

## **FIDIC Plant and Design-Build Contract**

### **MDB Harmonised Particular Conditions**

#### **1. Introduction**

There is a need for FIDIC to provide sample Particular Conditions that render the General Conditions of the 1st Edition 1999 of the FIDIC Plant and Design-Build Contract compatible with the Multilateral Development Bank (MDB) Harmonised Edition of the FIDIC Construction Contract.

“FIDIC MBD” means the FIDIC “Conditions of Contract for Building and Engineering Works Designed by the Employer – Multilateral Development Bank Harmonised Edition – March 2006”. It is abbreviated as MDB.

“FIDIC Design-Build” means the FIDIC “Conditions of Contract for Plant and Design-Build for Electrical and Mechanical Plant, and for Building and Engineering Works, Designed by the Contractor - First Edition 1999”. It is abbreviated as FDB.

The sample Particular Conditions are offered as a service to industry on a best-effort basis. The suggested Particular Conditions have not been reviewed, commented on or approved by the Participating Banks that have licensed the use of the FIDIC Construction Contract for the MDB Harmonised Edition.

These proposed Particular Conditions of Contract modify the FIDIC MDB Harmonised Construction Contract (March 2006 version) from design by the Employer (with remeasurement) to design by the Contractor (with lump-sum payment).

#### **2. Notes**

Generally and unless the context otherwise requires, the provisions of the FIDIC Plant and Design-Build Contract, 1st Edition 1999, have been incorporated without alteration. However there are some cases where this has not been applied and these are detailed in Section 3 below.

The Harmonised Construction Contract has been taken as the basic document. Any sub-clauses relating to design, payment and measurement have, where considered appropriate, been included in the Particular Conditions as amendments to the FIDIC MDB Harmonised Construction Contract. This also involves deletion of conflicting clauses in the FIDIC MDB Harmonised Construction Contract.

It is to be noted that these proposed PCs need some additional requirements in respect to design. It is assumed that these will be added as “Employer’s Requirements” (which can be easily adjusted by individual Employers), rather than as PCs.

It has been suggested that the Engineer would carry out a “detailed check of the Contractor’s design”. It is recommended not to adopt this approach (the Contractor should be fully responsible for the design, and having the Employer’s Engineer check will dilute this responsibility). However, the sample Particular Conditions are not affected by this issue, which would have to be covered in the Employer's Requirements.

The proposed Particular Conditions are applicable to typical projects as foreseen by the drafters of the MDB and may need to be amended to suit specific local conditions or requirements. No attempt is made to anticipate such local requirements.

The Particular Conditions of Contract in Section 4B are effectively a draft document because (i) they should be reviewed by a legal practitioner (see Clause 4.1), and (ii) while in themselves and for the defined purpose as set out in Clause 1.5 above they are believed to be comprehensive, they do not deal with specific local conditions or requirements.

General Conditions of Contract Clause 14.4 - Schedule of Payments (the Clause is almost identical in both FIDIC MDB Harmonised Construction Contract and the FIDIC Plant and Design-Build Contract) sets out provisions for interim payments to the Contractor if the Contract includes a Schedule of Payments. If included, this is a contractually binding document and should not be confused with a schedule of estimated payments which a Bidder may be required to submit with his Bid and which would usually only be used by the Employer to assist in its budgetary considerations. It does however draw attention to the need for care in determining how interim payments due to the Contractor are to be valued. One method would be to specify payment milestones in the Bidding Documents with payment to be made only when each milestone is achieved. Such milestones should be carefully defined as disagreements could arise when for example a payment milestone is nearly achieved but the balance cannot be completed until some months later.

### 3. Significant Changes

There are many changes required to convert the FIDIC MDB Harmonised Construction Contract to be suitable for use in a contract where the design is to be carried out by the Contractor and the form of payment is a lump sum. Many of the changes are procedural and self-explanatory and do not require comment.

The more significant changes to the FIDIC MDB Harmonised Construction Contract General Conditions include the following:

Delete MDB Clause 4.1 – Contractor’s General Obligations  
Insert new Clause 4.1 – Contractor’s General Obligations

The Clause sets out the Contractor’s design obligations (if any) which would occur under a Contract for Works designed by the Employer. Those obligations are inferred to be minor. In view of the insertion of new Clause 5 – Design, those aspects of this Clause are no longer relevant.

The Clause makes it clear that the Contractor is to design the Works but does not set out those obligations which are now covered in new Clause 5

Delete MDB Clause 5 – Nominated Subcontractors  
Insert new Clause 5 – Design

Nominated Subcontractors are not relevant to a Design-Build project.

In view of the deletion of Clause 5 and the need to insert detailed requirements for design by the Contractor, the opportunity was taken by the drafters of FDBV to use the number. The Clause from FDBV was inserted without alteration. It sets out in detail the Contractor’s obligations relating to the design of the Works.

Delete MDB Clause 12 – Measurement and Evaluation  
Insert new Clause 12 – Tests after Completion

This is not relevant in a lump-sum contract, but see also Clauses 14.1 and 14.16.

In view of the deletion of Clause 12 and the need to insert requirements for Tests after Completion by the Contractor, the opportunity was taken by the drafters to use the number. The Clause from FDB was inserted without alteration.

Delete MDB Clause 13.1 – Right to Vary  
Insert new Clause 13.1 – Right to Vary

The right of the Contractor to object to a variation is slightly different when the Contractor is responsible for the design. The Clause from FDB has been amended by omission of the sentence “*A Variation shall not comprise the omission of any work which is to be carried out by others.*” in the first paragraph as it is believed to be contrary to ADB policy. Also the words “*(ii) such Variation triggers a substantial change in the sequence or progress of the Works,*” have been retained from the MDB.

Delete MDB Clause 14.1 – The Contract Price  
Insert new Clause 14.1 – The Contract Price

This Clause refers to the method of determining the Contract Price by measurement in Clause 12.3. This is not appropriate for a lump-sum contract. (Note the whole MDB Clause 12 is deleted.)

The Clause from the FDB has been included with a minor procedural change and also with the addition of the paragraph from relating to the exemption of Contractor’s Equipment from import taxes and duties.

No corresponding MDB Clause  
Insert new Clause 14.16 – Measurement

Although the Contract is to be a Lump Sum, there will be some works which will need to be remeasured as being too difficult to accurately determine in the bidding process (e.g., dredging quantities, pile lengths) and therefore there is a need to measure same for payment.

No corresponding MDBV Clause  
Insert new Clause 18.5 – Insurance for Design

In view of the Contractor's substantial design responsibility, Professional Indemnity Insurance should be required.

#### **4. Particular Conditions of Contract**

##### **4A. Notes**

The Particular Conditions - Part A – Contract Data consists of project specific information which is to be completed by the Employer and included as part of a Standard Bidding Document (SBD).

Adoption of the proposed Particular Conditions - Part B (see below) requires that three new items be added to the Part A items in most standard SBD's. Those items are:

Period for notifying unforeseeable errors, faults and defects in the Employer's Requirements:  
5.1 days after Commencement Date

Minimum amount of professional indemnity insurance:  
18.5 [insert minimum amount of professional indemnity insurance]

Minimum period that professional indemnity insurance to be maintained:  
18.5 calendar years after the date of issue of the Final Payment

**4B. Particular Conditions of Contract: Part A - Contract Data**

The following Particular Conditions of Contract (PCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

Conditions	Ref. GCC	Data
Employer's name and address	1.1.2.2 & 1.3	[ ... insert Employer's name and address ... ]
Engineer's name and address	1.1.2.4 & 1.3	[ ... insert Engineer's name and address ... ]
Bank's name	1.1.2.11	Asian Development Bank (ADB)
Borrower's name	1.1.2.12	[ ... insert Borrower's name ... ]
Time for Completion	1.1.3.3	....._days [ ... insert the time for completion of the whole of the Works and also the time for completion of sections, if applicable. If times (or dates) are to be specified for various sections of the Works, they should be listed here ... ]
Defects Notification Period	1.1.3.7	365 days.
Sections	1.1.5.6	[If sections are used, refer to table Summary of Sections of the Works given below]
Electronic transmission systems	1.3	[ ... insert Electronic transmission systems... ]
Governing Law	1.4	[ ... insert: "The law of name Borrower's country ... ]
Ruling language	1.4	English
Language for communications	1.4	English
Time for access to the Site	2.1	_____ days after Commencement Date
Engineer's Duties and Authority	3.1(b)(ii)	Variations resulting in an increase of the Accepted Contract Amount in excess of ___% shall require approval of the Employer.
Performance Security	4.2	The performance security will be in the form of an unconditional bank guarantee in the amount(s) of [insert related figure(s)] percent of the Contract Price.]
Period for notifying unforeseeable errors, faults and defects in the Employer's Requirements	5.1	_____ days after Commencement Date
Normal working hours	6.5	
Delay damages for the Works	8.7 & 14.15(b)	_____ % of the final Contract Price per day, in the currencies and proportions in which the Contract Price is payable.
Maximum amount of delay damages	8.7	_____ % of the final Contract Price.
Provisional Sums	13.5.(b)(ii)	_____ % [If there are Provisional Sums, insert a percentage for adjustment of Provisional Sums]

Conditions	Ref. GCC	Data
Adjustments for Changes in Cost; Table(s) of Adjustment Data	13.8	Period “n” applicable to the adjustment multiplier “Pn”: _____ [Insert the period if different from one (1) month; if period “n” is one (1) month, insert “not applicable”]
Total advance payment	14.2	% Percentage of the Accepted Contract Amount payable in the currencies and proportions in which the Accepted Contract Amount is payable [Insert number and timing of instalments if applicable]
Repayment amortization of advance payment	14.2(b)	_____ %
Percentage of Retention	14.3	_____ %
Limit of Retention Money	14.3	_____ % of the Accepted Contract Amount
Plant and Materials	14.5(b)(i)	If Sub-Clause 14.5 applies: Plant and Materials for payment when shipped en route to the Site _____ [list].
	14.5(c)(i)	Plant and Materials for payment when delivered to the Site _____ [list].
Minimum Amount of Interim Payment Certificates	14.6	_____ % of the Accepted Contract Amount.
Maximum total liability of the Contractor to the Employer	17.6	[Select one of the two options below as appropriate]  The product of _____ [insert a multiplier less or greater than one] times the Accepted Contract Amount,  or _____ [insert amount of the maximum total liability]
Periods for submission of insurance:  a. evidence of insurance. b. relevant policies	18.1	[Insert period for submission of evidence of insurance and policy. Period may be from 14 days to 28 days.] ____ days ____ days
Maximum amount of deductibles for insurance of the Employer’s risks	18.2(d)	[insert maximum amount of deductibles]
Minimum amount of third party insurance	18.3	[insert minimum amount of third party insurance]
Optional (not recommended) Minimum amount of professional indemnity insurance	18.5	[insert minimum amount of professional indemnity insurance]
Optional (not recommended) Minimum period that professional indemnity insurance to be maintained	18.5	_____ calendar years after the date of issue of the Final Payment Certificate

Conditions	Ref. GCC	Data
Date by which the DB shall be appointed	20.2	28 days after the Commencement
The DB shall be comprised of	20.2	insert either “One sole Member” or “Three Members”
List of potential DB sole members	20.2	[Only when the DB is to be comprised of one sole member, list names of potential sole members; if no potential sole members are to be included, insert: “none”]
Appointment (if not agreed) to be made by	20.3	[Insert name of the appointing entity or official]

**Summary of Sections of the Works**

Section Name/Description (Sub-Clause 1.1.5.6)	Time for Completion (Sub-Clause 1.1.3.3)	Damages for Delay (Sub-Clause 8.7)

## 4C. Particular Conditions of Contract: Part B - Special Provisions

### Clause 1: GENERAL PROVISIONS

#### Sub-Clause 1.1: Definitions

1.1.1.1. Delete the whole contents and replace with:

**“Contract”** means the Contract Agreement, the Letter of Acceptance, the Letter of Tender, these Conditions, the Employer’s Requirements, the Schedules, the Contractor’s Proposal, and the further documents (if any) which are listed in the Contract Agreement or in the Letter of Acceptance.

1.1.1.5. Delete the whole contents and replace with:

**“Employer’s Requirements”** means the document entitled Employer’s Requirements, as included in the Contract, and any additions and modifications to such document in accordance with the Contract. Such document specifies the purpose, scope, and/or design and/or other technical criteria, for the Works.

Throughout the General Condition of Contract, the word “Specification” and the any terms including “Specification” and Drawings” are to be replaced by “Employer’s Requirements”.

1.1.1.6. Delete the whole Clause.

1.1.1.7. Delete the second sentence and insert:

Such document may include data, lists and schedules of payments and/or prices.

1.1.1.7a. Insert new Clause.

**“Contractor’s Proposal”** means the document entitled Proposal, which the Contractor submitted with the Letter of Tender, as included in the Contract. Such document may include the Contractor’s preliminary design.

1.1.1.9. Delete the whole contents and replace with:

**“Schedule of Guarantees”, “Schedule of Payments” and “Schedule of Payment Currencies”** mean the documents so named (if any) which are comprised in the Schedules.

1.1.3.6. Delete the whole contents and replace with:

**“Tests after Completion”** means the tests (if any) which are specified in the Contract and which are carried out under Clause 12 [*Tests after Completion*] after the Works or a Section (as the case may be) are taken over by the Employer.

1.1.6.1. Add at the end of the Clause and forming part of the sentence:

; as described in Sub-Clause 5.2 [*Contractor’s Documents*].

1.1.6.9. Add at the end of the Clause and forming part of the sentence:

Change “Variation” means any change to’ to **“Variation** means any change to the Employer’s Requirements or to’

#### Sub-Clause 1.5: Priority of Documents



Delete the sequence of priorities and replace with:

- (a) the Contract Agreement (if any),
- (b) the Letter of Acceptance,
- (c) the Letter of Tender,
- (d) the Particular Conditions – Part A,
- (e) the Particular Conditions – Part B,
- (f) these General Conditions,
- (g) the Employer’s Requirements,
- (h) the Schedules, and
- (i) the Contractor’s Proposal and any other documents forming part of the Contract.

#### **Sub-Clause 1.8: Care and Supply of Documents**

Delete first paragraph.

In the third paragraph, delete the word “Specification” and replace with “Employer’s Requirements” and delete the words “, the Drawings”.

#### **Sub-Clause 1.9: Delayed Drawings or Instructions**

Delete the heading and contents.

#### **Clause 1.9: Errors in the Employer’s Requirements**

Insert new heading and contents.

If the Contractor suffers delay and/or incurs Cost as a result of an error in the Employer’s Requirements, and an experienced contractor exercising due care would not have discovered the error when scrutinising the Employer’s Requirements under Sub-Clause 5.1 [*General Design Obligations*], the Contractor shall give notice to the Engineer and shall be entitled subject to Sub-Clause 20.1 [*Contractor’s Claims*] to:

- (a) an extension of time for any such delay, if completion is or will be delayed, under Sub-Clause 8.4 [*Extension of Time for Completion*], and
- (b) payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [*Determinations*] to agree or determine (i) whether and (if so) to what extent the error could not reasonably have been so discovered, and (ii) the matters described in sub-paragraphs (a) and (b) above related to this extent.

#### **Sub-Clause 1.11: Contractor’s Use of Employer’s Documents**

Delete the words “Specification, the Drawings” and replace with “Employer’s Requirements”.

### **Clause 3: THE ENGINEER**

#### **Sub-Clause 3.3: Instruction of the Engineer**

Delete the words “and additional or modified Drawings” where appearing in the first paragraph.

Delete the second sentence in the second paragraph and replace with

These instructions shall be given in writing.

## **Clause 4: THE CONTRACTOR**

### **Clause 4.1: Contractor's General Obligations**

Delete the contents of this Clause 4.1 and replace with

The Contractor shall design, execute and complete the Works in accordance with the Contract, and shall remedy any defects in the Works. When completed, the Works shall be fit for the purposes for which the Works are intended as defined in the Contract

The Contractor shall provide the Plant and Contractor's Documents specified in the Contract, and all Contractor's Personnel, Goods, consumables and other things and services, whether of a temporary or permanent nature, required in and for this design, execution, completion and remedying of defects.

All equipment, material, and services to be incorporated in or required for the Works shall have their origin in any eligible source country as defined by the Bank.

The Works shall include any work which is necessary to satisfy the Employer's Requirements, Contractor's Proposal and Schedules, or is implied by the Contract, and all works which (although not mentioned in the Contract) are necessary for the stability or for the completion, or safe and proper operation, of the Works.

The Contractor shall be responsible for the adequacy, stability and safety of all Site operations, all methods of construction and of all the Works.

The Contractor shall, whenever required by the Engineer, submit details of the arrangements and methods which the Contractor proposes to adopt for the execution of the Works. No significant alteration to these arrangements and methods shall be made without this having previously been notified to the Engineer.

### **Clause 4.4: Subcontractors**

Insert the word "and" at the end of sub-paragraph (b).

Delete the word "and" at the end of sub-paragraph (c).

Delete sub-paragraph (d).

### **Clause 4.5: Assignment of Benefit of Subcontract**

Delete the heading and contents.

### **Clause 4.5: Nominated Subcontractors**

Insert new heading and contents.

In this Sub-Clause, "nominated Subcontractor" means a Subcontractor whom the Engineer, under Clause 13 [*Variations and Adjustments*], instructs the Contractor to employ as a Subcontractor. The Contractor shall not be under any obligation to employ a nominated Subcontractor against whom the Contractor raises reasonable objection by notice to the Engineer as soon as practicable, with supporting particulars.

### **Clause 4.6: Co-operation**

Insert new third paragraph (before the paragraph beginning with the words "If, under the Contract, ").

The Contractor shall be responsible for his construction activities on the Site, and shall coordinate his own activities with those of other contractors to the extent (if any) specified in the Employer's Requirements.

In the old third (new fourth) paragraph, replace the word "Specification" with the words "".

**Clause 4.11: Sufficiency of the Accepted Contract Amount "Employer's Requirements".**

Add at the end of sub-paragraph (b) and forming part of the sentence the words:

"and any further data relevant to the Contractor's design."

**Clause 4.18: Protection of the Environment**

In the second paragraph, delete the word "Specification" and replace with "Employer's Requirements".

**Clause 4.19: Electricity, Water and Gas**

Delete the word "Specification" wherever appearing and replace with the words "Employer's Requirements".

**Clause 4.20: Employer's Equipment and Free-Issue Materials**

Delete the word "Specification" wherever appearing and replace with the words "Employer's Requirements".

**Clause 4.21: Progress Reports**

Delete sub-paragraph (a) and replace with:

- (a) charts and detailed descriptions of progress, including each stage of design, Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection, testing, commissioning and trial operation.

In sub-paragraph (f) insert the word "Variations," before the word "notices".

**5: NOMINATED SUBCONTRACTORS**

Delete the heading and entire contents.

**5: DESIGN**

Insert new heading and contents – Sub-Clauses 5.1 to 5.8 inclusive.

**5.1: General Design Obligations**

The Contractor shall carry out, and be responsible for, the design of the Works. Design shall be prepared by qualified designers who are engineers or other professionals who comply with the criteria (if any) stated in the Employer's Requirements. Unless otherwise stated in the Contract, the Contractor shall submit to the Engineer for consent the name and particulars of each proposed designer and design Subcontractor.

The Contractor warrants that he, his designers and design Subcontractors have the experience and capability necessary for the design. The Contractor undertakes that the designers shall be

available to attend discussions with the Engineer at all reasonable times, until the expiry date of the relevant Defects Notification Period.

Upon receiving notice under Sub-Clause 8.1 [*Commencement of Works*], the Contractor shall scrutinise the Employer's Requirements (including design criteria and calculations, if any) and the items of reference mentioned in Sub-Clause 4.7 [*Setting Out*]. Within the period stated in the Contract Data, calculated from Commencement Date, the Contractor shall give notice to the Engineer of any error, fault or other defect found in the Employer's Requirements or these items of reference.

After receiving this notice, the Engineer shall determine whether Clause 13 [*Variations and Adjustments*] shall be applied, and shall give notice to the Contractor accordingly. If and to the extent that (taking account of cost and time) an experienced contractor exercising due care would have discovered the error, fault or other defect when examining the Site and the Employer's Requirements before submitting the Tender, the Time for Completion shall not be extended and the Contract Price shall not be adjusted.

## **5.2: Contractor's Documents**

The Contractor's Documents shall comprise the technical documents specified in the Employer's Requirements, documents required to satisfy all regulatory approvals, and the documents described in Sub-Clause 5.6 [*As-Built Documents*] and Sub-Clause 5.7 [*Operation and Maintenance Manuals*]. Unless otherwise stated in the Employer's Requirements, the Contractor's Documents shall be written in the language for communications defined in Sub-Clause 1.4 [*Law and Language*].

The Contractor shall prepare all Contractor's Documents, and shall also prepare a other documents necessary to instruct the Contractor's Personnel. The Employer's, Personnel shall have the right to inspect the preparation of all these documents, wherever they are being prepared.

If the Employer's Requirements describe the Contractor's Documents which are to be submitted to the Engineer for review and/or for approval, they shall be submitted accordingly, together with a notice as described below. In the following provisions of this Sub-Clause, (i) 'review period' means the period required by the Engineer for review and (if so specified) for approval, and (ii) "Contractor's Documents" exclude any documents which are not specified as being required to be submitted for review and/or for approval.

Unless otherwise stated in the Employer's Requirements, each review period shall not exceed 21 days, calculated from the date on which the Engineer receives a Contractor's Document and the Contractor's notice. This notice shall state that the Contractor's Document is considered ready, both for review (and approval, if so specified) in accordance with this Sub-Clause and for use. The notice shall also state that the Contractor's Document complies with the Contract, or the extent to which it does not comply.

The Engineer may, within the review period, give notice to the Contractor that a Contractor's Document fails (to the extent stated) to comply with the Contract. If a Contractor's Document so fails to comply, it shall be rectified, resubmitted and reviewed (and, if specified, approved) in accordance with this Sub-Clause, at the Contractor's cost.

For each part of the Works, and except to the extent that the prior approval or consent of the Engineer shall have been obtained:

- (a) in the case of a Contractor's Document which has (as specified) been submitted for the Engineer's approval;

- (i) the Engineer shall give notice to the Contractor that the Contractor's Document is approved, with or without comments, or that it fails (to the extent stated) to comply with the Contract;
  - (ii) execution of such part of the Works shall not commence until the Engineer has approved the Contractor's Document; and
  - (iii) the Engineer shall be deemed to have approved the Contractor's Document upon the expiry of the review periods for all the Contractor's Documents which are relevant to the design and execution of such part, unless the Engineer has previously notified otherwise in accordance with sub-paragraph (i);
- (b) execution of such part of the Works shall not commence prior to the expiry of the review periods for all the Contractor's Documents which are relevant to its design and execution;
  - (c) execution of such part of the Works shall be in accordance with these reviewed (and, if specified, approved) Contractor's Documents; and
  - (d) if the Contractor wishes to modify any design or document which has previously been submitted for review (and, if specified, approval), the Contractor shall immediately give notice to the Engineer. Thereafter, the Contractor shall submit revised documents to the Engineer in accordance with the above procedure.

If the Engineer instructs that further Contractor's Documents are required, the Contractor shall prepare them promptly.

Any such approval or consent, or any review (under this Sub-Clause or otherwise), shall not relieve the Contractor from any obligation or responsibility.

### **5.3: Contractor's Undertaking**

The Contractor undertakes that the design, the Contractor's Documents, the execution and the completed Works will be in accordance with:

- (a) the Laws in the Country, and
- (b) the documents forming the Contract, as altered or modified by Variations.

### **5.4: Technical Standards and Regulations**

The design, the Contractor's Documents, the execution and the completed Works shall comply with the Country's technical standards, building, construction and environmental Laws, Laws applicable to the product being produced from the Works and other standards specified in the Employer's Requirements, applicable to the Works, or defined by the applicable Laws.

All these Laws shall, in respect of the Works and each Section, be those prevailing when the Works or Section are taken over by the Employer under Clause 10 [*Employer's Taking Over*]. References in the Contract to published standards shall be understood to be references to the edition applicable on the Base Date, unless stated otherwise.

If changed or new applicable standards come into force in the Country after the Base Date, the Contractor shall give notice to the Engineer and (if appropriate) submit proposals for compliance. In the event that:

- (a) the Engineer determines that compliance is required, and
- (b) the proposals for compliance constitute a variation, then the Engineer shall initiate a Variation in accordance with Clause 13 [*Variations and Adjustments*].

### **5.5: Training**

The Contractor shall carry out the training of Employer's Personnel in the operation and maintenance of the Works to the extent specified in the Employer's Requirements. If the Contract specifies training which is to be carried out before taking-over, the Works shall not be

considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [*Taking Over of the Works and Sections*] until this training has been completed.

## **5.6: As-Built Documents**

The Contractor shall prepare, and keep up-to-date, a complete set of “as-built” records of the execution of the Works, showing the exact as-built locations, sizes and details of the work as executed. These records shall be kept on the Site and shall be used exclusively for the purposes of this Sub-Clause. Two copies shall be supplied to the Engineer prior to the commencement of the Tests on Completion.

In addition, the Contractor shall supply to the Engineer as-built drawings of the Works showing all Works as executed, and submit them to the Engineer for review under Sub-Clause 5.2 [*Contractor’s Documents*]. The Contractor shall obtain the consent of the Engineer as to their size, the referencing system, and other relevant details.

Prior to the issue of any Taking-Over Certificate, the Contractor shall supply to the Engineer the specified numbers and types of copies of the relevant as-built drawings, in accordance with the Employer’s Requirements. The Works shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [*Taking Over of the Works and Sections*] until the Engineer has received these documents.

## **5.7: Operation and Maintenance Manuals**

Prior to commencement of the Tests on Completion, the Contractor shall supply to the Engineer provisional operation and maintenance manuals in sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Plant.

The Works shall not be considered to be completed for the purposes of taking-over under Sub-Clause 10.1 [*Taking Over of the Works and Sections*] until the Engineer has received final operation and maintenance manuals in such detail, and any other manuals specified in the Employers Requirements for these purposes.

## **5.8: Design Error**

If errors, omissions, ambiguities; inconsistencies, inadequacies or other defects are found in the Contractor’s Documents, they and the Works shall be corrected at the Contractor’s cost, notwithstanding any consent or approval under this Clause.

## **6: STAFF AND LABOUR**

### **Clause 6.13: Supply of Foodstuffs**

Delete the word “Specification” wherever appearing and replace with the words “Employer’s Requirements”.

## **7: PLANT, MATERIALS AND WORKMANSHIP**

### **Clause 7.2: Samples**

Delete the first part of the first paragraph and replace with:

The Contractor shall submit the following samples of Materials, and relevant information, to the Engineer for review in accordance with the procedures for Contractor’s Documents described in Sub-Clause 5.2 [*Contractor’s Documents*]:

### **Clause 7.5: Rejection**

Insert the word “, design” after the word “Materials” wherever appearing.

## **8: GENERAL PROVISIONS**

### **Clause 8.1: Commencement of Works**

Insert the words “design and” before the word “execution”.

### **Clause 8.3: Programme**

Delete sub-paragraphs (a) and (b) and replace with:

- (a) the order in which the Contractor intends to carry out the Works, including the anticipated timing of each stage of design, Contractor’s Documents, procurement, manufacture, inspection, delivery to Site, construction, erection, testing, commissioning and trial operation,
- (b) the periods for reviews under Sub-Clause 5.2 [*Contractor’s Documents*] and for any other submissions, approvals and consents specified in the Employer’s Requirements,

### **Clause 8.4: Extension of Time for Completion**

Delete sub-paragraph (a) and replace with:

- (a) a Variation (unless an adjustment to the Time for Completion has been agreed under Sub-Clause 13.3 [*Variation Procedure*]),

## **9: TESTS ON COMPLETION**

### **Clause 9.1: Contractor’s Obligations**

Delete the contents of this Clause 9.1 and replace with:

The Contractor shall carry out the Tests on Completion in accordance with this Clause and Sub-Clause 7.4 [*Testing*], after providing the documents in accordance with Sub-Clause 5.6 [*As-Built Documents*] and Sub-Clause 5.7 [*Operation and Maintenance Manuals*].

The Contractor shall give to the Engineer not less than 21 days notice of the date after which the Contractor will be ready to carry out each of the Tests on Completion. Unless otherwise agreed, Tests on Completion shall be carried out within 14 days after this date, on such day or days as the Engineer shall instruct.

Unless otherwise stated in the Employer’s Requirements, the Tests on Completion shall be carried out in the following sequence:

- (a) pre-commissioning tests, which shall include the appropriate inspections and (“dry” or “cold”) functional tests to demonstrate that each item of Plant can safely undertake the next stage, (b);
- (b) commissioning tests, which shall include the specified operational tests to demonstrate that the Works or Section can be operated safely and as specified, under all available operating conditions; and
- (c) trial operation, which shall demonstrate that the Works or Section perform reliably and in accordance with the Contract.

During trial operation, when the Works are operating under stable conditions, the Contractor shall give notice to the Engineer that the Works are ready for any other Tests on Completion, including performance tests to demonstrate whether the Works conform with criteria specified in the Employer's Requirements and with the Schedule of Guarantees.

Trial operation shall not constitute a taking-over under Clause 10 [*Employer's Taking Over*]. Unless otherwise stated in the Employer's Requirements, any product produced by the Works during trial operation shall be the property of the Employer.

In considering the results of the Tests on Completion, the Engineer shall make allowances for the effect of any use of the Works by the Employer on the performance or other characteristics of the Works. As soon as the Works, or a Section, have passed each of the Tests on Completion described in sub-paragraph (a), (b) or (c), the Contractor shall submit a certified report of the results of these Tests to the Engineer.

## **11: DEFECTS LIABILITY**

### **Clause 11.2: Cost of Remedying Defects**

Re-number sub-paragraph (c) as sub-paragraph (d).

Insert new sub-paragraph (c):

- (c) improper operation or maintenance which was attributable to matters for which the Contractor was responsible (under Sub-Clauses 5.5 to 5.7 or otherwise), or.

### **Clause 11.6: Further Tests**

Add at the end of the first sentence of the first paragraph;

“, including Tests on Completion and/or Tests after Completion.”

### **Clause 11.7: Right of Access**

Delete the contents of this Clause 11.7 and replace with:

Until the Performance Certificate has been issued, the Contractor shall have right of access to all parts of the Works and to records of the operation and performance of the works, except as may be inconsistent with the Employer's reasonable security restrictions.

## **12: MEASUREMENT AND EVALUATION**

Delete the heading and entire contents.

## **12: TESTS AFTER COMPLETION**

Insert new heading and contents – Sub-Clauses 12.1 to 12.4 inclusive.

### **12.1: Procedure for Tests after Completion**

If Tests after Completion are specified in the Contract, this Clause shall apply.

The Employer shall:

- (a) provide all electricity, equipment, fuel, instruments, labour, materials, and suitably qualified and experienced staff, as are necessary to carry out the Tests after Completion efficiently, and



- (b) carry out the Tests after Completion in accordance with the manuals supplied by the Contractor under Sub-Clause 5.7 [*Operation and Maintenance Manuals*] and such guidance as the Contractor may be required to give during the course of these Tests; and in the presence of such Contractor's Personnel as either Party may reasonably request.

The Tests after Completion shall be carried out as soon as is reasonably practicable after the Works or Section have been taken over by the Employer. The Employer shall give to the Contractor 21 days' notice of the date after which the Tests after Completion will be carried out. Unless otherwise agreed, these Tests shall be carried out within 14 days after this date, on the day or days determined by the Employer.

If the Contractor does not attend at the time and place agreed, the Employer may proceed with the Tests after Completion, which shall be deemed to have been made in the Contractor's presence, and the Contractor shall accept the readings as accurate.

The results of the Tests after Completion shall be compiled and evaluated by both Parties. Appropriate account shall be taken of the effect of the Employer's prior use of the Works.

Note: the Employer may prefer that the Contractor be responsible for providing for and carrying out the Tests after Completion in which case the above provisions would need to be amended.

## **12.2: Delayed Tests**

If the Contractor incurs Cost as a result of any unreasonable delay by the Employer to the Tests after Completion, the Contractor shall (i) give notice to the Engineer and (ii) be entitled subject to Sub-Clause 20.1 [*Contractor's Claims*] to payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [*Determinations*] to agree or determine this Cost and profit.

If, for reasons not attributable to the Contractor, a Test after Completion on the Works or any Section cannot be completed during the Defects Notification Period (or any other period agreed upon by both Parties), then the Works or Section shall be deemed to have passed this Test after Completion.

## **12.3: Retesting**

If the Works, or a Section, fail to pass the Tests after Completion:

- (a) sub-paragraph (b) of Sub-Clause 11.1 [*Completion of Outstanding Work and Remedying Defects*] shall apply, and
- (b) either party may then require the failed Tests, and the Tests after Completion on any related work, to be repeated under the same terms and conditions.

If and to the extent that this failure and retesting are attributable to any of the matters listed in sub-paragraphs(a) to (d) of Sub-Clause 11.2 [*Cost of Remedying Defects*] and cause the Employer to incur additional costs, the Contractor shall subject to Sub-Clause 2.5 [*Employer's Claims*] pay these costs to the Employer.

## **12.4: Failure to Pass Tests after Completion**

If the following conditions apply, namely:

- (a) the Works, or a Section, fail to pass any or all of the Tests after Completion,

- (b) the relevant sum payable as non-performance damages for this failure is stated (or its method of calculation is defined) in the Contract, and
- (c) the Contractor pays this relevant sum to the Employer during the Defects Notification Period,

then the Works or Section shall be deemed to have passed these Tests after Completion.

If the Works, or a Section, fail to pass a Test after Completion and the Contractor proposes to make adjustments or modifications to the Works or such Section, the Contractor may be instructed by (or on behalf of) the Employer that right of access to the Works or Section cannot be given until a time that is convenient to the Employer. The Contractor shall then remain liable to carry out the adjustments or modifications and to satisfy this Test, within a reasonable period of receiving notice by (or on behalf of) the Employer of the time that is convenient to the Employer. However, if the Contractor does not receive this notice during the relevant Defects Notification Period, the Contractor shall be relieved of this obligation and the Works or Section (as the case may be) shall be deemed to have passed this Test after Completion.

If the Contractor incurs additional Cost as a result of any unreasonable delay by the Employer in permitting access to the Works or Plant by the Contractor, either to investigate the causes of a failure to pass a Test after Completion or to carry out any adjustments or modifications, the Contractor shall (i) give notice to the Engineer and (ii) be entitled subject to Sub-Clause 20.1 [*Contractor's Claims*] to payment of any such Cost plus profit, which shall be included in the Contract Price.

After receiving this notice, the Engineer shall proceed in accordance with Sub-Clause 3.5 [*Determinations*] to agree or determine this Cost and profit.

### **13: VARIATIONS AND ADJUSTMENTS**

#### **Clause 13.1: Right to Vary**

Delete the contents of this Clause 13.1 and replace with:

Variations may be initiated by the Engineer at any time prior to issuing the Taking-Over Certificate for the Works, either by an instruction or by a request for the Contractor to submit a proposal. A Variation shall not comprise the omission of any work which is to be carried out by others.

The Contractor shall execute and be bound by each Variation, unless the Contractor promptly gives notice to the Engineer stating (with supporting particulars) that

- (i) the Contractor cannot readily obtain the Goods required for the Variation,
- (ii) such Variation triggers a substantial change in the sequence or progress of the Works,
- (iii) it will reduce the safety or suitability of the Works, or
- (iv) it will have an adverse impact on the achievement of the Schedule of Guaranties.

Upon receiving this notice, the Engineer shall cancel, confirm or vary the instruction.

#### **Clause 13.2: Value Engineering**

Delete the contents of this Clause 13.2 except for the first two paragraphs and the third paragraph with item (c).

### **Clause 13.3: Variation Procedure**

Delete the final paragraph and replace with:

Upon instructing or approving a Variation, the Engineer shall proceed in accordance with Sub-Clause 3.5 [*Determinations*] to agree or determine adjustments to the Contract Price and the Schedule of Payments. These adjustments shall include profit, and shall take account of the Contractor's submissions under Sub-Clause 13.2 [*Value Engineering*] if applicable.

### **Clause 13.5: Provisional Sums**

Delete from sub-paragraph (b) the following words:

“, from a Nominated Subcontractor (as defined in Clause 5 [*Nominated Subcontractors*]) or otherwise; and”

## **14: CONTRACT PRICE AND PAYMENT**

### **Clause 14.1: The Contract Price**

Delete the contents of this Clause 14.1 and replace with:

The following shall apply in relation to the Contract Price:

- (a) the Contract Price shall be the lump sum Accepted Contract Amount and be subject to adjustments in accordance with the Contract.
- (b) the Contractor shall pay all taxes, duties and fees required to be paid by him under the Contract, and the Contract Price shall not be adjusted for any of these costs, except as stated in Sub-Clause 13.7 [*Adjustments for Changes in Legislation*];
- (c) any quantities which may be set out in a Schedule are estimated quantities and are not to be taken as actual and correct quantities of the Works which the Contractor is required to execute; and
- (d) any quantities or price data which may be set out in a Schedule shall be used for the purposes stated in the Schedule and may be inapplicable for any other purpose; and

However, if any part of the Works is to be paid according to quantity supplied or work done, the provisions for measurement and evaluation shall be as stated in Sub-Clause 14.16 [*Measurement*]. The Contract Price shall be determined accordingly, subject to adjustments in accordance with the Contract.

Notwithstanding the provisions of sub-paragraph (b), the Contractor's Equipment, including essential spare parts therefor, imported by the Contractor for the sole purpose of executing the Contract shall be exempt from the payment of import duties and taxes upon importation.

### **Clause 14.4: Schedule of Payments**

In the first paragraph delete the words “schedule of payments” and replace with the words “Schedule of Payments”.

### **Clause 14.9: Payment of Retention Money**

In the first paragraph, add after the words “issued for the Works,” the following words: “, the Works have passed all specified tests (including the Tests after Completion, if any)”

In the third paragraph, add after the words “Clause 11 [*Defects Liability*]”, the following words: “or Clause 12 [*Tests after Completion*]”

In the fifth paragraph, add after the words “issued for the Works,” the following words:  
“, the Works have passed all specified tests (including the Tests after Completion, if any),”

#### **Sub-Clause 14.16: Measurement**

Insert new Sub-Clause:

The Engineer shall agree or determine the value of those parts of the Works which are to be measured, in accordance with Sub-Clause 3.5. Measurement shall be made of the net actual quantities of those parts notwithstanding local practice.

Whenever the Engineer requires any part of the Works to be measured reasonable notice shall be given to the Contractor, who shall:

- (a) promptly either attend or send another qualified representative to assist the Engineer in making the measurement, and
- (b) supply any particulars requested by the Engineer.

If the Contractor fails to attend or send a representative, the measurement made by (or on behalf of) the Engineer shall be accepted as accurate.

Except as otherwise stated in the Contract, wherever any Permanent Works are to be measured by records, they shall be prepared by the Engineer. The Contractor shall, as and when requested, attend to examine and agree the records with the Engineer, and shall sign the same when agreed. If the Contractor does not attend to examine and agree these records, they shall be accepted as accurate.

If the Contractor examines and disagrees the records, and/or does not sign them as agreed, then the Contractor shall notify the Engineer of the respects in which the records are asserted to be inaccurate. After receiving this notice, the Engineer shall review the records and either confirm or vary them. If the

Contractor does not so notify the Engineer within 14 days after being requested to examine the records, they shall be accepted as accurate.

### **Clause 17: RISK AND RESPONSIBILITY**

#### **Sub-Clause 17.1: Indemnities**

In sub-paragraphs (a) and (b) delete the words “Contractor’s design (if any)” wherever appearing and replace with the word “design”.

#### **Sub-Clause 17.5: Intellectual and Industrial Property Rights**

Delete the fourth paragraph and replace with:

The Contractor shall indemnify and hold the Employer harmless against and from any other claim which arises out of or in relation to (i) the Contractor’s design, manufacture, construction or execution of the Works, (ii) the use of the Contractor’s Equipment, or (iii) the proper use of the Works.

#### **Sub-Clause 17.7: Use of Employer’s Accommodation/Facilities**

In the first paragraph delete the word “Specification” and replace with “Employer’s Requirements”.

## **Clause 18: INSURANCE**

### **Sub-Clause 18.2 Insurance for Works and Contractor's Equipment**

In the second paragraph, add after the words "Clause 11 [*Defects Liability*]", the following words:

and Clause 12 [*Tests after Completion*]

### **Sub-Clause 18.5: Insurance for Design**

Insert new Sub-Clause:

The Contractor shall effect professional indemnity insurance, which shall cover the risk of professional negligence in the design of the Works. This insurance shall be for a limit not less than the amount shown on the Contract Data .

The Contractor shall maintain the professional indemnity insurance in full force and effect until the date shown in the Contract Data. The Contractor undertakes to notify the Employer promptly of any difficulty in extending, renewing or reinstating this insurance.

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