Engineering Ethics

Canon 1, NSPE Code of Ethics for Engineers: "Hold paramount the safety, health, and welfare of the public"

4 Nov 2020

NSPE Board of Ethical Review

National Society of Professional Engineers

Alexandria, Virginia



Meet our Webinar Attendees

Sample Polling Question "A"

My engineering work is principally within the following NSPE Administrative Region:

- A. Northeast (beige)
- B. Southeast (green)
- C. Central (gold)
- D. North Central (blue)
- E. Southwest (brown)
- F. Western & Pacific (pink)





Meet our NSPE BER Speakers



Mark Dubbin, PE, FPE, M. NSPE Las Cruces, NM



Jeffrey H. Greenfield, Ph.D., P.E., BCEE, F. NSPE Pompano Beach, FL



David Kish, Ph.D., P.E., M. NSPE West Lafayette, IN



William D. Lawson, P.E., Ph.D., F. NSPE Lubbock, TX



Favorite Ethics Quote Mark Dubbin

"The only obligation which I have a right to assume is to do at any time what I think right..."

- Henry David Thoreau (1817-1862) American naturalist, essayist, poet and philosopher

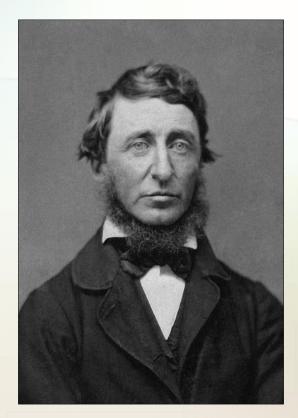


Image: Wikipedia, Public Domain



Favorite Ethics Quote Jeff Greenfield

"In law a man is guilty when he violates the rights of others. In ethics he is guilty if he only thinks of doing so."

- Immanuel Kant (1724-1804) German philosopher and Enlightenment thinker



Image: Wikipedia, Public Domain



Favorite Ethics Quote Dave Kish

"Always do right. This will gratify some people and astonish the rest."

- Mark Twain (1835-1910) American writer, humorist, entrepreneur, publisher and lecturer

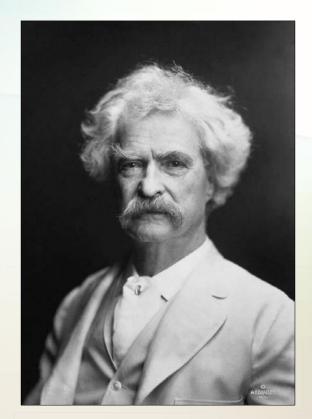


Image: Wikipedia, Public Domain



Favorite Ethics Quote Bill Lawson

"No man can always be right, so the struggle is to do one's best to keep the brain and conscience clear;

Never to be swayed by unworthy motives or inconsequential reasons,

But to strive to unearth the basic factors involved
And then do one's duty."

- Dwight D. Eisenhower (1890-1969) General of the Army and 34th President of the United States

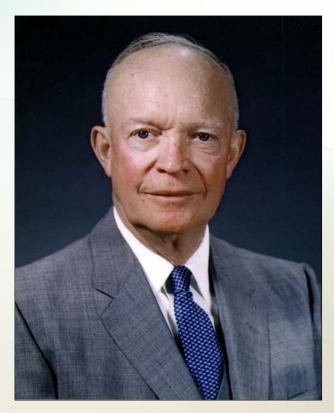


Image: Wikipedia, Public Domain

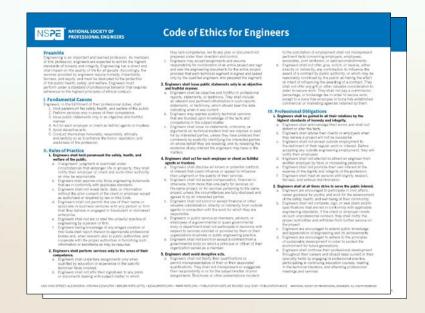


NSPE Code of Ethics for Engineers

Sample Polling Question "B"

In what year was the NSPE Code of Ethics for Engineers created?

- A. 1914
- B. 1934
- C. 1946
- D. 1964







Learning Objectives

Upon completion of this webinar, learners will be able to:

- Identify pertinent guidance from the NSPE Code of Ethics relative to professional conduct and ethics for professional engineers
- 2. Interpret and apply guidance relative to analyzing typical ethical dilemmas
- Demonstrate ethical problem solving skills for selected engineering situations.



A Suggested Course of Action when Facing an Ethical Dilemma

Copyright © 2020 Murdough Center for Engineering Professionalism. Used with permission. All rights reserved.

How should you handle an ethical dilemma?

This series of slides presents a five-step process to help you work through ethical problems, the central goal being ethical attitudes and actions.





STEP 1:

Gather the information needed to make a good decision.



- Get the facts. Make sure you have accurate and complete information regarding the situation.
- Distinguish between what you know from what is uncertain or is based on hearsay.
- Identify the stakeholders. Make a list of every individual, group or organization that has something significant to gain or lose in the resolution of the problem, noting what is at stake for them and the ethical standards that apply to each one.



STEP 2:

Determine what ethical standards apply to the situation.

- Review ethics guidance relative to the issue.
- If you are a licensed professional, check the ethics provisions of your licensure law.
- Use other resources available to you including your peers and supervisors.





STEP 3:

Clarify the key concepts in the ethical dilemma.

- The idea is to reduce the problem to its core ethical issues. An ethical dilemma typically takes the form of one good thing (e.g., <u>keeping</u> <u>your promises</u>) versus another good thing (e.g., <u>preventing harm</u>).
- Both of these keeping promises and preventing harm – are important ethical obligations.
- This is no easy dilemma to solve



STEP 4:

Prepare to solve the problem.

- Develop at least two possible alternative solutions.
- Systematically evaluate the alternatives using the ethical standards identified, the interests of the major stakeholders in the situation, and related factors.
- Weigh the costs of each possible solution to each stakeholder. The process of evaluation may turn up new questions and problems requiring further investigation.
- Choose the best alternative, using your judgment to balance the competing ethical obligations and goals.
- Develop a strategy to put your solution into action.



STEP 5:

Act!

The previous steps are directed toward helping you with this critical aspect of ethical problem solving.

However, once you know the right thing to do, the other critical aspect is to actually <u>DO THE RIGHT THING!</u> For many of us, this is the hard part.

Here, moral courage comes into play. If left unattended, ethical problems rarely solve themselves. The key is to take well-considered action. Ultimately, **you** must do this, relying on the assistance of your coworkers, supervisors, friends and others.





Engineering Ethics

NSPE BER members will review selected engineering ethics cases having to do with holding paramount the safety, health and welfare of the public. Polling questions and opportunity for Q&A will allow opportunities for audience interaction.



NSPE BER Case: 18-9



Public Health and Safety—

Building Codes to Address Environmental Risk

Public Health and Safety—Building Codes to Address Environmental Risk

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.





Public Health and Safety—Building Codes to Address Environmental Risk

Facts:

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.





Public Health and Safety—Building Codes to Address Environmental Risk

Question:

What are Engineer A's obligations under the circumstances?





Public Health and Safety—Building Codes to Address Environmental Risk

Section I.1, II.1. – NSPE Code of Ethics

Engineers, in the fulfillment of their professional duties, shall hold paramount the safety, health, and welfare of the public.

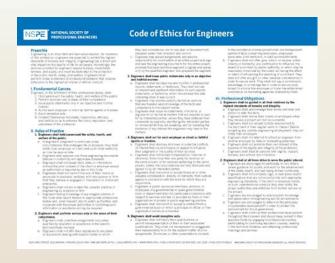




Public Health and Safety—Building Codes to Address Environmental Risk

Section II.1.a. - NSPE Code of Ethics

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.

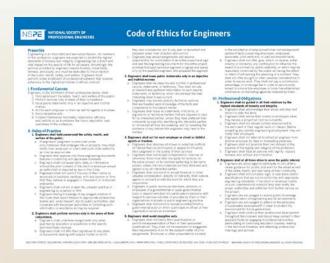




Public Health and Safety—Building Codes to Address Environmental Risk

Section II.1.b. - NSPE Code of Ethics

Engineers shall approve only those engineering documents that are in conformity with applicable standards





Public Health and Safety—Building Codes to Address Environmental Risk

Section III.1.b. - NSPE Code of Ethics

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

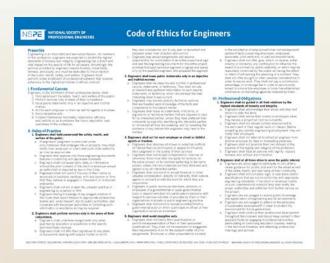




Public Health and Safety—Building Codes to Address Environmental Risk

Section III.2.d. – NSPE Code of Ethics

Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations





Public Health and Safety—Building Codes to Address Environmental Risk

Polling Question #1

In keeping with their ethical obligation to "keep up" technically, engineers are justified in introducing newly-developed, but not yet codified, knowledge into their analyses and recommendations.

- A. Agree
- B. Disagree
- C. Not Sure





Case: 18-9 Public Health and Safety—Building Codes to Address Environmental Risk

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.







Facts:

Engineer A is retained to investigate the structural integrity of a 60-year old occupied apartment building which his client is planning to sell. Under the terms of the agreement with the client, the structural report written by Engineer A is to remain confidential. In addition, the client makes clear to Engineer A that the building is being sold "as is" and he is not planning to take any remedial action to repair or renovate any system within the building prior to its sale.





Facts (continued):

Engineer A performs several structural tests on the building and determines that the building is structurally sound. However, during the course of providing services, the client confides in Engineer A and informs him that the building contains deficiencies in the electrical and mechanical systems which violate applicable codes and standards. While Engineer A is not an electrical nor mechanical engineer, he does realize those deficiencies could cause injury to the occupants of the building and so informs the client.

In his report, Engineer A makes a brief mention of his conversation with the client concerning the deficiencies; however, in view of the terms of the agreement, Engineer A does not report the safety violations to any third party.





Question:

Was it ethical for Engineer A not to report the safety violations to the appropriate public authorities?





Section I.1. - NSPE Code of Ethics

Engineers, in the fulfillment of their professional duties, shall hold paramount the safety, health, and welfare of the public.

Engineers, in the fulfillment of their professional duties, shall hold paramount the safety, health and welfare of the public in the performance of their professional duties

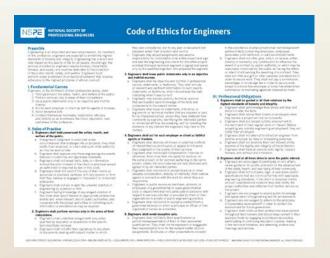




Section II.1.a. - NSPE Code of Ethics

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.

Engineers shall at all times recognize that their primary obligation is to protect the safety, health, property and welfare of the public. If their professional judgment is overruled under circumstances where the safety, health, property or welfare of the public are endangered, they shall notify their employer or client and such other authority as may be appropriate.

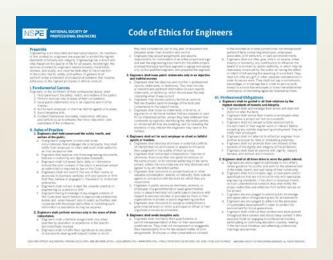




Section II.1.c. - NSPE Code of Ethics

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.

Engineers shall not reveal facts, data or information obtained in a professional capacity without the prior consent of the client or employer except as authorized or required by law or this Code.

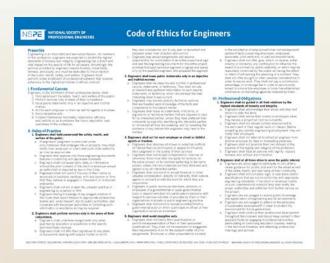




Section II.1.e. - NSPE Code of Ethics

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

Engineers having knowledge of any alleged violation of this Code shall cooperate with the proper authorities in furnishing such information or assistance as may be required.

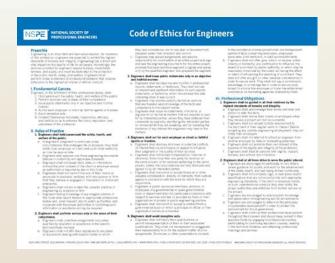




Section II.4. - NSPE Code of Ethics

Engineers shall act for each employer or client as faithful agents or trustees.

Engineers shall act in professional matters for each employer or client as faithful agents or trustees.





Section III.4. - NSPE Code of Ethics

Engineers shall not disclose, without consent, confidential information concerning the business affairs or technical processes of any present or former client or employer, or public body on which they serve.

Engineers shall not disclose confidential information concerning the business affairs or technical processes of any present or former client or employer without his consent.





Polling Question #2

Engineer A is retained to assess the structural integrity of a building, a task for which he is qualified. But should Engineer A's report mention the <u>other</u> building systems, not within his professional scope of service?

- A. Yes
- B. No
- C. Not sure





Conclusion:

It was unethical for Engineer A not to report the safety violations to the appropriate public authorities.







Public Health and Safety-Observing Off-Site Safety Issues

Facts:

Engineer A works for ES Consulting, a consulting engineering firm. In performing engineering services for ES Consulting, Engineer A performs construction observation services on a project for Client X. During the performance of the construction observation services for Client X, Engineer A observes potential safety issues relating to the performance of work by a subcontractor on a project being constructed on an adjacent piece of property for Owner Y, a party with whom neither Engineer A, ES Consulting, or Client X has any direct relationship.





Public Health and Safety-Observing Off-Site Safety Issues

Question:

What are Engineer A's ethical obligations under the circumstances?

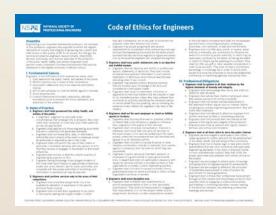




Public Health and Safety-Observing Off-Site Safety Issues

Section I.1. - NSPE Code of Ethics

Engineers, in the fulfillment of their professional duties, shall hold paramount the safety, health, and welfare of the public.





Public Health and Safety-Observing Off-Site Safety Issues

Section I.6. - NSPE Code of Ethics

Engineers, in the fulfillment of their professional duties, shall conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation, and usefulness of the profession.

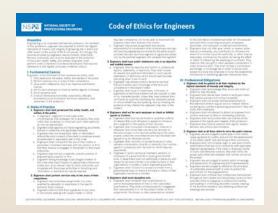




Case: 10-5 Public Health and Safety—Observing Off-Site Safety Issues

Section II.1.f. - NSPE Code of Ethics

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.

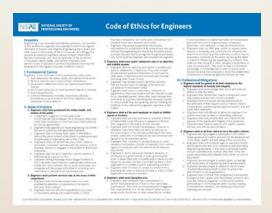




Public Health and Safety-Observing Off-Site Safety Issues

Section III.2. - NSPE Code of Ethics

Engineers shall at all times strive to serve the public interest.





Case: 10-5 Public Health and Safety-Observing Off-Site Safety Issues

Polling Question #3

The engineer's ethical obligation to "speak up" is just like the U.S. Department of Homeland Security's public awareness campaign, "If you **see** something, **say** something."

- A. Agree
- B. Disagree
- C. Not Sure





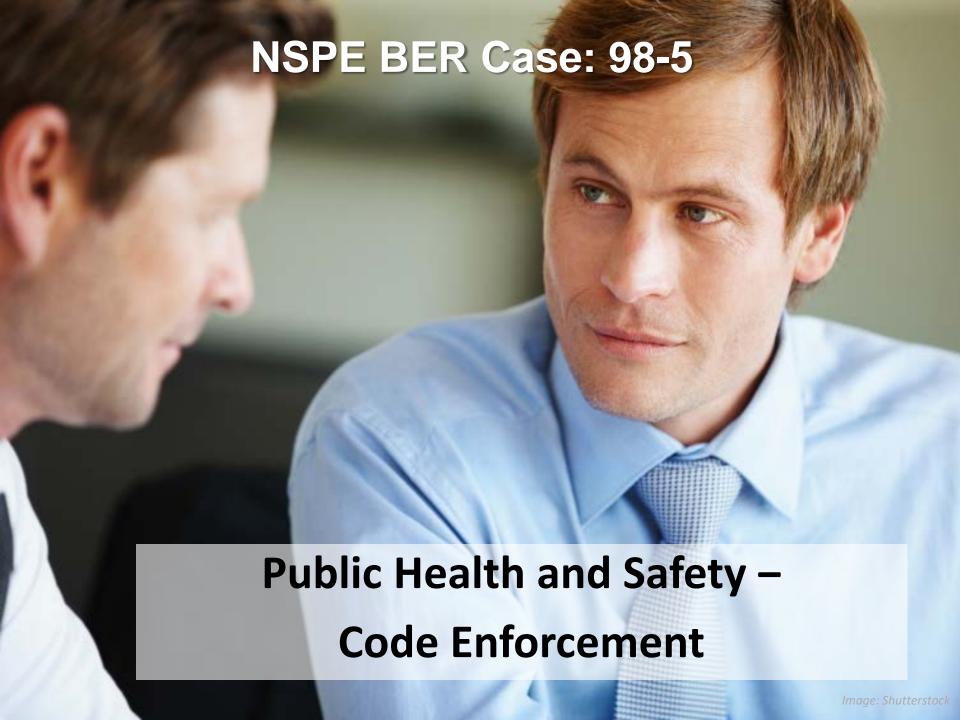
Case: 10-5
Public Health and Safety–Observing Off-Site Safety Issues

Conclusion:

Engineer A should bring this potential safety issue to the attention of Engineer A's supervisor and ES Consulting. The Board assumes that the potential safety issues do not pose an imminent danger; therefore, Engineer A does not have an obligation to report this issue beyond his superiors in ES Consulting.







Facts (Summary):

Engineer A serves as a director of a building department in a major city. He is concerned that as a result of a series of budget cutbacks and more rigid code enforcement requirements, his department is woefully understaffed.

His building code officials are caught between the responsibility to be thorough in their inspections (Engineer A must sign the reports) and the city's desire to hold down costs and generate revenue from inspection fees.

The chair of the local city council is sympathetic to Engineer A's concerns and the need for more code officials. But at the same time, the city seeks more businesses to relocate to the city in order to provide more jobs and a strengthened tax base.

So, the chair seeks Engineer A's concurrence on a city ordinance that would permit certain specified buildings under construction to be "grandfathered" under the older existing enforcement requirements and not the newer, more rigid requirements.

Engineer A agrees, and the chair approves hiring more code officials.



Question:

Was it ethical for Engineer A to agree to concur with the chairman's proposal under the facts?





Polling Question #4

This case depicts a form of "Faustian bargain." That is, Engineer A agreed to go along with the Chair's proposal (which de-toothed the more rigid code provisions) because doing so allowed Engineer A to hire more code officials (an outcome he strongly desired). Was Engineer A's concurrence ethically acceptable?

- A. Agree
- B. Disagree
- C. Not sure





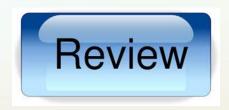
Conclusion:

It was not ethical for Engineer A to agree to concur with the chairman's proposal under the facts. Additionally, it was not ethical for Engineer A to sign inadequate inspection reports.





Key Ethics Points





- The NSPE Board of Ethical Review exists to, among other things, "render impartial opinions pertaining to the interpretation of the NSPE Code of Ethics."
- A simple five-step approach to ethical problem solving includes (1) get the facts, (2) identify applicable ethical guidance and standards, (3) clarify the key ethical issues, (4) identify alternatives, and (5) act!
- In the hierarchy of ethical obligations, protection of public health and safety is paramount.





- The NSPE Code of Ethics has changed over the years, yet the code offers relevant insight and guidance on cutting-edge ethical issues; for example, innovation and climate change.
- Engineers are encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.
- Engineers simultaneously are subject to multiple, sometimes conflicting obligations.





- Conforming to the requirements of state engineering licensure laws and regulations often involves proactive measures on the part of a professional engineer in relation to the public, employers/clients and professional colleagues.
- Sometimes identifying "the right thing" is not that hard... the hard thing is actually doing what is right.
- It is possible to face ethical dilemmas where the issue is not whether to hold paramount the public safety, health and welfare, bur rather how best to do so.





Discussion





Check out NSPE on

Twitter: http://twitter.com/NSPE

and

Facebook: http://bit.ly/19Rfak







NOTICE

The NSPE Online Seminar series is presented and copyrighted by the National Society of Professional Engineers®. All rights are reserved. Any transmission, retransmission or republishing of the audio or written portions of this program without permission of the National Society of Professional Engineers® is prohibited.



Thank You!

