

2016 National Society of Professional Engineers

MILTON F. LUNCH ETHICS CONTEST

New Hampshire Society of Professional Engineers

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Facts:

Engineer A is retained by Client X to oversee the design of an industrial processing facility, including manufactured elements of the facility. Engineer A prepares the drawings, plans and specifications for the industrial processing facility and in doing so, incorporates manufactured equipment into the facility. As part of Engineer A's preparation of the drawings, plans and specifications, Engineer A includes copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications. Engineer A gives full attribution to the manufacturer. Also included within Engineer A's contract with Client X is the provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans and specifications and in his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment.

Questions:

1. Was it ethical for Engineer A to include copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications, giving full attribution to the manufacturer?
2. Was it ethical for Engineer A to include within Engineer A's contract with Client X a provision whereby Engineer A represents that he has reviewed the manufacturer's drawings, plans and specifications and in his professional opinion believes the equipment will perform as represented, but that Engineer A is not responsible for the performance of the manufactured equipment?

References:

NSPE Code of Ethics for Engineers

1. Section I, 2 Engineers in the fulfillment of their professional duties, shall perform services only in the areas of their competence.
2. Section II, 2.0 Engineers shall perform services only in the area of their competence.
3. Section II, 2.a Engineers shall undertake assignments only when qualified by education or experience in the specific technical field involved.
4. Section II, 2.b Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, not to any plan or document not prepared under their direction and control.
5. 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.

References (Con't):

6. Section II, 3.b Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.
7. Section III, 7.c Engineers in sales or industrial employ are entitled to make engineering comparisons of represented products with products of other suppliers.

Discussion:

Engineers regularly reach outside of their engineering field and product knowledge to gather specialized information pertinent to projects that they are undertaking. In this instance, we can assume that the manufactured equipment referenced in this case is not simply manufactured elements of the building structure such as trusses or structural steel connectors, but rather machinery (manufactured equipment) related to the industrial process proposed within the facility. This manufactured equipment could be nearly any imaginable machinery that, by necessity, must be incorporated into the building during construction. A manned hoisting trolley, an automated wood finishing machine, roof top mounted air-conditioning system or a blow molding machine are examples of such equipment. The engineer would have to work in close cooperation with the manufacturer of the equipment to properly assess the effect of the equipment upon the entire facility design.

Complete drawings, plans and specifications of the manufactured equipment must be included with the overall plan, drawings and specifications of the proposed industrial processing facility. It is the best and surest way to "pass forward" the information upon which Engineer A based their many decisions. The documentation from the manufacturer provides the basis of determining floor loads, ventilation requirements, heating and cooling requirements, vibration, harmonics and a myriad of other decisions. Additionally, since the manufacturer's drawings, plans and specifications are included in the overall design documents, resident engineers and field inspectors will have a basis for performing a quality control inspection of the manufactured equipment when it is delivered and assembled on site.

Since the plans and specifications for the manufactured equipment were not of his own design, Engineer A correctly gives full credit and attribution to the manufacturer for the documents applicable to the manufactured equipment.

It seems unusual that Engineer A would include a provision in the contract to review and offer an opinion on the suitability of the manufactured equipment. This is more likely to be a provision included in the contract by the client.

It is important to make sure that our first assumption is that Engineer A is performing their services ethically. Evaluation of the manufactured equipment may seem to be an area that lies outside of Engineer A's competencies, however; without knowing Engineer A's background we must assume that the Engineer is acting ethically and has special knowledge and experience that would qualify him to review the manufactured equipment in question. Within the letter rendering Engineer A's professional opinion there should be a brief summary of the Engineer's qualifications so the basis of any opinion can

be understood and the opinion can be weighted properly in consideration of other factors associated with the selection of the manufactured equipment.

Without direct responsibility for the performance of the equipment, what motivation does Engineer A have to thoroughly review the drawings, plans and specifications for the manufactured equipment? Here again we have to start from the assumption that Engineer A is acting ethically. Everyone, including Engineer A, wishes for their projects to succeed. Manufactured equipment incorporated in the production facility must be reviewed at some level by all parties concerned with the success of the project. Ultimately, whether our engineer reviews the plans and specifications or not, the person that selected the equipment for the industrial process and the manufacturer of the manufactured equipment will be responsible for the satisfactory performance of the equipment once it is operational.

Conclusion:

Engineer A acted ethically when including copies of the drawings, plans and specifications provided by the manufacturer of the manufactured equipment with Engineer A's drawings, plans and specifications, giving full attribution to the manufacturer.

Engineer A acted ethically in offering his qualified professional opinion on the suitability of the manufactured equipment for the intended function without being directly responsible for the performance of the manufactured equipment.