

DELIVERY METHODS UNDER FIDIC FORMS OF CONTRACT

Lukáš Klee*

Abstract: *Construction and Engineering industry is a high risk industry. Management of the risks has overriding importance and every risk must be allocated to one or other party. Practice over many years has shown that sensible and balanced risk allocation results in the lowest overall total cost for completed projects.*

Common delivery methods such as General Contracting or Design-Bid-Build (often abbreviated as D/B/B), Design-Build (often abbreviated as D/B) including EPC (Engineer-Procure-Construct), and Construction Management (often abbreviated as CM), including CM At-Risk and EPCM (Engineer-Procure-Construction Management) and their key aspects such as Contract Price, Design Responsibility and Contract Administration create a basis of Risk Allocation.

Claim Management is a system for early solution of problems, obstructions and complications that helps reflect realized risk in Contract price and in Time for Completion.

The Fédération Internationale des Ingénieurs-Conseils (International Federation of Consulting Engineers) was founded in 1913 and the number of FIDIC associations worldwide is nearing to almost 100. FIDIC publish different best practise documents including sample forms of contracts for works that are known for balanced risk allocation and efficient Claim management system.

Key Words: *risk, risk allocation, claim, claim management, FIDIC*

1. FIDIC

The Fédération Internationale des Ingénieurs-Conseils (International Federation of Consulting Engineers) was founded in 1913 by members from France, Belgium and Switzerland. Nowadays, the number of FIDIC associations worldwide is nearing to almost 100. FIDIC publish different best practice documents including sample forms of contracts for works. The first edition of the Conditions of Contract for Works of Civil Engineering Construction was published in August 1957, having been prepared on behalf of FIDIC and the Fédération Internationale des Bâtiment et des Travaux Publics (FIBTP).

Nowadays, FIDIC forms of contract are intended to be suitable for projects being carried out around the world by all types of employers, often in a civil law environment with extensive support of large investors such as World Bank, European Union etc.

FIDIC recommends its conditions for international use and that is why they are created on a two part basis. There are the specific and general conditions. FIDIC warns from changing the general part and recommends to do all the changes because of local law requirements or project specialties in the specific part. There is no doubt that the FIDIC standard forms are helpful for the domestic use as well, mainly in regions with lack of traditional sample forms of contracts and/or with strong international competition.

2. COMMON DELIVERY METHODS

A construction project is a unique individual arrangement of processes that involve various participants with different tasks who are under influence of varied factors, includ-

* JUDr. Lukáš Klee, LL.M., Ph.D., MBA, Faculty of Law, Charles University, Prague

ing numerous hazards and related risks. With the above in mind, the right delivery method (form of construction project) should be selected, mainly by the client.

In general, three approaches to such a construction project organization can be most frequently encountered. Their names may differ, depending on a particular author and country. They are most frequently called General Contracting or Design-Bid-Build (often abbreviated as D/B/B), Design-Build (often abbreviated as D/B) including EPC (Engineer-Procure-Construct), and Construction Management (often abbreviated as CM), including CM At-Risk and EPCM (Engineer-Procure-Construction Management). A so-called “Multiple-Prime Contracts” may sometimes be encountered as an independent category, implying a construction project organization method where the Client has a larger number of main Contractors under his own control or under the control of his deputy. It is impossible to define the best method and hybrid arrangements often tend to appear. Obviously, the most suitable way of organization and management of participants have to be searched for every project. Financing conditions, client’s priorities, project difficulty, social circumstances, and many other factors are vital for selection.

Delivery Methods differ mainly in:

- A. Design responsibility,
- B. Contract price determination,
- C. Contract administration approach,
- D. Risk allocation

A. Relate to **Design responsibility** we encounter basically two situations:

1. The Employer is responsible for the design, preparing a detailed tender design (Drawings, Specifications and Bill of Quantities). In such an arrangement, the participants of a particular construction project will usually have to deal with a conflict of designers, because the Contractor adjusts the tender design within his own implementation design.
2. Contractor’s “Single Point Responsibility” for the Design and the Works. The Employer prepares the Employer’s requirements not in much detail, for the sake of a particular tender, stating only purpose, scope and other technical criteria, such as performance criteria often on a fitness for purpose basis.

B. In terms of **contract price determination**, there are in general three main payment bases:

1. Lump Sum,
2. Re-measurement,
3. Cost Plus.

C. In terms of **contract administration**, there are three usual arrangements with:

1. The Engineer = Employer’s agent whose job is to monitor and supervise the work with a duty to make fair determination on certain matters (for example on claim for extension of time and additional payment). The Engineer issues certificates on payments, taking-over and performance.
2. The Employer’s Representative = The Contract is administered directly by the Employer or its representative. If the Contractor is to achieve the certainty of time and price stipulated, then the involvement of the Employer must be limited to a minimum during construction.

3. Construction Manager = Employer's agent hired to coordinate all processes on Professional service agreement basis without direct responsibility for design and works.

The explanation above is partly simplified to give us the benefit of quick orientation. If we go back to particular delivery methods we assume:

1. General Contracting is a “traditional form” of project delivery with the Employer's design responsibility (including Drawings, Specifications and Bill of Quantities with Rates and Prices priced in Contractor's bid at his risk). It is a re-measured contract with the works measured on actual need and paid on the basis of monthly statements of works done. Contract administration is done by the Engineer.
2. Design-Build delivery method is typical for Contractor's design responsibility with the Employer's Requirements specifying only the purpose, standards, scope and performance criteria for the Works. It is a lump sum price without Bill of Quantities. Payments are done on a payments schedule basis. With Design-Build delivery method the Employer gains higher predictability of price and time for completion. The Contractor assumes higher risk, so his bid price usually contains risk surcharge.
3. Construction Management delivery method predicts that the client concludes direct contracts with particular Contractors on lump sum basis. For the sake of their coordination a construction Manager is hired by the Employer on Professional Service Agreement basis. Construction Manager is paid on cost plus basis, so the General contractor's surcharges are restricted. Construction Manager is not liable for bad performance by particular contractors. Construction Manager is liable for bad management, planning and coordination.

D. Risk allocation

To distinguish particular delivery methods in more detail, we have to say few words about Risk Allocation. According to US Department of Transportation (see <http://international.fhwa.dot.gov>) *“the goal of an optimal allocation of risk is to minimize the total cost of risk on a project, not necessarily the costs to each party separately. Thus, it might sometimes seem as if one party is bearing more of the risk costs than the other party. However, if both owners and contractors take a long-term view and take into consideration the benefit of consistently applying an optimal method to themselves and to the rest of their industry, they will realize that over time optimizing risk allocation reduces everyone's cost and increases the competitiveness of all parties involved”*.

In general, there are three basic rules of sound risk allocation:

1. allocate risks to the party best able to manage them,
2. allocate the risk in alignment with project goals,
3. share risk when appropriate to accomplish project goals.

Unbalanced Risk Allocation:

1. leads to project complications,
2. has negative influence on price, time and quality,
3. leads to speculative claims, disputes, Contractor's bankruptcy, early project termination etc.

3. DELIVERY METHODS UNDER FIDIC FORMS OF CONTRACT

Three basic contractual conditions forms, in 1999 First Edition, are now used for contracting in the field of construction projects; they are in particular:

a) Conditions of Contract for Construction (abbreviated as CONS, so-called “Red Book”), being the conditions with well-balanced risk allocation and assumed to be used for the projects where the risks associated with design documentation are to be largely borne by the Employer. CONS are the contractual conditions for General Contracting with the use of Employer’s specifications and drawings for awarding of the contract and for its implementation, including the measuring of the actually completed works, using the unit and item prices that are invariable in fact. Contract administration is done by the Engineer.

b) Conditions of Contract for Plant and Design-Build (abbreviated as P&DB, so-called “Yellow Book”), being the conditions with well-balanced risk allocation and assumed to be used for the Design-Build projects where the risks associated with design documentation are to be largely borne by the Contractor. Unlike CONS, the P&DB do not use Employer’s specifications and drawings for awarding of the contract and for its implementation any more, coming, however, from the so-called “Employer’s Requirements” that define, above all, the purpose, scope, standard, and other designing and engineering criteria, depending on the Client’s expectations. The specifications are not assumed to contain excessive details. Regarding the Employer’s requirements, the Contractor shall prepare his proposal to become a part of the contract. Even though the total price is conceived as a lump price, it may become subject to modifications mainly through changes and due to the claims raised for additional payments and extension of time. Contract administration is done by the Engineer.

c) Conditions of Contract for EPC/Turnkey Projects (abbreviated EPC or EPCT – Engineer, Procure and Construct, so-called “Silver Book”) that are typical for the Design-Build projects where the contractual risks (mainly those associated with design documentation, responsibility for the project specification reviews and investigation of the on-site physical condition) are – to a larger extent – moved over to the Contractor, being recommended where the entire investments sets (such as nuclear power plants) are to be contracted and where the requirement is to secure more reliably the total price and project implementation timing. It also applies to EPC that the price is conceived as a lump price, that completed works are not measured, but they can become subject to modifications, mainly through changes and due to limited number of claims raised for additional payments and extension of time. Contract administration is done by the Employer or his representative.

In order to distinguish between the P&DB and EPC conditions, FIDIC mentions the cases when it is recommended to use the P&DB conditions. They are the situations where:

- a) Bidders have not enough time and information for checking and processing of the Employer’s requirements in the tender documentation;
- b) Some of the parts or the entire construction work to be realized within the project are underground or in conditions hard to explore;
- c) Employer wants to supervise the jobs in progress or approve every piece of the Contractor’s design documentation to a larger extent;
- d) Regular reviews of the Contractor’s invoicing are presumed.

For DB projects where an operation period is needed, FIDIC prepared Conditions of Contract for Design, Build and Operate Projects (abbreviated DBO, so-called “Gold Book”)

in 2008 First edition. This form reflects the trend that contractors not only construct but also maintain and operate the facility for some period of time.

FIDIC published also Client/Consultant Model Services Agreement in 1998 Third Edition (so-called “White Book”). The terms of the Client Consultant Model Services are recommended for general use for the purposes of pre-investment and feasibility studies, designs and administration of construction and project management, where proposals for such services are invited on an international or domestic basis. FIDIC declares that this form is appropriate for CM projects; however, in practise it is not used for this purpose.

In terms of Risk Allocation, FIDIC Procurement Procedures Guide says:

- a) construction and Engineering industry is a high risk industry,
- b) management of the risks has overriding importance,
- c) every risk must be allocated to one or other party,
- d) a risk cannot “be left hanging in the air”,
- e) practice over many years has shown that sensible and balanced risk allocation results in the lowest overall total cost for completed projects.

It is common knowledge that efficient risk allocation must be based on decentralization principle, i.e. the risk is borne by the participant best able to control it. FIDIC Contracts are based on decentralization principle. CONS/Red Book and P&DB/Yellow Book are internationally recognized as conditions of contract with balanced risk allocation. It must be mentioned that EPC/Silver Book is based on a problematic risk allocation. These conditions are suitable for project without major unforeseeable risks that are often encountered in private funded projects within Power Plant, Process Plant and Industrial Plant Construction.

4. CONCLUSION

How it is mentioned in a recent article written by Mr Frederick Gillion (see fidic.org), in certain Central and Eastern European (CEE) countries Employers have managed to impose in public works contracts – largely financed by the EU – very onerous provisions for the Contractor which radically change the allocation of risks established by the General Conditions of Contract. FIDIC Users’ Conference in London in December 2011 confirmed this recent trend spreading in a number of other CEE countries (including Bulgaria, Poland, Hungary and Slovenia). The mentioned author further says there is undoubtedly a growing trend in the region for significant risks traditionally borne by employers under the FIDIC Yellow Book to be transferred to contractors in public works projects, often by importing provisions or principles from the Silver Book. Unfortunately, this trend is obvious also in recent public procurement in the Czech Republic.

Such a trend calls for a rapid change in EU secondary legislation so as to ensure that EU-financed contracts do reflect FIDIC’s principles of balanced risk sharing. The decision as to what conditions are to be used within the particular project shall always belong to the financing party; however, it is important to stress that balanced risk allocation is the key of longtime success in construction industry.