

Engineering Judgment Overruled—Faulty Workmanship

Case No. 13-3

Facts:

Engineer A works for the State X Department of Transportation and is the in-house project manager on a construction project being performed by Contractor Q for State X. Contractor Q submits a change order for Engineer A's approval on work already performed by Contractor Q. The normal practice is for a contractor to first seek review and approval of a change order by the project manager (in this case, Engineer A) before commencing the work. Engineer A believes, in his engineering judgment, the change order is actually the result of Contractor Q's faulty workmanship and not the result of any changes directed or required by State X. Following a lengthy conversation between the Engineer A and Contractor Q during which Engineer A informs Contractor Q that he will not sign off on the change order, Contractor Q contacts Supervisor B who supervises Engineer A. The next day, Supervisor B, who is not a professional engineer, directs Engineer A to sign off on the change order.

Question:

Would it be ethical for Engineer A to sign off on the change order?

References:

- Section II.3. - NSPE Code of Ethics: *Engineers shall issue public statements only in an objective and truthful manner.*
- Section II.4. - NSPE Code of Ethics: *Engineers shall act for each employer or client as faithful agents or trustees.*
- Section II.5. - NSPE Code of Ethics: *Engineers shall avoid deceptive acts.*
- Section III.1. - NSPE Code of Ethics: *Engineers shall be guided in all their relations by the highest standards of honesty and integrity.*

Discussion:

The ethical issue in this case relates to the fundamental role that professional engineers play in protecting the integrity of the design and construction process, including the issues of honesty and truthfulness and avoiding misleading and deceptive acts or statements. While the NSPE Board of Ethical Review has not had the opportunity to address the specific issue involved in this case, the Board has examined a variety of cases involving the design and construction process.

During any design and construction project, engineers are frequently called upon by various parties (contractor, subcontractor, sub-consultants, vendors, etc.) to provide clarification, design expertise, and other information for the overall benefit of the final project. While in many instances these types of services are considered to be within the normal scope of services provided by the engineer for the benefit of the engineer's actual

client, in other cases these activities may cross a line as to what is acceptable professional practice. Engineers need to be mindful of these factors and respond accordingly based upon appropriate ethical considerations as well as professional practice concerns.

The NSPE Board of Ethical Review has considered cases over the years where parties involved in the design and construction process sought assistance from the engineer in different capacities. For example, in an earlier BER Case No. 85-4, Engineer A was a forensic engineer, hired as a consultant by Attorney Z to provide an engineering and safety analysis report and courtroom testimony in support of a plaintiff in a personal injury case. Following Engineer A's review and analysis, Engineer A determined that he could not provide an engineering and safety analysis report favorable to the plaintiff because the results of the report would have to suggest that the plaintiff and not the defendant was at fault in the case. Engineer A's services were then terminated and Engineer A's fee was paid in full.

Thereafter, Attorney X, representing the defendant in the case, learned of the circumstances relating to Engineer A's unwillingness to provide a report in support of Attorney Z's case and sought to retain Engineer A to provide an independent and separate engineering and safety analysis report. Engineer A agreed to provide the report. In concluding that Engineer A's actions were not ethical, the Board noted that the mere fact that Engineer A had ceased performing services for Attorney Z would not be an adequate solution to the ethical dilemma at hand. Nor was the fact that Engineer A had agreed to provide a "separate and independent engineering and safety analysis report."

On the former point, the fact that Engineer A ceased performing services for Attorney Z did not mitigate the fact that Engineer A, throughout his first analysis, had access to presumably confidential information, documents, etc., that were made available to him by the plaintiff and plaintiff's attorney in a cooperative and mutually beneficial manner. In its analysis, the Board did not accept the proposition that following the termination of Engineer A's relationship with attorney for the plaintiff, Engineer A could somehow "blot out" confidential information from his mind and start from "square one" in performing his engineering and safety analysis report. It was clear to the Board from the facts that the real reason for the defendant's attorney's decision to hire Engineer A was that the attorney believed Engineer A would provide a report that would be favorable to the attorney's client. The Board believed that Engineer A had to have been aware of the reasons why his services were being retained by virtue of the sequence of events. Said the Board, "even if Engineer A was so naive as to believe that Attorney X was unaware of the circumstances of his termination, the Board did not believe this would excuse Engineer A's actions. At a bare minimum, Engineer A should have fully discussed the issue with Attorney Z." The Board also noted that while it could be argued that Engineer A's loyalties were not divided because he had terminated his relationship with the plaintiff's attorney

(see BER Case No. 74-2), Engineer A still had an ethical obligation to that client to protect certain confidential information and facts, as well as a duty of trust and loyalty.

More recently in BER Case No. 11-1, Engineer A was the engineer of record for a building renovation project on behalf of Client B. The plans and specifications for the project included the installation of skylight curbs for roof skylights. Smith, the owner of XYZ Skylight Curbs, was selected as a subcontractor on the project to provide the specified skylight curbs. Since Engineer A prepared the plans and specifications and is knowledgeable about building renovations, although not specifically with respect to skylight curbs, Smith proposed to retain Engineer A to review and stamp XYZ Skylight Curbs' calculations and design documents in connection with the project. In deciding that it would not be ethical for Engineer A to review and stamp the calculations and design documents as requested in connection with the project, because he was not in responsible charge for the design of the skylight curb, the Board noted that there clearly was an existing relationship between Engineer A and Client B, suggesting the potential for a clear conflict of interest.

As the Board has stated on numerous occasions, it is generally not possible to serve two masters with competing or potentially competing interests. In addition, the facts indicated the obvious circumstances where Engineer A could be placed in a situation where he may be called upon to review his own work—a clear violation of the NSPE Code of Ethics. Such actions could expose Engineer A to potential liability and endanger the interests of Engineer A's client. Further, based upon the facts, there was a clear question as to whether and to what extent Engineer A had any direct involvement in the preparation of the calculations and design documents in question and if not, whether Engineer A could properly stamp the calculations without exercising the requisite responsible charge over the work. (See also BER Case No. 93-4).

Turning to the specific facts and circumstances in the present case, as a general rule in project management practice, a change order is a component of the change management process whereby changes in the Scope of Work are agreed to by the Owner. Normally a change order is work that is added to or deleted from the original scope of work of a contract, which alters the original contract amount and/or completion date. Change orders are common to many projects, and very common with large projects. After the original scope (or contract) is formed, complete with the total price to be paid and the specific work to be completed, a client may decide that the original plans do not best represent his definition for the finished project. Accordingly, the client will suggest an alternate approach.

Common causes for change orders to be created can be:

- The project's work was incorrectly estimated;
- The Owner or project team discovers obstacles or possible efficiencies that require them to deviate from the original plan;
- The Owner or project team are inefficient or incapable of completing their required deliverables within budget, and additional money, time, or resources must be added to the project; or
- During the course of the project, additional features or options are perceived and requested.

A project manager typically generates a change order that describes the new work to be done (or not done in some cases), and the price to be paid for this new work. Once this change order is submitted and approved it generally serves to alter the original contract such that the change order now becomes part of the contract.

Under the facts in the present case, it appears that the normal change order process was not followed by Contractor Q. Engineer A appears to have fulfilled his ethical responsibilities by calling this issue to the attention of Contractor Q and thereafter to Supervisor B. While there may have been extenuating circumstances that may have justified the need for immediate action by Contractor Q to complete the work referenced in the proposed change order, such as an onsite emergency or some other event or circumstance that might have resulted in additional expenses to the owner, there does not appear to be any suggestion of those factors under the facts. Instead, it appears that there is at least a possibility that the process was being improperly used. For that reason, Engineer A was justified in declining to process the change order as requested by Contractor Q. If Engineer A is pressured by Supervisor B to relent and approve the change order, Engineer A would have an obligation to bring this matter up to appropriate authorities within the State X Department of Transportation or such other authorities as appropriate.

Conclusion:

It would not be ethical for Engineer A to sign off on the change order. If Engineer A is pressured by Supervisor B to relent and approve the proposed change order, Engineer A would have an obligation to bring this matter up to appropriate authorities within the State X Department of Transportation or such other authorities as appropriate.

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