

Public Health, Safety, and Welfare—Drinking Water Quality

Case No. 20-04

Facts:

Engineer A is a professional engineer who serves as the superintendent and chief engineer for the Metropolitan Water Commission (MWC). In order to reduce municipal expenditures and lower water rates, the MWC has been considering changing its water supply source from purchasing water from remote reservoirs from another regional authority to using the local river as the MWC's source. Engineer B, a consulting engineer retained by the MWC charged with evaluating water treatment needs for the change in water source, provided a report to Engineer A recommending extensive capital investments and a three-year timeline for further evaluation of water quality, design, and construction of improvements. The improvements are needed prior to the change in water source to ensure that sufficient corrosion control is provided so that old service pipes in the MWC service area don't leach lead at levels in excess of drinking water standards. Both Engineer A and Engineer B met with the MWC at a meeting sparsely attended by the public and recommended that the change in water source be substantially delayed until improvements could be completed. Despite those recommendations, the MWC voted to proceed simultaneously with the accelerated evaluation and design of needed water treatment improvements and the change in water source.

Questions:

1. What are the ethical obligations of Engineer A and Engineer B in this circumstance?
2. What should Engineer A and Engineer B do?

NSPE Code of Ethics References:

Section II.1. - Engineers shall hold paramount the safety, health, and welfare of the public.

Section II.1.a. - If engineer's judgment is overruled under circumstances that endanger life or property, they shall notify their employer or client and such other authority as may be appropriate.

Section II.1.c. - Engineers shall not reveal facts, data, or information without the prior consent of the client or employer except as authorized by law or this Code.

Section III.1.b. - Engineers shall advise their clients or employers when they believe a project will not be successful.

NSPE BER Case References: [19-10](#), [00-5](#), [89-7](#)

Discussion:

The role of the professional engineer in protecting the public health, safety, and welfare is fundamental to the practice of engineering and is the overriding charge in the NSPE Code of Ethics. This fundamental canon has been considered many times in past cases.

In a case that has been cited many times, [BER Case No. 00-5](#) centered on the reopening of a dangerous, closed bridge by a nonengineer public works director. The NSPE Board of Ethical Review stressed the importance of holding the public safety paramount. More recently, in [BER Case No. 19-10](#) Engineer A was hired by Client B to provide a building investigation after a fire. Engineer A determined that the building was unstable. Additionally, Engineer A determined that recent structural changes to the building, which was issued a certificate of occupancy by a county building official, might have caused new structural problems. In its conclusion, the Board of Ethical Review wrote, “Engineer A had an obligation to continue to pursue a resolution of the matter by working with Client B and in contacting in writing the supervisor of the county official, the fire marshal, or any other agency with jurisdiction, advising them of the structural deficiencies.”

Previous cases have also addressed the duty to report when safety concerns exist. In [BER Case No. 89-7](#), Engineer A was retained to investigate the structural components of an apartment building. While the building was structurally sound, Engineer A was informed that there were deficiencies in electrical and mechanical systems that violated applicable codes and standards. The agreement between the client and Engineer A indicated that the structural report was to remain confidential. Engineer A did not report the electrical and mechanical deficiencies to the appropriate authorities. In this case, the NSPE Board of Ethical Review determined that “it was unethical for Engineer A not to report the safety violations to the appropriate public authorities,” stating “we believe Engineer A could have taken other steps to address the situation, not the least of which was his paramount professional obligation to notify the appropriate authority if his professional judgment is overruled under circumstances where the safety of the public is endangered.”

As stated in the previous cases, the need to hold paramount the safety, health, and welfare of the public is well established. The remaining referenced Code sections provide a step-by-step path forward in this case for Engineer A and Engineer B with Section II.1. in mind. It is important to note that Engineers A and B have presented the findings and recommendations jointly and, as such, their actions should be in concert, although not identical.

The engineering judgments of Engineer A and Engineer B were overruled by the MWC. If Engineers A and B believe life or property is endangered, Section II.1.a. provides that not only shall the employer or client be notified, but also all other appropriate authorities. It appears that the state regulatory agency has been contacted; however, there should be a formal presentation of the facts, findings, and recommendations. This action may also address Section II.1.c. As Engineers A and B are required to hold paramount the safety, health, and welfare of the public, and as this duty is a fundamental canon of the NSPE Code of Ethics, the consent of the MWC is not required.

Additionally, if project success is defined as “the public will not be endangered at all,” then Engineers A and B should advise their client that they believe the project will not be successful. Again, as with the state regulatory agency, this advisement should proceed in a formal manner.

The formal presentations satisfy Engineer A's and Engineer B's duty to report. However, in the event that these formal presentations fail to sway the MWC to change its plans, given the gravity of the danger to public health and safety, Engineers A and B have an obligation to further pursue the matter.

Conclusions:

1. In fulfillment of their ethical obligations under the Code, Engineers A and B should formally communicate their concerns to the MWC, including that they believe the project will not be successful.
2. Both Engineers A and B have ethical obligations to notify the MWC and other appropriate authorities that prematurely changing the water source puts the public health and safety at risk. Furthermore, Engineers A and B have independent obligations to formally and in writing report their concerns to the state regulatory agency. While they may provide a joint and cooperative report, each has an independent obligation. Neither the consent nor opposition of the client is a factor in their fulfillment of this obligation.

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