

The Moderator

J. Neville

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CONTRACTUAL ISSUES IN EPC BUSINESS IN INDIA

The following article on EPC Turnkey Contracts with reference to India; reproduced here in its entirety, formed the basis of a presentation given by the Society's General Secretary, Mr. James Neville, at "EPC 2000", a seminar held at the Oberoi Towers', Mumbai on 8th August, 2000 as part of the "Chemtech Silver Jubilee Conference Series".

One of the initial considerations of an Employer in the development of any project, having, of course, first, confirmed the availability of financing, will be to identify the design source and how it is to fit into the contracting scheme, especially when all three elements of cost, time and quality are to be strictly maintained.

All over the world there are contractors expert in all types of engineering and construction works, whatever the nature of the project, and it is reasonable, since design inevitably grows out of tried and tested construction methods, that Employers should seek to profit from a potentially important contribution in both expertise and experience regarding design from such contractors with a view to promoting both the speed and economics of their own projects.

Employers, therefore, can and do confidently rely upon contractors' skills, not only for construction but also for design. This input of expertise and experience is a major advantage to Employers and can allow the chosen contractors to influence the practicalities of projects from the early stages and also to highlight potential problems associated with the design obligations, the responsibility for which such contractors will ultimately bear on EPC Turnkey projects.

Furthermore, contractors' input into EPC Turnkey systems means a single team both to design and to construct projects bringing normally distinct specialists into a cooperative relationship, it being the intention of all concerned that design integrated with and overlapping construction should lead to cheaper and speedier implementation.

Having, thus, made a decision to benefit from a contractor's expertise and experience by selecting the EPC Turnkey approach the Employer, usually in collaboration with his chosen consultant, will, first of all, express his requirements in the form of a design brief. The consultant, normally employed to oversee the project, having probably been advising the Employer from the conceptual stage of the project, will then be involved in expanding the brief into the more explicit "Employer's Requirements", taking into consideration, up to what stage it has been decided that the design responsibility should be taken over by the successful contractor.

The consultant, with or without the aid of the Employer, depending upon whether the Employer himself is a specialist in the particular field, will then incorporate the Employer's Requirements into bid documents for presentation to various pre-qualified bidders before finally being involved in the technical and financial assessment of the successful contractor's bid in response to the same.

It can be seen, therefore, in reality that in EPC Turnkey projects contractors may have to assume responsibility for completing and/or developing an incomplete design at any time from briefing onwards.

However, as normally happens in major engineering contracts, by bid stage the Employer's consultant will have already prepared at least part of the design and the transition of responsibility for design to the contractor will, in principle, occur at this time, even though all the interconnected parts of the project might not necessarily be at the same stage.

It is essential, therefore, especially if different parts of the project are at varying stages of design, that the contractor is clear about precisely where he takes over and what the Employer and his consultant have already done, i.e. what exactly are the Employer's Requirements (i.e. are they comprehensive, accurate, clear and unambiguous) and what are the contractor's corresponding obligations in the development of the same to bring the project to completion?

At the time of the bid submission contractors' proposals will either complement the Employer's Requirements by bringing the design to completion (extremely unusual in major engineering projects given the limited time to tender) or, more likely than not, indicate how this is to be achieved. So in accepting a contractor's bid based on an incomplete design the intention is that the Employer accepts statements of intent about the residual or outstanding parts of the design upon which a "fixed and firm contract sum" is based.

This fact is rendered all the more important when it is considered that at Contract execution stage whilst the design is still not fixed, the Contract Price certainly is!

Once the Contract has been entered into, the successful contractor, therefore takes upon himself the responsibility for satisfying the Employer's Requirements by, first of all, verifying the incomplete Bid Package or basic design, usually assuming responsibility for the same, (the assumption of responsibility actually coming before the submission of bids since, as stated above, the fixed price will not usually be adjusted to cover unforeseen design provisions) and by expanding the same into a full and complete "description" of the required project in the form of residual and detailed design, engineering, drawings, diagrams, specifications, purchase orders and other matters specified in the Contract documents.

In developing the Employer's Requirements into a buildable design the contractor will, obviously be faced with many unanswered questions, namely, will the post-contract design development be accepted by the Employer in view of the uncertainty of any dubious descriptions in specifications or other references to documents containing national or international standards or engineering practice or concepts? Or when, in actual fact, does the Employer's or his consultant's refusal to accept that the Contract is being satisfied turn into a change in the Employer's Requirements, which should be paid for, i.e. what are the fixed limits within which the contractor ought to be allowed the freedom to adjust and innovate during progress, whilst still managing to meet the Employer's Requirements?

It is contended that whilst a contractor's proposals are to be a reasonable extension of the Employer's Requirements they ought, within the limits set (if these can be identified), to be able to be modified as to their detail in the design development. If, for example, a basic design has been closely determined by the Employer's consultant or, perhaps, a process licensor, it will mean that certain constraints of layout, sizes, arrangements, etc. will have been given but the contractor should be left to interpret them so as to be able to evolve and develop the same to meet the Employer's Requirements.

This will be all the more important if the Employer's Requirements encompass many interconnecting parts of the project at varying stages of design. Since it will not always be possible to freeze matters which may be subject to later modification depending upon what is finally agreed in other parts.

Consequently, as the design is incomplete and possibly fragmented at the outset then the contractor, unless clear mandatory stipulations are imposed, must be allowed some measure of discretion within whatever was actually agreed as to what he is to provide with regard to the detailed design. This is, therefore, the contractor's freedom to develop the optimum response whilst at the same time meeting the Employer's Requirements, the whole exercise being a question of interpretation of what actually meets the Employer's Requirements as the design is being developed.

Unfortunately, many Employers and their consultants do not seem to understand that the contractor cannot allow for and neither does the system lend itself to drastic design revision in order to take in major technical development, or more often than not personal preferences, which evolve during the currency of the project *and therein lies a major problem in obtaining Employer "approvals" following on from a highly subjective interpretation of the Employer's Requirements.*

The period for development of the detailed design should, therefore, simply be used by the Employer and his consultant to ensure that the contractor in developing the design is not deviating too far from the Requirements or that he is not lowering standards. This situation, in view of the problems of interpretation referred to above, obviously calls for a more detached attitude from both the Employer and his consultant with both of them stimulating ideas rather than just turning down what is simply not liked, albeit that it satisfies the Employer's Requirements when considered from an objective point of view.

What is so easily overlooked, or on many occasions conveniently forgotten, is that neither the Employer nor his consultant are responsible for checking that the contractor's design is correct or even adequate but only that it conforms to the Employer's Requirements set down in the Contract, the contractor, as previously stated and as required by the Employer under the contracting scheme, being solely responsible for the design and its workability.

The Employer and his consultant, on issues of design interpretation, must, therefore, stick to the framework of the Employer's Requirements and the contractor's proposals for the same, so that only departures from the framework can be disputed and not developments within it, unless, of course, the Employer is prepared to pay for such changes. To ensure that the above is fulfilled the Employer and his consultant ought, of course, to have provided the contractor with all the information in their possession and which was used to prepare the Bid Package or basic design.

In support of these statements regarding the limited powers of the Employer and his consultant, there are references in the majority of EPC Turnkey contracts whereby any information given by the Employer is for guidance only and that any comment or advice from the Employer on the contractor's designs will not relieve the contractor of his responsibility for bringing the project to successful completion in accordance with such design.

Even in the absence of such a provision, however, there would still be a strong presumption, in view of the type of contract, i.e. turnkey, that this would be the case. Therefore, the Employer or his consultant should be *"reviewing and not approving"*, approval in the strict sense of the word being inconsistent with any denial of responsibility, and merely noting the contractor's proposals as apparently satisfying the

Employer's Requirements expressed in the Bid Package or basic design, by now incorporated into the Contract.

Moreover, even where the Employer does have the right contractually to instruct design changes, i.e. to require the contractor to amend the design to suit any revised Employer's Requirements, it is contended that neither the Employer, nor his consultant, has power directly to introduce design of his own into the project without substantially destroying the agreed basis upon which the design is to be carried out. Should this be done then it simply confuses responsibilities and, as not normally appreciated by Employers or their consultants, can actually diminish those of the contractor in regard to the design aspects.

Thus, the Employer and his consultant cannot dictate to the contractor what he is to produce, other than where it concerns Employer specified or supplied materials forming part of the overall Employer's Requirements, without being in danger of losing the advantages of the EPC Turnkey approach and, furthermore, of assuming a measure of responsibility for the contractor's design and any failings in it.

The role of the Employer's consultant should, therefore, simply be to advise the Employer and neither he nor the Employer should be attempting to run the project design. The contractor in an EPC Turnkey scheme carries more than his fair share of commercial risks and should not have to bear Employer/consultant interference. In building up his bid price the contractor has, in the face of the incompleteness of the design, already had to cover all quantitative uncertainties as adequately as possible whilst trying to achieve an optimum economic result for both himself and the Employer.

It is for this reason, therefore, that the contractor, if he is meeting the Employer's Requirements, should not, and, without specific provisions to the contrary, need not accept design intrusion, the Employer and his consultant having to content themselves with the role of consenting to what the contractor proposes, so long as the same conforms to the Employer's Requirements.

The contractor must, therefore, be constantly aware of actions amounting to interference and intrusion that will in certain cases become apparent. For example, if by some change the contractor is able to provide a solution which has the same user value but costs less, it is reasonable for the contractor to be paid the full Contract Price, any cost benefit in these cases going to the contractor. It being unusual for an Employer to want to pay more - in the reverse situation.

However, in many cases, especially on Government and Public Sector projects, due to the interference and intrusion into the contractor's design work, it is possible for the Employer, with the assistance of appropriate contractual wording, to identify cost benefit and to claim it for himself, a common phenomenon on projects in India.

It would be fair to say, therefore, that the implementation and any review of the project work ought to be based on a reasonable interpretation of the Employer's own Bid Package or basic design and specifications, standard engineering practices as applied by the contractor and acceptable standards, codes and norms to be applied by both of them in developing a detailed design *but with total reliance on the contractor's skill and experience as, a designer and constructor without, save only in exceptional cases, the interference or intrusion of the Employer or his consultant.*

Turning now to the aspects of time, both the Employer and his consultant ought to be very much aware that in performing their consenting functions under the Contract any review of the contractor's design

development must be done without delay, the Employer, and not just the contractor, having undertaken to perform his obligations in order to meet the time schedule.

As referred to above major problems occur when Employers and their consultants indulge themselves in a design "approving" exercise. Exhaustive comments, if any, strictly limited to conformity with the agreed Requirements and any other contractual or legal. right, have to be made and dealt with efficiently to avoid endless and unnecessary reconsideration and to allow the contractor to respond to any legitimate needs in a timely manner.

This situation can be facilitated when the Employer has given a relatively detailed brief, incorporating all the information that the contractor could have rightfully assumed he would obtain under the Contract, since the requirements will then be easy to identify and discussion, thus, be limited.

If, as stated above, various parts of the project, although closely interconnected, have been developed to differing stages of design, then any review of the separate portions of designs must also take this fact into account. Early decisions, whilst they may seem logical, might, in the face of an overall review, be later seen to be leading to illogical or at least suboptimal results. Thus, any attempt on the part of the Employer or his consultant to finalise or freeze a part of a design without due consideration of this Employer created problem will clearly lead to disruption and delay at some stage or other in the overall review.

Moreover, as the parties become concerned successively with more detailed matters the slightest delay in settling early problems can only lead to delays on the whole design and consequently the engineering, procurement, fabrication and erection. The fact that the design was not completed pre-contract means, since it overlaps with construction, that non-completion will impede both off-site and on-site progress if it is not allowed to proceed timely and efficiently.

The contractor is under a programme obligation by the time schedule and the Employer, having himself undertaken to respect the same, must react simply within the limits of his obligations in a timely manner and abstain from interfering in the design process. Thus, if the Employer does make comments in accordance with rights under the Contract then the contractor has to consider, depending upon the stage reached and if the proposals meet the Employer's Requirements, whether to take the same into consideration, *it being remembered that the contractor is developing the design from the Bid Package and basic design documents incorporated into the Contract without adjustment of the price but with absolute responsibility for results.*

In entering into EPC Turnkey contracts, scheduled for completion within a restricted time and with a fixed price, Employers must afford the fullest cooperation and assistance to contractors by according timely approvals to their proposals, limiting any remarks during the design review to only actual errors and genuine departures from the Employer's Requirements of the Bid Package and good engineering practice and exercising the fullest flexibility in the interpretation of the Employer's Requirements, ensuring that at no stage would the process of design or construction be stalled or stopped, other than for reasons expressly stipulated in the Contract.

Employers and their consultants by choosing the EPC Turnkey route are relying on the skill and judgement of contractors and it is, therefore, unnecessary, except in the face of gross non-compliance with his obligations, to interfere in any way or to subject contractors to long delays in the acceptance of their proposals especially when they meet the Employer's Requirements, are in accordance with standard,

international engineering practices and incorporate materials, equipment and plant to be procured from already known or even approved vendors.

It is clear, therefore, that any review and comments by the Employer and his consultant ought to be carried out bearing in mind the level of information supplied and the strict time limits imposed by the Employer himself with a view to keeping the system rolling, whatever happens, and that decisions to freeze any or all aspects of the design, engineering and ultimately procurement cannot always be made. This is done, of course, in the interest of the project with a view to ensuring that both sides keep to the time schedule that they have agreed to meet.

In the practical rather than the legal sense, in EPC Turnkey contracts time is of the essence and is applicable to the obligations of both the Employer and the contractor. Accordingly, Standard Contracts have been drafted with this in mind to allow work, at whatever stage of advancement, i.e. residual and detailed design, engineering, procurement, fabrication or erection, to proceed smoothly and efficiently, only essential matters being considered, and even then without undue delay. These contracts, read in the light of the relevant governing law, also usually provide more than adequate protection to Employers where contractors are not or are found at some later stage not to have fulfilled their obligations.

EPC Turnkey contracts, therefore, need to be managed and administered in a very different manner from traditional contracts with Employers' designs, it being clearly understood that contractors whilst executing EPC Turnkey projects must be allowed to proceed at their own risk, unless safety is involved, since they are ultimately responsible for the design, its constructability and the "fitness for purpose", contracts, as stated above normally containing adequate safeguards should contractors be in breach of any of these obligations.

Consequently, EPC Turnkey contracts should not, as is very often the case in India, be allowed to turn into exercises in innovative engineering to arrive at a final result far superior to that described in the Contract and agreed to be undertaken by the Contractor. This is what has become commonly known as the abuse of EPC Turnkey principles - but that's another story!

References:

Construction Contracts: Principles and Policies in Tort and Contract - I.N. Duncan Wallace

Design and Build Contract Practice - Dennis Turner

Design and Build: Uses and Abuses - Jeremy Hackett

Design Liability in the Construction Industry - D. L. Cornes

Understanding and Negotiating Turnkey Contracts - Joseph A. Huse

FIDIC Conditions of Contract for EPC Turnkey Projects

FIDIC GLOBAL CONTRACT CONDITIONS FOR THE CONSTRUCTION INDUSTRY

With a view to familiarising the infrastructure and construction industries and the engineering consulting profession in India with the new FIDIC contract conditions developed in 1999 in the context of both national and international contracts, the Consulting Engineers Association of India ("CEAI") is organising an international conference at the Hotel Taj Man Singh, New Delhi on the 20th and 21st January, 2001 under the banner "FIDIC Global Contract Conditions for the Construction Industry".

Members are reminded that all FIDIC publications, conveniently priced in Rupees, can now be obtained from the CEAI offices at East Court, Zone 4, Core 4B, India Habitat Centre, Lodhi Road, New Delhi. Tel 011 4601068. Fax 011 4642831. E-Mail, cengr@del2.vsni.net.in. Website: <http://www.consultingengr.com>

