NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

BOARD of ETHICAL REVIEW

CASE REVIEW

Silent Dissent—Concern About Modifying Questionable Prints

Case No. 25-6

NSPE.ORG

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Facts

Engineer Y, a licensed professional engineer, works for Company A, a company that designs and fabricates external fuel tanks for aircraft. One day, a senior manager gives Engineer Y a set of technical prints and instructs them to create a modified version, changing details but keeping the overall design essentially the same. The manager emphasizes that this needs to be done by the end of the following month for a potential contract opportunity.

Engineer Y has direct technical expertise in aircraft fuel tank design, regularly attends technical conferences on the topic, and is familiar with competing tank design approaches in the industry. For these reasons, Engineer Y strongly suspects the prints may not belong to Company A and feels uneasy about the request. Instead of carrying out the requested task, Engineer Y files the prints away, tells the manager they are "working on it," and begins quietly looking for another job. Before being pressed to deliver the modified design, Engineer Y leaves Company A but does not tell anyone about their concerns or that they never started the work on the fuel tank design modifications.

Questions

1. Was it ethical for the senior manager to give the set of fuel tank technical prints to Engineer Y?
2. Was it ethical for Engineer Y to tell the senior manager they were "working on it" while refusing to proceed with the task?
3. Was it ethical for Engineer Y to leave Company A without informing Company A or their manager of their concerns or that they had not started on the fuel tank design modifications?

Code of Ethics References:

I.4 Act for each employer or client as faithful agents or trustees.

I.5 Avoid deceptive acts.

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.

II.1.d Engineers shall not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise.

II.1.e Engineers shall not aid or abet the unlawful practice of engineering by a person or firm.

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.

III.1 Engineers shall be guided in all their relations by the highest standards of honesty and integrity.

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

III.3 Engineers shall avoid all conduct or practice that deceives the public.

III.3.a Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.

III.6.c Engineers shall not, without consent, use equipment, supplies, laboratory, or office facilities of an employer to carry on outside private practice.

III.8.a Engineers shall conform with state registration laws in the practice of engineering.

III.9 Engineers shall give credit for engineering work to those to whom credit is due, and will recognize the proprietary interests of others.

III.9.b Engineers using designs supplied by a client recognize that the designs remain the property of the client and may not be duplicated by the engineer for others without express permission.

III. 9.c Engineers, before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights or patents, should enter into a positive agreement regarding ownership.

BER CASE REFERENCES:

BER Case 82-5; BER Case 88-6; BER Case 97-12; BER Case 99-13; BER Case 05-5; BER Case 08-11; BER Case 21-11; BER Case 22-9

Discussion

This case illustrates some of the aspects, considerations, and challenges facing an (apparent) ethical engineer who is directed by management to perform an (apparent) unethical task. The fact scenario raises three significant concerns: (1) the ethics of the Company A senior manager who directed Engineer Y to modify technical prints that might not belong to Company A, (2) Engineer Y's decision to hide the offending prints, lie about inaction on the assigned task, and leave rather than face a very difficult situation, and (3) the ethical culture of Company A that influenced—or possibly compelled—Engineer Y to behave in this manner. The Board of Ethical Review (BER) finds it significant that in past cases; for example, in BER Case 97-12 and BER Case 99-13, similar ethical scenarios have resulted in whistleblowing. But here, Engineer Y did not "blow the whistle" but instead chose to leave the firm without saying anything.

It is appropriate to begin with the behavior of the Company A senior manager who gave Engineer Y a set of technical prints and instructed Engineer Y to create a modified version of the design. The facts do not state whether the senior manager is an engineer, licensed or otherwise. Because the NSPE Code of Ethics (the Code) is written to apply to engineers, a non-engineer manager may not be ethically culpable under the Code.

But if the senior manager is an engineer, specific Code provisions that guide the ethical usage of engineering designs obtained from others include but are not limited to the obligation to "not reveal facts, data or information without . . . prior consent . . . except as authorized" (Code Section II.1.c), to "give credit for engineering work to those to whom credit is due, and …recognize the proprietary interests of others" (Code Section III.9), to recognize that designs "supplied by [others] . . . may not be duplicated by the engineer for others without express permission" (Code Section III.9.b), and "before undertaking work for others in connection with which the engineer may make improvements, plans, designs, inventions, or other records that may justify copyrights . . . [the engineer] should enter into a positive agreement regarding ownership" (Code Section III.9.c). Beyond these ethical considerations, usage of technical prints would also be a legal matter of intellectual property (IP) ownership. IP law applies to all, and for engineers the Code requires that engineers "shall conform with state registration laws in the practice of engineering" (Code Section III.8.a).

It is important to emphasize the facts of this case do not conclusively establish that it was unethical or illegal for Company A's senior manager to give the technical prints to Engineer Y. It is possible that unbeknownst to Engineer Y, Company A management actually complied with all

aforementioned code provisions vis-a-vis ownership and use of the fuel tank design. Granted, the fact statement is clear that for very specific reasons, Engineer Y strongly believes the design prints do not belong to Company A.

BER Case 08-11 discusses many of the ethical and legal aspects associated with the use – actually, misuse – of intellectual property in engineering work. The case introduced Engineer A, a software systems engineer hired by NewSoft, who was tasked to develop a new software product based upon proprietary software for which NewSoft did not have a license. Engineer A voiced concern about the situation, but senior leadership did nothing. The BER found that it was ethical for Engineer A to insist that the matter be immediately resolved—(1) the company must take immediate steps to obtain the necessary license, permission, or other legal clearance in order to proceed with the work or (2) the company must obtain a legal opinion from competent legal counsel demonstrating that the actions being taken by NewSoft do not amount to a copyright infringement. Further, if NewSoft failed to follow the course of action in either (1) or (2), Engineer A could have either resigned from NewSoft and/or reported NewSoft's actions to the appropriate authorities. In arriving at this conclusion, the BER referred to in BER Case 97-12 in which the BER censured (a different) Engineer A for hastily reporting their employer's violation of a software licensing agreement, and associated BER Case 99-13, which clarifies some of the ethical considerations of how an engineer should, and should not, go about filing a negative report on one's employer.

This brings us to the decision in this case by Engineer Y to misrepresent and omit facts on the project, both during the tenure of their assignment as well as when they left Company A.

Whether Engineer Y's concerns about Company A's ownership of the fuel tank technical documents were valid or not, either way, the deliberate decision to lie to their senior manager directly violated Engineer Y's ethical obligation to be guided by the highest standards of honesty and integrity (Code Section III.1), to "avoid deceptive acts" (Code Section 1.5), to "advise their... employers when they believe a project will not be successful" (Code Section III.1.b), to "avoid all conduct or practice that deceives the public" (Code Section III.3), and to "avoid the use of statements containing a material misrepresentation of fact or omitting a material fact" (Code Section III.3.a). BER Case 05-5 and BER Case 21-11 are two examples that illustrate the central importance of "objectivity and truthfulness as a core ethical value of the engineering profession."

Moreover, if Engineer Y's concerns about the fuel tank technical prints were reliable and valid — that is, if Company A did not own the documents (a fact not yet established)— this would engage other ethical obligations for Engineer Y. These include the obligation to "not permit the use of their name or associate in business ventures with any person or firm that they believe is engaged in fraudulent or dishonest enterprise" (Code Section II.1.d), to "not aid or abet the unlawful practice of engineering by a person or firm" (Code Section II.1.e), to ". . . report [knowledge of any alleged violation of the Code] 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" (Code Section II.1.f), to "conform with state registration laws in the practice of engineering" (Code Section III.8.a).

In BER Case 82-5, an engineer, with strong feelings on an employer's course of conduct

being improper, had an ethical right to report concerns to the proper authorities. In BER Case 88-6, an engineer chose not to elevate the concerns to the proper authorities, after presenting concerns in various other directions to avoid conflict with their employer. The BER emphasized the duty to disclose concerns and act in accordance with professional obligations and personal conscience.

The BER finds it fully reasonable, in the present case, that Engineer Y, motivated by ethical values, is strongly suspicious about Company A's ownership of the fuel tank technical documents. What the Board finds *surprising* is that such a concern would lead (ethical) Engineer Y to, in the name of ethics, directly violate multiple provisions of the Code.

One plausible explanation for Engineer Y's behavior is the ethical climate of Engineer Y's place of employment—i.e., Company A—and in particular, the organization's communication structures and pathways. Ethics experts have noted that "the general duty for the employer is to provide channels through which employees may question and criticize company decisions, policies, and the conduct of company operations. Failure to do this essentially disregards the critical intelligence and the moral agency of employees." Others have observed that "a healthy, ethical workplace is characterized by candor, that is, an environment in which employees believe they can discuss their thoughts, their ideas, and their opinions in an open way. This requires a work environment that is perceived to be safe, safe for the candid interchange of information and for discussing both the good news and the bad news. Employees must believe they can bring up and discuss problems without fear of embarrassment or retribution."

Perhaps Company A's ethical climate would not allow the safe and candid interchange of information, the case in point being whether Company A actually did own the fuel tank technical documents. But again, would an unethical company culture justify lying and deception? The BER thinks not. These deceptions do not uphold the engineer's obligation to act for their client as a faithful agent or trustee (Code Section I.4), they erode trust in the profession, they create legal and ethical exposure for both Engineer Y and Company A, and they compromise the profession's commitment to honesty, fairness, and the protection of public health, safety, and welfare. This is especially significant when considering that external fuel tank design involves structural integrity, flammability, and other critical safety considerations.

Engineer Y's update to their senior manager that they were "working on (the modified design)" misrepresented to their employer that the project would be successful and was a deceptive act. The update was incomplete and, given Engineer Y used the allotted project time for their own job search, this was likely for personal gain (Code Section III.6.c). In BER Case 22-9, an engineer left out relevant and pertinent information from an analysis, recommending only two of four possible project delivery methods (the two the engineer was qualified to perform) rather than analyzing all four methods

[1] *Newton, L.H. and Pyle, M.D. (2004). "The Employment Relationship: Rights, responsibilities and Respect" in in Ethics Applied, Edition 4.0 K. Goree, M.D. Pyle, E. Baker and J.V. Hopkins (eds). excerpt from Chapter 20, pp. 709-715. Boston MA: Pearson Education.*

[2] *Skooglund, Carl (1995). "Ethics in the Workplace", a message to Texas Instruments Employees. Dallas, TX: Texas Instruments, Inc.*

and providing the client a recommendation on how to evaluate the other two. The BER concluded that this action was unethical, with the engineer having omitted a full analysis for personal gain. Likewise, this present case reinforces the ethical issue of misrepresentation of work status, wherein Engineer Y distorted and altered the facts.

Engineer Y's departure from Company A without telling anyone the assigned project was never started did save Engineer Y from an uncomfortable confrontation. If Engineer Y's suspicions about Company A were valid, it probably also avoided an intractable conflict that may have resulted in Engineer Y leaving the company regardless. Regrettably, the truth cannot be known, because Engineer Y never gave his senior manager at Company A an opportunity to explain, or (assuming Company A's path was awry) to change and do the right thing. While the facts do not discuss some aspects of the case, the BER acknowledges that Engineer Y's situation was extremely difficult. What was needed in this instance was moral courage. Instead, Engineer Y's silence achieved pain avoidance at the cost of the ethics of the profession, and ultimately this was conduct that did not enhance the honor, reputation, and usefulness of the engineering profession.

Conclusions:

1. It is undetermined whether it was ethical for the senior manager at Company A to give the set of technical prints to Engineer Y. The facts clearly identify Engineer Y's strong suspicions about this, but the question was avoided rather than addressed.
2. It was not ethical for Engineer Y to tell the senior manager they were "working on it" while refusing to proceed with the design modification task. Engineer Y violated multiple provisions of the Code by misrepresenting work status; failing to inform the employer about non-performance even with departure from Company A employment; and not addressing potential ethical/legal concerns regarding the prints.
3. It was not ethical for Engineer Y to leave Company A without informing Company A or their manager of their concerns or that they had not started on the fuel tank design modifications. The ethical course of action would have been to raise concerns immediately with management; document reasons for refusal to proceed; and report suspected unethical conduct to appropriate authorities if necessary.

BOARD OF ETHICAL REVIEW:

The BER acknowledges the contributions of the following individuals in assisting in the development of this case.

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Each opinion is intended as guidance to individual practicing engineers, students, and the public. In regard to the question of application of the NSPE Code of Ethics to engineering organizations (e.g., corporations, partnerships, sole proprietorships, government agencies, and university engineering departments), the specific business form or type should not negate nor detract from the conformance of individuals to the Code. The NSPE Code deals with professional services, which must be performed by real persons. Real persons in turn establish and implement policies within business structures.

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