

- Section II.2. - Code of Ethics
- Section II.2.a. - Code of Ethics
- Section II.2.b. - Code of Ethics
- Section II.2.c. - Code of Ethics
- Section III.2.b. - Code of Ethics

### **COMPETENCE TO PERFORM FOUNDATION DESIGN**

#### **FACTS:**

Engineer A, a professional engineer works with a construction contractor on a design/build project for the construction of an industrial facility. During the construction of the project, the construction contractor separately retains the services of a Engineer B, a professional engineer to design structural footings as part of the facility. Engineer B's degree and background is in chemical engineering. Engineer A has been unable to establish that Engineer B has any apparent subsequent training in foundation design and Engineer A has reservations concerning the competence of Engineer B to design the structural footings and reports his concerns to the contractor.

#### **QUESTIONS:**

1. Would it be ethical for Engineer B to perform the design of the structural footings as part of the facility?
2. Did Engineer A have an ethical responsibility to question Engineer B's competency and report his concerns to the contractor?

#### **REFERENCES:**

- Section II.2. - Engineers shall perform services only in the areas of their competence.
- Section II.2.a. - Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.

- Section II.2.b. - Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.
- Section II.2.c. - Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.
- Section III.2.b. - Engineers shall not complete, sign or seal plans and/or specifications that are not of a design safe to the public health and welfare and in conformity with accepted engineering standards. If the client or employer insists on such unprofessional conduct, they shall notify the proper authorities and withdraw from further service on the project.

#### DISCUSSION:

The Board has had occasion to consider cases involving ethical issues that are somewhat related to the issues involved in this case. In BER Case 71-2, a case involving the brokerage of engineering services by two firms competing for government work and the question of competence. The Board, in examining predecessor Section 6, recognized "the propriety and value of the prime professional or client retaining the services of experts and specialists in the interests of the project", and noted that a prime professional will be expected to retain or recommend the retention of experts and specialists in situations in which the prime professional is performing substantial services on the project. Likewise, BER Case 78-5, involved an effort by a consulting firm under consideration to perform services to a public utility in which the firm sought to alter its qualifications following its interview with the public utility in order to improve its position to secure the contract. The Board affirmed its decision rendered in BER Case 71-2 that in the field of consulting practice, engineers have an ethical obligation to seek work only in areas where they possess educational background and experience or to retain individuals who possess the necessary educational background and experience to perform the work.

More recently, in BER Case 85-3, a local county ordinance required that the position of county surveyor be filled by a P.E. The first appointee to the position was not a P.E. and was therefore deemed unqualified to continue in the position. The county commissioners met and decided to appoint an engineer, a P.E. with experience and educational background solely in the field of chemical engineering. The engineer accepted the position. The duties and responsibilities of

the position of county surveyor included oversight of surveying reports and highway improvement projects but did not include actual preparation of engineering or surveying documents. After considering the two earlier cases, the Board decided it was unethical for Engineer A to accept the position as county surveyor, noting that while the facts of the two aforementioned cases were quite dissimilar to BER Case 85-3, those two cases related to the same Code provisions, and do have some bearing upon the Board's consideration of those provisions.

As the Board noted in BER Case 85-3, obviously, there are important distinctions in applying the Code language to a consulting practice and applying the language in the context of an employment relationship. In the former situation, the firm has a good deal more discretion and flexibility and may be able to structure its work force to fit the needs and requirements of a particular job for which the firm is being retained. For example, if an engineering firm is retained to perform engineering and land surveying services and the firm does not have expertise in the area of land surveying, under the provisions of the Code the firm should retain individuals with that expertise.

Because of the relatively dynamic nature of private consulting practice, engineering firms frequently establish joint ventures and subcontracts, hire additional qualified personnel, or make other arrangements in order to serve the needs of a client more effectively and efficiently. However, the Board noted that from a practicality standpoint, it would be extremely difficult, if not impossible, for a county surveyor with no background or expertise in surveying to perform effective oversight of surveying reports and highway improvement projects for the county. The Board could not see any way in which the engineer could be in accordance with Section II.2.b. under these facts because whatever course of action he took would result in unethical conduct and compromise his role as county surveyor.

Said the Board, "It may seem plausible that Section II.2.c. would provide some ethical avenue through which the engineer could perform the job as county surveyor. While it is true that the engineer meets the legal requirements for the position because he is a licensed professional engineer, professional ethics requires an engineer to go beyond what is specifically permitted by the law. The Board then reviewed Code Section II.2., the introductory section which makes the clear statement that the engineer is obligated to perform services only in his area of competence and concluded that it would not be consistent with the Code provision for the engineer to act as a county surveyor when his expertise is limited to the field of chemical engineering.

Section II.2.a. states that an engineer should undertake assignments only when qualified by education or experience in the specific technical fields involved. In the case at hand, Engineer B appear to be accepting an assignment in an area in which he possesses no apparent background or expertise. Under the facts of this case, the job responsibilities of Engineer B includes the design of structural footings as part of the facility. In contrast, in BER Case 85-3, the county surveyor's responsibilities did not include actual preparation or approval of engineering or surveying documents; however, the job responsibilities did include oversight of surveying reports and highway improvements. Nevertheless, The Board concluded in BER Case 85-3 that at a bare minimum, one who is serving in the role as a county surveyor must have at least

some substantive degree of background and experience in order to accept such a position. Said the Board, "We fail to see how an individual, without such background or experience, could properly perform and exercise the judgment and discretion required by the job."

In the present case, we follow the same reasoning and conclude that there is at least a reasonable basis for Engineer A to conclude that Engineer B does not possess the competence to perform the required task. While it may be possible for Engineer B as a consultant to the contractor to retain the services of a competent structural engineer to design the structural footings for the facility, we do not think this would be feasible under the facts. It appears under the facts that Engineer B was retained specifically for the sole and exclusive purpose of designing the structural footings in question. If Engineer B were to seek a separate firm to perform that very task, we have to seriously wonder what it was Engineer B was actually hired to perform and for what it was being paid.

We believe that Engineer A has an objective basis to determine whether Engineer B has sufficient education, experience and training to perform the required structural design services. If Engineer A determines that Engineer B does not possess the required education, training and experience to perform the services, we believe Engineer A has an ethical obligation to confront Engineer B to make his concerns known to Engineer B, recommending that Engineer B withdraw from the project. If Engineer B refuses to acquiesce to Engineer A's recommendation, Engineer A has an obligation under the Code to bring the matter to the attention of his client and to the authorities as appropriate, and if necessary, withdraw from the project if his concerns are not met.

#### CONCLUSIONS:

1. It would be unethical for Engineer B to perform the design of the structural footings as part of the facility.
2. Engineer A has an ethical responsibility to question Engineer B's competency and report his concerns to the contractor.

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