

Committee T Session
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on

NEW TRENDS IN STANDARD FORMS OF CONTRACT FOR
INTERNATIONAL CONSTRUCTION AND BOT PROJECTS

A COMPARISON BETWEEN
FIDIC CONDITIONS OF CONTRACT FOR EPC TURNKEY
PROJECTS (Test Edition of the “Silver Book”)

AND

THE ENAA MODEL FORM
POWER PLANT CONSTRUCTION
ON SOME ISSUES OF PRINCIPLE INTEREST

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1. INTRODUCTION

The question for today's session is new **trends in standard forms of contract for international construction and BOT projects**. The timing for raising this question could not have been better. There is in my opinion a very strong trend and I will try to illustrate some effects of it on recently produced standard forms.

The history of contract forms intended for international construction projects is not very long. FIDIC published its first edition of **Conditions of Contract for Works of Civil Engineering Construction**, the Red Book, in the late fifties. Notwithstanding publication of new editions, the Red Book remained a traditional British type construction contract. FIDIC resisted long to publish conditions for design-build. Expectations on publication by FIDIC of such a standard form continued to grow and in 1995 FIDIC published **Conditions of Contract for Design-Build and Turnkey**, the Orange Book.

There are only few other standard forms available that are intended for use in international construction projects, at least with a design-build or turnkey character. The ENAA Model Forms and the New Engineering Contract published by ICE, all published during the last 12 years, can be mentioned.

The major underlying trend in international construction projects is obviously the move from traditional employer provided design with remeasurable price to design-build with lump sum prices. One of the driving forces behind this is the transition from publicly financed to privately financed infrastructure. The limited recourse financing in BOT projects requires an all-encompassing undertaking from the Contractor. The most obvious effect of the trend is the allocation of all risks to the Contractor,

2. THE FIDIC CONDITIONS UPDATE

During the last two years FIDIC has been developing drafts of four new sets of conditions;

- **Conditions of Contract for Construction** for Building and Engineering Works design by the Employer (the Red Book);
- **Conditions of Contract for Plant and Design-Build** for Electrical and Mechanical Plant, and for Building and Engineering Works, designed by the Contractor (the Yellow Book);
- **Conditions of Contract for EPC Turnkey** (the Silver Book);
- **Short Form of Contract** (the Green Book);

As far as I understand, the reason for drafting the Silver Book was to supply a form of contract specifically intended for use in BOT projects. FIDIC had for that reason adopted the "all risks on the contractor - philosophy" and with that base taken the Orange Book and simply amended certain clauses, while keeping the general structure. Another specific purpose of the Silver Book is for use in turnkey thermal power plant and other industrial projects.

The draft new Books have been reviewed by numerous individuals and organisations, including the IBA. European International Contractors (EIC) where I am active, has been very critical to the Silver Book.

At FIDIC Annual Conference last week its in Edmonton in the neighbouring state Alberta, the new Books were officially launched as Test Editions, They will now be on sale and be presented to a wider audience at various seminars around the globe in the coming months..

3. THE ENAA MODEL FORMS

The Engineering Advancement Association of Japan (ENAA) published the first edition of the **ENAA Model Form International Contract for Process Plant Construction**, in 1986.

This was followed in 1996 by **ENAA Model Form International Contract for Power Plant Construction**,. It is intended for use in a "full turnkey power plant construction project",. The ENAA Model Forms includes detailed Appendixes with detailed drafting.

For the purpose of this article I refer solely to the ENAA Model Form Power Plant Construction, That is of greater interest in light of BOT than the process plant form.

The ENAA Model Forms are considered well drafted. The wording is short and clear. It is comparison with the FIDIC conditions easy to get an overall comprehension of.

4. THE SILVER BOOK AND THE ENAA MODEL FORM IN BOT PROJECTS.

After having published the Orange Book, FIDIC came to the conclusion that this form was not sufficient for BOT projects. Further risks had to be shifted to the Contractor. The form would however not be drafted exclusively for that purpose. FIDIC had also recognized a demand for conditions for turnkey thermal power plants and other industrial plants..

The **Introductory Note to the Test Edition** of the Silver Book states that during recent years the market have required a form of contract where a greater certainty of the final price can be achieved,, This is particularly in relation to project finance. The Silver Book is clearly aimed at satisfying those requirements, even if it acknowledged that the Construction Contract has to take the allocation of risks in the other contracts in the BOT package into consideration. FIDIC seems therefore to claim that the Silver Book is a construction contract standard form for use in BOT projects.

The ENAA Model Form takes another approach. It includes an Appendix called **Project Financing Considerations** which clearly acknowledges that lenders will focus on a number of particular issues in the Model Form and that it may need amendments to suit in project finance projects.

5. COMPARISON BETWEEN THE SILVER BOOK AND THE ENAA MODEL FORM ON SOME ISSUES OF PRINCIPLE INTEREST

I have chosen to look closer at certain matters of particular interest for turnkey contracts. These are;

Responsibility for errors in information provided by the Employer;

- Responsibility for errors in the Employer's Requirements;
- Interference by the Employer in the performance by the Contractor;

Already at this stage I would like to point out that the issues chosen are not matters of allocation risk for events beyond the control of the Parties. If you would consider also the above issues to be matters of risk allocation, it is risks within the control of one of the parties i.,e., the Employer, To place that risk on the Contractor obviously contradicts the principle that the party that best can control a risk should carry it.

5.1 Responsibility for errors in information provided by the Employer. The Silver Book

It is obviously intended that the Employer shall not be responsible for errors or other incorrectness in information provided by him to the Contractor,.

Sub-Clause 4.10 - Site Data

“The Employer shall have made available to the Contractor for his information, prior to the Base Date, all relevant data in the Employer's possession on hydrological and sub-surface conditions at the Site, including environmental aspects. The Contractor shall be responsible for verifying and interpreting all such data,”

Sub-Clause 5.1 - General Design Obligations;

The Employer shall not be deemed to have given any representation of accuracy or completeness of any information. Any information received by the Contractor, from the Employer or otherwise, shall not relieve the Contractor from his responsibility for the design of the Works,”

By Sub-Clause 4.12 it is confirmed that the Contractor will have to bear the consequences of incorrectness in the information provided by the Employer, as the Contractor is deemed to have obtained all necessary information and to have foreseen all difficulties.

Sub-Clause 4.12 - Unforeseeable Difficulties;

“The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the Works.. By signing the Contract, the Contractor accepts responsibility for having foreseen all difficulties and costs of successfully completing the Works, The Contract Price shall not be adjusted to take account of any unforeseen difficulties or costs, except as otherwise stated in the Contract,”

In other words, unless otherwise stated in Part II - Conditions of Particular Application, all data and information provided by the Employer is used by the Contractor on his own risk..

ENAA Model Form

The Owner is responsible for the information to be provided by him during the course of the Contract. **GC 10.1 - Owner's**

Responsibilities;

“The Owner shall ensure the correctness and exactitude of all information and/or data to be supplied by the Owner as described in Appendix 9-3 (Scope of Works and Supply by the Owner) except when otherwise expressly stated in the Contract,”

It is also clear that the Owner is responsible for information submitted prior to signing Contract.

GC 20.1.1 - Specifications and Drawings;

“The Contractor shall be responsible for any discrepancies, errors or omissions in the specifications, drawings and other technical documents prepared by it, whether such specifications, drawings and other documents have been approved by the Owner or not, provided that such discrepancies, errors or omissions are not due to inaccurate information furnished in writing to the Contractor by or on behalf of the Owner.”

The ENAA Model Form provides that the Contractor shall make a reasonable examination of information provided by the Owner, a reasonable site investigation and examination of other data available.

GC 9.2 - Contractor's Responsibilities;

“The Contractor confirms that it has entered into this Contract on the basis of a reasonable examination of the data relating to the Works (including any data as to boring tests) provided by the Owner and of information which it could have obtained from a visual inspection of the Site (if access thereto was available) and of other data readily available to it relating to the Works as on the date of the Agreement”

Comments

Obviously the two conditions of contract have two opposite principles as concerns the Employer's responsibility for information provided by him. The ENAA Model Form has fully adopted the basic principle that normally applies for contracts, i.e. that a party is responsible for that information provided by him is correct.. The Silver Book does not even have an option for the situation where the Employer shall be responsible for certain information provided by him.

In larger contracts the Contractor can not obtain certain fundamental information or data from any other source than the Employer. Consequently he should then not be held responsible if such information is incorrect.. The location of the Site, physical limits of the Works, interfaces and for particular types of projects e.g.. quality of the fuel for a thermal power plant or water flow and net head for a hydro power project, are certainly information that must be provided by the Employer and that he must retain responsibility for.

For the purpose of this discussion, I consider that the Silver Book standpoint never can fully apply in any proper contract. Even in the most pure BOT situation certain basic facts connected to the commercial foundation of the project can not be off-loaded to the turnkey contractor. In my opinion, not even in the situation where the Contractor also is shareholder in the concession company. The wording of the Silver Book will therefore not apply to its full extent.. Also considering this, the burden put on the Contractor is of course very heavy. The Contractor will as the collector and responsible for all information of importance for execution of the Works have a knowledge of the project that the Employer will not have. This will be of importance for the discussion on the Employer interference below..

5.2 Responsibility for errors in the Employer's Requirements The

Silver Book

The form of tender normally states that the tenderer has based his tender on the documents included in invitation. The Letter of Tender included in the Silver Book contain a statement that the tender has ascertained that the Conditions of Contract, Employer's Requirements do not contain any errors or other defects.

The conditions of contract shifts virtually all responsibility for the Employer's Requirements to the Contractor. **Sub-Clause**

5.1 states that;

“The Contractor shall be responsible for the design of the Works and for the accuracy and completeness of the Employer's Requirements...”

and that

“The Employer shall not be responsible for any error, inaccuracy or omission of any kind in the Employer's Requirements, and shall not be deemed to have given any representation of accuracy or completeness of any information”

This does not sit well with the definition in **Sub-Clause 1.1.1.3** which states that;

“the Employer's Requirements” is the specification of the purpose, scope, and/or design and/or other technical criteria.

and therefore the conditions does take a step back later in Sub-Clause 5.1 by providing that;

“However, the Employer shall be responsible for the correctness of the following portions of the Employer's Requirements:

- (a) definition of intended purposes for the Works or any parts thereof,(b) criteria for testing/performance of completed Works, and
- (c) any other portions which are stated as being the responsibility of the Employer.”

ENAA Model Form

The Contractor shall perform the works in accordance with the Technical Specifications.

GC 7.1 - Scope of Works;

“The Contractor's obligations cover the provision of all Materials and the performance of all works and services required for the design, procurement, construction, erection, commissioning and delivery of the Plant and the completion of the Works in accordance with the plans, procedures, specifications, drawings, codes and any other documents as specified in Appendix 9-4 (Technical Specifications) “

This provision requires the Appendixes to be complete and any omission may be outside the Contractor's scope of work. On the other hand in the following provision the Owner is somewhat supported. Note however, that this does not cover any defects or errors in the specification.

The Owner seems in accordance with GC T1 to have a far reaching responsibility for the designs and specifications included in the Contract.. This interpretation is supported by;

27.3 - Defect Liability;

“The Contractor's obligations under this GC 27 shall not apply to (3) any designs, specifications or other data designed, supplied or specified by or on behalf of the Owner, or any matters for which the Contractor has disclaimed responsibility hereunder ...”

Comments

The Silver Book and the Model Form illustrates the two extreme positions that can be taken in respect of responsibility for the scope, design criteria, design basis, specifications etc. contained in the Employer's Requirements.

It is interesting to note that the Orange Book represents a position in between these two.. The Contractor is obliged to “satisfy himself regarding the Employer's Requirements and to give notice of any error, fault or other defect.. The Employer's Representative could then determine if he should issue a variation order. FIDIC had apparently come to the conclusion that the Orange Book was not suitable for BOT projects in this respect. Maybe the draftsman took impression of e.g, an interesting article in The

International Construction Law Review named Use of the FIDIC Orange Book in Context of a BOT Projects where the author said that “Financial institutions acting as the lenders in a BOT project generally require a single point of responsibility for the design and construction of the works.. They therefore require the contractor to assume the risk of any defect or error in the design including any defect or error in the employer’s requirements” (underlined here).

The Silver Book expects the Contractor already at tender stage to verify the Employer’s Requirements and ascertain that it does not contain any errors and defects.. In the conditions the Contractor shall be responsible for accuracy and completeness - not errors! On the other hand - the Employer is expressly not responsible for error’s - so who is?

Before we continue we should consider if we understand what an “error” in the Employer’s Requirements actually mean? What do you measure against if we are talking about design criteria, quality requirements etc., The Employer’s Requirements must contain the core of the Employer’s description of the delivery and thus the description of the obligations of the Contractor under the Contract.. The Employer must retain responsibility for the definition of the works. The wording in the Silver Book raises numerous questions on how the provision shall be applied in reality. If there is an inaccuracy or error in the Employer’s Requirements, will a change require a variation order? Is it allowed for the Contractor to depart from the Employer’s Requirements without the Employer consent. Maybe he should, as he is responsible for the consequences of any inaccuracy or incompleteness and guarantees fulfillment of the performance criteria!

Of course can the Employer’s Requirements contain design and information for which he quite correctly should not be responsible.. This is design and information that are not mandatory but which should be regarded as an example. These matters could ee g. be basic design or illustrative drawings developed by the Employer during his own internal approval process and budgeting or required for obtaining approval from authorities. Any use thereof by the Contractor would be on his own risk. However, it is important to remember that the core elements of the Employer’s Requirements must remain the responsibility of the Employer because they are mandatory for the Contractor and by complying therewith he fulfils his obligations.

5.3 Interference by the Employer

The Silver Book

The Introductory note to the Test Edition states that as most of the risks are allocated to the Contractor “the Contractor should be given freedom to carry out the work in his chosen manner, provided the end result meets the performance criteria specified by the Employer”.. I could not agree more. The note further continues “Consequently, the Employer should only exercise limited control over and should in general not interfere with the Contractor’s work”.

Unfortunately the conditions does not live up to the spirit of the introductory note.. The Employer is in numerous provisions empowered to interfere in the performance by the Contractor’s performance of the work. This can be illustrated by i.e. the following provisions.

Sub-Clause 3.4 - Instructions; As this the Subcontract-clause is worded, it could be read as giving the Employer a general authority to issue instructions to the Contractor.

Sub-Clause 3.5 - Determinations; It is dubious if one party shall have a right to make unilateral determinations to the extent allowed for the Employer in the Silver Book. That the determination is a unilateral decision is nicely veiled behind the words that the determination shall be “fair” and made “in accordance with the Contract”.

Sub-Clause 5.2 - Contractor’s Documents; As the Contractor has the total responsibility for achieving the performance criteria, the Employer shall not interfere with the development of the Contractors’s Documents. The provision on approval and review of documents are very detailed and gives the Employer extensive power to require changes..

Sub-Clause 7.3 - Inspection; There is a very far reaching obligation to notify the Employer before work is covered up, put out of sight or plant packaged for storage or transport!

Sub-Clause 7.5 - Rejection; The Employer may after inspection reject plant, material or work that is not in accordance with the Contract.. The Contractor must promptly make good the defect..

Sub-Clause 7.6 - Remedial Work; This provision allows the Employer` to severely interfere with the performance of the work by giving instructions of removal of plant or material from Site, and removal and re-execution of work. The Contractor is obliged to comply also if he intends to challenge the instruction.

Sub-Clause 14 - Payment procedure; The provisions on payment could be radically simplified by assuming that the payments will be made in accordance with a payment plan, Payments shall be made monthly in accordance with the payment plan

together with such additional payments to which the Contractor is entitled to under the contract. There is no need for valuation by the Employer as indicated in Sub-Clause 14.6.

There is no provision expressly stating that the Employer will be responsible for the consequences on the works of his instruction. In an international standard form a clear statement in such respect would have been suitable.

Generally there is already through the conditions themselves an interference with the Contractor's work, as they are more detailed than should be necessary in a EPC turnkey contract.

ENAA Model Form

There is no provision indicating a general right for the Owner to give instructions or make determinations **GC 19 -**

Subcontracting

The ENAA Model Form requires consent by the Owner to major suppliers and civil subcontractors, which is not required under the Silver Book.

GC 20.3 - Approval of documents

As in the Silver Book, it shall be specified in an Appendix which documents shall be prepared by the Contractor and submitted to the Owner either for approval or review. Works related to documents to be approved shall only be commenced after approval by the Owner. Approval is deemed to be given after 14 days in the absence of approval or disapproval. If the Contractor do not agree with a disapproval by the Owner the question may be referred to an Expert appointed by the parties. When such referral has been made the Owner can instruct if and how the works shall proceed. If later the Expert upholds the Contractor's dispute of the disapproval then;

- the Contractor shall be reimbursed for his additional costs incurred due to the instruction;
- the Contractor shall be relieved of "responsibility and liability in connection with the dispute and the execution of the instruction as the Expert shall decide", and;
- the time for completion shall be extended.

GC 23 - Tests and inspections

There is a similar provision for disputes in connection with tests and inspections as for approval of documents. **GC 39 -**

Change in the Works

In the event the parties fail to reach agreement on the price of a proposed change and the extension of time, then the Owner may instruct the Contractor to execute the change pending such agreement. If an agreement has not been reached with 60 days, either party may refer the matter to the Expert.

Comments

In respect of the Silver Book, an interesting test is to compare the provisions mentioned above with those in the new Yellow Book. It is easily established that the provisions virtually are the same. In the Silver Book all risks has been shifted to the Contractor including the responsibility for all information and for the correctness of the Employer's Requirements and at the same time the Employer retained all his powers to interfere in the Contractor's work.

Why are the powers with which the Employer is equipped in the Silver Book unacceptable? To avoid misunderstanding it should be noted that contractors should have no objection to a reasonable amount of monitoring and supervision of the works by the Employer. However, these provisions are not aiming at monitoring, they go much further.

The fundamental objection to the provisions is that, as the Silver Book is worded, the Employer has transferred most of the design and specification to the Contractor. The Employer is only responsible for definition of intended purpose and stated performance criteria. How can he then during execution of the works establish that certain details are not in accordance with the Contract? If the Employer does have an opinion in this respect it is of course of interest for the Contractor to so learn, but if the Contractor does not agree then the Contractor's opinion should prevail. He is in the end responsible for time, cost and that performance criteria and intended purpose are met. If the Employer is not prepared to trust the Contractor with the execution up to the time of tests on completion but want to participate in the development of the works, then he should chose another contract

form than EPC turnkey with the risk allocation provided for in the Silver Book..

I think my argument is even stronger in light of 'a BOT project. The Employer/concession company will be a provider of services.. One of the benefits of BOT in relation to the construction is the freedom to optimize design and construct. If all construction risk is transferred to the Contractor then that very freedom in design and construction is also transferred, because it is only in such case the optimization can effectively take place..

Contractors do not approve of a possible argument that the Employer of course should not unreasonably interfere and that any incorrect instruction or notice would be a variation order.. This is not sufficient, particularly if the Employer's Requirements are written in a general and vague manner. Further disturbing is that the Silver Book is a form intended for international use. In such documents there is an additional need of clarity as there may not be any firm practice in the country of the project on how EPC turnkey contracts correctly should be administrated by the Employer. It can neither be guaranteed that the Employer in a particular contract has retained a consultant that misunderstands or takes advantage of its role when nominated as the Employer's Representative..

6. CONCLUSION

The Employer is under the Silver Book intended to only provide a very condensed description of the scope of work i.e. the intended purpose and the performance criteria. All remaining matters in order to achieve these objectives are the responsibility of the Contractor. Virtually all risks related to the performance of the Works have also been allocated to the Contractor This description of obligation and risk allocation generally fits well with an EPC turnkey contract.

However, the draftsman of the Silver Book has not taken the full consequence of the above in establishing the provisions related to the administration of the Contract. The Employer is in the Silver Book equipped with far too much power to involve himself in the execution of the Contract. If he has chosen to only very briefly describe the scope of work and leave the remainder to the Contractor to be responsible for, then he must take the consequence and let the Contractor perform the Works in the matter that suits him..

The ENAA Model Form on the other hand has placed the responsibility for the specification of the Works as included in the Contract on the Owner.. At the same time there is far less opportunity for the Owner to involve himself in how the Contractor actually performs the Work and to instruct him in the event work is not performed in accordance with the Contract..

In my opinion both the Silver Book and ENAA Model Form would improve if they swapped some conditions with each other.. The Silver Book should have the very limited administrative provisions of the ENAA Model Form and thus exclude the Employers undue interference and the Owner in the ENAA Model Form would need the wide authority to monitor the Contractor's compliance with the specifications.

The Silver Book is only published in a Test Edition, FIDIC is open to comments on the document until the end of 1998.. I urge everyone involved in these kind of projects to acquaint himself with the Silver Book and to give comments to FIDIC, maybe on one of the seminars that will be held during the fall. We have a new trend in standard forms for international construction projects, it is not cast in stone, we have an opportunity to ensure that the trend will be positive for all involved in international construction projects.