



# Delivering Competent Engineering Services

An Online Continuing Education Course for Engineers

**Course Number: FM-2008**  
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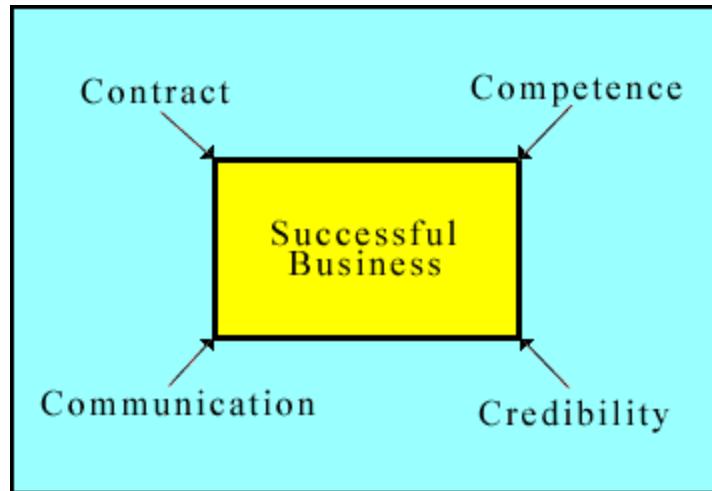
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## 1.0 Introduction

The delivery of competent engineering services depends to a great extent on the qualification, training and experience of the Project Leader/Manager who represents and speaks for the Engineering Contractor in dealing with the need expressed by a client. It is the Manager that is entrusted with the development of a scope of work that is responsive to the client's requirements. Furthermore, following the successful negotiation of an acceptable contract between client and contractor the scope of work is assigned to a qualified project team for implementation under the direct supervision of the Project Manager. It is during these early stages of interactions between the Manager and client that the stage is set for the ultimate success or failure of a project. Success is defined by a client satisfied with the services rendered and by a contractor who has realized a fair profit for services rendered. Failure, on the other hand, becomes evident by the breakdown of communication between client and contractor ultimately leading the client to sue the contractor for breach of contract and professional liability for the delivery of poor or substandard services.

Professional liability refers to the responsibility for alleged unfavorable outcomes arising or resulting from the implementation of work performed by a contractor for a client in accordance with the terms spelled in a contract. The debilitating effects of professional liability claims can best be appreciated by those who have experienced them. The resulting drawn-out court litigation results in psychological trauma for all parties involved and represents an enormous waste of time, a scattering of energies, a drag on productivity, and a drain on profitability.

A business is successful when it generates a profit, which means that its income exceeds its expenses. Unfortunately, however, the simple act of working to realize a profit exposes you to possible charges of professional liability. In other words, profit and liability are regarded as the two sides of the same coin. This course reviews, from a contractor's perspective, promising strategies that will help you minimize your exposure to unwarranted professional claims and maximize your chances of retaining as much of your profit as possible. To accomplish this important goal you should pay special attention to the 4 Cs of business: contract, credibility, competence and communication.



**Figure 1: The 4 Cs of success in business**

Professional liability claims are not filed at the time the technical scope of a proposal is accepted and incorporated into a contract. However, it is during this early stage that steps can be taken to minimize your exposure or prevent it altogether. It is often here that the seed of a claim is planted, since the scope of work is an integral part of the contract and promises made in it are legally binding.

Establishing and maintaining the confidence of a client should be the prime objective of a successful business. It is an ongoing process that cannot be allowed to lapse during the entire life of the contractual relationship. You should also be aware that your staff can assist you very effectively in establishing and maintaining credibility with your client.

It is the contractor's manager and staff that have the responsibility to implement the scope of work in accordance with the terms of the contract and accepted professional standards. Therefore, the people you work with and the way your company is organized will make a great difference to the success of your business and your exposure to professional liability claims.

Finally, clear and effective communication is essential to establishing positive agreements with the client, to directing and coordinating the work of the project staff, and to promoting the cooperation of subcontractors and consultants.

To address these issues, the following topics are examined:

- Elements of a contract
- Methods for establishing and maintaining credibility
- Staff competence and performance
- Communication skills

## 2.0 Elements of a Contract

A contract formalizes in writing the verbal agreements reached between the client and contractor, and it spells out the terms and conditions under which a specified scope of work is to be implemented. Therefore, it is particularly important to draw up a contract with great care, especially since the team that negotiates the contract and the staff that initiates the work may change over the lifetime of the project. You should keep in mind that a contract, once executed, is a legally binding document whether implemented by you or others on your behalf.

Consequently, any departure from its terms and conditions exposes you and your firm to claims of alleged unfavorable outcomes. Ideally, a properly drawn contract needs to anticipate and prevent as many future misunderstandings as possible between the parties involved. Also, once a claim is filed, a contract provides the basis on which a court of law can rest its decisions and judgments.

The following discussion about the terms and conditions of a contract assumes that the scope of work has already been negotiated and that all parties are clear and in agreement as to its content and deliverables. If problems exist, they should be resolved before the contract is finalized because the scope of work is attached to the contract and becomes a part of its legal and binding sections. In other words, no contract changes or adjustments can overcome or compensate for serious problems with the scope of work. Unclear and/or unrealistic promises and unworkable deliverables should be reviewed, clarified and/or adjusted as needed before the contract is executed.

Following is a list of thirteen common standard terms and conditions that you are likely to encounter in a contract for professional engineering services. Each term is then discussed in more detail.

- Definitions
- Equipment and access to site
- Billing
- Responsibility for services
- Indemnification
- Insurance
- Special Liability
- Consequential damages
- Delays
- Third party interests
- Changes and termination
- Precedence and divisibility
- Concluding statement

## 2.1 Definitions

This is the introductory section of the contract. It defines who the client and contractor are, and it establishes the working relationship between them. It also defines what is meant by the scope of technical services and states that the scope of work is included as an attachment to the contract. Provisions are also made in this section for modifications and/or additions to the scope of work to be treated as an extension to this attachment, provided they are mutually accepted and ratified by the client and contractor.

The word "contract" is also defined in this section to include the terms and conditions contained in the remainder of the document. Usually a statement is inserted in this section to the effect that these terms and conditions supersede any other agreement reached between the parties.

In essence, however, there are two important aspects of this section relative to liability: 1) it incorporates the scope of work as an integral attachment to the contract, and 2) it invalidates and supersedes all other agreements between the parties. Make sure that 1) the scope of work is clear and attainable and 2) there is a statement covering the fact that the contract invalidates and supersedes other agreements.

## 2.2 Equipment and Access to Site

This section should state that the client will provide site access to the contractor so that the contractor can perform the scope of work efficiently. It may also include reference to supporting documentation that the client will provide the contractor to enable him to perform the services effectively. If the contractor intends to use specialized equipment that requires special handling before use, arrangement for appropriate site access and testing of the equipment can be included in this section. The illustration provided below is an example where special arrangements were made to bring in and set up specialized equipment on site.



**Figure 2: Example of the type of heavy track-mounted equipment that needs special handling to get on site and assemble for use. This equipment was operated to dig and install a cut-off wall in the foundation of a major dam.**

## 2.3 Billing

This section spells out the elements of the financial agreement between the client and contractor. It defines whether the contract is to be implemented on a time and cost plus reimbursement of expenses basis or on a fixed cost basis. Payment frequency in relation to the scope of work and other charges for reimbursement is also specified here. In drafting this section, you should keep in mind that the relationship between your revenues and expenses may spell the difference between realizing a profit and incurring a loss.

### PROFIT AND LOSS EQUATIONS

**Revenues > Expenses = Profit**

**Revenues < Expenses = Loss**

**Figure 3: The difference between realizing a profit and incurring a loss depends to a great extent on the structuring of the billing clause.**

It is obvious that the wording of this section should be reviewed quite carefully to ensure that you establish an equitable cash flow in return for your services. You should not wait till the end of the contract to get paid. Converting completed work to cash on a regular schedule is particularly important from a professional claims standpoint. It should be realized that on-time payment is closely linked to the financial status of the client.

In a tight cash situation, the client will tend to stretch its account payables by delaying payments to vendors and contractors. In such a case, the vendor or contractor becomes the financier of the client's business. A certain amount of delay may be inevitable and should be treated with tact. Pressing too hard for payment may lose the client. The contractor should be able to absorb a reasonable delay in payment from the client. In such a case, short-term judicial borrowing by the contractor can be used to alleviate the situation until it gets resolved. In other words, you can borrow from time to time to weather a tight cash situation, but you cannot do it forever and expect your business to survive. Also, accepting excessive delays in payment will eventually lead to the filing of claims by the contractor and counterclaims by the client, a situation that should be avoided at all cost. Paying attention to the details of the contract at this stage can help resolve this impasse. Therefore, it is recommended that you set a clear agreement in this clause that ties a regular cash flow to a demonstrable progress of your work.

## 2.4 Responsibility for Services

This section establishes the fact that the services to be provided by the contractor and other qualified parties, such as subcontractors, shall be paid to include in the care and skill ordinarily exercised by a professional of the same profession practicing under similar conditions. The contractor should not offer guarantees or warranties for the services provided unless necessary, they should always be accompanied by a disclaimer of any liability exposure.

The right of the contractor and consultants should be able to expect and accept such information. If such information is not available, the contractor should be able to expect and accept such information. The scope, schedule and cost of services to be provided should be clearly defined and any necessary data.

It is prudent to include in the contract a provision for the re-performance of the contractor in the event of any defective services performed. The period of liability for the re-performance of any defective services performed should also be specified as reasonably possible.

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