

Public Health and Safety—Boiler Valves and Switches

Case No. 18-5

Facts:

Engineer A, a professional engineer, worked for many years as a quality control engineer for Boilco, a boiler manufacturer. In recent years, Boilco began using a more economical international supplier of boiler valves and electric switches to reduce costs, but Engineer A's product testing demonstrated that the new boiler valves and electric switches were inferior and could be unsafe. Engineer A rejected the first shipment, but Engineer A's supervisor, also a professional engineer, overruled Engineer A. When Engineer A brought his product concerns to senior management, Engineer A's supervisor abruptly fired Engineer A for insubordination. After termination, Engineer A contacted a federal agency, detailing the threat to public safety posed by Engineer A's former employer.

Questions:

1. Were Engineer A's actions in contacting the federal agency ethical under the facts and circumstances?
2. Was it ethical for Engineer A's supervisor to fire Engineer A for insubordination?

NSPE Code of Ethics References:

- Section I.3.* - *Engineers, in the fulfillment of their professional duties, shall issue public statements only in an objective and truthful manner.*
- Section II.1.* - *Engineers shall hold paramount the safety, health, and welfare of the public.*
- Section II.1.a.* - *If engineers' 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 or required by law or this Code.*
- Section II.1.f.* - *Engineers having knowledge of any alleged violation of this Code shall report thereon to appropriate professional bodies and, when relevant, also to public authorities, and cooperate with the proper authorities in furnishing such information or assistance as may be required.*
- Section II.4.* - *Engineers shall act for each employer or client as faithful agents or trustees.*
- Section III.1.b.* - *Engineers shall advise their clients or employers when they believe a project will not be successful.*

NSPE BER Case References: 82-5, 88-6, 89-7, 97-13, 05-1

Discussion:

Consistent with the NSPE Code of Ethics, in their professional relations, engineers have an obligation to act with judgment and discretion, as well as with a sense of fairness and balance, in recognition of the complex issues involved in engineering practice and the business and technical issues faced by employers or clients.

The NSPE Board of Ethical Review has on several occasions examined cases relating to the obligations of engineers to report activities that endanger the public health and safety.

One example of the BER's prior health and safety case analysis can be found in Case No. 89-7, in which an engineer, Engineer A, was retained to investigate the structural integrity of a 60-year-old occupied apartment building that Engineer A's client was planning to sell. Under the terms of the agreement with the client, the structural report written by Engineer A was to remain confidential. In addition, the client made clear to Engineer A that the building was being sold "as is" and that the client was not planning to take any remedial action to repair or renovate any system within the building prior to its sale. Engineer A performed several structural tests on the building and determined that the building was structurally sound. However, during the course of Engineer A providing services, the client confidentially informed him that the building contained deficiencies in the electrical and mechanical systems, which violated applicable codes and standards. While Engineer A was not an electrical nor mechanical engineer, he did realize those deficiencies could cause injury to the occupants of the building, and so he informed the client. In his report, Engineer A made a brief mention of his conversation with the client concerning the deficiencies. However, in view of the terms of the agreement, Engineer A did not report the safety violations to any third party. In deciding it was unethical for Engineer A not to report the safety violations to the appropriate public authorities, the BER noted that the facts presented in the case raised a conflict between two basic ethical obligations of an engineer: 1) the obligation of the engineer to be faithful to the client and not to disclose confidential information concerning the business affairs of a client without that client's consent, and 2) the obligation of the engineer to hold paramount the public health and safety.

As noted in BER Case No. 89-7, there are various rationales for the nondisclosure language contained in the NSPE Code of Ethics. Engineers, in the performance of their professional services, act as "agents" or "trustees" to their employers or clients. They are privy to a great deal of information and background concerning the business affairs of their employers or clients. The disclosure of confidential information could be quite detrimental to the interests of their employers or clients and, therefore, engineers as "agents" or "trustees" are expected to maintain the confidential nature of the information revealed to them in the course of rendering their professional services.

Later, in BER Case No. 97-13, the Board considered facts involving a public agency that retained the services of VWX Architects and Engineers to perform a major scheduled overhaul of a bridge. VWX retained the services of Engineer A, a civil engineer, as its subconsultant to perform

bridge inspection services. Engineer A's scope of work was solely to identify any pavement damage on the bridge and report it to VWX for further review and repair. Three months prior to the beginning of the scheduled overhaul of the bridge, while traveling across the bridge, Police Officer B lost control of his patrol car. The vehicle crashed into the bridge wall. The wall failed to restrain the vehicle, which fell to the river below, killing Police Officer B. While conducting the bridge inspection, although not part of the scope of services for which he was retained, Engineer A noticed an apparent pre-existing defective condition in the wall close to where the accident involving Police Officer B occurred. Engineer A surmised that the defective condition may have been a contributing factor in the wall failure and noted this in his engineering notes. Engineer A verbally reported this information to his client, which then verbally reported the information to the public agency.

The public agency contacted VWX Architects and Engineers, which then contacted Engineer A and asked him not to include this additional information in his final report since it was not part of his scope of work. Engineer A stated that he would retain the information in his engineering notes but not include it in the final report, as requested. Engineer A did not report this information to any other public agency or authority. In ruling that it was ethical for Engineer A to retain the information in his engineering notes but not include it in the final written report as requested, the BER noted that Engineer A acted reasonably under the circumstances by properly balancing the obligation of the engineer to be faithful to the client and not to disclose what might be considered by the client to be confidential information concerning the business affairs of a client without that client's consent, and the obligation of the engineer to hold paramount the public health and safety. The BER said this because there was nothing under the facts to indicate anything more than Engineer A's general surmise and speculation about the cause of the structural failure of the wall. Engineer A's observation appeared to be based on a visual inspection without anything more. There was nothing noted in the facts to indicate that Engineer A had expertise in structural engineering. The BER noted that to place this information in a final report would not be responsible and could unnecessarily inflame the situation. Therefore, the BER concluded that Engineer A took the appropriate action, first in coming forward to his client with the information and then by documenting the information for possible future reference as appropriate.

Under the circumstances, it would have been improper for Engineer A to include reference to the information in his final report, particularly since it would have been based on mere speculation and not careful testing or evaluation by a competent individual or firm. At the same time, the BER determined that Engineer A had an obligation to follow through to see that correct follow-up action was taken by the public agency. Only if the public agency did not take corrective action should Engineer A consider alternatives. For Engineer A to have reported this information to a public authority under the circumstances as outlined in the facts, before determining whether corrective action was taken, would have been an overreaction and could easily have risked jeopardizing the professional reputations of his client and the public agency.

Turning to the facts in the present case, it is the BER's view that Engineer A's actions were consistent with the NSPE Code of Ethics for Engineers. Engineer A's action in first alerting his immediate supervisor and then contacting higher management when his immediate supervisor was not responsive demonstrates that he made a good faith effort to exhaust internal mechanisms within the company in order to address what he reasonably viewed as a serious public safety concern. The decision to terminate Engineer A, a long-tenured quality control engineer, immediately after he reported concerns about meeting safety standards first to an immediate supervisor and then to higher management indicates that Engineer A's actions in contacting the federal agency and detailing the threat to public safety posed by his former employer were justified and were consistent with NSPE Code of Ethics Section II.1.f.

Conclusions:

1. Engineer A's actions in contacting the federal agency and detailing the threat to public safety posed by his former employer were justified and were consistent with the NSPE Code of Ethics.
2. It was unethical for Engineer A's supervisor to fire Engineer A for insubordination.

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