

FACT SITUATION #1

Signing and Sealing of Documents—Fire Sprinkler Layout Drawings

Facts:

Engineer A is a professional engineer with significant expertise in fire protection engineering. Recently Engineer A was contacted by a fire sprinkler contractor and asked to review, sign and seal the fire sprinkler contractor's proposed layout design document developed solely by the fire sprinkler contractor without the involvement of a professional engineer in order for the document to be submitted to the local code official for review and approval. Under the state law, fire sprinkler design documents are required to be prepared by or under the responsible charge of a licensed professional engineer. Engineer A has significant experience preparing detailed fire sprinkler layout drawings and performing hydraulic calculations and fluid delivery time calculations as required by National Fire Protection Association standards.

Question:

What are Engineer A's ethical responsibilities under the circumstances?

NSPE CODE REFERENCES

(To be submitted by the contestant. Use [NSPE Code of Ethics](#) references only.)

DISCUSSION

To be submitted by the contestant

CONCLUSIONS

To be submitted by the contestant

NOTE: *In order to maintain anonymity for purposes of judging, the actual body of the entry should not include any reference to the state society, chapter, member, student, university, or any other individual group who submitted the entry. However, be sure to provide the name, address, email address, phone number, and current NSPE member number of (1) your NSPE chapter or state society, and (2) each of the individuals responsible for submitting the entry, on a separate cover sheet accompanying your entry. Submissions failing to include this information will be returned to submitter and will not be eligible for the contest.*

FACT SITUATION #2

Conflict of Interest—Overlapping Service Arrangements

Facts:

Engineer A serves as managing director and president, and reports to the Board of Directors, of a startup company (XPro), in which he is also an investor. XPro is involved in the development of a new low-cost technology to purify drinking water in developing countries. Engineer A also has a separate engineering company that is under contract with XPro to provide engineering services. The XPro board is aware of this relationship and does not object.

Fabrico, a fabrication company, has begun to provide technical services to XPro. Fabrico is now requesting professional engineering services—unrelated to its work with XPro—from the Engineer A’s engineering company. Fabrico does not want to invoice the startup. Instead, Fabrico has proposed that Engineer A’s company perform the engineering services for Fabrico for free and that Fabrico provide technical support to the startup on a “pro bono” basis.

Question:

Would it be ethical for Engineer A’s company to perform the engineering services for Fabrico for free and to permit Fabrico to provide technical support to the startup on a “pro bono” basis?

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DISCUSSION

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FACT SITUATION #3

Public Health, Safety, and Welfare—Driverless/Autonomous Vehicle

Facts:

Engineer A is a professional engineer working as a consultant to an automobile manufacturer that is considering the development of a driverless/autonomous vehicles operating system. Engineer A is assigned to an engineering risk assessment team whose members are being asked to make a recommendation relating to potential situations that could arise in connection with the operation of driverless/autonomous vehicles. The following scenario is among the situations that are being considered by the engineering risk assessment team: In the event of an unavoidable crash, does the vehicle’s system choose the outcome that will likely result in the greatest potential for safety for the vehicle’s passengers or does the vehicle’s software system instead choose an option where the least amount of potential harm is done to any of those involved in an accident, such as having the car crash into a stationary object (e.g., telephone pole, etc.) with the probability of causing some passengers serious but non-life threatening injuries instead of striking and potentially causing a fatal injury to a pedestrian, cyclist, or motorcycle rider?

Question:

What are Engineer A’s ethical obligations?

NSPE CODE REFERENCES

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DISCUSSION

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CONCLUSIONS

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FACT SITUATION #4

Conflict of Interest—Design of Playground As Favor To Public Official

Facts:

Engineer A is the owner of an engineering firm in a small town. Engineer A and his firm frequently perform engineering services for the small town and also for other local agencies that are overseen by the town council. Recently Engineer A and his firm were selected by a local agency to design a major public project in the town. Following the firm's completion of the project, Engineer B, the town engineer who leads a panel that approves the selection of engineering firms performing services for the town and other local agencies, asks Engineer A and his firm to donate engineering services to design a playground on behalf of a local not-for-profit organization that the city council member is active in and supports. Before Engineer A has a chance to reply, Engineer B advises Engineer A that Engineer A's firm's design of the playground will "keep Engineer A and his firm in good graces" with Engineer B in the future with regard to future work with the town or other public work.

Questions:

1. Was it ethical for Engineer B to ask Engineer A and his firm to donate engineering services to design a playground on behalf of a local not-for-profit organization that the city council member is active in and supports under the facts?

2. Would it be ethical for Engineer A to donate engineering services for the playground design under the circumstances?

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