

ETHICS PANEL

Moderator:

Mark A. Swyka, P.E.

Panelists:

Stephen Gordon, ESQ

Daryl O'Dell, P.E.

Martin Ryan, P.E.

NSPE Code of Ethics for Engineers

Engineering is an important and learned profession. As members of this profession, engineers are expected to exhibit the highest standards of honesty and integrity.

Engineering has a direct and vital impact on the quality of life for all people. Accordingly, the services provided by engineers require honesty, impartiality, fairness, and equity, and must be dedicated to the protection of the public health, safety and welfare. Engineers must perform under a standard of professional behavior that requires adherence to the highest principles of ethical conduct.

NSPE Code of Ethics for Engineers

- <https://www.nspe.org/resources/ethics/code-ethics>
- [nspe.org](https://www.nspe.org)
- Commencing August 1, 2011 all Professional Engineering License renewals require a minimum of 1 hour of Engineering Ethics

Fundamental Canons

Engineers, in the fulfillment of their professional duties, shall:

1. Hold paramount the safety, health and welfare of the public
2. Perform services only in areas of their competence
3. Issue public statements only in an objective and truthful manner
4. Act for each employer or client as faithful agents and trustees
5. Avoid deceptive acts
6. Conduct themselves honorably, responsibly, ethically, and lawfully so as to enhance the honor, reputation and usefulness of the profession.

The Road to Ethics



FIU Bridge Collapse

- Florida International University – Miami, Florida
- New pedestrian bridge
 - Pre-cast, post-tensioned concrete
 - 174 feet long
- Cracks identified late February 2018
- Lifted into place on March 10, 2018
- Larger cracks observed after placement
- Collapsed on March 15, 2018

FIU Pedestrian Bridge



FIU Pedestrian Bridge



Photo Credit: Sun Sentinel

FIU Bridge Collapse, Introductory Discussion

Note: Forensics are ongoing, and this is for discussion only

Prior to the March 15, 2018 FIU pedestrian bridge collapse, consider the following:

- The FDOT required that one of the main supports be moved increasing the span.
- An engineer reported cracks two days earlier.
- The project was behind schedule and over budget.

What are the potential ethical considerations?

Question 1 – Reviewing Work

Engineer A is retained by a local school district to review a design prepared by Engineer B. The design had yet to be reviewed/approved by local code officials. Engineer A recommends substantial changes. Engineer B continues design but does not incorporate Engineer A's comments. The design is not completed, the school opening delayed, and the school district files a law suit for professional negligence against Engineer B.

The attorney filing the lawsuit must consult with a professional engineer who will be requested to sign a certificate of merit asserting that, in the professional engineer's opinion, the lawsuit is not frivolous and without merit. The attorney contacts Engineer A, who will be called as a fact witness, to review the information and sign the certificate of merit.

Question 1

- *Would it be ethical for Engineer A to agree to perform the review of Engineer B's work?*
- *Would it be ethical for Engineer A to sign the certificate of merit?*

Question 1 – What the Board Concluded

Citing NSPE Code Section III.7.a

1. It would be ethical for Engineer A to agree to perform the review of Engineer B's work.
2. It would not be ethical for Engineer A to sign the certificate of merit since Engineer A will also be a fact witness. Engineer A should recommend an independent professional engineer to review the case and, if appropriate, sign the certificate of merit.

Ref: Sections II.1, II.1.b, II.3.a, III.4, III.7.a (18-8)

Question 2 – Conflict of Interest

Professional Engineer A owns ABC Engineering which has been retained by a state agency to participate in an independent external peer review of a design of a major state-funded transportation project. No confidentiality agreement exists on the project. The review focuses on clarifications and refinements of existing construction documents which are ultimately incorporated into a Design-Build RFP. One year after ABC completes their work the state agency issues the RFP. XYZ Construction invites ABC to participate in a design-build joint venture to submit a proposal for this project.

- *Is it ethical for Engineer A and his firm, ABC Engineering to participate in a design-build joint venture for this project?*

Question 2 – What the Board Concluded

It would not be unethical for Engineer A and ABC Engineering to participate in this design-build joint venture as long as the state agency approves and the work complies with state laws and regulations.

Ref: Sections II.4, II.4.a, II.4.b, II.4.d, III.4.a (18-10)

Question 3 – Fiduciary Duty

Engineer A is a professional engineer in private practice and is negotiating a contract with Client X for the design and construction of a building. Client X Places a provision in the contract that states: “Engineer A shall act as a fiduciary on behalf of Client X in the performance of engineering services for the benefit of the client.” A fiduciary is a person who is required to act for the benefit of another (here, Client X) on all matters. The fiduciary owes the other party the duties of good faith, trust, confidence, and candor in all matters within the scope of the relationship.

- *Is it ethical for Engineer A to agree to a contractual provision to act as a fiduciary on behalf of Client X?*

Question 3 – What the Board Concluded

While the Board of Ethical Review cannot say that entering into such an agreement is at face value a breach of engineering ethics, at a minimum, a professional engineer agreeing to a fiduciary liability standard must clearly communicate to any other contracting party (here, Client X) that Engineer A's paramount obligation is to protect the public health and safety. The engineer should negotiate additional language in the agreement recognizing this fundamental ethical obligation.

Ref: Preamble, Sections I.4, II.4, III.8 (18-12)

Question 4 – Conflict of Interest

Engineer A is an employee for Firm X. Engineer A purchases office computer software from Company Y, which employs Engineer A's spouse as its sales representative, and Engineer A's spouse handles the transaction. After an internal complaint is filed within Firm X regarding nepotism/favoritism, Firm X determines that the prices from Company Y are within market pricing range and that the office computer software products meet Firm X's needs.

- *Was it ethical for Engineer A to fail to disclose that Engineer A's spouse was a sales representative with Company Y?*
- *Was it unethical for Engineer A to have entered into a contract with Company Y?*

Question 4 – What the Board Concluded

1. It was unethical for Engineer A to fail to disclose that Engineer A's spouse was a sales representative for Company Y.
2. It was unethical for Engineer A to have entered into a contract with Company Y. Instead, Engineer A should have first disclosed the contract and the spousal relationship with an appropriate Firm X supervisor who could consider and approve the agreement, if appropriate.

Ref: Sections I.5, II.4.a, II.4.c, III.1.e (18-1)

Question 5 – Conflict of Interest

Bob is a board member of an engineering technical society and is actively encouraging the society to enter into an agreement with Jones Publishing, a technical journal publisher, to annually publish technical articles and content generated by the society's members. During a recent society board meeting, Bob expressed strong resistance to exploring other publishing options. In addition, Bob was being considered for the editorial board of a journal published by Jones Publishing.

- *What are Bob's ethical responsibilities?*

Question 5 – What the Board Concluded

Bob has a trust relationship in his role as a member of the board of the technical society and therefore must provide full disclosure regarding his relationship with Jones Publishing. Furthermore, Bob, in his role as a society board member, should recuse himself from discussion and voting on the matter of Jones Publishing.

Ref: Sections I.5, II.4.a, II.4.b, II.4.c (18-2)

Question 6 - Misrepresentation

Charlie, A licensed professional engineer is hired by an attorney to serve as an expert witness. Prior to trial Charlie learns that a witness for the opposition was representing themselves on their web site, letterhead and business cards as a licensed professional engineer when in fact they were not. Further on in the process Charlie observes that the other engineer is no longer representing themselves as a licensed professional engineer. He confers with the attorney regarding reporting the other engineer's representations to the state licensing authority. The attorney counsels him not to do that until after the legal matter is settled as it could harm the interests of the attorney's client.

- *What action should Charlie take in connection with the other engineer's misrepresentation of being a licensed professional engineer?*

Question 6 – What the Board Concluded

It would be appropriate, in serving the interests of Charlie's client, to refrain from reporting the misrepresentation to the state authorities since the violation has been resolved.

Ref: Sections I.4, II.1.e, II.1.f, II.4, II.5.a, III.3.a, III.7 (18-3)

Question 7 – Conflict of Interest

Engineer A serves as a construction inspector on a bridge that is being extensively renovated. Engineer A's employer, ABC Engineering, holds the construction inspection services contract with the Town. The general contractor on the project is Engineer A's former employer, XYZ Construction Company. After leaving XYZ as a full-time employee, Engineer A continued to perform occasional jobs for the company on a part-time basis. One such task was the preparation of shop drawings for the bridge renovation project. Engineer A did not disclose his relationship with XYZ Construction to ABC Engineering or the Town.

- *Can Engineer A ethically prepare shop drawings for a project that he is inspecting?*
- *What are Engineer A's ethical obligations under the circumstances?*

Question 7 – What the Board Concluded

Engineer A has an ethical obligation to immediately cease performing work for XYZ Construction.

Engineer A has an ethical obligation to fully disclose the work performed for XYZ Construction to ABC Engineering with notice to the Town.

Ref: Sections I.5, II.1, II.4, II.4.a, II.4.b, III.1.c, III.6.b (18-4)

Question 8 – Public Health & Safety

Edgar, a professional engineer, worked for many years as a quality control engineer for Boilco, a boiler manufacturer. In recent years, to reduce cost, Boilco began using a lower cost international supplier for boiler valves and electric switches. Edgar's product testing demonstrated that the new boiler valves and electric switches were inferior and could be unsafe. Edgar rejected the first shipment, but his supervisor, also a professional engineer, overruled the decision. When Edgar brought his product concerns to senior management, Edgar's supervisor abruptly fired him for insubordination. After termination, Edgar contacted a federal agency, detailing the threat to public safety posed by Boilco.

- *Were Edgar's actions in contacting the federal agency ethical?*
- *Was it ethical for Edgar's supervisor to fire him for insubordination?*

Question 8 – What the Board Concluded

1. Edgar's actions in contacting the federal agency detailing the potential threat to public safety by Boilco were justified and consistent with the NSPE Code of Ethics.
2. It was unethical for Edgar's supervisor to fire him for insubordination.

Ref: Sections I.3, II.1, II.1.a, II.1.c, II.1.f, II.4, III.1.b (18-5)

Question 9 – Patent Infringement

Professional Engineer A heads product development for ABC Pharmaceuticals in Country X. Country X has high infant mortality resulting from a curable infectious disease. The drug supply in Country X is often inferior and requires expensive testing to verify quality of the available drugs. ABC Pharmaceuticals began to manufacture Dylzian, a life saving drug for infants, for use solely in Country X. The manufacture of Dylzian is assigned to Engineer A. Dylzian is based upon a drug patented to another pharmaceutical company in another country. The manufacture of Dylzian by ABC violates the patent under the laws of the other country, but not in Country X where it will be produced and distributed.

- *What are Engineer A's ethical obligations?*

Question 9 – What the Board Concluded

Engineer A has an ethical obligation to respect the intellectual property rights of the other pharmaceutical firm and to take appropriate steps to address those rights. Such steps could include:

1. Seeking clarification and finalization of the patent rights of the parties – and if necessary encouraging ABC to negotiate a patent licensing agreement for the sale of this drug in Country X,
2. Explore the potential for other life-saving drug options that could be tested using new drug quality testing equipment in Country X, or
3. Determine whether a new ABC product is in the company pipeline that could address the health challenges in Country X.

Ref: Sections II.1, III.9, III.9.c (18-6)

Question 10 – Electronic Deliverables

Engineer A is a solo practitioner in private practice who performs engineering design services in a rural area. Engineer A recently established an internal process for using an electronic seal and signature protocol once engineering design documents are final. Electronic signatures and seals are permissible in the jurisdiction where Engineer A practices. Engineer A is retained by a client in a nearby community to perform engineering design services. Engineer A does not advise the client in advance regarding the use of electronic seal and signature. Unbeknownst to Engineer A, the client does not have the software necessary to permit a valid exchange of the documents transmitted. As a result, code official approval, financing, and construction are delayed, causing inconvenience and increased cost to the client.

- Was it ethical for Engineer A to use an electronic seal and electronic signature?*
- Is Engineer A responsible for the client's inconvenience resulting from the incompatibility of software?*

Question 10 – What the Board Concluded

Engineer A's actions were not unethical.

However, Engineer A should have taken appropriate steps in advance to communicate to the client how the deliverable would be transmitted.

Ref: Sections II.1.b, II.2.b, II.2.c, II.4, III.8.a (18-7)

Question 11

An engineer is retained by a client to perform design services. During the performance of these services, the state board of professional engineers contacts the engineer regarding an ethics complaint filed against the engineer by a former client for which the engineer provided the same services. The engineer does not believe that it is necessary to notify their current client of the pending complaint. Through another party, the current client learns of the complaint and is upset that they were not notified directly by the engineer.

- *Is it unethical not to notify the current client of the former client's ethics complaint?*

Question 11 – What the Board Concluded

No engineer should be compelled to disclose potentially damaging allegations about his professional practice — allegations that could be false, baseless, and motivated by some malicious intent. Instead, the engineer should weigh all factors and, depending upon the nature and seriousness of the charges, take prudent action, which might include providing the client with appropriate background information.

Question 12

An attorney requests that Engineer potentially assist with a litigation. No details or strategy discussed at this stage. Engineer sends resume and fee schedule, and requests sign off on fee schedule and a retainer. Does not hear from Attorney. In the interim another attorney contacts Engineer about expert witness services on the same case. Not having heard from the first attorney, Engineer accepts the assignment. Afterwards, the first attorney contacts Engineer and says they are ready to proceed, and after finding out the circumstances threatens to disqualify the engineer from providing services.

- *Was it unethical for Engineer to accept the assignment from the second attorney?*

Question 12 – What the Board Concluded

It was not unethical for the Engineer to accept the assignment from the second attorney.

The Board did note that it would have been courteous for the Engineer to contact the first attorney before accepting the assignment. However, the Board was not prepared to say that the Engineer had any obligation ethical or otherwise to do so.

Question 13

A forensic engineer is asked to be a technical expert in a litigation in order to review and comment on settlement documents prepared by the opposition. The engineer receives the documents electronically and notices (though no one else has), that the documents contain embedded comments that are detrimental to the interests of the opposing party.

- *What is the engineer's ethical obligation regarding this information?*

Question 13 – What the Board Concluded

The Engineer had an ethical duty to immediately advise his client and attorney of the fact that the Defense Attorney's comments had been revealed to Engineer. In addition, Engineer may be required to suspend further action in this matter pending the court's resolution of the issue.

Question 14 – Acceptable Exchange

Hardy Cross, PE is the owner of Moment Structural Engineering, a small firm. The Wright Foundation, a local nonprofit organization, needs the structural engineering services offered by Moment, but has limited funding. The Wright Foundation proposes to include Moment's name and logo in their advertising materials in exchange for the structural engineering services.

- *Would it be ethical for Moment to agree to Wright's proposal?*

Question 14 - What the Board Concluded

It would be ethical for Moment to agree to Wright's proposal so long as the advertisement by Wright is not misleading or deceptive.

Of note, the US Supreme Court found that restrictions on non-deceptive advertising are unlawful, so the Board's decisions regarding advertising have evolved over time.

Ref: Sections II.3, II.5, III.2, III.5.a (12-10)

Question 15 – Ethics Course

Engineering Firm ABC offers continuing education for staff. As a service to the engineering profession, ABC also offers ethics courses to engineers who are not employees. The course is open to any engineer. Many attendees are clients of the Firm, but most are not. While the purpose of the course is not business development, it could result in a business contact potentially leading to future work. No follow-up is made by ABC, except that a certificate is issued at the end of the course. A fee of \$25 is charged to cover lunch and administrative support. It is not intended for ABC to make a profit from the course.

- *Is it ethical for ABC to offer the ethics course?*
- *Is it ethical for ABC to offer the course without charging the \$25 fee?*

Question 15 - What the Board Concluded

It is ethical for ABC Engineering to offer the ethics course. Offering an ethics course advances the profession.

It is ethical for ABC to offer the course without fee. The program does not amount to valuable consideration, and there is no quid pro quo.

Ref: Sections I.6, II.5.b, III.2.a, III.8.a, III.9.e (12-9)

Question 16 – Direction Contrary to Code

The City Engineer conducts a traffic study. Based upon available data the City Engineer develops a public works improvement program and presents the plan to the City Council. One of the recommendations in the program is the purchase of a right-of-way to expand the size of the 11-foot lanes to 12 feet in order to meet current engineering standards and design guidelines. The City Council rejects the recommendations and directs the City Engineer to continue with the proposed public works improvements but retain the present lane configuration.

- *What are the City Engineer's ethical obligations under the circumstances?*

Question 16 - What the Board Concluded

The City Engineer has an obligation to advise members of the City Council that failure to follow the recommendations, which are based on current codes and standards, would place the public health and safety at risk and will also put the city in noncompliance with federal and state standards and requirements.

The City Engineer should not sign, seal or approve documents that fail to meet current codes and standards unless appropriate exceptions are received.

Ref: Sections II.1, II.1.a, II.1.b, II.3.a, II.4, III.2.b (15-11)

Question 17 - Confidentiality

An engineer performs an evaluation of a structural failure in connection with litigation, and is subject to a confidentiality agreement. Litigation settles, engineer's confidentiality agreement prohibits disclosure of her findings, but her findings indicate a significant public health and safety issue.

- *What are the Engineer's obligations?*

Question 17 – What the Board Concluded

The Engineer should:

- Explain her ethical obligations for public safety & welfare
- Explore an alternative path to identify the issue (paper or article without identifiable facts that would compromise the settlement agreement)

However, if Client refuses and Engineer believes the matter rises to an imminent or urgent threat, she should notify appropriate authorities.

Question 18 – Change Orders

An engineer reviews a contractor's change order for work already completed. Engineer determines that change order is a result of faulty workmanship and denies payment. Contractor contacts Engineer's supervisor (not a PE) and supervisor directs Engineer to approve change order.

- *Would it be ethical for Engineer to approve the change order?*

Question 18 – What the Board Concluded

It would not be ethical for the Engineer to sign off on the change order.

If pressured to sign, the Engineer would have an obligation to bring the matter to the appropriate authorities.

Question 19

Engineer A works for a large company, is the only PE, and supervises a number of unlicensed engineers.

Unlicensed Engineer B has a history of poor performance, including safety issues, which have not been resolved through improvement plans. Engineer A contacts HR and recommends termination. HR decides against.

- *What are Engineer A's ethical obligations?*

Question 19 – What the Board Concluded

Because safety issues are involved, Engineer A has an ethical obligation to make his professional opinion and recommendation known to higher management.

While Engineer B is still employed, Engineer A should do everything in his power to eliminate the safety issues.

Question 20 – Dangerous Conditions

Fran is a professional engineer employed by a construction contractor hired by DOT to inspect and repair a series of parkway on- and off-ramps. Commercial vehicles are not permitted on the parkway. Fran is directed to design inspection and construction scaffolding for a cloverleaf ramp with limited height and width clearance. From her personal experience driving on the parkway to and from work, Fran has observed commercial vehicles illegally driving on the parkway. She is concerned that the safety of the inspection and construction employees, as well as others, could be endangered if one of these commercial vehicles passes by the proposed inspection and construction scaffolding.

- *What are Fran's ethical obligations under the circumstances?*

Question 20 - What the Board Concluded

Fran should immediately notify verbally, and in writing if necessary, her immediate supervisor of the safety hazards to employees and others due to commercial vehicles passing while inspection and repair is being performed on the ramps.

Notification of transportation or law enforcement is also advisable so that decisions can be made about enhanced safety measures, such as increased enforcement while the work is performed.

Ref: Sections II.1, II.1.f, III.2.b (12-11)

Question 21 – The Man Who Knew Too Much

Albert is a forensic engineer. Albert is approached to serve as an expert witness by the lawyer for the plaintiff. Several months earlier Albert was approached by the lawyer for the defense in the same case. The defense lawyer did not disclose any confidential information or facts to Albert but did make the statement that “*actually, we have a very weak case and will probably lose.*” There was no further contact by the defense lawyer.

- *Would it be ethical for Albert to serve as an expert witness retained by the lawyer for the plaintiff?*

Question 21 - What the Board Concluded

It would be ethical for Albert to serve as an expert witness retained by the lawyer for the plaintiff. NSPE Code references section II.4.a: Engineers shall disclose all known or potential conflicts of interest that could influence or appear to influence their judgment or the quality of their services.

Ref: Sections III.4, III.4.a, III.4.b (12-12)

Question 22 – Intern as a Project Lead

Bart is a PE with a BS and MS in Civil Engineering. Bart has been assigned to a project where the project lead is Fred, an Engineer Intern. Fred has a MS in civil engineering but his undergraduate degree is not in engineering and so he must wait a few more years before taking the PPE Exam. Bart is concerned that his work as a PE is being scrutinized by a person who has not yet attained engineering licensure.

- *Would it be ethical for Bart, a licensed PE, to work on an assignment for which the project lead is an Engineer Intern?*

Question 22 - What the Board Concluded

It would not be unethical for Bart, a licensed PE, to work on an assignment for which the project lead is an Engineer Intern. However, if Bart is required to sign and seal engineering documents he will need to exercise the requisite “responsible charge” over the engineering design work and be satisfied that the engineering work meets applicable engineering standards. In addition, Bart must also review the state engineering licensing laws and regulations to determine these requirements and, if necessary, discuss these issues with his immediate supervisor and other managers as appropriate.

Ref: Sections II.1, II.1.a, II.1.e, II.2.a, II.2.b, II.2.c (15-6)

Hypothetical Landfill Failure

Fred is a Licensed Professional Engineer experienced in landfill design and construction and known for forensic investigation and expert witness services. Fred has been invited to a tour of a landfill facility with which he has no professional relationship and that was designed by a separate professional engineering company. In the course of the site visit Fred makes observations that may or may not be indicative of an impending landfill failure.

- *Based upon Fred's observations, what are the potential issues?*
- *Recognizing that Fred is only a guest at the facility, what are Fred's ethical obligations to the facility owner and/or the facility designer?*