

Signing and Sealing—Manufacturer’s Drawings

Case No. 19-11

Facts:

Engineer A is the lead engineer for FGH Design, which is designing a plan to interface with a manufactured alarm and public address system with existing equipment at a State X Government Laboratory. The final design drawings will show the interconnections between Buzzpeak, the manufacturer of the alarm and public address system, and the State X facility infrastructure, such as speakers and alarm triggers. The preliminary drawing package consists of two groups of documents: 1) the interconnection drawings specifically designed for the government client, and 2) the standard drawing from the PA system manufacturer of their cabinet, with modifications to facilitate connection to the facility.

The Client, State X Government Laboratory, has requested that the final drawings be sealed by Engineer A, including drawings provided by Buzzpeak, which contain changes made by Buzzpeak to their drawings that were required for interfacing to the customer’s systems at the request of the Engineer A.

Question:

Would it be ethical for Engineer A to sign and seal drawings provided by the manufacturer, which contain changes made by the manufacturer to their drawings that were required for the interfacing to the customer’s systems?

NSPE Code of Ethics References:

- Section II.2.a. - Engineers shall undertake assignments only when qualified by education or experience in the specific technical fields involved.*
- Section II.2.b. - Engineers shall not affix their signatures to any plans or documents dealing with subject matter in which they lack competence, nor to any plan or document not prepared under their direction and control.*
- Section II.2.c. - Engineers may accept assignments and assume responsibility for coordination of an entire project and sign and seal the engineering documents for the entire project, provided that each technical segment is signed and sealed only by the qualified engineers who prepared the segment.*

NSPE BER Case References: [86-2](#), [97-7](#)

Discussion:

The role of a professional engineer in signing and sealing engineering drawings, plans, and specifications is a core issue within professional engineering practice. The signature and seal of a professional engineer is the legal representation that the engineering drawings, plans, and specifications were prepared under the responsible charge (the direct control and personal supervision) of the professional engineer and

certifies that the work was performed competently, meets the professional standard of care, and acceptable standards of practice.

The NSPE Board of Ethical Review has addressed this issue on numerous occasions. For example, in [BER Case 86-2](#), Engineer A was the Chief Engineer within a large engineering firm and affixed his seal to some of the plans prepared by registered engineers working under his general direction who did not affix their seals to the plans. At times, Engineer A also sealed plans prepared by nonregistered, graduate engineers working under his general supervision. Because of the size of the organization and the large number of projects being designed at any one time, Engineer A found it impossible to give a detailed review or check of the design. Engineer A believed he was ethically and legally correct in not doing so because of his confidence in the ability of those he had hired and who were working under his general direction and supervision. By general direction and supervision, Engineer A meant that he was involved in helping to establish the concept, the design requirements, and reviewed elements of the design or project status as the design progressed. Engineer A was consulted about technical questions, and he provided answers and direction in these matters.

In finding that it was unethical for Engineer A to seal plans that were not prepared by him, or which he had not checked and reviewed in detail, the Board noted that one of the most important parts of the NSPE Code of Ethics is the reference to “direction and control” found in Section II.2.b. The Board stated that the accepted definition of that provision is “guidance or supervision of action or conduct; management; a channel or direct course of thought or action.” The word “control” is generally defined as “the authority to guide or manage; direction, regulation, and coordination of business activities.” The Board concluded that “direction” and “control” have a meaning which, when combined, would suggest that an engineer would be required to perform the critical tasks related to preparing the drawings, plans, and specifications in order for the engineer to ethically affix his seal, which Engineer A did not do.

More recently in [BER Case 97-7](#), Engineer A, a licensed professional engineer, worked for a utility company. Technician B works under Engineer A and Technician B became trained in the design of small single-story buildings. Eventually, Technician B required minimal supervision, but Engineer A carefully reviewed, signed, and sealed all drawings and specifications as required by the local building authority. During a company reorganization as a result of downsizing, Engineer A was transferred to another department and performed different activities and functions. Technician B continued to design small single-story buildings and brought the plans and specifications to Engineer A’s department for Engineer A to sign and seal before bringing them to the local building authority for approval. Although not his direct supervisor, Engineer A followed the procedures used in the past, continued to direct and control Technician B, reviewed the documents prepared by Technician B in detail, found them to be correct and signed and sealed them.

In deciding that it was ethical for Engineer A to sign the documents prepared by Technician B, the Board determined that although no longer his direct supervisor, Engineer A had direct day-to-day oversight control and supervision of Technician B's work. The Board said, "the actual design work is being performed by a non-engineer with substantial, actual, direct, personal supervision under the responsible charge of a licensed professional engineer. Technician B and Engineer A were not operating under a loose, ill-defined structure, which could result in consequences for them as well as for their employer."

In the present case, it is the BER's opinion that the facts here are more in line with [BER Case 86-2](#). The facts are as follows: Engineer A did not have "responsible charge" (direct control or personal supervision) over the work of Buzzpeak, an independent contractor; was not involved in the initial design of Buzzpeak's manufactured alarm and public address system; and did not have any authority or control over any changes made by Buzzpeak to its drawings.

A far better course of action would be for Engineer A to seal only the interface drawings for the client. Also, if necessary, Engineer A should work with Buzzpeak to have Buzzpeak have another professional engineer sign and seal its work so that the work had been completed in a proper professional manner, consistent with State X laws and regulations.

Conclusion:

It would not be ethical for Engineer A to sign and seal drawings prepared by the manufacturer that contain changes made by the manufacturer to their equipment that are required for the interfacing to the customer's systems.

Board of Ethical Review:

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