A Review and Comparison of the Codes of Ethics of United States Engineering and Technical Societies

Engineering codes of ethics are a starting point for any discussion of engineering ethics in the U.S. and beyond. While there are significant similarities among the many codes of ethics of U.S. engineering and technical societies, there are also many significant differences in what the codes address and do not address. This paper will examine the codes of ethics of all major engineering professional and technical societies and examine key provisions relating to such issues as protecting the public health and safety, performing services only in areas of competence, objectivity and truthfulness, conflicts of interest, confidentiality, and other critical issues.

This paper will review and discuss the codes of ethics of the following U.S. engineering and technical societies:

- American Institute of Aeronautics and Astronautics
- American Institute of Chemical Engineers
- American Institute for Medical and Biological Engineering
- American Institute of Mining, Metallurgical and Petroleum Engineers
- American Nuclear Society
- American Society of Civil Engineers
- American Society for Engineering Education
- American Society of Mechanical Engineers
- Human Factors and Ergonomics Society
- Institute for Electrical and Electronic Engineers
- National Council of Examiners for Engineering and Surveying
- National Society of Professional Engineers
- Society of Women Engineers

This paper has been prepared by Arthur Schwartz, Deputy Executive Director and General Counsel for the National Society of Professional Engineers (NSPE), 1420 King Street, Alexandria, Virginia 22314 (USA), E-mail: aschwartz@nspe.org / Web site: www.nspe.org
History of U.S. Engineering Code of Ethics

The earliest U.S. codes of ethics were developed by what are referred to as the engineering founder societies, which included the American Society of Civil Engineers, American Institute of Chemical Engineers, American Society of Mechanical Engineers, and the Institute for Electrical and Electronic Engineers. Many of the codes of ethics of the other engineering and technical societies were originally based on provisions of the founder society codes of ethics.

Structure and Enforcement Provisions

The structure and enforcement provisions of engineering and technical society codes of ethics vary. Some organizations have lengthy codes of ethics with detailed canons, principles, rules, and interpretive commentary while others are structured only with brief, bulleted items expressing general philosophical positions. Frequently the highest ethical obligations appear at the beginning of each society’s code of ethics, with secondary obligations appearing later on in the code of ethics. In addition, while some codes are intended as general guidance and are aspirational, others have more serious consequences with disciplinary penalties imposed for violations of the code of ethics.


A review of engineering and technical society codes of ethics have identified the following key areas which are common to all or many of those codes of ethics: (1) public health, safety, and welfare; (2) sustainability and the environment; (3) disclosure of concerns to clients; (4) disclosure of concerns to authorities; (5) competency; (6) objectivity, honesty, and truthfulness; (7) duty to employers or clients; (8) conflicts of interest and disclosure; (9) confidentiality; (10) personal merit and qualifications; (11) credit to others; (12) criticism of and interference with others; (13) honor, integrity, and reputation of the profession; (14) fraud, bribery, and violation of the law; (15) gratuities; (16) payments from more than one party; (17) personal and professional development; (18) professional development of others in the profession; (19) discrimination and harassment; (20) partisan statements; (21) projects outside area of competence; (22) extending public knowledge of science and technology; (23) serving as an expert witness; (24) signing and sealing of plans; (25) employee safety and compensation; (26) dignity and restraint in describing work; (27) accepting criticism; (28) reporting a member’s ethics violation to the society; (29) conflicts in public service; and (30) contingency fees.

The following is a review of each of these key areas, followed by a sample of some of the ways in which these code provisions are stated.
Public Health, Safety, and Welfare

The engineer’s role in protecting the public health and safety is generally regarded in most codes as the most fundamental obligation. As a member of a learned profession, it is generally understood that engineers are expected to have a very high regard for the public good. There is some variation in the language in the codes regarding the issue of whether the public health and safety should be held paramount above all other concerns and considerations.

Many engineering codes embrace this value while other codes use such terms as “shall have proper regard”; consider it a “fundamental concern”; “shall accept responsibility for the public health and safety” or “shall be cognizant that their first and foremost responsibility is the to the public welfare”; and “accept responsibility in making decisions consistent with….” There is also some variation in the extent of the obligation. Among the different provisions include such terms as “safety, health, and welfare of the public” and “welfare, health, and safety of the community”. Some codes’ public health, safety, and welfare provisions also identify “the environment” and “fellow workers” as part of this paramount or fundamental obligation. While there is a degree of variation in each of these provisions, it is clear that the engineer’s obligation to the public health, safety, and welfare is the highest or among the highest ethical obligations owed by engineers.

Sustainability and the Environment

With the emergence and growth of the environmental and sustainable development movement in the U.S. and around the world in recent years, many engineering codes of ethics have supplemented or added language addressing this issue. As individuals with great technical expertise in areas affecting and shaping the environment, engineers are expected to use their skills in ways that preserve and protect our natural resources. A few codes do not address this issue specifically, instead taking the position that other, more general code obligations to the public health and safety address environmental questions.

For those organizations that specifically address this issue, the language used includes the obligation to “protect the environment in the performance of their professional duties”, “be dedicated to…with fundamental concern for protecting the environment”, “work to protect the environment”, “strive to comply with the principles of sustainable development in the performance of their professional duties”, “consider environmental impact and sustainable development”, “concern themselves with the impact of their plans and designs on the environment”, consider development that meets the needs of the present without compromising the ability of future generations to meet their own needs”, “disclose promptly factors that might endanger the public or the environment”, and “encouraged to adhere to the principles of sustainable development in order to protect the environment for future generations.”
Some of the engineering societies that take enforcement action against society members who violate code provisions have expressed the view that while it is important to have these provisions in the society code of ethics, it may be difficult to effectively enforce these provisions. In addition, a few engineering societies have expressed the view that such provisions could elevate the legal standard of care to which engineers are generally held, could increase legal liability exposure for engineers and, therefore, have been reluctant to include such provisions in their codes of ethics.

**Disclosure of Concerns to Clients**

The engineer’s obligation to advise the employer or client of concerns discovered in connection with the engineer’s work is recognized in the vast majority of professional society codes of ethics. As professionals with the ability to identify circumstances that could compromise the interests of parties to whom the engineer may have an obligation, engineers are expected to provide appropriate disclosure to such parties.

Among the language used includes obligations to “indicate to his employer or client the adverse consequences to be expected if his (the engineer’s) judgment is overruled”, “report matters within his areas of expertise which the engineer believes represents a contravention of public law, regulation, health, or safety”, “advise their employer or client (and consider further disclosure if warranted if they perceive that a consequence of their duties will adversely affect the present or future health or safety of their colleagues or the public)”, “endeavor to promote the well being of the community and, if the engineer’s judgment is overruled in a particular instance, inform the client or employer of possible consequences”, “when perceiving a consequence of their professional duties to adversely affect the present or future public health and safety, shall formally advise their employers or clients, and if warranted, consider further disclosure”, and other similar provisions.

Sometimes the issue of disclosure raises ethical challenges for engineers, particularly where employers or clients have sought to restrict such disclosures through prior confidentiality agreements or other mechanisms. However, where the information to be disclosed involves a violation of law or a danger to the public, it is generally agreed that such employer- or client-imposed restrictions cannot stand in the way of the engineer’s overarching obligation to communicate his or her concerns. Another issue that arises under this code provision is where an engineer’s judgment is overruled by an individual who does not possess the technical competence to render a knowledgeable opinion. Engineers in industry and government are often managed by nonengineers, which sometimes raises this ethical concern.
Disclosure of Concerns to Authorities

In addition to the code provisions relating to the ethical obligation to disclose professional concerns to the employer or client, many engineering codes of ethics also have specific provisions relating to the obligation to make formal disclosure to appropriate authorities, such as government agencies and other similar entities. In some cases, reports by engineers to their employers or clients do not result in further meaningful action or follow-through. In other cases, there may be an obligation to establish a formal record with a governmental entity so that the agency may take appropriate action in the future.

Among the code provisions that address this issue include phrases such as “and consider further disclosure if warranted”, “and if appropriate under the circumstances, notify the proper authority of the situation”, “notify and advise any appropriate authority if warranted”, “report violations to the appropriate authorities”, “shall present such information to the proper authorities in writing and shall cooperate with the proper authorities in furnishing such further information or assistance as may be required”, and similar language.

Competency

Professional competency is a critical ethical obligation because it goes to the heart of one’s ability to perform as a professional. Technical competence and expertise is a hallmark of the practice of engineering and it is core to what an engineer is expected to perform on behalf of their employers, clients, and for the benefit of the public. In addition to an engineer’s obligation to maintain professional competence, an engineer must also understand the scope and limitations of one’s professional competence and not practice beyond one’s areas of competence. This may include disclosure to the employer or client and possibly seeking additional education, training, or experience in order to perform technical services.

Code provisions relating to competency include such provisions indicating that the engineer “will undertake only those professional assignments for which he is qualified”; “perform professional services only in areas of their competency”; “offer services in the areas of their competence and experience, affording full disclosure of their qualifications”; “perform only those services that we are qualified by training or experience to perform, and provide full disclosure of our qualifications”; “members limit their practice to those areas wherein they maintain a competence by virtue of training and/or experience and not extend their endeavors beyond their realm of competence”; and “to maintain and improve our technical competence and to undertake technological tasks for others only if qualified by training after full disclosure of pertinent limitations”.
Objectivity, Honesty, and Truthfulness

Maintaining objectivity, honesty, and truthfulness with employers and clients as well as others with whom an engineer has contact in the course of professional practice is critical in establishing and exhibiting the credibility necessary in order to practice effectively. Failure to establish and maintain these basic values will have grave consequences, damaging the reputation of the engineer and those with whom the engineer is associated. Serious consequences will flow from such failure.

Code provisions effecting objectivity, honesty, and truthfulness include provisions indicating that an engineer will “express an opinion on a subject only when it is founded on adequate knowledge and honest conviction”; “issue statements or present information only in an objective and truthful manner”; “give evidence, express opinions, or make statements in an objective and truthful manner and on the basis of adequate knowledge”; “engineers shall be honest, truthful, ethical, and fair in presenting information and making public statements, which reflect on professional matters in their professional role”; “present all data and claims, with their basis, truthfully and honest in all respect”; “prepare engineering and technical articles for the lay or technical press which are only factual and within the context of the engineer’s competency and level or expertise”; “avoid sensationalism, exaggeration, and superficiality that constitutes deception and avoid any misrepresentation”; and “be honest and realistic stating claims or estimates”.

Duty to Employers or Clients

Engineers are retained by their employers or clients to perform professional services. In their role as employees or consultants, engineers are often privy to employer or client information and are expected to demonstrate a professional level of care and loyalty in the performance of their services.

Code provisions addressing this issue include provisions admonishing the engineer to “serve with devotion his employer and the public”; “act as a faithful agent or trustee”; “be honest and impartial and serve with fidelity their employer, clients, and the public”; “apply their skill and knowledge in the interests of their employer or client for whom they act in professional matters”; “disclose nothing of a proprietary or confidential nature concerning the business affairs or technical processes of any present or former client or employer without the necessary consent, unless necessary to abide by other provisions of the Code or applicable laws”; and “represent their employer’s capabilities and interests accurately so as not to mislead their clients or potential clients or damage the business interests or reputation of their employer”.

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Conflicts of Interest and Disclosure

Engineers, particularly those who work as consultants, sometimes find themselves in situations in which they perform work on behalf of parties both in the public and private sectors that may have different interests in connection with a project, transaction, or other business relationship. Sometimes these professional relationships raise the question of conflicts of interest. At one point in time, engineering codes of ethics prohibited engineers from becoming involved in situations that might raise the possibility of a conflict of interest. However, because engineers cannot always avoid such situations, many, but not all, engineering codes of ethics were modified to require the engineer to disclose the circumstances relating to the conflict of interest.

Conflict of interest and disclosure provisions vary greatly and include provisions requiring “engineers to inform their employer or client if he is financially interested in any vendor or contractor, or in any invention, machine, or apparatus which is involved in a project or work of his employer or client and not allow such interest to affect his decision regarding services which he may be called upon to perform”; “act in professional matters for each employer or client as faithful agents or trustees, avoiding conflicts of interest, and never breaches confidentiality”; “avoid all known or potential conflicts of interest and keep the employer or client informed which could lead to a conflict”; “disclose to affected parties any known or potential conflict of interest or other circumstances, which might influence, or appear to influence, judgment or impair the fairness or quality of their performance”; and similar language.

Confidentiality

Engineers in all areas of professional practice frequently become privy to information that is intended to be and remain confidential by the employer or client. This information may include sensitive employer or client information, trade secrets, technical processes, business information, and other material that, if disclosed or used improperly, could result in damage to the business or other interests of the employer or client. As professionals, engineers have a special obligation to maintain the confidences of the employer or client and not disclose this information to third parties without permission or consent obtained in advance. There are sometimes exceptions to this obligation, but as a general rule, engineers who breach this obligation violate their ethical duty.

Provisions relating to the issue of conflict of interest in engineering codes of ethics include such language as “engineer will not disclose information concerning the business affairs or technical processes of any present or former employer or client without consent”; “never breach confidentiality”; “shall neither disclose nor use confidential information gained in the course of the engineer’s engagement without permission of the employer or client, except as may be required by court order or other legal process”; “engineers shall not use confidential information coming to them in the course of their assignments as a means of making a personal profit if such action is adverse to the interests of their client, employers, or the public”; and “shall preserve the confidentiality of any information obtained from human research subjects that, if divulged, may have harmful effects on those subjects”.

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Personal Merit and Qualifications

Engineers are expected to demonstrate their professional qualifications and expertise in the delivery of their services to their employers or clients. When being considered for hire or retention, engineers have an obligation to be honest and truthful regarding their capabilities and must not provide inaccurate, misleading, or deceptive information. When competing with others, engineers should do so on the basis of their qualifications and should not employ unfair methods when pursuing employment or clients.

Code of ethics provisions relating to the issue of personal merit and qualifications include such references such as “engineers will be dignified and modest in explaining their work and merit and will uphold the honor and dignity of the profession”; “build their professional reputations on the merits of their services”; “shall not compete unfairly”; “shall neither falsify nor misrepresent, by misleading omissions or otherwise, the qualifications, experience, and prior responsibility of the member or the member’s associates”; “shall accept responsibility for their actions, seek and acknowledge criticism of their work, offer honest and constructive criticism of the work of others, properly credit the contributions of others, and do not accept credit for work not their own”; “do not compete unfairly with others, and avoid injuring others, their property, reputation, or employment”; “shall not permit misrepresentation of their academic or professional qualifications or experience”; “shall not misrepresent or exaggerate their degree of responsibility in prior assignments nor complexity of said assignments”; and “presentations incident to the solicitation of employment or business shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments”.

Credit to Others

Engineers as supervisors, team members, and in other capacities have an obligation to provide appropriate recognition and acknowledgement of the work of others when presenting reports, papers, and other professional deliverables. Failure to provide appropriate recognition and acknowledgement can result in taking credit for work not performed, failing to credit the work effort and achievements of other parties who contributed to the work product, and potentially violating the proprietary rights of others.

Language in engineering codes of ethics relating this issue includes “take care that credit for professional work is given to those whom credit is properly due”; “treat fairly and respectfully all colleagues and coworkers, recognizing their unique contributions and capabilities”; “give proper credit for professional work to those to whom credit is due and acknowledge the accomplishments of subordinates and others”; “do not accept credit for work not their own”; “recognize the proprietary interests of others”; “name the person or persons who may be responsible for designs, inventions, writings, or other accomplishments”; “shall not engage in plagiarism. The act of substantially using another author’s ideas or written materials without due credit and advance notification is unethical”; “have an obligation to report their work to the general engineering community and give credit to those who have contributed on a professional level to that publication”; and “give credit proportional to their contribution to all those
responsible for the formulation, design, analysis, or other material if their contribution was on a professional level”.

**Criticism of and Interference with Others**

As professionals, engineers are expected to act collegially with other engineers, treating each other with respect and courtesy in all situations and circumstances. The failure to act with respect and courtesy toward a professional colleague damages the reputation of those engineers involved and also reflects poorly upon the engineering profession generally.

Code sections relating to this provision include “shall not injure maliciously the professional reputation, prospects, or practices of another professional”; “accept responsibility for their actions, seek and heed critical review of their work, and offer objective criticism of the work of others”; “avoid injuring others, their property, reputation, or employment”; “offer honest criticism of the work of others”; “shall not indiscriminately criticize another’s work”; “shall inform in advance another engineer whenever they plan to publicly criticize or comment upon another’s work”; “shall not seek ethical sanctions against another engineer unless there is good reason to do so under the relevant codes, policies, and procedures governing that engineer’s ethical conduct”; and “avoid impugning the integrity of other experts without a factual, reasonable, and substantive basis”.

**Honor, Integrity, and Reputation of the Profession**

As professionals, engineers are expected to act in a manner that represents high ideals and advances the image and public understanding of engineering and engineers. The manner in which individual engineers conduct themselves in their personal and professional lives can have an important impact upon the image of engineers and engineering in the minds of all members of society.

Specific code sections relating to this ethical value include “uphold and advance the honor and dignity of the profession”; “increase the competence and prestige of the profession”; “engineers should exhibit high standards of competency, honesty, integrity, and impartiality, be fair and equitable”; “shall avoid any conduct which brings discredit upon the profession”; “committed to ethical, businesslike, and lawful conduct, including proper use of authority and decorum”.

**Fraud, Bribery, and Violation of the Law**

It is self-evident that no profession can maintain public trust if its members fail to meet minimum legal requirements. Criminal and civil laws must be adhered to by all engineers to ensure their professional integrity and that the public interest is protected.
Among provisions in engineering codes include “engineers shall not be involved with any business or professional practice which the engineer knows or should know is a fraudulent or dishonest venture”; “engineers shall act in accordance with all applicable laws and the canons of ethics as applicable to the practice of engineering as stated in the laws and regulations governing the practice of engineering in their country, territory, or state”; “we reject bribery and coercion in all their forms”; “engineers shall not knowingly engage in business or professional practices of a fraudulent, dishonest, or unethical nature”; “engineers shall act with zero tolerance for bribery, fraud, and corruption in all engineering or construction activities in which they are engaged”; and “engineers should be especially vigilant to maintain appropriate ethical behavior where payments of gratuities or bribes are institutionalized practices”.

**Gratuities**

Engineers in both the public and private sector often have contact with vendors, material men, suppliers, contractors, and other commercial parties who sometimes offer gifts of substantial value in connection with anticipated or existing contracts. Similarly, sometimes, engineers who are being considered for or who are retained on a project offer gifts of substantial value to public or private parties in connection with the anticipated or existing contracts. Either situation is unacceptable and in violation of professional societies’ codes of ethics.

Code provisions relating to gratuities include “engineers will not accept from vendors or contractors any commissions or allowances which represent a conflict of interests”; “engineers shall neither solicit nor accept financial or other valuable consideration, including but not limited to free designs, from material or equipment suppliers, in exchange for specifying the supplier’s products”; and “engineers shall neither solicit nor accept gratuities, directly or indirectly, from contractors, their agents, or other parties dealing with the engineer’s client or employer in connection with work for which the engineer is responsible”.

**Payments from More Than One Party**

Engineers in private practice often work for and represent the interests of a variety of parties. However, sometimes the interests of those parties conflict with one another either at the time of the establishment of the relationship with the engineer or at some point following. A complicated relationship may become even more complicated when payments for the engineer’s services are made by each of these parties.

Key code provisions relating to payments from more than one party include “engineer will not accept compensation—financial or otherwise—from more than one party for the same service or for other services pertaining to the same work, without the consent of all interested parties” and “engineers shall not accept compensation, financial or otherwise, from more than one party for services on the same project, unless the circumstances are fully disclosed and agreed to by all interested parties”.

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Personal and Professional Development

Engineering is a dynamic profession with both the breadth and depth of engineering knowledge changing on an ongoing basis. Engineers must be committed to their own personal and professional development.

Code of ethics language addressing this issue includes “continue their professional development throughout their careers” and “engineers should keep current in their specialty fields by engaging in professional practice, participating in continuing education courses, reading in the technical literature, and attending professional meetings and seminars.”

Professional Development of Others in the Profession

In addition to a personal commitment to personal and professional development, engineers have an ethical obligation to encourage and support the professional development of those under their responsible charge and supervision.

Provisions relating to this issue include “engineers will endeavor to provide opportunity for the professional development and advancement of those in his employ or under his supervision”; “cooperate in advancing the profession by interchanging information and experience with other professionals and students, as well as contributing to the media and to the efforts of engineering and scientific societies and schools”; “shall take a positive interest in, and encourage the engineer’s professional employees, associates, and subordinates to actively support professional organizations which further the general interest of the profession”; “encourage employees to attend and present papers at professional and technical society meetings”; and “assist colleagues and coworkers in their professional development and to support them in following the code of ethics”.

Discrimination and Harassment

Engineers have an obligation to be fair and just in their professional relationships and must avoid any action that treats others in a biased manner. In addition to violations of code of ethics provisions, such conduct could result in legal and other sanctions against engineers and their employers, and reflect poorly on other engineers and the engineering profession. Many engineering societies do not address these issues in their codes of ethics but in professional policies and other guidelines.

Code of ethics provisions addressing discrimination and harassment include “never tolerate harassment”; “engineers shall engage in professional relationships without bias because of race, religion, gender, age, ethnic or national origin, attire, or disability”; “we treat all persons fairly”; “engineers should not use a position as a teacher, a granting or contracting official, an employer or employee, or any other position of influence to coerce or harass others”; “engineers should not use race, handicap, sex, sexual preference, age, religion, or national origin as a consideration in hiring, promotion, training, or in any research or application where such consideration is irrelevant to the demands for performance”.

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Partisan Statements

As a general rule, engineers are hired and retained to provide drawings, plans, specifications, designs, studies, reports, and other factual material for their employers or clients. Engineers are not generally retained as advocates on behalf of their employers or clients. When an engineer is placed in a position where the engineer is promoting a point of view or perspective in professional practice, the engineer has certain ethical obligations.

Provisions relating to partisan statements include “engineers shall issue no statements, criticisms, or arguments on engineering matters which are inspired or paid for by interested parties, unless they indicate on whose behalf the statements are made”; “unless they preface their comments by identifying themselves by disclosing the identities of the party or the parties on whose behalf they are speaking, and by revealing the existence of any financial interest they may have in the matter under discussion”; and “an engineer shall reveal the existence of any interest, pecuniary or otherwise, that could be taken to affect the engineer’s judgment in a technical matter about which the engineer is making a statement or giving evidence”.

Projects Outside Area of Competence

All engineers are implored to practice only within their area of competence and to refrain from engaging in areas for which the engineer does not possess the necessary minimum education, training, and experience. Professional competence is not a static concept and can both grow and diminish over time. Engineers must be mindful of the breadth and depth of their abilities and practice accordingly.

Provisions relating to this issue include “the engineer will undertake only those professional assignments for which he is qualified and engage or advise his employer or client to engage specialists and will cooperate with them whenever his employer’s or client’s interests are served best by such arrangements”; “engineers may accept an assignment requiring education or experience outside of their own field of competence, provided their services are restricted to those phases of the project in which they are qualified and all other phases of the project are performed by qualified consultants or employees”; “engineers shall maintain and improve their technical competence and undertake tasks for others only if qualified by training or experience, or after full disclosure of pertinent limitations”; and “licensed engineers may accept assignments for coordination of an entire project, provided that each design segment is signed and sealed by the licensed engineer responsible for preparation of that design segment”.

Extending Public Knowledge of Science and Technology

As part of their professional and civic responsibilities, engineers have a responsibility to share their understanding of science and technology with members of the public. This includes making presentations before public gatherings, visiting schools to talk to students, and volunteering their technical expertise for the benefit of the community.
Language in codes of ethics relating to this issue include “engineers will endeavor to extend public knowledge and appreciation of engineering and its achievements”, “engineers shall consider the consequences of their work and societal issues pertinent to it and seek to extend public understanding of those relationships”, “engineers should endeavor to extend public knowledge of engineering and sustainable development”, and “engineers shall endeavor to prevent misunderstandings of the achievements of engineering.”

**Serving as an Expert Witness**

As professionally and technically competent practitioners, engineers often have general or specialized expertise and are called upon to assist in the resolution of legal and other disputes between parties in litigation or before other public authorities. Engineers serving in this role have special obligations and responsibilities.

Ethics code provisions relating to serving as an expert witness include “engineers shall be objective and truthful in professional reports, statements, or testimony, and they shall include all relevant and pertinent information in such reports, statements, or testimony”; “engineers when serving as an expert witness, shall express an engineering opinion only when it is founded on adequate knowledge of the facts, upon a background of technical competence, and upon honest conviction”; “engineers when serving as an expert or technical witness before any court, commission, or other tribunal, shall express an engineering opinion only when it is founded on adequate knowledge of the facts in issue, their background of technical competence in the subject matter, and their belief in the accuracy and propriety of their testimony”; and “engineers shall provide testimony objectively and without bias…their testimony should be based on credible data and/or scientific principles…they should be prepared to identify the merits and limitations of the data and principles as well as their own capability to interpret those data and apply those principles”.

**Signing and Sealing of Plans**

Engineers who are licensed professional engineers in the U.S. have special legal and regulatory duties and responsibilities under state law regarding their preparation, review, and approval of engineering documents (drawings, plans, specifications, reports submitted to clients or public authorities). Failure to meet these duties and responsibilities can result in the loss of an engineer’s license as well as disciplinary action by the engineer’s professional society.

Among the code provisions addressing this issue include “engineers shall not affix their signatures or seals to any engineering plan or document dealing with subject matter in which they lack competence by virtue of education or experience, or to any such plan not prepared under their supervisory control” and “engineers shall not approve or seal plans and/or specifications that are not design safe to the public health and welfare and in conformity with accepted engineering standards”.

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Employee Safety and Compensation

While most codes of ethics do not address conditions of employment issues, some engineering and technical society codes of ethics do contain such language.

Some of the provisions include language such as “engineers will provide a prospective employee with complete information on working conditions and his proposed status of employment, and after employment will keep him informed of any changes in them”; “the engineer will uphold the principle of appropriate and adequate compensation for those engaged in professional work, including those in subordinate capacities”; and “engineers shall uphold the principle of mutually satisfying relationships between employers and employees with respect to terms of employment including professional grade descriptions, salary ranges, and fringe benefits.”

Dignity and Restraint in Describing Work

Engineers are expected to be modest in their professional communications and should not promote their personal interests in a manner that reflects poorly on the engineering profession.

Code provisions address this in the following manner: “engineers will be dignified and modest in explaining his work and merit, and will ever uphold the honor and dignity of the profession”; “engineers shall exercise due restraint in explaining the member’s own work”; and “engineers shall be truthful in explaining their work and merit, and shall avoid any act tending to promote their own interests at the expense of the integrity and honor of the engineering profession or another individual”.

Accepting Criticism

Part of being an engineer is recognizing that an engineer’s actions will be evaluated by other parties. In some cases, the engineer’s performance will be viewed positively and in other cases it may be viewed negatively. Engineers have a responsibility to respond to such evaluations in a professionally productive and constructive manner, and to not become defensive.

Language relating to this issue includes “engineers shall accept responsibility for their actions, seek and heed critical reviews of their work”; “seek and acknowledge criticism of their work”; “be open to and acknowledge criticism of their work”; “engineers shall admit their own errors when proven wrong and refrain from distorting or altering the facts to justify their mistakes or decisions”; “seek, accept, and offer honest criticism of technical work, acknowledge and correct errors”; and “engineers shall acknowledge their errors and shall not distort or alter the facts”.

Reporting a Member’s Ethics Violation to the Society

Engineers who become aware of ethical violations by their engineer colleagues cannot remain silent and have an ethical obligation to take appropriate action in connection with these violations. In some cases, engineers may observe conduct and suspect a violation or learn of the possibility of a violation from another party.
Code provisions relating to this issue include “engineers shall disclose knowledge of any matter involving another engineer’s alleged violation of the code of ethics in a prompt and complete manner to the appropriate bodies” and “engineers having knowledge of possible violations of any rules of professional conduct shall provide the board with information and assistance as necessary to make the final determination of such violations.

Conflicts in Public Service

Engineers often serve as members or advisors to public bodies or agencies. Sometimes their responsibilities as members or advisors to public bodies or agencies raise potential conflicts with their responsibilities as practicing engineers.

Among the code language addressing this issue includes “engineers in public service as members, advisors, or employees of a governmental body or department shall not participate in consideration or actions with respect to services solicited or provided by them or their organization in private or public engineering practice”; “engineers shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization services as a member”; and “engineers shall not solicit or accept a contract from a governmental body on which a principal or officer of their organization serves as a member”.

Contingency Fees

Sometimes engineers are asked to enter into contracts with clients based upon a contingent event or circumstance, with the engineer’s compensation being forthcoming only if the contingent event or circumstance occurs. These contractual arrangements are generally not ethical, as the engineer’s judgment in rendering the services may be unduly influenced or called into question by the circumstance of the contractual arrangement.

Code provisions addressing this issue include “engineers may request, propose, or accept professional commissions on a contingent basis only under circumstances in which their professional judgment would not be compromised”; “engineers shall not accept fees on a basis contingent on the outcome of a matter”; and “engineers shall not request, propose, or accept a commission on a contingent basis under circumstances in which their judgment may be compromised.”

Conclusion

As can be seen, while there are many similarities among the various provisions of U.S. engineering and technical societies’ codes of ethics, there are also some important differences and distinctions, reflecting historical, professional, technical, and other factors. Engineers and their engineering and technical societies have an obligation to carefully review and recommend updates to their codes of ethics—balancing longstanding ethical values and principles while also addressing contemporary issues affecting the practice of engineering.