability of the SSHE Rules and Regulations as a whole, the following are key requirements to which attention is specifically drawn:

- Contractor personnel working on or visiting a Company facility or work site is to act in accordance with the Company's SSHE Policy.
- Contractor shall comply with the requirements of the Company's SSHE Rules and Regulations when works or visits Company facility or work site.
- No personnel shall attend work whilst impaired by alcohol, drugs or other substances.
- Specific site emergency response procedures/plans (ERPs) are available on Company's locations and shall be strictly followed.
- Contractor personnel who have underlying diseases/prior diseases and did not disclose as per Company fitness to work requirements, if there is relapse/active/recurrent illness or accident related to those prior diseases, Contractors shall be responsible for damages and expenses incurred with this accident/illness/relapse, including the cost of bringing the patient to hospital for treatment.

3. LEGALISATION, COMPANY AND INDUSTRY REQUIREMENTS/ STANDARDS

Contractor shall ensure all works and services are governed and realized in a manner complying with the following, in order of precedence:

1. Works and services shall comply with all applicable Laws.

2. Contractors shall commit themselves to uphold the human rights of workers and to treat them with dignity and respect as understood by international norms which include:

   a) **Freely Chosen Employment**: Contractors shall not engage or employ people against their own free will.

   b) **Child Labor Avoidance**: Contractors shall not employ children below the age where the law of the country permits employment. Young workers may also be barred from performing night work or hazardous work.

   c) **Wages and Benefits**: Compensation paid to workers shall comply with all applicable wage laws, including those relating to minimum wages, overtime hours and legally mandated benefits.

   d) **Non-Discrimination**: Contractors shall not engage in discrimination based on sexual orientation, race, color, religion, age, marital status, pregnancy, political affiliation, or disability in hiring and employment practices.

   e) **Human Treatment**: Contractors shall respect worker's rights and shall ensure no harsh and inhumane treatment, including any mental or physical coercion or verbal abuse of workers.

   f) **Freedom of Association**: Contractors shall recognize that employees are entitled to be, or refrain from being, union members.

3. For works or services provided to Company is drawn to the maximum number of working hours allowed for onshore and offshore operations, and the maximum duration of stay offshore per rotation, as defined by applicable laws.

4. Works and services shall generally comply with relevant industry standards and internationally recognized codes of practice issued by organizations such as, but not limited to:

   - The International Association of Oil & Gas Producers (IOGP).

   - Occupational Safety and Health Administration (OSHA)

5. COMPANY's Documents:

   - COMPANY SSHE Policies
   - COMPANY SSHE Contract Requirement
   - COMPANY SSHE Standard, Procedure, and Guideline

4. STOP WORK AUTHORITY (SWA)

Company reserves the right to direct Contractor to cease, or not proceed with, any work that in Company opinion is unsafe. If directed to do so such actions will not prejudice any other conditions of Contract as established.

Contractor is required to have in place a STOP work system where all employees and Sub-contractors are encouraged and empowered to intervene and stop any work at any time to discuss the hazards and risks.

SPECIFIC SSHE REQUIREMENT

5. SCOPE OF CONTRACT

Contractor performs the contractual activities under the provision of "G1FSO and CALM Buoy System Lease and Operate for G1/61" for PTTEP ED, as following:

- Preform Detailed Engineering
- Conversion of the FSO
- Fabrication of the CALM Buoy
- Load out of the CALM Buoy
- Transportation and Installation of the FSO and the CALM Buoy System
- Hook-up and Commissioning of the FSO and the CALM Buoy System
- FSO and CALM Buoy System Operation and Maintenance under Company's premises
- FSO and CALM Buoy System disconnection, removal and redelivery under Company's premises

6. SSHE CONTRACT MODE

Contractual services shall be under the Company's

SSHE Contract Mode 2 which means the contractor provides people, processes, equipment and/or facilities for the execution of the contract, as a main rule, under its own SSHE-MS, providing the necessary instructions and oversight and verifying the proper functioning of its SSHE-MS. This mode requires interfacing or bridging with the PTTEP SSHE-MS and also reporting SSHE performance data including events and incidents to PTTEP ED. PTTEP ED is responsible for assuring the overall effectiveness of the SSHE management controls put in place by the contractor, including its interface with subcontractors, and ensuring that both PTTEP and the contractor's SSHE-MS are compatible.

SSHE Contract Mode 3 which means the contractor provides people, process, equipment, and/or facilities for the execution of the contract under its own oversight, instruction, and SSHE-MS that requires no interfacing or bridging with the PTTEP SSHE-MS and is not required to report SSHE performance data including events and incidents to PTTEP. However, this does not exclude the possibility that PTTEP may wish to guide and influence SSHE performance under this type of contract; may provide product quality or environmental specifications, quality control and acceptance testing, etc.; and/or may insist that the contractor comply with a code of conduct which addresses human rights, labour rights, corruption, etc.

7. SSHE MS APPLICABLE BETWEEN COMPANY AND CONTRACTOR UNDER SERVICE CONTRACT

Contractual activities shall be identified and controlled by either Company or Contractor, as the SSHE MS framework of the contract.

Contractual Activities	SSHE MS Applicable (Company, Contractor, or Both)
Preform Detailed Engineering	Contractor
Conversion of FSO	Contractor
Fabrication of CALM Buoy	Contractor
Load out of CALM Buoy	Contractor
Transportation and Installation of FSO and CALM Buoy System	Both
Hook-up and Commissioning of FSO and CALM Buoy System	Both
FSO and CALM Buoy System Operation and Maintenance under Company's premises	Both
FSO and CALM Buoy System disconnection, removal and redelivery under Company's premises	Both
Environmental Management	Company

8. SSHE CONTRACT RISK ASSESSMENT

Company aims to manage all the SSHE risks that are associated not only with its own activities but also those of its Contractors. Key of this process is to follow the Company SSHE Risk Assessment Standard.

Company has made a listing of expected activities, related hazards, initial risk level, and control & recovery requirement for contract in Appendix A, which ISO17776:2016 is deployed as a guidance for list of hazards and Company Risk Assessment Matrix is used for evaluating the risk rating.

Company has also highlighted which Company documents shall be followed to reduce the risk to ALARP level in the applicable documents section of this SSHE Contract Requirement.

Contractor shall review the listing of activities, based on the information provided in the Contract Scope of Works and the SSHE Contract Requirement for completeness and shall highlight where Contractor has specific procedures for managing the risks.

Contractor shall prepare and submit a documented risk assessment with Job Safety Analysis (JSA) as a minimum to Company. Risk assessment shall cover all works starting from mobilization,

execution, to demobilization – which considers environmental and community impacts of Contractor work e.g. spill prevention/response, waste management, prevention of external complaints etc.

9. ORGANIZATION AND RESOURCES

9.1 SSHE ORGANIZATION FOR CONTRACT

Contractor shall prepare a contract-specific organization chart showing personnel responsible for the implementation of SSHE objectives.

Contractor shall allocate sufficient resources at all levels to effectively manage SSHE for this contract.

9.2 SSHE CONTRIBUTIONS FROM MANAGEMENT LEVEL

Management level of contractor shall demonstrate a visible SSHE leadership through:

- Encourage all contractor personnel to strive to achieve the ultimate goal of Target Zero.
- Promote and support the necessary resources to achieve excellent SSHE performance.
- Provide efforts for continuous improvement in all aspects of SSHE performance.
- Manage all contractor personnel to provide services in compliance with the applicable laws and SSHE Contract Requirement.
- Cascade SSHE responsibility to managers, supervisors and workers.
- Manage Sub-contractor to provide services in compliance with the applicable laws and SSHE Contract Requirement.
- Ensure activity risks are controlled and managed to “ALARP” level and contingency plans are in place.
- Visit working areas for SSHE inspections and audits, as defined in the Contract SSHE Management Plan and SSHE Monitoring Program.
- Follow up on the shortfalls/ findings close-out arising from incidents, inspections, and audits for SSHE performance improvement.

9.3 CONTRACTOR SSHE PERSONNEL, COMPETENCY, WORKING PATTERN

Contractor shall provide sufficient qualified SSHE personnel with appropriate ratio of workforce and complexity of contract scope of work. Describe their roles and responsibilities and provide CVs for the contractor SSHE personnel for managing contractual activities.

Expected responsibilities of Contractor SSHE personnel are:

- Prepare and monitor progress of SSHE monitoring program

- Conduct Hazard Identification and Risk Assessment
- Communicate SSHE matters including SSHE awareness, Incident lesson learnt, rules & regulations to workforce
- Provide SSHE training for contractor personnel
- Conduct and evaluate Sub-contractor assessment in SSHE matters
- Manage environmental and conduct health monitoring (if required)
- Conduct incident investigation and anomaly reporting
- Prepare emergency response plan and monitor the drills
- Provide SSHE statistics and performance monitoring/reporting,
- Conduct SSHE inspections and audits (To perform walkaround site inspection at least 50% per day)
- Implement and monitor SSHE improvement plans
- Promote strong SSHE Culture in organization of project/contract
- Etc.

Minimum Competence for Contractor SSHE Personnel

Contractor shall provide competent and experience SSHE Personnel and comply with the following requirements:

- Minimum of 3 - 5 years' experience in types of work is required for supporting the services being tendered for. (Remark: Low risk contract - 3 years, Medium risk contract - 4 years, and High risk contract - 5 years experience)
- Ability to communicate effectively at all levels of the Contractor's organization
- Ability to communicate in written and spoken English
- Ability to provide SSHE training
- Ability to conduct incident investigations and identify underlying causes
- Knowledge of SSHE hazards identification and risk assessment for preventing and recovering from incidents
- Ability to facilitate and develop Contract SSHE Management Plan and SSHE document

- Ability to conduct and report SSHE inspections and audits.

Requirements for Contractor SSHE Personnel to Manage this Project – Installation, Disconnection, Removal and Redelivery

SSHE Position	Qualifications	Number Requirement (Person)	Working Location	Working Hours/Service	Remark
Project SSHE Manager	Ten (10) years' relevant Project Experience. Five (5) years' in a lead Capacity. Degree in SSHE related subject or, IOSH / OSHA Member /Chartered status or, Government recognized Safety Manager, Professional or Engineer level.	1	Contract Office/Yard	Office hour (8 hrs.)/ Weekday/On call stand by	Preferable English at minimum TOEIC score 750 up or equivalent Fully dedicated to the PROJECT
SSHE Lead / Supervisor	Three (3) years' SSHE Supervisory work experience related to the Project Scope. Hold a Diploma or Degree in SSHE related subject or, Certificated Safety Officer level and/or, Bachelor of Science Program in Occupational Health and Safety or be a member of an independent internationally recognized Professional Institution such as ISOH, OSHA,	1	Contractor Office/Yard Or Worksite/Onboard	Office hour (8 hrs.)/ Weekday/On call stand by	Preferable Minimum One Lead per fifteen (15) SSHE Officers English at TOEIC score 600 or equivalent
SSHE officer (Professional level)	Certificated Safety Officer level and/or, Bachelor of Science Program in Occupational Health and Safety	As per law requirement	Contractor office/Yard Or Worksite/Onboard	Office hour (8 hrs.)/ Weekday/On call stand by	Emergency on call standby during weekend
SSHE Technicians/ Inspectors	Two (2) years' relevant SSHE experience Certified Technical Level or other Industry recognized formal SSHE related certification	As per law requirement Or 1:50 Ratio	Worksite/Onboard	Depend on nature of operation at site	Safety Technicians/ Inspectors may also include specialist related SSHE subjects such as Work at Height (WAH),

					Transport, Lifting Management etc.; and certified at Technical Level
Site Medical staff for Offshore	1)Local Medical /Nurse/paramedic license complied with Local law 2) Three (3) years' medical work experience 3) Validation of ACLS, BLS and ITLS training course 4) Occupational health skill/training.	1 -2 up depend on size operation (POB) and Remote medical facility	Worksite/onboard	12 hr on duty during Day shift/ 12 hr on call Night shift	Approved/ Agreement by Company corporate doctor.

Requirements for Contractor SSHE Personnel to Manage this Project – Operation and Maintenance

SSHE Position	Qualifications	Number Requirement (Person)	Working Location	Working Hours/Service	Remark
Safety Officer	Five (5) years' SSHE Officer work experience related to the Project Scope.	1	Worksite/onboard	12 hr on duty during Day shift/ 12 hr on call Night shift	Preferable English at minimum TOEIC score 600 up or equivalent
Site Medical staff for Offshore	1)Local Medical /Nurse/paramedic license complied with Local law 2) Three (3) years' medical work experience 3) Validation of ACLS, BLS and ITLS training course 4) Occupational health skill/training.	1	Worksite/onboard	12 hr on duty during Day shift/ 12 hr on call Night shift	Approved/ Agreement by Company corporate doctor.

9.4 SSHE TRAINING REQUIREMENT

Contractor shall provide competent personnel as per provided job descriptions. The skills of the personnel shall be such that they are capable of taking a full role in the management of the hazards presented by the work.

Contract shall submit CV's and training records of key staff for Company approval and may be requested to provide staff for interview at Company's discretion.

Contractor shall develop SSHE Training Matrix in line with Company SSHE training Matrix for approval by Contract Holder and Contract SSHE Representative. Contractor shall, at its own cost, provide the trainings to Contractor and Sub-contractor personnel (including refresher training) in accordance with the requirement of SSHE Training Matrix.

Contractor shall, at all times, maintain an up-to-date list of all personnel employed under the contract, and details of the training courses they have attended, including the attendance date.

It is important to ensure that Contractor and Sub-contractor personnel are competent to provide services effectively and safely for company. The minimum SSHE training requirement for this contract is the latest Standards of Training, Certification, and Watchkeeping (STCW) standard and as requirement attached in Appendix B.

- All Contractor and Sub-contractor personnel shall complete the training listed in Appendix B before commencement of the services, unless stated otherwise in SSHE training matrix or unless otherwise approved by the Contract Holder in writing.
- Company shall provide training and awareness in the referenced documentation as mentioned in SSHE training matrix.
- Contractor and Company shall plan for the training to be undertaken prior to the mobilization phase of the contract.
- Contractor Shipboard personal competency shall be in accordant with the requirement law of the Flag state, International Maritime organization (IMO) and CLASS.

9.5 APPLICABLE DOCUMENTS

The following Company controlled documents are applicable to the activities as described in the work scope.

- Contractor shall adhere to the documents listed below.
- In case, Company decides to implement any update to the documents listed below, Company shall issue an instruction and provide the latest documents to Contractor during execution of contract.

Company Corporate Documents

Ref. No.	Doc. Code	Title	P1*	P2*
Corp_01		PTTEP SSHE Policy	Y	Y
Corp_02	11038-STD-SSHE-701-R05	Audit and Review Standard.pdf	Y	Y
Corp_03	11038-STD-SSHE-511-R00	Climate Change Management Standard.pdf		Y

Ref. No.	Doc. Code	Title	P1*	P2*
Corp_04	11038-STD-SSHE-301-R02	Corporate Oversight of SSHE MS Standard.pdf	Y	Y
Corp_05	11038-STD-SSHE-202-R00	Corporate SSHE Plan, SSHE KPI's and Performance Monitoring Standard.pdf	Y	Y
Corp_06	11038-STD-SSHE-501-R05	Emergency and Crisis Management Standard.pdf	Y	Y
Corp_07	11038-STD-SSHE-503-R02	Environmental Management Standard.pdf	Y	Y
Corp_08	11038-STD-SSHE-601-R07	Incident Management Standard.pdf	Y	Y
Corp_09	11038-STD-SSHE-510-R02	Life-Saving and Process Safety Rules Standard.pdf	Y	Y
Corp_10	11038-STD-SSHE-508-R06	Management of Change Standard.pdf	Y	Y
Corp_11	11038-STD-SSHE-507-R02	Occupational Health Management Standard.pdf	Y	Y
Corp_12	11038-STD-SSHE-505-R02	Operational Safety Management Standard.pdf	Y	Y
Corp_13	11038-STD-SSHE-440-007-R02	Process Safety Management Standard.pdf	Y	Y
Corp_14	11038-STD-SSHE-402-R04	Safety Case Standard.pdf	Y	Y
Corp_15	11038-STD-SSHE-504-R04	Security Management Standard.pdf	Y	Y
Corp_16	11038-STD-SSHE-303-R07	SSHE Communication Standard.pdf	Y	Y
Corp_17	11038-STD-SSHE-603-R03	SSHE Culture Management Standard.pdf	Y	Y
Corp_18	11038-STD-SSHE-306-R04	SSHE Regulatory Compliance Standard.pdf	Y	Y
Corp_19	11038-STD-SSHE-401-R06	SSHE Risk Management Standard.pdf	Y	Y
Corp_20	11038-STD-SSHE-305-R06	SSHE Training and Competency Standard.pdf	Y	Y
Corp_21	12148-PDR-SSHE-505/02-R00	Arsenic Mercury and Benzene Procedure.pdf	Y	Y
Corp_22	12148-PDR-SSHE-505/38-R00	Chemical Management Procedure.pdf	Y	Y
Corp_23	12146-PDR-SSHE-602/01-R03	Environmental Performance Reporting Procedure.pdf	Y	Y
Corp_24	11038-PDR-SSHE-401/02-R01	Health Risk Assessment Procedure.pdf	Y	Y
Corp_25	12148-PDR-SSHE-505/01-R01	Lifting Operation Safety Procedure.pdf	Y	Y
Corp_26	11003-PDR-SSHE-561-002-R01	Medical Assessment of Fitness to Work for Domestic Offshore Workers Procedure.pdf	Y	Y
Corp_27	12148-PDR-SSHE-505/42-R00	Permit to Work Procedure.pdf	Y	Y
Corp_28	12148-PDR-SSHE-302/01-R03	SSHE Contractor Management Procedure.pdf	Y	Y
Corp_29	12146-PDR-SSHE-503/01-R01	Waste Management Procedure.pdf	Y	Y
Corp_30	11038-PDR-SSHE-507-02-R01	Work-Related Injury_Illness Case Management Procedure.pdf	Y	Y
Corp_31	12147-GDL-SSHE-401/00/04-R02	Bow Tie Analysis Guideline.pdf	Y	Y
Corp_32	12148-GDL-SSHE-505/00/03-R01	Dropped Objects Prevention Safety Guideline.pdf	Y	Y
Corp_33	11038-GDL-SSHE-507/00/06-R01	Drugs and Alcohol Guideline.pdf	Y	Y
Corp_34	11003-GDL-SSHE-561-005-R01	Fitness to Work Guideline.pdf	Y	Y
Corp_35	12147-GDL-SSHE-412-012-R02	Hazard and Operability (HAZOP) Study Guideline.pdf	Y	Y
	12147-GDL-SSHE-411-013-R02	Hazard Identification (HAZID) Study Guideline.pdf	Y	Y
Corp_36	12148-GDL-SSHE-602-024-R01	Incident Investigation Guideline.pdf	Y	Y
Corp_37	11038-GDL-SSHE-560/02-022-R00	Infectious Disease Outbreak Management Guideline.pdf	Y	Y

Ref. No.	Doc. Code	Title	P1*	P2*
Corp_38	12148-GDL-SSHE-401/00/08-R01	Job Safety Analysis (JSA) Guideline.pdf	Y	Y
Corp_39	12147-GDL-SSHE-401/00/06-R01	Layer of Protection Analysis (LOPA) Guideline.pdf	Y	Y
Corp_40	12147-GDL-SSHE-403/00/01-R03	Loss of Primary Containment (LOPC) Reporting and Reduction Guideline.pdf	Y	Y
Corp_41	12147-GDL-SSHE-403/00/02-R01	Major Accident Event Prevention Tool Guideline.pdf	Y	Y
Corp_42	11003-GDL-SSHE-501-003-R02	Medical Emergency Management Guideline.pdf	Y	Y
Corp_43	SSHE-106-GDL-569	Medical Surveillance Management Guideline.pdf	Y	Y
Corp_44	12146-GDL-SSHE-503/00/07-R01	Naturally Occurring Radioactive Material (NORM) Management Guideline.pdf		Y
Corp_45	12147-GDL-SSHE-701/00/04-R01	Pre Start Up Audit Guideline.pdf	Y	Y
Corp_46	12148-GDL-SSHE-540/10-025-R01	Pressure Testing Guideline.pdf	Y	Y
Corp_47	12147-GDL-SSHE-701/00/03-R00	Project and Operational Technical Review Guideline.pdf	Y	Y
Corp_48	12147-GDL-SSHE-403/00/03-R00	Safety Critical Elements (SCE) Performance Standards Guideline.pdf		Y
Corp_49	12148-GDL-SSHE-504/00/01-R00	Security Management Guideline.pdf	Y	Y
Corp_50	12148-GDL-SSHE-701-021-R02	Security Review and Audit Guideline.pdf	Y	Y
Corp_51	12148-GDL-SSHE-401/00/07-R03	Security Risk and Threat Analysis and Assessment Guideline.pdf	Y	Y
Corp_52	12148-GDL-SSHE-505/05/01-R01	Simultaneous Operations Guideline.pdf	Y	Y
Corp_53	11038-GDL-SSHE-563-020-R01	Site Medical and Health Care Services Guideline.pdf	Y	Y
Corp_54	11003-GDL-SSHE-560/1-006-R00	Vector Borne Diseases Management Guideline.pdf	Y	Y
Corp_55	12148-GDL-SSHE-540/09-023-R01	Working at Height Safety Guideline.pdf	Y	Y
Corp_56	12148-PDR-SSHE-505/02-R00	Arsenic Mercury and Benzene Procedure.pdf	Y	Y
PDD_01		Organizational Context and Planning for Production Asset Group in Thailand		Y
PDD_02	10012-PDR-SSHE-540.10-001-R01	Welding Cutting and Grinding	Y	Y
PDD_03	10012-PDR-SSHE-700.01-007-R01	Nonconformity, Corrective and Preventive Action		Y
PDD_04	10015-GDL-SSHE-302/01/02-R01	SSHE AWARD AND RECOGNITION GUIDELINE		Y
PDD_05	10015-GDL-SSHE-603/00/02-R01	Hazard Reporting and Communication Guideline	Y	Y
PDD_06	10015-GDL-SSHE-RPR-507/00/06-R00	Handling of Illegal Drugs or Substances Guideline	Y	Y
PDD_07	10015-PDR-SSHE-401/05-R01	SSHE Risk and Opportunity Management		Y
PDD_08	10015-PDR-SSHE-501/07-R17	Tropical Cyclone Plan for Gulf of Thailand	Y	Y
PDD_09	10015-PDR-SSHE-503/06-R01	Environmental Aspect and Impact Evaluation		Y
PDD_10	10015-PDR-SSHE-505/11-R00	Routine Job Card Procedure		Y
PDD_11	10015-PDR-SSHE-505/68-R01	Hydrogen Sulfide (H2S) Management Procedure		Y
PDD_12	10015-PDR-SSHE-507/04-R01	Hearing Conservation Program (HCP)	Y	Y
PDD_13	10015-PDR-SSHE-601/01-R03	Domestic Assets Fatality Management Procedure	Y	Y

Ref. No.	Doc. Code	Title	P1*	P2*
PDD_14	10018-GDL-SSHE-603/00/03-R02	Stop Work Authority Guideline	Y	Y

Site Specific SSHE Documents

Ref. No.	Doc. Code	Title	P1*	P2*
G1-001	12185 -PDR-SSHE-505/42-R00	G1 Permit To Work Instruction		Y
G1-002	12185 -PDR-SSHE-505/01-R00	G1 Lifting Operation Procedure	Y	Y
G1-003	12185 -PDR-SSHE-505/92-R00	G1 Welding, Cutting and Grinding Procedure	Y	Y
G1-004	12185 -PDR-SSHE-505/93-R00	G1 Inhibit Override Control Procedure		Y
G1-005	12185 -PDR-SSHE-505/18-R00	G1 Pressure Testing Procedure	Y	Y
G1-006	12185 -PDR-SSHE-505/48-R00	G1 Electrical Isolation Procedure		Y
G1-007	12185 -PDR-SSHE-505/47-R00	G1 Process & Mechanical Isolation Procedure		Y
G1-008	12185 -PDR-SSHE-501/08-R00	G1 Emergency Response Plan	Y	Y
G1-009	12185 -PDR-SSHE-504/01A-R00	G1 Security Plan	Y	Y
G1-010	12185 -PDR-SSHE-505/57-R00	G1 Handling Of Pressurized Cylinders and Industrial Gases Procedure	Y	Y
G1-011	12185 -PDR-SSHE-505/27-R00	G1 Depressurizing Venting Draining and Flushing Procedure		Y
G1-012	12185 -PDR-SSHE-505/09-R00	G1 Confined Space Entry Procedure	Y	Y
G1-013	12185 -PDR-SSHE-505/06-R00	G1 Personal Transfer Procedure	Y	Y
G1-014	12185 -PDR-SSHE-505/08-R00	G1 General Safety Rules	Y	Y
G1-015	12185 -PDR-SSHE-501/07-R00	G1 Tropical Cyclone Response Plan and Procedure	Y	Y
G1-016	12185 -PDR-SSHE-505/24-R00	G1 Radioactive Source Procedure	Y	Y
G1-017	12185 -PDR-SSHE-501/03-R00	G1 Oil Spill Response Plan	Y	Y
G1-018	12185 -PDR-SSHE-305/03-R00	G1 Personnel Induction and Onboarding Procedure	Y	Y
G1-019	12185 -PDR-SSHE-305/02-R00	G1 Short Service Employee Procedure		Y
G1-020	12185-GDL-SSHE-505/00/08-R00	G1 Portable Gas Detection Guideline		Y

Remark:

*P1 = For transportation, Hook up and Installation

*P2 = For Operation and Maintenance

Contractor Documents

Contractor shall provide similar listing of Contractor controlled documents to Company, which are applicable to the contract for managing operation safely.

During execution of contract, Company reserves the right to request Contractor to develop any specific Contractor documents such as Procedures, Guidelines, Work Instructions when any contractual activities are required to have so to manage the risks in operations and for SSHE improvement.

10. FITNESS TO WORK AND MEDICAL CHECK UP

Contractor shall ensure that Contractor and Sub-contractor personnel are medically fit for work, as per Company Fitness to Work Guideline (11003-GDL-SSHE-561-005).

- Ensure that medical examination (pre-employment and annual medical check-up) has been conducted by recognized medical centers and shall compared all tests and examinations required to perform the work according to age, sex and work location.
- The medical fitness certificate must be issued by a duly authorized doctor and must specify the tests undertaken and confirm that the person is medically fit to work. Any queries concerning an individual's fitness to work shall be referred to Company Medical Advisor/Doctor whose decision is final.
- Upon request Company may request to see original certificate; this shall be returned in due course.
- Medical examination and Fitness to Work Certificate is at Contractor's own cost.
- Medical reports are strictly confidential and shall be communicated to Company Doctors only.

11. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Contractor shall provide Personal Protective Equipment for specific works/activities to prevent hazards and minimize risks exposure to Contractor personnel. Personal Protective Equipment allocation is at Contractor's own cost. In case of insufficient PPE providing by Contractor to own personnel at site, Company reserves the right to charge back to Contractor for lending any consumable PPE items.

The provided Personal Protective Equipment shall meet the Company requirement, as per Company Operational Safety Management Standard, Appendix B: Use of Personal Protective Equipment (11038-STD-SSHE-505)

12. INFECTIOUS DISEASE OUTBREAK MANAGEMENT

Contractor shall have a plan and strategy to prevention and management of infectious diseases, as per Company Infectious Disease Outbreak Management Guideline (11038-GDL-SSHE-560/02-022).

12.1 EXPECTATION FROM CONTRACTOR ON INFECTIOUS DISEASE OUTBREAK MANAGEMENT

To prevent Outbreak in locations where personnel live and work together in close quarters, such as on offshore installations, onboard ships, and at remote camps, Contractor shall implement the following:

- Contractor shall strictly follow the local law and regulations.
- Contractor shall strictly follow the Company rules and regulations or Contractor rules if more stringent.
- Contractor shall submit “Infectious Disease Outbreak Management Plan” to Company and approved by Company Corporate Doctor, as per Company Requested.

  For Example, but not limited to the following:

  - Contractor shall provide the Preventive Measures/Programs (Vaccination, etc.) to all personnel before working with Company
  - Contractor shall conduct medical testing and confirm Negative result of all personnel with Company Approved Testing Method before mobilization to Company Mobilization Points.
- Contractor shall submit “Medical Emergency Response Plan for Suspected Infectious Person” to Company and approved by Company Corporate Doctor, as per Company Requested.

SSHE DELIVERABLE/CONTRIBUTIONS REQUIREMENT AFTER AWARD

After award, Contractor shall provide SSHE contributions to Company for each phase of contract, starting from Pre-mobilization, Mobilization, Execution, Demobilization, to Contract Close-out. This is to ensure that Contractor provide contractual services safely to Company throughout the contract duration.

13. PRE-MOBILIZATION PHASE

13.1 POST AWARD MEETING

After contract awarded, Contractor shall participate in Post Award Meeting with Company. This Post Award Meeting is an interactive session between the Company and Contractor to ensure that all contractual obligations including SSHE are thoroughly and mutually understood before the execution of any work. Management level, key operational personnel and key SSHE personnel are required to attend this meeting with Company.

13.2 CONTRACT SSHE MANAGEMENT PLAN

Contractor shall develop the Contract SSHE Management Plan including Bridging/Interface information and submit to Contract Holder and Contract SSHE Representative for approval after awarding or before mobilization.

Contract SSHE Management Plan is mandatory for both SSHE Contract Mode 1 and 2 and shall reflect the nature of the work to be performed and the specific hazards to be controlled and mitigated to ensure that Contractor personnel shall perform the work safely in Company's premises. Contract SSHE Management Plan shall cover all Contract phases from mobilization through execution, demobilization and site restoration, details provided shall fully describe the manpower, equipment, and applicable document for the contract

For SSHE Contract Mode 2, contract bridging document/information is mandatory required. It is necessary to agree which processes will have primacy and how the interfaces and other bridging mechanisms will operate between the Company and Contractor SSHE MS.

For SSHE Contract Mode 1, contract bridging document/information may be required in case Company SSHE MS/Standard/Procedure does not cover any special task provided from Contractor.

13.3 SSHE MONITORING PROGRAM

Contractor shall strictly implement the Contract SSHE Management Plan for this contract and highlight its activities which shall be contributed and performed by Contractor during contract execution.

Contractor shall develop SSHE Monitoring Program (Annual SSHE Plan Tracking Sheet) for monitoring and updating the progress of SSHE activities/contributions in monthly or regular basis to

Company. SSHE Monitoring Program shall be submitted to Contract Holder, Company Site Representative and Contract SSHE Representative for approval before mobilization.

13.4 PRE-MOBILIZATION KICK-OFF MEETING AND AUDIT

Contractor shall arrange pre-mobilization kick-off meeting with all working crews for communicating scope of work, asset safety induction, asset SSHE rules and regulations, SSHE objectives etc.

Contractor shall collaborate with Company for pre-mobilization audit. This audit provides Company to ensure the readiness (People, Plant, Process) of Contractor before mobilization. Pre-mobilization audit findings shall be captured and discussed among Contract Holder, Company Site Representative, Contract SSHE Representative and Contractor. Discussions shall be recorded in an audit/inspection report.

Contractor shall respond to Contract Holder; agreeing on the findings, advising on a remediation schedule, and/or confirming that all audit recommendations shall be or have been carried out for closing-out before mobilization or within an agreed timeframe.

13.5 SSHE COMMENCEMENT CERTIFICATE

START / SUSPENSION OF WORK OR SERVICES

Contractor shall cooperate with Company to audit Contractor on completion of the activities undertaken in the pre-mobilization period as per the agreed in SSHE Contract Requirement and fill in the SSHE Commencement Certificate where required.

Company will sign off the SSHE Commencement Certificate (Appendix C) when satisfied with Contractor's effort and compliance with the requirements as written in this document.

Contractor shall not commence the services until Company has issued the SSHE Commencement Certificate.

Company reserves the right to delay the start of the work or services and/or withhold payments until such time as it is satisfied that the Contractor has properly addressed all SSHE aspects. Similarly, the Company shall have the right to suspend the work or services if the Contractor does not observe the SSHE requirements. Any costs resulting from such delay or suspension will be borne by the Contractor.

14. MOBILIZATION PHASE

When Contractor Personnel mobilize to working location, Contractor shall ensure all Contractor personnel to do as the following:

- Attend Site SSHE Induction
- Recheck the readiness of People, Plant, and Process
- Familiarize with Emergency Alarm and Muster Points
- Conduct Emergency Drills, if required by Company

- Emphasize Stop Work Authority

15. EXECUTION PHASE

15.1 SSHE INCIDENT MANAGEMENT AND REPORTING

Contractor shall report an incident in accordance with the Company's Incident Management Standard (11038-STD-SSHE-601-R07). Company shall review all work-related SSHE incidents.

In case of any incident, Contractor personnel shall ensure full cooperation with Company for incident investigations to identify root causes and actions to prevent recurrence. This includes providing relevant documentation, personnel interviews, membership of investigation teams etc.

15.2 EMERGENCY RESPONSE

For SSHE Contract Mode1, Contractor shall follow specific emergency response plan of working location and take part of emergency drills.

For SSHE Contract Mode2, Contractor shall use own emergency response plan and procedure including taking part in drills and exercises. Contractor shall develop emergency response plan to align with Company emergency response plan.

In case where Company provides emergency including medical emergency support then it reserves the right to back charge Contractor for response arrangements including follow up treatment and transportation as necessary.

Contractor shall ensure own employees have sufficient insurance coverage to be treated in the Company nominated hospitals otherwise the treatment cost for injury from work shall be responsible by Contractor for Contractor or Sub-contractor personnel.

15.3 SSHE COMMUNICATION

Contractor shall conduct various SSHE communication to their personnel to be aware of SSHE issues. Examples include but not limit to:

- Meetings (Including sub-contractors)
- Notice boards (indicate locations)
- Newsletters, Video, Podcast (indicate frequency of issue)
- Describe typical methods of SSHE promotion during contracts, e.g.:
    - Small 'give away' with SSHE message
    - Competitions and quizzes
    - Achievement of SSHE milestones
    - Promotion of SSHE anomaly reporting and ideas

Contractor personnel shall actively participate in toolbox talk prior to the execution of activities.

15.4 SSHE PERFORMANCE MONITORING AND REPORTING

Contractor shall support Company in achieving excellence SSHE performance and shall report on the Contractor's Leading and Lagging Indicator Performance during the duration of contract on monthly basis.

Contractor shall monitor SSHE activities/contributions for contract as per agreed in SSHE Monitoring Program (Annual SSHE Plan Tracking Sheet) and report the progress of completion to Company. The completion of SSHE Monitoring Program is considered as Leading indicator Performance.

Mandatory Leading and Lagging indicator performance requiring Contractor to submit to Company (Contract Holder, Company Site Representative, Contract SSHE Representative/Asset SSHE) is identified in Appendix D.

The CONTRACTOR shall define lagging and leading indicators in line with his SSHE Plan and COMPANY objectives. The KPI's shall be updated within the Weekly SSHE and Monthly PROJECT SSHE Performance Reports.

Annually the base case of Lagging Indicators in the KPI shall be based on COMPANY (when in COMPANY premise) or Industry standard three (3) years average (When out of COMPANY premise) at the time of award reduced by 10% TRIR, LTIR, MAR etc. The CONTRACTOR shall provide an estimate of LTI Free Milestones based on Budgeted Man-hour / histogram over the period of the PROJECT including Onshore, which may include No LTI Free and Injury Free Campaigns.

CONTACTOR to utilize performance and trends in continual improvement of his SSHE-MS and the overall SSHE Management Plan.

The CONTRACTOR shall prepare his KPI for presentation and APPROVAL by the COMPANY

15.5 SSHE PERFORMANCE REVIEW AND MEETING

Contractor shall assign management level personnel and/or safety personnel who is responsible for this contract to participate in Company's SSHE Meeting. The frequency of SSHE performance review and meeting between Contractor and Company shall be arranged in regular basis such as monthly, quarterly, and yearly.

15.6 AUDIT AND REVIEW

Contractor shall initiate a schedule for SSHE audit and inspection on regular basis, as agreed in the SSHE Monitoring Program.

Contractor shall provide resources to close out audit/inspection findings within agreed timeframe.

Company reserves the right to conduct the SSHE audit/inspection/surprised visit with Contractor as per SSHE Contract Requirement.

Contractor shall arrange a management meeting for Contractor SSHE management review at least once a year and submit the next year SSHE improvement plan or SSHE campaign to Company.

16. DEMOBILIZATION PHASE

16.1 SITE RESTORATION

Before demobilization from Company site, Contractor shall ensure the following as the minimum:

- Site cleanliness and good site handover condition
- Completed tasks submission
- Permit to Work close-out
- Waste management and disposal
- Rental Company equipment/tools hand back

For any damage on any Company site/ premises/ equipment & tools caused by Contractor, the cost/expense for reinstatement shall be under Contractor's liability, as identified in this contract.

Company reserves the right to perform a site visit and ensure that Contractor demobilizes from the site of work in accordance with all contractual agreements.

16.2 SITE RESTORATION CERTIFICATE

When demobilization and site restoration are completed and satisfactory to all contractual agreements, Contractor shall fill in the Site Restoration Certificate where required.

Company shall sign off the Site Restoration Certificate (Appendix E) when satisfied with Contractor's effort and compliance with the requirements as written in this document.

Site Restoration Certificate shall be signed off only one time on the last working day of Contractor in Company's premises for this contract, as the minimum requirement.

17. CONTRACT CLOSE-OUT PHASE

Contractor shall develop and submit the SSHE contract close-out report to Company within the agreed timeframe as specified in the contract.

Missing of SSHE contract close-out report submission or any delayed report submission from Contractor within agreed timeframe, Company reserves the right to lock out the bank guarantee or deduct the Contract payment to Contractor, as specified in this contract.

SSHE PENALTY

18. SSHE PENALTY

Contractor shall accept the below requirements for SSHE Penalty.

- Repeated failure, Serious failure or Serious SSHE Violations by Contractor to comply with the Contract SSHE obligations or local laws may result in the removal from site of the relevant Contractor's supervisory and/or managerial personnel.
- In the event Company considers that Contractor has failed to comply with the latest approved Contract SSHE Management plan, or other Contract SSHE Requirements, then Company shall issue Contractor with a SSHE Penalty notice.
- A SSHE Penalty notice is any written notification issued by Company detailing specific aspects of the services that do not comply with either the latest approved Contract SSHE Management plan or other Contract SSHE requirements.
- Company reserves the right to apply "Just and Fair" Treatment and SSHE penalty to Contractor.

APPENDICES

APPENDIX A: SSHE CONTRACT RISK ASSESSMENT

Company has made a listing of expected activities, related hazards, initial risk level, and control & recovery requirement for contract in the below table. Contractor shall review the listing of activities, based on the information provided in the Contract Scope of Works and the SSHE Contract Requirement for completeness and shall highlight where Contractor has specific procedures for managing the risks.

Remark: C = Contractor and SC = Sub-contractor

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
1. Mobilization and Installation CALM buoy include	C, SC									
1.1 Heavy Lifting		Drop object		4,C			• Lifting Plan • JSA • Competency • Lifting Procedure • Certified Lifting Gear • Lifting Inspection		Y	Y
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast •		Y	Y

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
1.2 Marine operation/movement		Vessel collision		4,C			• G1 GMI • PTW for anchoring operation • Competency • PTTEP Marine represent on board	Y	Y	Y
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
1.3 Diving: Man diving, ROV, SAT dive		Get drown	4,C				• Diving Procedure • Competency • PTW • JSA • Fit for work • Medical Check up • Emergency response plan , rescue plan • Equipment inspection and certified		Y	Y
		Lost of ROV		2,C			• ROV Operating procedure • Competency • Equipment inspection and certified • PTW • JSA		Y	Y
		Severe Weather	4,C	2,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
2. Mobilize and Installation vessel FSO	C,SC						•			

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
2.1 Marine operation/movement		Vessel collision		4,C			• G1 GMI • PTW for anchoring operation • Competency • PTTEP Marine represent on board	Y	Y	Y
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
2.2 Hook up –Hawsers, loading hose		Tension hazard	4,C	4,C			• Design • Stay clear line of fire • Weather Limit • GMI • Hook-up procedure		Y	Y
		Vessel collision	4,C	4,C			• G1 GMI • PTW for anchoring operation • Competency • PTTEP Marine represent on board • Ensure communication comply with GMI	Y	Y	Y
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
2.3 Introduce HC in system		Spill and LOPC			3,C	4,C	• Design • Pressure testing as per procedure • Emergency response plan • Spill response plan and equipment •	Y	Y	Y

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
		Fire and explosion	5,C	4,CB			• Control hot work in vicinity area • Standby Gas detector • Design and maintenance Fire fighting system as per SOLAS (No backlog) • Standby FIFI vessel		Y	Y
		Pressure Hazard	4,C				• Pressure testing as per procedure • Stay clear line of fire • JSA • Operation procedure/Instruction		Y	Y
3. Operating and Maintenance FSO	C, SC						•			
3.1 Marine operation		Vessel collision		4,C			• G1 GMI • PTW for anchoring operation • Competency • PTTEP Marine represent on board	Y	Y	Y
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
3.2 Tanker operation		Vessel collision		4,C			• G1 GMI • Pilot on board • Support by truck boat • PTW • Competency • Tanker operation procedure • JSA	Y	Y	Y

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
		Dynamic situation : Severe Weather		4,C			• Weather Limit • Plan installation to avoid Tropical Cyclone season • Weather forecast		Y	Y
		Spill			3,C	4,C	• Hose certified, inspection and maintenance • Spill response plan and spill response equipment • Marine break away coupling • Standby vessel		Y	Y
							•			
3.3 Positon keeping		Drift and collision		4,C			• Maintenance system in place • Competency • Weather Limit • Redundancy of hawsers			
3.4 FSO process operation		Fire and explosion	5,C	4,C			• Control hot work in vicinity area • Standby Gas detector • Design and maintenance Fire fighting system as per SOLAS (No backlog) • PTW • Emergency response plan • Emergency Drill		Y	Y
		Spill and LOPC			3,C	4,C	• Maintenance system in place • Spill response plan and spill response equipment		Y	Y
		Confine space	4,C				• PTW • Competency		Y	Y

Activity	Carried out by:	Associated Hazards	Risk Assessment Level (Initial Risk Level)				Control and Recovery Requirements	Control & Recovery Action By		
	C or SC		People	Assets	Environment	Reputation		Company	C	SC
							• Operating procedure • Fitness to work for confine • Emergency response plan			

Prepared By:	Apichart Whungkhunnatham	**Date:**	17/06/22
Review By:	Peerati Mesamarn	**Date:**	17/06/22

Company Risk Assessment Matrix

								Likelihood				
								Rare (A)	Unlikely (B)	Possible (C)	Likely (D)	Almost Certain (E)
Impact Rating	**Project Cost + Schedule**	**Legal / Compliance**	**Property Damage**	**Financial**	**People**	**Environment**	**Image/Reputation**	**Event occurrence is remote and/or never heard of in the EP industry**	**Event has occurred a few times in the EP industry or is unlikely to occur in PTTEP**	**Event has occurred several times in the EP industry or occurred once in PTTEP or may occur in PTTEP**	**Event has occurred several times per year in the EP industry or more than once per year in PTTEP or occurred in the same location or is likely to occur in PTTEP**	**Event has occurred frequently in the EP industry or occurred more than once per year at the same location or is expected to occur in PTTEP**
Critical (5)	Impact on cost or schedule > 10%	Dismissal of Board + Management Revocation of any licenses or permits Imprisonment > 12 months Fines/Compensations: Thai law > 5 M THB: Foreign laws > 1M USD	Loss > $50M	> 10% of NI/NPV/EMV	Multiple fatalities	Spill > 100K bbl Tier 3 International assistance, major financial consequences, persistent severe environmental damage.	International media coverage Formal complaint from international authority	**Note 1**	**Note 1**			
Serious (4)	Impact on cost or schedule 5-10%	Suspension of stock trading Suspension of licenses or permits Imprisonment 6-12 months Fines/compensation: Thai law 1M-5M THB; Foreign laws 200K-1M USD	Loss between $5-50M	1-10% of NI/NPV/EMV	Multiple LWDC One permanent disability One fatality	Spill > 10K bbl Tier 2 Regional assistance, severe envi. damage, take extensive measures to restore.	National media coverage Local community protest with national influencer					
Significant (3)	Impact on cost or schedule 2.5-5%	Imprisonment < 6 months Fines/compensation: Thai laws < 100k-5M THB; Foreign laws 5K-200K USD	Loss between $100K- 5M	0.1-1% of NI/NPV/EMV	Single LWDC Multiple RWDC	Spill > 1,000 bbl Tier 1 Localised effect, limited effect, repeat breaches of statutory.	Regional media coverage Online media spread Local community protest with provincial/state influencer					
Moderate (2)	Impact on cost or schedule 1.25-2.5%	Fines /compensation: Thai laws < 100K THB; Foreign laws < 5K USD	Loss between $10K- 100K	0.01-0.1% of NI/NPV/EMI	MTC Single RWDC	Spill > 1 bbl no lasting effect, single breach of statutory.	Local media interest Influenced online media post Local community aggregation					
Minor (1)	Impact on cost or schedule <1.25%	No penalty Breach but can be resolved without any actual punishment	Loss < $10K	< 0.01% of NI/NPV/EMI	Minor injury with First Aid	Spill < 1 bbl Slight effect within fence, negligible financial consequences.	No news coverage Non-influenced online media post Local community complaint				**Note 2**	**Note 2**

REMARK:
If residual risk is in 5,A or 5,B have to focus on reducing consequences.
If residual risks in 1,E or 1,D focus on reducing frequency of occurrence

Consequences Line 5, are Major Accident Events (MAE's).
Consequences Lines 4 and 5 are High Potential Incidents (HPI's) for purposes of incident reporting and investigation.

APPENDIX B: MINIMUM SSHE TRAINING REQUIREMENT

CONTRACTOR SHALL DEVELOP SSHE TRAINING MATRIX ACCORDING TO ATTACHMENT CATGORY AND PROJECT OPERATING COUNTRY'S LAWS AND REGULATIONS FOR COMPANY APPROVAL.

APPENDIX B1: SSHE TRAINING MATRICES FOR TRANSPORTTION, HOOK UP AND INSTALLATION

CATEGORY B1B – CONTRACTORS FOR CONSTRUCTION CREW

CATEGORY B1B – CONSTRUCTION MARINE CREW

APPENDIX B2: SSHE TRAINING MATRICES FOR OPERATION AND MAINTENANCE

CATEGORY B2A – MARINE VESSEL CREW

CATEGORY B2B – SSHE CRITICAL POSITION (SCP)

Appendix B1: SSHE Training Matrices for Transporttion, hook up and installation

Category B1A – Contractors for Construction crew

Training Enforcement	Training Course	Provide by	Training Completion	Refresh Frequency (Year)	Project Manager *	Supervisor / Foreman / Team Leader / Chief	Site SSHE	Engineer	Technician	Intervention Team *	Doctor / Medic	Medical Assistant *	Forklift Operator	Radio Operator *	Helicopter Landing Officer (HLO) *	Coxswain / Boatswain *	Electrician	Driver *	Crane Operator *	Rigger / Signaler	Scaffolder	Security Guard	Gardener	Campboss	Cook / Catering team	Housekeeper	Selected Person (1), (2)	Remarks
Specific, Site, Expert requiren	Site SSHE Induction	Contractor	S	0	M	M	M	M	M	M	M		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	All new personnel on employment.
Legal and Authority Requirem	Safety Officer Supervisor Level (จป หัวหน้างาน)	Contractor	S	0		M																		M				For personnel identified by law as "Supervisors". This course is applicable only for Thailand Domestic operations. Within 180 days after be appointed as Supervisor Level
Legal and Authority Requirem	Safety Officer Management Level (จป บริหาร)	Contractor	S	0	M																							For personnel identified by law as "Management". This course is applicable only for Thailand Domestic operations. Within 180 days after be appointed as Management Level
Legal and Authority Requirem	Safety Officer for SSHE Committee Member (คณะกรรมการค	Contractor	S	0			R																				M	Only persons who are appointed by Company or Contractors as per require by Thai Law.
Legal and Authority Requirem	Basic Scaffolding for Oil and Gas	Contractor	B	3																	M							
Legal and Authority Requirem	Tropical Basic Offshore Safety Induction & Emergency Train	Contractor	B	4	M	M	M	M	M	M	M		M	M	M	M	M	M	M	M	M			M	M	M		See details requirements in the SSHE course training catalog. The certificate must be issued by Training Provider under TPTI approval list for the contractor working in Thailand Asset. The certificate for the international asset is upon the SSHE Instruction to the contractor, i.e., OPITO, local law requirement.
Legal and Authority Requirem	Tropical Further Offshore Emergency Training (T-FOET)	Contractor	B	4	M	M	M	M	M	M	M		M	M	M	M	M	M	M	M	M			M	M	M		See details requirements in the SSHE course training catalog. The certificate must be issued by Training Provider under TPTI approval list for the contractor working in Thailand Asset. The certificate for the international asset is upon the SSHE Instruction to the contractor, i.e., OPITO, local law requirement.
Legal and Authority Requirem	Basic Working at Height	Contractor	B	3		R	R	R	R								R		R	R	R		R					See details requirement in SSHE course training catalog
Legal and Authority Requirem	Confined Space Entry & Breathing Apparatus	Contractor	S	5		R	R	R	R	R											R						M	For working with confine space(if any)
Legal and Authority Requirem	Basic Offshore Crane Operator	Contractor	S	2															M									For Thailand, Offshore Crane Operator shall attend the course arranged by TPTI for once in a lifetime
Legal and Authority Requirem	Lifting, Rigging and Slinging	Contractor	S	2		R		R	R										M	M								Covering four positions (Lifting Supervisor, Crane Operator, Rigger, and Signaler) per required by Thai law.
Legal and Authority Requirem	Forklift Operations	Contractor	S	2									M															For forklift driver(If any)
Legal and Authority Requirem	High Pressure Gas Cylinder Handling	Contractor	B	0		R	M		R											R							M	
Legal and Authority Requirem	Radiation Safety Officer Level 1	Contractor	B	0																							M	See details requirement in SSHE course training catalog. For the international asset refers to the local regulations
Legal and Authority Requirem	Basic Firefighting	Contractor	S	3	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	Require 100% for contractors work in PTTEP control area, refresher training is not mandatory for non-organic contractor personnel.
SSHE Compulsory	Basic First Aid	Contractor	S	5	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	Require 100% for contractors work in PTTEP control area, refresher training is mandatory according to BOnST, FOnT, T-BOSIET, and T-FOET and TPTI requirement.
Legal and Authority Requirem	Basic Electrical Safety and Electrical Safety Rules for Opera	Contractor	B	3		R			R								M										M	As per required by Thai Law
Legal and Authority Requirem	Helicopter Landing Operation (HLO/HLA)	Contractor	B	3											M												M	
SSHE Compulsory	Fundamental Risk Assessment and Job Safety Analysis (JS	Contractor	B	0	M	M	M	R																			M	
Specific, Site, Expert requiren	Authorized Gas Tester	Contractor	B	3			R		R																		M	Person who is assigned as gas tester
Specific, Site, Expert requiren	Offshore Advance Firefighting	Contractor	B	3																							M	Person who is assigned as Intervention Team
Specific, Site, Expert requiren	Intensive First Aid	Contractor	B	3								M															M	Person who is assigned as Medical Assistant at worksite
Specific, Site, Expert requiren	Permit to Work System (PTW)	Contractor	B	5	R	R	R	R																R			M	1st time training by classroom, and refreshment by e-Learning module. For those working related with PTTEP Permit to Work System.
Specific, Site, Expert requiren	Pressure Testing	Contractor	O	0		R		R	R																		M	For selective person before performing pressure testing activities

Remark:

*	SSHE Critical Position
M	Mandatory
R	Only Relevant Person (see details in SSHE Course Catalog)
	Course for SSHE Critical Position

Training Completion period:

B	**Before** take position / Role or before commence work
A	**Within 6 months** after take position / Role or commence work
A1	**Within 1 year** after take position / Role or commence work
A2	**Within 2 years** after take position / Role or commence work
S	**Specific** as per Legal, Authority, SSHE MS or Site requirement
O	**Other(s)** to be Specify training completion period

Note

(1) For Person who is Selected / assigned for the related work / activity

(2) For Person who is Selected / assigned for"Safety Critical Position" to be comply with "SSHE Competency Matrix for Safety Critical Position" and refer to PSM Std.

(3) Refer to Marine Department Regulations - Knowledge examination of the Naval Operators 2014

(4) Standard of Training Certification and Watchkeeping for Seafarers - STCW 2010

Appendix B1: SSHE Training Matrices for Transporttion, hook up and installation

Category B1B – Construction Marine Crew

Training Enforcement	Training Course	Provide by	Training Completion	Refresh Frequency (Year)	Master / Veassel Captain	Chief Officer	2nd Officer	3rd Officer	Radio Operator	Chief Engineer	2nd Engineer	3rd Engineer	Electrician	Coxswain / Boatswain *	Able seaman (AB)	Ordinary Seaman(OS) / Clearner / Deck Crew	Deck cadet (trainee)	Fitter	Motorman (Oiler)	Wiper	Cook / Catering team	Mess man / Bell boy	Crane operator *	Doctor / Medic	Selected Person (1), (2)	Remarks
Specific, Site, Expert requirement	New Joiner Vessel safety Induction + PTTEP Marine G1 Marine Control	PTTEP ED/Contractor	B	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	Briefing by PTTEP ED during pre-mob meeting
Legal and Authority Requirement	Tropical Basic Offshore Safety Induction & Emergency Training (T-BOSIET)	Contractor	B	4																					M	This course is applicable for staff working in the Offshore petroleum area. Marine crew who travelling by helicopter
Legal and Authority Requirement	Tropical Further Offshore Emergency Training (T-FOET)	Contractor	B	4																					M	This course is applicable for staff working in the Offshore petroleum area.Re-validation course for T-BOSIET
SSHE Compulsory	Confined Space Entry & Breathing Apparatus	Contractor	B	5																					M	A person who involves in a confined space permit to work. (entry person, rescue team, work controller, approver)
SSHE Compulsory	Basic Offshore Crane Operator	Contractor	B	2																			M			
SSHE Compulsory	Lifting, Rigging and Slinging	Contractor	B	2	M	M	M	M		M	M	M	M	M	M	M		M	M	M			M		M	Covering four positions (Lifting Supervisor, Crane Operator, Rigger, and Signaler) per required by Thai law.
Legal and Authority Requirement	Helicopter Landing Operation (HLO/HLA)	Contractor	B	3																					M	Person who is assigned as HLO and HLA in Helicopter operation
SSHE Compulsory	Fundamental Risk Assessment and Job Safety Analysis (JSA)	Contractor	B	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
SSHE Compulsory	Basic Incident Investigation & Root Cause Analysis	Contractor	A	5	M	M				M	M															
SSHE Compulsory	Oil Spill Management Level 1	Contractor	A	5																					M	Applicable for the oil spill response vessels (ERT members)

Remark:

*	SSHE Critical Position
M	Mandatory
R	Only Relevant Person (see details in SSHE Course Catalog)
	Course for SSHE Critical Position

Training Completion period:

B	**Before** take position / Role or before commence work
A	**Within 6 months** after take position / Role or commence work
A1	**Within 1 year** after take position / Role or commence work
A2	**Within 2 years** after take position / Role or commence work
S	**Specific** as per Legal, Authority, SSHE MS or Site requirement
O	**Other(s)** to be Specify training completion period

Note

(1) For Person who is Selected / assigned for the related work / activity

(2) For Person who is Selected / assigned for"Safety Critical Position" to be comply with "SSHE Competency Matrix for Safety Critical Position" and refer to PSM Std.

(3) Refer to Marine Department Regulations - Knowledge examination of the Naval Operators 2014

(4) Standard of Training Certification and Watchkeeping for Seafarers - STCW 2010

Appendix B1: SSHE Training Matrices for Transporttion, hook up and installation

Category B2A – Marine Vessel Crew

Training Enforcement	Training Course	Provide By	Training Completion	Refresh Frequency (Year)	Master / Veassel Captain	Chief Officer	2nd Officer	3rd Officer	Radio Operator	Chief Engineer	2nd Engineer	3rd Engineer	Electrician	Coxswain / Boatswain *	Able seaman (AB)	Ordinary Seaman(OS) / Clearner / Deck Crew	Deck cadet (trainee)	Fitter	Motorman (Oiler)	Wiper	Cook / Catering team	Mess man / Bell boy	Crane operator *	Doctor / Medic	Selected Person (1), (2)	Remarks
Specific, Site, Expert requirement	New Joiner Vessel safety Induction + PTTEP Marine GMC	PTTEP ED/Contractor	S	2	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	PTTEP ED/Contractor
Legal and Authority Requirement	Tropical Basic Offshore Safety Induction & Emergency Training (T-BOSIET)	Contractor	B	4																					M	This course is applicable for staff working in the Offshore petroleum area. Marine crew who travelling by helicopter
Legal and Authority Requirement	Tropical Further Offshore Emergency Training (T-FOET)	Contractor	B	4																					M	This course is applicable for staff working in the Offshore petroleum area.Re-validation course for T-BOSIET
SSHE Compulsory	Confined Space Entry & Breathing Apparatus	Contractor	B	5																					M	A person who involves in a confined space permit to work. (entry person, rescue team, work controller, approver)
SSHE Compulsory	Basic Offshore Crane Operator	Contractor	B	2																			M			
SSHE Compulsory	Lifting, Rigging and Slinging	Contractor	B	2	M	M	M	M		M	M	M	M	M	M	M		M	M	M			M		M	Covering four positions (Lifting Supervisor, Crane Operator, Rigger, and Signaler) per required by Thai law.
SSHE Compulsory	Fundamental Risk Assessment and Job Safety Analysis (JSA)	Contractor	A1	0	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M		
SSHE Compulsory	Basic Incident Investigation & Root Cause Analysis	Contractor	A	5	M	M				M	M															
SSHE Compulsory	Oil Spill Management Level 1	Contractor	A	5																					M	Applicable for the oil spill response vessels (ERT members)

Remark:

*	SSHE Critical Position
M	Mandatory
R	Only Relevant Person (see details in SSHE Course Catalog)
	Course for SSHE Critical Position

Training Completion period:

B	**Before** take position / Role or before commence work
A	**Within 6 months** after take position / Role or commence work
A1	**Within 1 year** after take position / Role or commence work
A2	**Within 2 years** after take position / Role or commence work
S	**Specific** as per Legal, Authority, SSHE MS or Site requirement
O	**Other(s)** to be Specify training completion period

Note

(1) For Person who is Selected / assigned for the related work / activity

(2) For Person who is Selected / assigned for"Safety Critical Position" to be comply with "SSHE Competency Matrix for Safety Critical Position" and refer to PSM Std.

(3) Refer to Marine Department Regulations - Knowledge examination of the Naval Operators 2014

(4) Standard of Training Certification and Watchkeeping for Seafarers - STCW 2010

Appendix B1: SSHE Training Matrices for Transporttion, hook up and installation

Category B2B – SSHE Critical Position (SCP)

Training Enforcement	Training Course	Provide by	Training Completion	Refresh Frequency (Year)	Top Management	CMT Leader / Member	Corperate EMT Member	EMT Incident Commander	ERT Leader / Member	Intervention Team	Medical Assistant	Site Manager	FSO / FPSO Barge Master	Manager / Superintendent	Production Superintendent	Maintenance Superintendent	Operational Site Supervisor	Production Supervisor	SSHE Supervisor / Officer	Site SSHE	Site Electrical Authorize Person	Radio Operator	Telecommunication Engineer	Project Manager	Company Site Representative	Person assigned as Company Man	Crane Operator	Coxswain / Boatswain	Helicopter Landing Officer (HLO)	Technical Safety, Process, Mechanical, Project Engineer	Logistic / Fleet Maintenance	Technical Authorities (TA1 and TA2)	Driver	Remarks
Legal and Authority Requirement	Offshore Lifeboat Coxswain	External	B	3																								M						
Legal and Authority Requirement	Confined Space Entry & Breathing Apparatus	External	S	5						M		M	M	R	M	M	R	M	M	M														
Legal and Authority Requirement	Basic Offshore Crane Operator	External	S	2																							M							
Legal and Authority Requirement	Lifting, Rigging and Slinging	External / Internal	S	2											R	R	R	M	M	M							M							Covering four positions (Lifting Supervisor, Crane Operator, Rigger, and Signaler) per required by Thai law.
Legal and Authority Requirement	Basic Electrical Safety and Electrical Safety Rules for Operation-based personnel	Internal	B	3													R				M		M									M		Applicable only TA1 & TA2 for Electrical Safety
SSHE Compulsory	Process Safety for Operation	Internal	A1	0								M	M	R	M	M	M	M	M	M					M	M								
SSHE Compulsory	Management of Change (MOC) for Accountable Position -Including Deviation system	Internal	A2	4								M	M	R	M	M	M	M	M	M					M	M				M		M		Including Deviation system
SSHE Compulsory	Oil Spill Response Level 1	External	A	5					M	M		M	M	R	M	M	M	M	M	M						M					M			Required for ERT members
SSHE Compulsory	Oil Spill Response Level 2	External	A	5					R	R		R	R	R	R	R	R	R	R							R			R		R			This course applies only to ERT personnel assigned to coordinate with the Corporate EMT.
Specific, Site, Expert requirement	Offshore Advance Firefighting	External	S	3						M																			M					
Specific, Site, Expert requirement	Intensive First Aid	External	A1	3						M	M																							Person who is assigned as Medical Assistant at worksite
Specific, Site, Expert requirement	Fast Rescue Craft (FRC)	External	B	5																								M						Only person who is assigned as Rescue boat coxswain
Specific, Site, Expert requirement	Major Emergency Management	External	B	0				M	M			M	M	R	M	M	R	M		M						M								

Remark:

*	SSHE Critical Position
M	Mandatory
R	Only Relevant Person (see details in SSHE Course Catalog)
	Course for SSHE Critical Position

Training Completion period:

B	**Before** take position / Role or before commence work
A	**Within 6 months** after take position / Role or commence work
A1	**Within 1 year** after take position / Role or commence work
A2	**Within 2 years** after take position / Role or commence work
S	**Specific** as per Legal, Authority, SSHE MS or Site requirement
O	**Other(s)** to be Specify training completion period

Note

(1) For Person who is Selected / assigned for the related work / activity
(2) For Person who is Selected / assigned for"Safety Critical Position" to be comply with "SSHE Competency Matrix for Safety Critical Position" and refer to PSM Std.
(3) Refer to Marine Department Regulations - Knowledge examination of the Naval Operators 2014
(4) Standard of Training Certification and Watchkeeping for Seafarers - STCW 2010

APPENDIX C: SSHE COMMENCEMENT CERTIFICATE

	SSHE COMMENCEMENT CERTIFICATE		
Contract Title:	Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61		
Contractor:		Contract No:	THC22-5272
Sub-contractors:			
Assets	Platong Field (Block G1/61)		

Note: Please put "N/A" with not concerned item and add the concern items in the table.

	Pre-mobilization Activity	Completion Date	Remark
	Post award meeting		
	Contract SSHE management plan including bridging document (Mode 1&2)		
	SSHE monitoring program (Annual SSHE plan tracking)		
	Pre-mobilization kick-off meeting		
	Pre-mobilization audit (3Ps Method)		
1P = People			
	Training completion as per Local Law and Contract Requirement (Both SSHE and Technical)		
	Fitness to Work approved by Company		
	Key personnel established and organization being implemented as per approved chart		
2P = Plant			
	Industrial site accepted (Rig, DLB, etc.)		
	Accommodation accepted		
	Vehicle e.g. Truck, Van, Trailer, Barge, AHTs		
	Equipment & tools (Including waste bin and plastic bag) inspected and certified as company requirements. All are in good condition and comply with company requirement.		
	Life-saving and emergency equipment inspected and certified as company requirement.		

	PPEs are in good condition and comply with company requirement.		
3P = Process			
	All operational and safety STD/PDR/GDL/WI are in place and approved.		
	Local Law Requirement Check for Specific Activities (e.g. confined space, lifting, and etc.)		
	Waste Management Plan		
	Risk assessment report and JSA are in place.		
	Emergency Response Plan (ERP) as well as Medical Emergency Response Plan (MERP) is in place.		
	Journey Management Plan (JMP) is in place.		
Pre-mobilization audit items close-out			
Notes:			

On behalf of the Contractor, we confirm that the activities stated above have been carried out and we can perform the work in a safe manner to Company.

Name	Position Title	Responsibility	Date	Signature
		Contractor		

We hereby agree that the SSHE status of this contract allows work to proceed, subject to the above exceptions.

Name	Position Title	Responsibility	Date	Signature
		Company Site Representative		
		Contract Holder		

Notes: Contract Holder shall finally **send a copy of an approval SSHE commencement certificate** to the following recipients: Field Manager (Site Top Authority), Site SSHE, Company Site Representative, Contract SSHE Representative and Contractor.

APPENDIX D: MONTHLY CONTRACT SSHE PERFORMANCE REPORT

Contractor shall submit the monthly SSHE Performance Report to Company Site Representative, (CSR), Contract Holder (CH) and Contract SSHE Representative/Asset SSHE within first week of next month (*Ex. SSHE performance report on June has to submit within 1st week of July*).

This report shall contain factual information on the SSHE performance of Contractor which consists of the following:

Return for the month of:			
Monthly SSHE Performance	**Status As of……..**	**Evidence**	**Applicable (Yes/No)**
No. of Employees working in the month			
No. of Manhours (Including any overtime) in the month			
No. of Fatality / Permanent disabilities Cases in the month			
No. of Lost Workday Cases in the month (LWDC)			
No. of Restricted Work Cases in the month (RWDC)			
No. of Medical Treatment Cases in the month (MTC)			
No. of First Aid Cases in the month (FAC)			
No. of Near Misses in the month			
No. of Occupational Illnesses in the month			
No. of Loss of Primary Containment in the month (LOPC)			
No. of Spill Cases in the month (Display spill volume)			
No. of Vessel Accident in the month			
No. of SOC & HRC card submission in the month			
% SSHE Monitoring Program Completion			

APPENDIX E: SITE RESTORATION CERTIFICATE

	SITE RESTORATION CERTIFICATE		
Contract Title:	Provision of G1FSO and CALM Buoy System Lease and Operate for G1/61		
Contractor:		Contract No:	THC22-5272
Sub-Contractors:			
Asset:	Platong Field (Block G1/61)		

Note: Please put "N/A" with not concerned item and add the concern items in the table.

Site Restoration Activity	Completion Date	Remark
Demobilization date approved		
Worksite inspection completed (e.g. Company platform crane, Life Saving Equipment are still in good condition).		
Waste disposal and transportation completed		
Contract handover report/note		
Rental tools/equipment handed over back to Company in good condition		
Project completion report/SSHE contract close-out report submission to Company		

On behalf of the Contractor, we confirm that the activities stated above have been carried out and we restored the site(s) according to the Company requirements

Name	Position Title	Responsibility	Date	Signature
		Contractor		

We hereby agree that the SSHE status of this contract allows the Contractor to demobilize, subject to the above exceptions.

Name	Position Title	Responsibility	Date	Signature
		Company Site Representative/Area Authority		
		Contract Holder		

Notes: Contract Holder shall finally **send a copy of an approval Site Restoration certificate** to the following recipients: Field Manager (Site Top Authority), Site SSHE, Company Site Representative, Contract SSHE Representative and Contractor.