Section II.2.a. - Code of Ethics
Section II.2.b. - Code of Ethics
Section II.2.c. - Code of Ethics
Section III.5.a. - Code of Ethics
Section III.9. - Code of Ethics

PAYING MANUFACTURER TO PREPARE DRAWINGS

FACTS:

Engineer A, a principal in a large engineering firm that designs plants for industrial firms is requested by an industrial manufacturer to design an industrial facility. Included as part of the facility are several major pieces of industrial equipment. Engineer A's firm does not possess the expertise to design a particular kind of industrial equipment and therefore requests and pays a manufacturer of the equipment components to prepare contract design drawings for the particular equipment to be included as part of Engineer A's contract document bidding package. Engineer A reviews the contract drawings and signs and seals those drawings as part of the overall design drawings.

QUESTIONS:

1. Was it ethical for Engineer A to pay a manufacturer of the equipment components to prepare contract drawings to be included as part of Engineer A's contract package?

2. Was it ethical for Engineer A to sign and seal those drawings?

REFERENCES:

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.

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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.5.a. -Engineers shall not accept financial or other considerations, including free engineering designs, from material or equipment suppliers for specifying their product.

Section III.9. -Engineers shall accept responsibility for their professional activities; provided, however, that Engineers may seek indemnification for professional services arising out of their practice for other than gross negligence, where the Engineer's interests cannot otherwise be protected.

DISCUSSION:

Over the last thirty years, the practice of engineering has become increasingly specialized. Technical specialty and subspecialty areas have proliferated as new and innovative ways of solving our society's needs have been developed. In today's ever-complex professional environment, an engineer can not be expected to master the entire range of professional competencies which are included within the definition of the practice of engineering any more than, for example in the field of medicine, a family practitioner can be expected to perform open heart surgery. It appears that in the years ahead, engineering, just as medicine, law and the other professions, will become more specialized and sub-specialized. While engineers will continue to be trained to possess a basic understanding of the fundamentals of engineering, few engineers will be competent to perform professional services in all areas. Every professional must recognize the limitations of his own competence and take appropriate steps in dealings with clients to assure that the client recognizes those limitations in accordance with the Code.

More and more, engineers will be placed in situations where they will be required to rely upon the expertise of materialmen, equipment suppliers, and others who provide much of the substance and hardware that will be used and incorporated into the projects, products, facilities and systems that engineers design. This fact will certainly have a significant impact in the manner in which engineers deliver their professional services and the nature of the services they provide to their client. For example, in the design of major plants for the manufacture of highly sophisticated computer components, it is unlikely that a professional engineer with expertise in fields related to structural engineering could be expected to master the intricacies of electrical and electronics engineering equipment, components, etc.

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At the same time, we do not wish to suggest that a professional engineer who is called upon to serve in the role of lead professional in the design of a facility, system, building or structure containing highly specialized systems or equipment should be permitted to avoid responsibility for the overall design of that facility, system, building or structure. As the Code clearly states in Section III.9., "engineers shall accept responsibility for their professional activities..."

It would appear that a reasonable balance needs to be struck between the increasing specialization and subspecialization within the profession of engineering and the ethical obligation of engineers to assume full responsibility for the results of their professional activities.

Most state engineering registration statutes or rules of professional conduct emphasize the view that it is unprofessional for an engineer to attempt to practice in a field of engineering in which the engineer is not proficient. The point is also clearly articulated in the NSPE Code of Ethics. In Case 87-1, an engineer, employed by the Army was informed that his position was being abolished and that he was being reassigned. The engineer accepted the new position even though he lacked the technical expertise to perform the required duties. In finding that the engineer acted ethically, we noted that under the facts of the case, the engineer was accepting a position as a staff engineer of a government agency and would be reporting to an experienced engineer. We did not read the Code to prohibit the engineer from accepting his new assignment. "To do so," we stated, "would limit the ability of engineers to expand their level of experience and knowledge." We asserted that the intent of Section II.2. of the Code is to limit individual engineers from undertaking assignments or positions of authority and responsibility where they lack competence or experience. We concluded by stating that we did not believe the Code's intent was to prohibit engineers, whose work is subject to review and oversight by senior engineers, from accepting new and different tasks and duties, thereby growing professionally. "To decide otherwise, we said, "would be to ignore the practical realities of engineering and impose inflexible practice requirements on the profession."

While the facts and circumstances of Case 87-1 can be distinguished from the present case, we believe there are relevant comparisons to draw. In both instances, the engineers are being asked to perform professional services beyond their area of competence. In Case 87-1, it would appear that the engineer's response, in accepting the position in question was reasonable for the circumstances cited. Under the facts in the present case, we do not believe it would be inappropriate for Engineer A to request and pay a manufacturer to
prepare contract drawings which would be included as part of the engineer's contract documents. Presumably, the component manufacturer has competent engineers on staff who are expert and knowledgeable concerning the industrial equipment in question. It would seem that Engineer A's request would be not unlike a situation where an engineer serving as the prime design professional on a project retains sub-consultants (e.g., mechanical, electrical, structural, etc.) to design those aspects of the work for which the consultant does not possess adequate competence. This is a traditional and customary method in which professional services are delivered within the design community and we believe it would be unwise to attempt to constrain such practices.

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On the other hand we are of the view that it would be inappropriate for Engineer A to sign and seal the contract drawings prepared by the manufacturer. Engineer A, by his own admission, does not possess the competence to review the contract drawings and sign and seal those drawings. One must question what is the purpose of Engineer A including documents and drawings which he did not prepare and for which he does not possess competence. As the Code makes clear, it is unethical for engineers to affix their signatures to any plan or document dealing with a subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control. Under the facts, it is clear that neither Engineer A nor his firm possesses adequate competence to develop the design drawings for the industrial equipment. Moreover, in the absence of competence either by Engineer A or his firm, it would be impossible for Engineer A or his firm to direct or control the development of those design drawings. "Direction" and "control" are the means by which one party exercises supervision over another party. In order to effectively exercise such supervision, it is clear that the supervising party must be knowledgeable about the areas being supervised. Here, Engineer A and his firm cannot be said to be knowledgeable and therefore it would be inappropriate for Engineer A or any other member of his firm to sign and seal drawings for the design of the industrial equipment.

In the past, this Board has addressed circumstances where engineers have accepted financial or other consideration, including free engineering designs, from material or equipment suppliers for specifying their products as in Case 76-8. We distinguish this case from those cases where we found the engineer's actions in violation of the Code for several reasons. First, under the facts, Engineer A received nothing in exchange from the equipment component manufacture. Instead, Engineer A paid the equipment component manufacturer a fee for all services rendered. Second, there is no evidence that the equipment component manufacturer's product was even being specified. Rather, it seems the manufacturer was merely preparing a generic design for certain equipment and that any other vendor of equipment components could also bid on the work. There may
be circumstances in which an engineer should indicate that the equipment component manufacturer being requested to provide contract design drawings would not be permitted to bid the work; however, we are not willing to go that far in this case.

CONCLUSIONS:

1. It was ethical for Engineer A to pay a manufacturer of equipment components to prepare contract drawings to be included as part of Engineer A's contract package.

2. It was unethical for Engineer A to sign and seal those drawings.

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