**EXHIBIT III**

**DIRECTIVES FOR PRODUCT DEVELOPMENT**

**FPSO PETROBRAS 91 (P-91)**

**\*\*\*\*\*\*\*\*\*\*\*\*Revision Control\*\*\*\*\*\*\*\*\*\*\*\*\***

**Rev 0: Bid original version**

**SUMMARY**

[**1. GENERAL 3**](#_Toc209430606)

[**2. COMMUNICATION 5**](#_Toc209430607)

[**3. DOCUMENTATION 5**](#_Toc209430608)

[**4. ISSUANCE AND PROCESSING OF DOCUMENTS 9**](#_Toc209430609)

[**5. GENERAL DIRECTIVES 10**](#_Toc209430610)

[**6. MANAGEMENT OF ENGINEERING ACTIVITIES 12**](#_Toc209430611)

[**7. OTHER DOCUMENTS 24**](#_Toc209430612)

[**8. APPENDIX 24**](#_Toc209430613)

# GENERAL

* 1. This Exhibit defines the minimum requirements to be followed by Seller and its Subcontractors in carrying out all engineering scope.
  2. Seller's engineering design shall be developed according to the requirements specified in Exhibit II - General Technical Description and its annexes.
  3. Seller shall be fully responsible for the engineering scope, including all Subcontractors companies and their scope of execution.
  4. Engineering scope of work includes at least, but not limited to, the following items:
     1. Execution of the detailed engineering design, in accordance with Exhibit II - General Technical Description, the Agreement and its Exhibits. It should be noted that this scope entails, at least, the issuance of the documentation required by the Appendix 1 - List of Deliverables.
     2. Management of the engineering design and all interfaces between engineering design, equipment design (including those delivered by Buyer), components, systems, Modules, Hull, Integration, also including the drawings verification, monitoring of the entire scope under the Vendors and Subcontractors, in their workplaces, and coordination of all scope of engineering support for manufacturing, construction, commissioning and start-up of the Unit, until the Final Acceptance.
     3. Management of Subcontractors and Equipment suppliers in the execution of engineering, including Vendors technical bid evaluations, verification of supplier drawings, certification of Equipment and materials, monitoring of all manufacturing activities and coordination of all final documentation issued by Subcontractors and suppliers, including verification of all documents to be included in the Data Books (as defined in item 6.7).
     4. Technical engineering support for all systems of the Unit, as well as management, registration and acquisition of all data necessary for the issuance of the final drawings with “as built” stamp.
     5. Certification of Seller, Subcontractors and Vendors documents related to their agreement scope, according to the requirements of the Classification Society.
     6. Maintain a support engineering team throughout all the Agreement period.
     7. Preparation and issuance of the project's complete Data Book according to the guidelines defined in this Exhibit.
  5. Seller engineering scope shall be carried out by a single engineering design company, also acting as engineering management entity for the complete Seller’s Scope of Supply. Buyer may accept more than one Subcontractor engineering design company, but, in this case, Seller shall elect one of them as the prime design company for the engineering management, and therefore this prime design company shall be responsible for quality assurance and standardization for scopes performed by other companies.
  6. The development of the engineering design shall use “Computer Aided Engineering” (CAE) tools, following the minimum requirements in Appendix 2 (I-ET-3000.00-1350-940-P4X-014 – Digital Engineering Requirements for BOT) and Exhibit XVI - Computational Tools and Integrated Management System.
  7. Meetings between Buyer and Seller shall be scheduled, for both technical and administrative discussions, in a frequency to be agreed between Buyer and Seller, according to the project phase and needs.
  8. Seller shall implement any necessary changes to the documents arising from the detailed design development, Classification Society, flag authority, “Marine Warranty Surveyor” (MWS) and regulatory bodies requests without any extra cost to Buyer.
     1. Buyer will share with Seller lessons learned from recent regulatory audits to be addressed and incorporated in the design during project execution.
  9. In order to carry out safety studies PHA (Preliminary Hazard Analysis) and HAZOP (Hazard and Operability Study), or to review them at any time, Seller shall follow the provisions of the Safety Guidelines document available in Exhibit II - General Technical Description, and Buyer shall be informed about the planning at least 45 (forty-five) days in advance to indicate a team that will form a multidisciplinary group. Seller shall implement the recommendations from and agreed upon by the safety studies with no additional cost or schedule impacts. In addition, Seller shall manage the implementation of such recommendations, collecting and recording the evidence (in the engineering documents and field implementation) in the specific reports that shall be updated periodically at a frequency that shall be agreed with Buyer.
  10. A specific kick-off meeting shall be scheduled between Buyer and Seller prior to the execution of the risk and consequence analysis requested in the document Safety Guidelines detailed on Exhibit II - General Technical Description, in order to discuss and agree with the form of execution and presentation of such studies. Risk analysis and safety studies premises and assumptions shall be aligned and approved by Buyer prior to the analysis/studies execution.
  11. All necessary resources to carry out the meetings of safety studies PHA and HAZOP (rooms, audiovisual resources, printed copies, etc.) shall be made available by Seller with no additional cost to Buyer. All P&IDs shall be issued and submitted to Buyer with a minimum of 30 (thirty) days prior to the meetings.

# COMMUNICATION

* 1. Requests for technical clarification shall be made in writing, using a Technical Query form (“TQ”), which shall be issued with the appropriate Buyer’s code numbers for each subject and sent to Buyer by the Electronic Documentation Management System (EDM) used by it. It shall be noted that Buyer can also request technical clarifications from Seller via TQ. Buyer and Seller shall issue a response within 10 (ten) Business Days of issuing the TQ. Any deviation shall be mutually agreed.
  2. Each TQ shall address only one specific subject.
  3. Buyer reserves the right to participate in any meeting/activities held among Seller, Classification Society, flag authority, “Marine Warranty Surveyor” (MWS), regulatory bodies and any other Subcontractor. Seller shall inform Buyer, with a minimum of 10 (ten) days prior to the meeting, local and subject of the meetings.

# DOCUMENTATION

* 1. The project documentation shall have a single standard, in English or Portuguese language, as described in the following items. Engineering Technical Documents Templates shall be presented by Seller for Buyer approval.
  2. All design engineering documents, including Subcontractor and Vendor documents, delivered to Buyer shall include a Buyer’s code number, according to the codification system presented in Appendix 3 - Structure of the Buyer Code Number System. References to documents shall also include Buyer’s code numbers. All documents in electronic format, including revisions, shall be given Buyer’s code number in their files’ names.
  3. All project documentation, as foreseen in the engineering document list, in the Vendor document lists and required by competent authorities (Classification Society, flag administration, Brazilian regulatory authorities, etc.) shall be sent to Buyer for information through the EDM System used by Buyer.
  4. Every document delivered to Buyer from Seller, Classification Society and Vendors shall be also delivered in electronic format. All electronic files of the project shall be delivered in native editable format to meet future needs for updating and also in PDF format (Portable Document Format - Adobe Acrobat). Both shall be included at EDM System used by Buyer.
     1. Every document delivered to Buyer from Classification Society shall be transmitted using Classification Society’s documentation exchange web system to be included at EDM System.
  5. Each document shall be delivered in its original editable version and in searchable PDF format. The original editable version of a single document shall be delivered in a single electronic file. Files containing more than one document, or one document divided in many files will not be accepted by Buyer.
  6. PDF files shall be delivered with an edit lock and without enabling any password security restrictions to access the document's content. All PDF files shall have content search functionality enabled. Vendors documents that do not require updating in the operational phase can be delivered only in PDF format.
  7. All documentation in Portuguese required by the Brazilian law shall be written in this language. In addition to these, the following documentation shall also be delivered in Portuguese:

1. Shipboard operation manual;
2. Shipboard maintenance manual;
3. Plant operation manual;
4. Plant maintenance manual;
5. SOPEP (Shipboard Oil Pollution Emergency Plan).
6. Reports of risk and consequence analysis requested in the document Safety Guidelines detailed on Exhibit II – General Technical Description.
   1. The following documentation shall be issued in bilingual format (English and Portuguese):
7. Safety plan;
8. Escape route plan;
9. Hazardous area classification plan.
   1. “Seller Engineering Design Documents” are those issued by Seller in order to purchase, manufacture, construct, assemble and commission systems, Equipment, Modules, Hull, structures, piping and allow Integration of the Topside and the Hull, including their respective facilities to assist with future operation and maintenance. All these documents, in all their revisions, shall be made available in the EDM System used by Buyer. Only documents issued in English or Portuguese will be accepted.
   2. Buyer will carry out a sampling basis review of Seller Engineering Design Documents in order to confirm the fulfillment of the scope by Seller. During execution phase, Seller shall issue a report to evidence that all GTD (including annexes) technical requirements are met, including reference to documents. This report shall be issued regularly and kept updated until the signature of Provisional Acceptance Statement. Any clarification and/or deviation shall be clearly indicated and mutual agreed and backed-up through Technical Query exchange.
   3. The first issue of the document list shall be submitted to Buyer 10 days after the engineering phase kick-off meeting. Buyer will then select which documents will be reviewed based on the Table 1 below. The revision process shall not be considered a hold point for the engineering. The workflows for Seller’s Engineering Design Documents will occur through EDM System used by Buyer.

Table 1

|  |
| --- |
| PFDs/UFDs and P&IDs |
| GTD and Annexes Compliance Report |
| Safety studies and assumptions documents of the design criteria and studies methodologies |
| Scape routes plan |
| Shutdown matrix |
| Calculation Memories |
| Change Management Procedures |
|  |
| Fiscal Metering Documentation |
| Interface documents with equipment supplied by Buyer |
| Documents defined on other Exhibits |

* + 1. Buyer evaluation aims to verify the compliance of Seller’s design with the technical requirements of the Agreement, GTD and its annexes.
    2. In case Buyer detects non-compliance with GTD, norms, laws and regulations applicable to the Agreement, it reserves the right to request correction in any design document.
  1. For their issuance, and for each revision, Seller Engineering Design Documents shall be identified (cover sheet) as follows. It shall be noted that the status defined below may not be the same for submission to the Classification Society, and Seller shall maintain a separate control for this purpose, if necessary:
     1. “For Information” – It may have comments from Buyer for the documents “For Information” as per mentioned on item 3.11. It shall be noted that the Appendix 1 – List of Deliverables contains, at a minimum, the documents that shall be issued with the status “For Information”.
     2. “Released” – Document evaluated and released by Buyer in the previous revision.
     3. “For Quotation” – In this status these documents are considered appropriate for the equipment/material acquisition.
     4. “As Purchased” – The information contained in these documents, in the current revision, is in accordance with the purchased item.
     5. “For Construction” – The information contained in these documents, in the current revision, is considered adequate for construction.
     6. “As Built” – The information contained in these documents, in the current revision, is consistent with what was actually built or assembled.
     7. “Canceled” – These documents are no longer engineering design documents. Seller shall not use the document number that was canceled at any time during the development of the Project.
  2. A complete master document list shall be submitted in a monthly basis to Buyer, together with the engineering execution plan. This list shall include all necessary information, at least: document code number, document title, technical discipline, the last current revision issued, the date of issue of the previous revision, the expected date of the next revision, the purpose of the current issue ("For information", "For quotation", "For Construction", etc.), purpose of issuing the document to the Classification Society (For information, For approval, etc., as per Classification Society standard), status regarding Classification Society, associated module, associated system (example: Ballast, Sea water lift, Oil processing, main gas compression, etc.), the percentage of progress reflected by the documents, the number of the transmission form in the EDM System used by Buyer and document format (A0, A3, A4, etc.).
  3. A second master document list shall contain references to the numbering of Vendor document lists and shall be submitted in a monthly basis to Buyer.
  4. The resulting comments of Buyer sampling basis review, related to a review of a single document, will be forwarded to Seller through a specific template using the EDM System indicating its status, as follows:
     1. “Released” – no changes are requested. The next document revision shall be issued as “Released” unless relevant changes are implemented.
     2. "Comments added" – there are requests for changes that shall be implemented by Seller in next document revision or clarifications shall be presented in order to not implement them.
     3. “Not released” – there are substantial deviations from the terms, standards, practices, or quality. Seller shall implement the corrections in the next revision or present clarifications for not implementing them.
  5. Comments added by Buyer, pursuant to items 3.15.2 and 3.15.3, shall be addressed in the periodic meetings as defined in item 1.7.
  6. A list of “As Built” documents to be checked shall be submitted to Buyer for evaluation. Field markings shall be submitted to Buyer for information, prior to issuing the “As Built” document. If Buyer identifies, at any time, non-compliance with the actual configuration of the implemented construction, Seller shall be responsible for verifying the field situation and correcting all impacted documents.
  7. If Buyer identifies, at any time, non-compliance with the requirements established in the GTD (General Technical Description), Seller shall be responsible for correcting the documentation, as well as for any impacts resulting from such inconsistencies. In this case, Buyer may, at its sole discretion, check and comment on any technical documents issued by Seller, Subcontractor and Vendors.
  8. The Buyer shall provide its comments within ten (10) business days. The Seller shall respond to any Buyer comments within ten (10) business days from the date of formalization by the Buyer. Any deviation shall require mutual agreement. The act of commenting, releasing or not commenting the documents submitted to Buyer, does not exempt Seller from the responsibility of carrying out its scope in accordance with the terms of the Agreement.

# ISSUANCE AND PROCESSING OF DOCUMENTS

* 1. All electronic delivery of documents between Seller and Buyer will be using the EDM System used by Buyer. Transmission form shall be in accordance with a specific electronic transmission model to be informed by Buyer.
  2. Seller shall provide IT (Information Technology) facilities in order to establish communication between its document management system and the EDM System. The communication shall allow the delivery and receiving of documents, as well as the registration of the transmission. The costs of implementing the communication are the responsibility of Seller.
  3. Seller shall work with Buyer to establish the correct communication of its document management system and the EDM System.
  4. The management and responsibility for the documents will remain with Seller, until the end of the Agreement, when its latest updated revisions will be delivered to Buyer. This responsibility does not exempt Seller and its Subcontractors from delivering the files in an editable format during the development of the engineering design.
     1. The latest revisions in an editable format shall also be delivered to the responsible for the Operation Contract in order to allow for updating them regarding possible field changes in the operation phase.
  5. The documents shall be delivered to Buyer in all revisions.
  6. Any change in the project documentation from one revision to the next shall be highlighted by Seller, Subcontractors and Vendors. Partial changes or exclusions to an item shall be clearly marked in the document. Revision indications shall be made using “clouds” (drawings) or highlighting (text).
  7. The act of modifying, cancelling, replacing, or renumbering documents is considered a revision.
  8. In the case Buyer comments interfere with the Agreement scope, Seller shall notify Buyer’s Agreement manager. Under no circumstances shall Seller apply such comments to the project without following procedures defined in Exhibit XIV - Directives for Claims and Change Orders.

# GENERAL DIRECTIVES

* 1. Seller’s detailed engineering shall ensure that the following objectives are met:

1. Full compliance with Agreement and its Exhibits;
2. Provide safe facilities;
3. Avoid environmental pollution;
4. Provide that the Unit operates properly;
5. Full compliance with the Classification Society, regulatory bodies and Brazilian authorities rules and requirements;
6. Compliance of the project’s KPIs (Key Performance Indicator).
   1. Design Certification
      1. Seller shall be responsible for complying with all requirements for certification of Classification Society rules.
      2. All design certification procedures shall be agreed between Seller and the Classification Society and forward to Buyer for information.
      3. Seller shall provide all necessary support studies required by the Classification Society.
      4. Seller is responsible for the certification of Vendor documents in its scope of work according to Classification Society requirements.
      5. Seller shall inform Buyer about the progress of the Classification Society's approvals during meetings and in the monthly report.
      6. The kick-off meeting with the Classification Society shall be held before the start of the issue of engineering documents. Seller shall prepare the list of documents and equipment list to present at the meeting.
   2. Seller shall provide Buyer in a monthly basis the backup of the databases of the CAE tools, including the complete and integrated 3D model of the entire Unit, in an editable format and with the appropriate software for visualization, following the minimum requirements defined in Appendix 2 (I-ET-3000.00-1350-940-P4X-014 – Digital Engineering Requirements for BOT) and Exhibit XVI – Computational Tools and Integrated Management System. The databases shall be updated according to the latest changes.
   3. All process and instrumentation diagrams shall be prepared using CAD/CAE tools and made available to Buyer. In case the development of the detailed engineering is carried out with CAE 2D tool, the updated databases shall be provided to Buyer whenever required.
   4. The native files of the process simulations, pipe stress analysis, structural analysis, CFD simulations for gas dispersion, explosion, fire propagation analysis, electronic files of flame detection study, naval models and hydrodynamics time series shall be available to Buyer whenever required.
   5. All structural design reports and 2D and 3D drawings (in pdf and in editable version), as well as all computer FEM structural analysis models (global and local) of hull and topside structures shall be provided by SELLER to BUYER at the end of the construction (as built) and at the delivery of the Unit to BUYER, considering all model updates, if so. Models shall be in electronic format, considering all necessary inputs for the analysis (including geometry, loads, boundary conditions, properties, materials, mesh etc), and also the design spreadsheets and computational data manipulation tools to be provided. In addition, shall be submitted also the stability model in electronic format to BUYER.
   6. The 3D model generated shall also be used to perform automatic interference checking and reporting, as well as to produce input data for pipe stress analysis.
   7. Seller shall carry out a safety layout review and design review sessions, with participation of Buyer, in order to evaluate and comment the progress of the detailed design, emphasizing compliance with safety, accessibility, ergonomics, material handling, constructability and operability requirements. Design review sessions shall comply with minimum requirements defined in Appendix 2 (I-ET-3000.00-1350-940-P4X-014 – Digital Engineering Requirements for BOT).
   8. Seller shall be responsible for regularly updating all drawings, incorporating any changes in order to guarantee the reliability of the database. The three-dimensional scale models generated for each Unit module/ equipment/ system shall be integrated into only one complete three-dimensional model of the entire Unit. A key plan and 3D model technical specification shall be issued in the very beginning of the detail engineering design, in order to establish the assumptions and to organize the development of the model.
   9. The final delivery of the database shall include:
7. The three-dimensional model and all files used to create the 3D project;
8. Any additional documentation or electronic files.
   1. All equipment and lines, including equipment and lines of Subcontractors and Vendors, shall be in accordance with Buyer identification system, according to Appendix 4 - I-ET-3000.00-1200-940-P4X-004 (Rev.0) – Tagging Procedure for Production Units Design BOT. The equipment and lines identification shall be the same in engineering documentation, supplier documentation, CAD/ CAE database and identification (tag) of equipment/ lines in the field.

# MANAGEMENT OF ENGINEERING ACTIVITIES

* 1. Seller shall submit to Buyer the documents related to the engineering execution plan, especially the details of this phase in the physical schedule of the Agreement, according to Exhibit VI - Directives for Planning and Control. The engineering plan shall be issued within 30 days after signing the Agreement and shall be sent monthly, including updates.
  2. The Engineering execution plan shall include:

1. A histogram;
2. The general list of documents;
3. A section with a matrix of complete project interfaces for each Subcontractor, Vendor, Classification Society and Buyer;
4. Critical interfaces that can cause a delay in the completion of the engineering design;
5. Status of documents’ approval, including the approval status of Classification Society;
6. The main stages of the acquisition plan related to document issuance data;
7. A schedule for the development of the detailed engineering and of the 3D model in its phases.
8. Audit plan. Seller shall submit a project audit plan to verify the compliance with internal procedures, Buyer's requirements, international standards and regulatory requirements. The audits must be executed throughout the engineering design phase, prior to sail away and prior to start-up. The audits reports shall be issued to Buyer for information and Buyer must have access to Seller's pending items control.
   1. In addition to the engineering execution plan, Seller shall issue a monthly engineering report which shall include:
      1. The activities to be carried out in the following month in order to allow Buyer and Seller to control the progress of engineering project.
      2. Main punch list items for engineering design, including pending items (“holds”) of the Classification Society, Subcontractors and Vendors.
      3. Schedule of engineering activities (documents issuance, 3D modeling, databases of CAE tools, etc.) with the respective action plan in case of impact on the schedule.
      4. Physical progress of the main engineering activities.
9. Studies and analysis (safety studies, stress analysis, structural analysis, electrical studies, among others);
10. Physical progress of isometric issuance;
11. Physical progress of list of lines and P&IDs issuance;
12. List of critical interfaces that may impact the project;
13. Pending documents analysis by Buyer and pending issuance/ resubmission;
14. Status of Vendor documentation;
15. Status of the documentation submitted to the Classification Society.
    1. Change Management
       1. Seller shall carry out a change management process applied to the execution phases of the engineering activities in order to ensure that all changes that occur during the design, supply, construction, assembly, commissioning and pre-operation phases are properly identified, analyzed and the risks introduced by them are also analyzed, evaluated and controlled.
          1. A change management procedure complying with all the requirements herein and the applicable regulations must be submitted to Buyer for comments.
       2. Change management shall be systematically implemented in the various stages of the project, in a traceable and registered way. Change management shall also include actions to ensure that potentially affected project disciplines are notified of the change and that relevant documents are kept up to date.
       3. The change management system shall include, at least:
16. Change management of safety studies: guaranteed, at any time during the execution of the project, that safety studies, and all aspects related to these, are representative and appropriate to the installation;
17. Management of recommendations from safety studies: the management of recommendations shall ensure that all recommendations generated by safety studies are addressed until the start of the Unit’s operation;
18. Management of field modifications: this management shall ensure that field modifications are addressed, and the technical documentation updated until the start of the Unit’s operation.
19. Management of design modifications: this management shall ensure that engineering changes implementation are addressed concurrent with construction phase. The final implementation of changes in the field shall be tracked in order to closeout the modifications.
    * 1. The change management system shall indicate each change of assessment record and whether the change impacts the safety studies. If there is any impact, the necessary revisions shall be issued. Seller shall submit this assessment for Buyer’s approval.
      2. Seller's change management system shall allow the issuance of partial reports for Buyer consult at any time. Seller shall issue a final report at the end of the project with the content of the entire change system.
    1. Safety Studies
       1. Seller shall issue risk and consequence analysis (safety studies) requested in the document Safety Guidelines detailed on Exhibit II – General Technical Description.
       2. Seller shall hire a specialized company to carry out theses analysis. This company shall have proven experience and be approved by Buyer.
       3. Seller shall consider in the gas dispersion study scope of work the issuance of an “As Built” revision considering final coordinates measured by topographic survey and registered on field installation reports.
       4. Seller shall issue flame detectors coverage reports, considering the issuance of “As Built” revision with final coordinates and angles measured by topographic survey and registered on field installation reports.
    2. “As Built” documentation
       1. Seller is responsible for final "As Built" revision incorporating changes made during construction, commissioning and start-up. “As Built” revision shall incorporate all safety studies recommendations.
       2. Buyer will request 1 (one) printed copy of some “As Builts” and Data Dooks due to law attendance, regulatory agencies exigences, legal conformity, Classification Society rules or any other international or Brazilian applicable regulation. In these cases, Seller shall delivery the printed copies without any cost to Buyer.
       3. All purchasing documents shall also have a final "As Purchased" revision and incorporating changes made during the purchase and engineering phases.
    3. Data Book
       1. Seller shall issue to Buyer approval the complete Data Book including the documents/registers of the engineering, construction and commissioning. The basic organization of the Data Book is:
       2. Part I – Operation and maintenance manuals – English and Portuguese versions;
       3. Part II – Engineering Data Book – including final “As Built” and “As Purchased” documents duly stamped by Classification Society, where applicable;
       4. Part III – Vendor Data Books, according to the Exhibit V - Directives for Acquisitions;
       5. Part IV – NR-13 dossiers;
       6. Part V – Construction Data Book;
       7. Part VI – Commissioning Data Book;
       8. Part VII – NR-10 dossiers.
       9. Vendors Data Book
          1. Seller shall issue to Buyer approval the complete Data Book, which shall include all final version of the approved documents of engineering, construction, installation, preservation, commissioning, operational and maintenance produced for the equipment/system, stamped by Classification Society, when applicable. The basic organization of the Vendor Data Book shall be as follows and as per details on Exhibit V – Directives for Acquisitions:
       10. Part I – Engineering documents;
       11. Part II – Operation and maintenance manual, instruction for installation, preservation and commissioning;
       12. Part III – Quality manual, comprising material certificates, tests and procedures, weld and NDT (Non-Destructive Tests) reports and traceability;
       13. Part IV – NR-13 dossiers and documentation for compliance with regulatory agencies and Classification Society, with the approval stamp of the Classification Society;
       14. Part V – NR-10 dossiers and documentation for compliance with regulatory agencies and Classification Society, with the approval stamp of the Classification Society.
           1. Seller shall upload to Buyer’s EDM system the approved Data Book for the Modules’ packages.
           2. Seller shall issue the Data Books for all equipment included on Seller’s Scope of Supply.
       15. Engineering Data Book
           1. The purpose of this directive is to describe the engineering Data Book structure.
           2. Seller shall issue engineering Data Books with at least the content described below, on structure engineering Data Book section.
20. Seller shall issue engineering Data Books as part of the final documentation.
21. Seller shall upload to Buyer’s EDM system all “As Built” documents produced by Seller, Subcontractors and suppliers, approved and stamped by the Classification Society, in both native file and searchable PDF file for both text and image.

* BASIC STRUCTURE ENGINEERING DATA BOOK

UEP

P-XX

Description of documents disposal and methodology of location and consultation

Process

Lay Out and Piping

Instrumentation and Control

Electrical

Safety

Heating, Ventilation and Air Conditioning

Noise/Vibration reports

Structural

Document List

PART “1”

PART “2”

PART “3”

PART “4”

PART “5”

PART “6”

PART “7”

PART “8”

PART “9”

Mechanical Equipment

Outfitting

Accommodation and Architectural

Telecommunications

Naval Systems

General Calculation Reports

Hazop Studies

PART “10”

PART “11”

PART “12”

PART “14”

PART “15”

PART “16”

Naval Architecture

PART “13”

Classification Society original stamp approved documents

PART “19”

Miscellaneous Documents

PART “18”

Project Automation

PART “17”

DETAILED STRUCTURE ENGINEERING DATA BOOK

**PART “1”**

Process

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “2”**

Lay Out and Piping

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “3”**

Mechanical Equipment

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “4”**

Instrumentation and Control

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “5”**

Electrical

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “6”**

Safety

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “7”**

Heating, Ventilation and Air Conditioning

**PART “8”**

Noise / Vibration Reports

|  |  |  |
| --- | --- | --- |
| TEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “9”**

Structural

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “10”**

Outfitting

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “11”**

Accommadation and Architectural

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “12”**

Naval Architectural

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “13”**

Telecommunic-ations

**PART “14”**

Naval Systems

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “15”**

General Calculation Reports

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “16”**

Hazop Studies

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “17”**

Project Automation

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “18”**

Miscellaneous documents

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

|  |  |  |
| --- | --- | --- |
| ITEM | DOCUMENTS | INDEXED BY |
| 1 | Technical Specification (ET) | Sequential order |
| 2 | Drawing (DE) | Sequential order |
| 3 | Calculation Sheet (MC) | Sequential order |
| 4 | List (LI) | Sequential order |
| 5 | Report (RL) | Sequential order |

**PART “19”**

Classification Society original stamp approved documents

# OTHER DOCUMENTS

* 1. Field modifications’ documents shall be made available at EDM system. A corresponding electronic transmittal shall follow all electronic files.
  2. All purchase documents issued by the Seller shall also have a final “As Purchased” revision and shall incorporate the changes made during purchasing and engineering phases.

# APPENDIX

Appendix 1 – List of deliverables

Appendix 2 – I-ET-3000.00-1350-940-P4X-014 (Rev. D) - Digital Engineering Requirements for BOT

Appendix 3 - Structure of the Buyer Code Number System

Appendix 4 – I-ET-3000.00-1200-940-P4X-004 (Rev.0) – Tagging Procedure for Production Units Design BOT