

**Legal considerations for FPSO projects**  
**Design and Construction**

**Stuart Beadnall**  
**Stephenson Harwood LLP**

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## **Legal Considerations for FPSO Design & Construction Projects**

### **Introduction**

- 1 EPC/EPIC Contract Terms
- 2 Design Risk
- 3 Scope of Work and Variations
- 4 Acceptance and Delivery

## Stephenson Harwood

Stephenson Harwood has a team of lawyers with a detailed knowledge advising clients engaged in floating production projects. We regularly advise on FPSO selection, development and operational processes. Our experience covers the complete spectrum of issues that relate to FPSO projects which includes commercial and contractual areas, finance, technical challenges, and risk areas associated with FPSO projects.

We have been involved in some of the largest FPSO disputes which provides experience to help clients avoid similar problems on new projects.

## Examples of Relevant Experience

### FPSO Operating Agreements

- Investigating and assisting with claims arising from substantial/schedule delays and disruptions occurring on an FPSO development project, offshore Brazil.
- Advising on a wide range of issues and remedies following technical difficulties substantially delaying start-up of an FPSO operating contract.
- Acting for FPU contractor in a long-running dispute concerning the termination of FPSO operations in Nigeria.
- Assisting in managing risks relating to the termination of an FPSO agreement operating in the North Sea.

### Conversions

- Advising in a major High Court litigation over the conversion of two VLCCs to be used as FPSOs.
- Advising on the terms of a project for the version of an LNG carrier for operation as a floating production vessel.
- Negotiating all contracts for conversion, operation and financing of FPSO for a North Sea Operation.
- Negotiating terms for the FPSO conversion, lease and services agreed for operation off Equatorial Guinea.

### FPSO/EPIC Contracts

- Acting for a major Norwegian FPSO contractor on a significant dispute arising from a newbuild and a modification programme commenced in Singapore and completed in the United Kingdom.
- Advising on the terms of an EPIC contact, lease, operating services and JV agreement for FPSO to be employed in Brazil.
- Negotiating the contract for construction and installation of an FPSO offshore Nigeria.
- Dispute over the installation of an FPSO topsides in Canada and related Insurance Claims.

## Finance

- Reviewing and negotiating all documents used in project financing and defeased UK tax lease financing of North Sea FPSO.
- Negotiating all finance documents on behalf of oil company end users, drafting option arrangements protecting those end users plus a package of security documents and inter-creditor arrangements with the financiers for UK FPSO operators.
- Advising on use of secured option arrangements to protect end-user interests in three FPSO projects.
- Advising on possible financing arrangements and structures and their implications for end-users in relation to FPSO in West of Shetlands.

## Speaker Experience



**Stuart Beadnall**

**Partner**

T: +44 20 7809 2936

E: [stuart.beadnall@shlegal.com](mailto:stuart.beadnall@shlegal.com)

Stuart is head of the Stephenson Harwood Offshore Oil & Gas Group. He has been involved in FPSO projects since 1991. He is the lead author of "Offshore Construction: law and Practice": he leading authority on design and construction of units for the offshore oil and gas sector

He worked as in-house counsel at BHP Petroleum on the Challis, Jabiru, Skua and Griffin FPSO projects, has advised on new developments in UKCS and fields in Nigeria, Equatorial Guinea, Cote d'Ivoire, Mauritania, Vietnam, Brazil and Canada. Stuart has also been lead partner in a number of high-profile disputes concerning design, construction, installation, FPSO operations and offtake, INCLUDING Balder FPU, the largest ever FPSO litigation.

He also has recent experience of the emerging floating LNG sector, drawing on long experience of FPSO and LNG projects.

## Delegates Materials

### 1 Session 1 – Introduction to EPC/EPIC contract terms

Set out below is a table comparing the three types of construction contracts: Shipbuilding, onshore and offshore. It should help provide an understanding of the main principles applicable to each type of contract and where they differ.

In general the structure of an offshore construction contract follows that of a shipbuilding contract, whilst the nature of the contractual obligations and liabilities mirror more closely those found in construction.

Shipbuilding		Construction	Offshore
<b>Description/Scope of work</b>			
1	The Builder is required to deliver a vessel in compliance with a fully detailed specification, appended to the main contract, and in satisfaction of the requirements, of a nominated classification society and other Regulatory Authorities.	The Contractor is required to develop the design and undertake construction in accordance with the drawings provided by employer, specifications concerning quality and materials, and the employer's technical requirements.	The Contractor is required to develop a design to meet the requirements of a functional specification, outlining the intended capabilities of the unit, usually in accordance with company – provided FEED documentation.
<b>Price and Payment Terms</b>			
2	The Contract price is usually fixed, and payable in instalments by reference to passage of time or particular milestone events, but not by reference to the quantity of work performed.	The price may be fixed, or subject to measurement of work and materials. Fixed prices may be subject to various contingencies. Payment is made in stages, according to the quantity of work performed, often as verified by an independent party.	The price is normally fixed, notwithstanding lack of detailed scope of work and quantities at the time of contract award. There may be scope for adjustment of price according to estimated steel weights. Payments are made by reference to milestones, which may not accord to the actual quantity of work performed.
<b>Modifications and Variations</b>			
3	Changes to the specification require agreement on price and other changes. There is no right for the Buyer to impose change unilaterally.	There may be detailed variation provisions allowing the employer the option to request, for its approval, estimates of cost and time for additional work. There is generally a limit implied to the extent of change permitted.	The Company reserves the right to impose changes to the scope of work, without limitation as to extent, timing and number of such changes.

Shipbuilding		Construction	Offshore
<b>Technical Acceptance</b>			
4	Compliance with the specification is determined by a series of tests performed during the sea trial. The Buyer is not obliged to accept delivery if defects are discovered, unless these are capable of being corrected, following delivery, without affecting the operation or safety of the vessel.	Work may be accepted in stages during construction, with certain commissioning tests to be completed prior to handover. Further commissioning may be undertaken during the defects correction period, prior to the facility being fully operational.	A series of acceptance tests are required prior to delivery. The Company is not obliged to accept delivery until each of these tests has been successfully completed.
<b>Delivery/Handover</b>			
5	The Buyer takes delivery at the shipyard, on payment of the final instalment, at which point title passes to the Buyer.	Handover may occur in stages, or on a "turnkey" basis.	Delivery may occur at the shipyard or at the nominated site, following installation. Title may pass on delivery, when the delivery instalment is paid.
<b>Builder/Contractor's default</b>			
6	If the Builder defaults, the Buyer may terminate, and recover advance instalments and interest. The right to claim general damages is normally excluded.	If the Contractor defaults, then the Employer may terminate, and engage a new contractor to complete the work, and claim additional costs and liquidated damages for delay.	If Contractor defaults, the Company may have an option, as with the shipbuilding contract to recover compensation for delay by way of liquidated damages. However, as an equivalent facility cannot easily or readily be obtained, the Company may exercise the option to take over the work and complete elsewhere.
<b>Buyer/Company's default</b>			
7	If the Buyer defaults, the Builder may terminate, retain advance instalments, and sell the vessel, if it exists, to recover the balance of contract price, plus expenses.	If the employer defaults, the Contractor may terminate, retain payments, and claim the cost of work performed, plus loss of profit, subject to contractual limitations and exclusions of liability.	If the Company defaults, the Contractor may terminate and retain possession of the work and paid instalments. The Contractor may have the right to sell the unfinished work to realise its loss.

## 2 Session 2 – Design Risk

### Allocation of responsibility between Contractor, Company and Third Parties

#### 2.1 Design Development v Design Risk

Development:	CONCEPT		
		BASIC	
			DETAILED
Risk:	PRE-FEED	FEED	EPIC

#### 2.2 Issues:

- 1 Does a FEED contain a complete basic design?
- 2 Should the FEED be fit for commencement of detailed design/engineering?
- 3 If the basic design is incomplete, is the work required to complete it part of basic or detailed design?
- 4 Who is liable for defects in the basic design?

#### 2.3 Liability for FEED defects

- A. Does the Company warrant the accuracy of the FEED?
  - Express Warranties – unlikely
  - Implied Warranties – improbable
- B. Has the Company represented the accuracy of the FEED pre-contract?
  - Misrepresentation
    - Has there been a statement of fact?
      - Or just statements of opinion?
      - Has there been any statement at all?
    - Did the statement induce the Contractor to agree contract terms?
      - Would the contract price have been the same?
      - Was it reasonable for the Contractor to rely on the statement?

#### 2.4 General duty of good faith

- If the Company withholds information such as a weight estimate, is that a breach of a duty of good faith?
  - Under English, no general duty of good faith.
  - Such duty may be included as an implied term.
  - Would such duty satisfy the test for implying a term into a contract in the absence of any express warrant of accuracy?

## 2.5 Variation Orders

- Is completion of the basic design a variation of the Contractor's EPC/EPIC scope of work?
- If the Contractor's design scope is expressed as "including detailed engineering", is the basic design outside the contractual scope?
- If the Contractor performs basic design as a variation, is the Contractor entitled to be compensated for:
  - Additional engineering man-hours, or
  - The consequences of the changes to the FEED including schedule extension?

## 2.6 Verification Obligations

### Contract Terms

*"The Company shall provide the Contractor with all the completed elements of the Design Documentation within 60 days of the date of this Contract.*

*The Contractor shall thereupon review the Design Documentation provided by Company and shall, no later than 90 days from the date of receipt of the Design Documentation, notify the Company of any defect or error therein, which the Company shall, either remedy at its own cost or instruct the Contractor under a variation order to remedy at Company's cost.*

*Except to the extent of any defect or error in the Design Documentation so notified to Company, the Contractor shall, upon expiry of such 90 day period, be deemed to have assumed full responsibility for the Design Documentation and for the construction of the vessel on the basis thereof."*

### Facts

- The Contractor's engineering Scope of Work is to undertake detailed design. Four months into the detailed design process, the Contractor discovers fundamental defects in the basic design contained in the Design Documentation. As a consequence, the unit cannot be constructed to meet the requirements of the Technical Specification without either holding up the design process whilst the basic design is revised, or undertaking major changes to the Specification.
- The Contractor issues a VOR for the changes to the Specification. Company refuses the request on the grounds that the Contractor has accepted full design responsibility on expiry of the 90 day verification period, which includes responsibility to rectify defects in the basic design.

### Questions

- 1 What is the meaning of "any defect or error therein"? Does it include latent deficiencies that cannot be discovered on the face of the drawings?
- 2 Is the Company entitled to impose a variation order at the Contractor's cost?



## **2.7 EPC Overview – Fitness for purpose**

### **Contract Terms**

*Typical turn-key procurement terms:*

*Contractor agrees to provide an FPSO in compliance with an agreed Functional Specification, including minimum oil production, minimum storage capacity, minimum offloading capability, maximum dimensions, etc and warrants that the FPSO is capable of operating at the FPSO site in maximum water depth in accordance with Company Provided Technical Requirements.*

### **Facts**

Contractor designs procures and installs the FPSO in accordance with each of the contractual requirements and passes each relevant acceptance test. Due to the weather conditions being harsher than predicted in the met-ocean data, the weather down time for off take reduces the available offloading window. As a consequence, the maximum offloading capability is insufficient to discharge, on each occasion, the required quantity, resulting in the storage tanks reaching maximum capacity, causing cessation of production.

### **Questions**

On the basis that the Contractor has agreed to provide the FPSO on turnkey basis, is the Contractor responsible for providing an FPSO capable of achieving continuous maximum production?

Would the position be different if the Contractor had warranted to provide an FPSO "fit for purpose".

### 3 Session 3 – Scope of Work and Variations

#### A. How to determine what is outside the contractual scope

##### **Lump Sum Turnkey Contracts**

*"Work means all and any part of the works and services to be performed by Contractor as outlined in Contractor's scope of work and all other activities that are required for Contractor's full performance of its obligations under the Contract."*

*"Contractor shall provide or arrange to provide all services, labour, personnel and materials needed to perform the work."*

The contract technical requirements are usually set out at length, with often inconsistent or incomplete specifications appended to the main contract. How are these to be interpreted under English law – as legal documents understood literally, or as technical documents, applied with a degree of flexibility and common sense?

#### 1 Interpreting words actually used.

- This applies to technical documents and all documents incorporated into the contract, even if not legally drafted. Natural and ordinary meaning is applied. But what is the natural and ordinary meaning of complex technical specifications?

#### 2 Context of the words used.

- What is the common usage of expressions used among experienced construction engineers?
- If the meaning is clear in context, this is presumed to reflect what the parties negotiating the contract intended.

#### 3 Ambiguous wording:

- An interpretation based on industry practice (what the parties ought to have agreed) will not suffice. The ambiguity must be resolved. How?
- Only one interpretation fits the commercial context; or
- The most likely correct interpretation based on the words used.

#### 4 Resolving Inconsistencies:

- Contract and all appendices should be read as a whole and presumed to be mutually explanatory.
- Specific provisions usually reflect the parties interactions more clearly than general or standard provisions.
- Words used will be assumed to have the same meaning throughout the contract and its appendices.

#### 5 Wrong wording

- What if parties use words that clearly say something different from what they may have intended?
- Rules relating to ambiguity do not apply. However;

- Absurdity – English law will not presume the parties intended an outcome that can only be described as absurd, as distinct from unfair.
- Rectification; the contract may be amended only upon clear evidence of a contrary agreement.

## 6 Use of English

- Should terms be construed more liberally if drafted by parties whose first language is not English?

## 7 Order of precedence clauses

- Do these determine inconsistencies conclusively?
- May they be applied to overturn the normal rules of interpretation?

## B Variations

- **No right under English law to impose a Contractual Variation;** Contractor has absolute right to refuse to perform an instruction exceeding the work contemplated by the Contract.
  - What if additional work is necessary in order to achieve the Contract Objectives, or to make the work product fit for purpose?
- If Contract provides to a Company the right to impose changes, what are the limits of permitted change?
  - **Nature of the work:** e.g if Contractor's design work is limited to detailed engineering, can this be varied to include basic design?
  - **Extent of the change:** e.g. is it permissible to increase the scope by 10%, or 20%, or 50% of the original work volume?
  - **Timing of the change:** May a minor change be introduced during commissioning, which may have the effect of causing delay to completion of the work and impacting Contractor's other commitments?
- **Application of Agreed Schedule of Rates:** May this be used by Company to impose any change, regardless of nature, extent or timing, if such work is covered by the Agreed Schedule of Rates?
- To avoid such limitations, may Company achieve unrestricted right to make changes to the work by Contract Provisions such as the following:-

### 3.1 Right to Introduce Changes – Case study

#### Contract Wording:

*"Company has the right to make changes to the Work. Changes may include increases or decreases in the quantity, character, kind or execution of the Work, as well as a change to the Contract Schedule."*

*"Company and Contractor shall attempt to agree in writing an appropriate adjustment in Contract Price and Project Schedule resulting from the Change."*

*"If Company and Contractor fail to agree, then Company may issue a written request for Contractor to proceed in accordance with Company's directive without such agreement."*

*Contractor shall comply with such written request but such compliance shall not prejudice either party's right to dispute whether or not the directive is a change, or to dispute the appropriate adjustment... ."*

*"Any adjustment in Contract Price shall be in accordance with the agreed Schedule of Rates in exhibit [ ]."*

### **Facts**

- The Company wishes to change the Work from procurement of an FPSO to an FPDSO and directs the Contractor to add drilling capability to the Specification.
- Contractor objects on grounds that:
  - The scale of the change to the scope of work is far beyond the work contemplated in the Contract
  - The changes would cause severe disruption to the Contractor's other commitments
  - The agreed schedule of rates would not adequately compensate the Contractor for such additional work

### **Questions**

- 1 Is the Contractor entitled to refuse the COR?
- 2 Is the Contractor entitled to stop work?
- 3 Does the Contractor have other remedies?

## **4 Session 4 – Acceptance, delivery, termination and step-in rights**

### **FPSO Acceptance Procedures**

- Completion of FPSO and sail-away.
- Company prepares Site and Fixed Production Facilities, and obtains Licenses.
- Target Arrival Date & NOA.
- Contractor mooring and installation.
- Company provides hydrocarbons.
- Pre-commissioning
- Handover
- Provisional Acceptance Tests.
- Final Acceptance.

### **Questions:**

- Note at each stage the transfer of risk and responsibility.
- When is commissioning complete?
- Which part determines when Acceptance has occurred?
- Does legal responsibility for commissioning depend on the Contract being described as EPCI or EPIC?

### **FPSO Case Study**

#### **Facts 1**

- FPSO designed for operations offshore Nigeria, based on oil-field data.
- Contractor installs and begins 72 hr running acceptance tests;
- Oil is produced and all tests passed, apart from the expelled water purity tests.

Issue – Is Contractor entitled to insist on Provisional Acceptance Certificate on grounds that substantially all tests have been passed and the FPSO is capable of production?

#### **Facts 2**

- Contractor continues testing to achieve water purity test, but fails. The reason appears to be oil outside the oil-field data characteristics.
- Company refuses to pay for time spent by Contractor producing oil, and threatens to terminate Contract if all tests not passed by Contractual deadline.
- Contract requests VOR for cost of modification works to add oil heating facilities; Company refuses.

### **Issue**

- Should Contractor proceed with the modification despite Company's rejection of VOR?

## 5 Session 5 – Delay and disruption and global claims

### Overview

- The normal rule is that a contractor must prove:
  - one or more events for which the employer is responsible;
  - loss and expense suffered by the contractor; and
  - a causal link between the event and loss and expense.

A global claim is a modification of this principle and does not attribute individual costs to actual events, although claims must still be proved as a matter of fact.

### Delay and Disruption Case Study

- Contract terms are as follows:
  - *"Contractor shall commence performance of the Work immediately and shall continue the same in an expeditious manner and in accordance with the Contract Schedule. The Contractor shall at all times accord to the Work the highest priority and shall mitigate any delay, including any delay in Company granting Contractor access, supplies, information or approvals. Time is of the essence in the performance of this Contract."*
  - *"Should Company at any time have reason to believe that the Contract Schedule will not be met, Company may notify Contractor and thereupon Contractor shall work additional overtime and engage additional personnel and take such other necessary steps as may be necessary to complete the work within the approved Contract Schedule."*

### Case study 1

- During the detailed design process, defects and incomplete items in the Company provided basic design are discovered. Company instructs Contractor to complete the basic design and rectify defects during the detailed design process, without schedule extension.
- Company introduces numerous minor changes to the specification during the detailed design process. Company insists that none of the individual changes justifies a schedule extension.
- Company provides technical information later than dates requested by Contractor. Company refuses schedule extension on the grounds that, due to other reasons, the design process was already delayed.
- Completion of design and procurement is delayed. Company alleges this is due to inadequacies in the Contractor's and Sub-Contractor's engineering capability.
- To mitigate delay, Contractor proceeds with detailed design process pending completion of outstanding basic design items and reduces planned pre-outfitting work.
- Due to delay in completion beyond the original Contract Schedule date, Company claims liquidated damages, and insists Contractor increases resources in order to accelerate production. Due to knock-on effect of out-of-sequence working, a fall in productivity due to increased manning and clash of activities, completion is further delayed. Company insists Contractor redoubles its effort to accelerate and increase resources, threatening termination for delay..

- Contractor presents a claim for additional compensation for consequences of changes, late provision of Company items and Company's acceleration instructions ("Delay and Disruption"). The question of claim is based on planned against actual costs, less 20% attributable to Contractor inefficiencies (a "Global Claim").

### Questions

- 1 Does Contractor have any contractual basis for claiming such Delay and Disruption costs?
- 2 On what basis can Contractor prove that the Global Claim is attributable to the Company causes? If Contractor cannot prove such causation, is it entitled to any additional compensation?