John Challenger and David McIvor explain why, 45 years on, IChemE’s Forms of Contract continue to be industry’s go-to contract of choice

The Institution of Chemical Engineers (IChemE) has for over 45 years published a range of standard contracts for the chemical industry, the first of which was the Model Form of Conditions of Contract for Process Plants Suitable for Lump-sum Contracts (The Red Book). The drafting committee recognised the need to create a contract that dealt with projects that were performance based, involved a combination of engineering skills, and accommodated the complex way in which the purchaser and the contractor allocated roles and responsibilities over the various phases of development of a new process plant.

The unique economic factors, multi-disciplinary projects and potential catastrophic risks associated with the process plants industry require knowledgeable and precise drafting of key issues of which the following need to be taken into account:

- responsibility for the design which can be based on a combination of the proprietary technology design of the process licensor or purchaser, the detailed design of the contractor and specialist equipment or systems suppliers, hence there is no single point of responsibility when it comes to design,
- the financial standing of the purchaser usually far exceeds that of the contractor such that the purchaser is the party most
able to bear any catastrophic losses;
- impact of the timescale of a project that can cross business cycles and changes in government and law that can affect priorities, and risks management;
- chemical, biochemical, oil, gas or nuclear projects that all include complex dynamic systems that are a potential source of a catastrophic failure which can result in serious injuries, fatalities, pollution and serious property damage; and
- the impact of regulatory controls relating to quality, the environment and safety.

The IChemE contracts seek to properly balance the above factors providing a flexible framework for project execution that reflects that scope, complexity, size, sequence of construction and need for financial planning all within highly-regulated safety and environmental standards, and the importance of the specification, schedules and the guidance notes.

In the context of output performance-based contracts the IChemE’s Forms of Contract are the only standard suite of contracts providing not only the legal terms but, through the schedules and guidance notes, a framework for developing the level of detail needed to specify the project and the sequence of events for the successful passage from project inception through commissioning, take-over to operation, and performance testing. While the application of inappropriate contracting strategies or contract documents can lead to disputes, the prime cause of most major contract problems are incomplete, vague or ambiguous contracts linked with poorly drafted schedules. While most of the key considerations that should be addressed in the specification and schedules may appear obvious they are frequently incomplete and inadequately defined, becoming a source of disputes.

While the legal terms seek to properly allocate risk based on an analysis of where this is best managed, the real challenge in contract formation is completing the 21 schedules that fully define the project. Too frequently, the excellent and informative guidance notes included with each form of contract are not consulted by those drafting the contracts. The guidance seeks to highlight the need to provide a detailed specification and description of the works, supported by completed schedules that cover all aspects of the project, in particular the completion, handover and testing regimes required. Therefore, both parties must expend the time and effort needed to provide sufficient detail in the specification to avoid any ambiguity in the requirements that the plant must meet.

The specification must incorporate the technical details for the plant together with a list of all standards and codes of practice, to which the plant is to be built. Equally important is the inclusion of the outputs of the accepted international or nationally accepted ‘commissions’ or quality management systems in the testing regime defined in Schedule 16 (Performance tests and procedures). If the loading tests on the process equipment are on the sufficiency of the plant to meet statutory or regulatory standards this should be clearly included in the specification. The specification should also address any work involving modification or extension of, and any impact on, existing plant such as the need to maintain production, the condition of existing plant and all interfaces between old and new facilities.

The overall quality assurance programme. The purpose of validation is to ensure the documentation evidence providing assurance that the product from a manufacturing process will consistently meet its defined specifications and quality characteristics in all required circumstances.

The parties should therefore jointly review in detail the specification and schedules prior to the contract being awarded to remove inconsistencies and ensure they hold a common understanding of what is required. This practice is often neglected.

Transfer of responsibility and liability

From both a contractual and safety perspective it is critical that responsibility for the plant should pass from the contractor to the purchaser in a clearly-defined way. The following are some of the key factors to consider:

- (a) compliance with the specification and with the description of the works;
- (b) operational dependence of particular tasks or sections of the plant, thereby setting a logical sequence in the approved programme;
- (c) application of financial incentives or damages;
- (d) transfer of care, custody and control;
- (e) site management and health, safety and environmental requirements;
- (f) introduction of raw materials; and
- (g) insurance cover and liabilities.

What constitutes completion of construction?

Terms within the sequence of construction and handover are often confused with individuals substituting their own definitions for terms like ‘start-up’ (pre-commissioning), ‘commissioning’, ‘ready for commissioning’, or ‘ready for startup’ rather than using terms specifically defined in the contract. The IChemE forms ‘completion of construction’ is used for establishing that the plant is physically complete in compliance with the specification and great care should be taken in defining what constitutes this key stage in a project since this can also be used for assessing delay and applying liquidated damages.

Each party’s roles should be defined with great precision in schedule 15 (Take-over procedure) and should include all plant checks, inspection procedures, equipment tests and a full set of necessary documentation to be provided by the contractor.

It is emphasised that these activities are crucial to the ultimate success of the project and should not be rushed by undue pressure to commence production. The purchaser should only take over once the contractor has demonstrated that the plant is up to standard and ready for the raw material to be introduced.

Conclusions

While the IChemE forms of contract allow an enviable record of extremely low instances of dispute, users need to understand that the way projects are procured can implant later sources of dispute into the specification and schedules. Probably the most critical of all is the potential source of a catastrophic failure which can result in serious injuries, fatalities, pollution and serious property damage; and

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