

Public Health and Safety—Building Codes to Address Environmental Risk

Case No. 18-9

Facts:

Engineer A is an engineer in private practice. Engineer A is retained by Client A, a developer, to perform hydrodynamic modeling and coastal risk assessment in connection with potential climate change and sea level rise for a residential development project near a coastal area. The geographic area in which Client A is planning to build the project currently has no building code in place. Based on newly released information as well as a recently developed algorithm that includes newly identified historic weather data, Engineer A believes the residential development project should be built to a 100-year projected storm surge elevation, due to public safety risks even at lower projections of future surge level rise. Because of the increased cost, Owner refuses to agree that the residential development project be built to a 100-year projection storm surge elevation.

Question:

What are Engineer A's obligations under the circumstances?

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 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.b. - Engineers shall approve only those engineering documents that are in conformity with applicable standards.*
- Section III.1.b. - Engineers shall advise their clients or employers when they believe a project will not be successful.*
- Section III.2.d. - Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.*

NSPE BER Case References: 04-8, 07-6, 09-12, 11-4

Discussion:

As the BER has noted on several occasions, engineers play an essential role in society by taking steps and actions to ensure that products, systems, facilities, structures, and the land surrounding them are reasonably safe. Sometimes engineers are placed in situations in which they must balance their obligations to their employer or client with their obligations to protect the public health and safety. NSPE Code Section III.2.d. places some additional responsibilities on engineers for the protection of the environment.

In BER Case No. 04-8, Engineer A, an environmental engineer, performed wetland delineation services on the client's wetland site. A few months after Engineer A completed the services, he drove by his client's property and noticed that the client had installed a substantial amount of fill

material on more than half an acre across a portion of the wetlands without any permits, variances, or permissions. The installation of the fill material was a substantial violation of the federal and state laws and regulations. In its decision, the BER set forth an appropriate course of action for Engineer A, concluding that Engineer A should contact the client, inquire about the actions the client had taken, and point out that the actions were a violation of the law—and that steps needed to be taken to remedy the violation or obtain a variance from the proper authorities. In this connection, the engineer should advise that the remedial actions should be in full compliance with all applicable environmental laws and regulations, which may include review by a licensed engineer. If appropriate steps were not taken by the client, Engineer A had an obligation to bring the matter to the attention of the appropriate authorities.

In BER Case 07-6, Engineer A was a principal in an environmental engineering firm and had been requested by a developer client to prepare an analysis of a piece of property adjacent to a wetlands area for potential development as a residential condominium. During the firm's analysis, one of the engineering firm's biologists reported to Engineer A that, in his opinion, the condominium project could threaten a bird species that inhabited the adjacent protected wetlands area. The bird species was not an "endangered species," but it was considered a "threatened species" by federal and state environmental regulators. The BER determined that it was unethical for Engineer A to not include the information about the threat to the bird species in a written report that would be submitted to a public authority that was considering the developer's proposal. Engineer A should have included the information in the written report and advised the client of its inclusion. The BER noted that engineers have an obligation to be objective and truthful in professional reports, statements, or testimony and include all relevant and pertinent information in such reports, and that it would be reasonable to assume that the public authority approving the development would be interested in this information.

Turning to the facts in the present case, as a licensed professional engineer who must exercise professional judgment based upon technical competence, Engineer A has determined, based on historical weather patterns and data, that the residential development project should be built to a 100-year projected storm surge elevation. The BER must presume that Engineer A's determination is based upon a reasonable and good faith belief that a less stringent standard would place future residents, as well as the general public, at risk and have the potential to cause significant property and environmental damage. The facts suggest that Engineer A's determination is based upon technical information—including newly released information as well as a recently developed algorithm that includes newly identified historic weather data.

While the desire of the developer to reduce costs is understandable and a legitimate consideration, when weighed against the apparent substantial risk to life and property, the latter consideration should prevail. Engineer A should continue to pursue discussions with Client A to convince Client A of the danger in which future residents, as well as the general public, could be placed, and the potential for significant property and environmental damage. If Client A refuses to agree with Engineer A's design standard, Engineer A should withdraw from the project. Engineer A should also consider contacting local government officials to advocate for the

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implementation of appropriate and updated region-wide building codes in all jurisdictions for the geographical area where or near where the residential development project is being built.

Conclusion:

Engineer A should continue to pursue discussions with Client A to convince Client A of the danger in which future residents, as well as the general public, could be placed, and the potential for significant property and environmental damage. If Client A refuses to agree with Engineer A's design standard, Engineer A should withdraw from the project.

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