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Thanks to Outgoing Members of the Board's Advisory Committees

Several members of the board's Industry Advisory Committee have completed their terms at the end of 1996. We wish to express our sincere appreciation for their service during the past several years. These individuals are:

- Ramon F. Miguez, P.E. Dallas
- Ricardo R. Salinas, P.E. McAllen
- Jimmie A. Schindewolf, P.E. Houston
- Carl M. Skooglund Dallas

Sincere appreciation is also extended to engineering deans who served the board for over six years and have now stepped down from being dean; thus they no longer serve on the board's Education Advisory Committee. These are:

- Roger Eichhorn, Ph.D., P.E. University of Houston
- John McElroy, Ph.D., P.E. UT/Arlington
- Herbert Woodson, Ph.D., P.E. UT/Austin

Welcome to Incoming Members of the Board's Advisory Committees

There are four new members of the Industry Advisory Committee. We welcome:

- Brenda Ann Bradley, P.E. Houston
- Jorge David Perez, P.E. McAllen
- H. Kenneth Rigsbee, Jr., P.E. Austin
- Victor Arthur Weir II, P.E. Ft. Worth

A warm welcome to the Education Advisory Committee is also extended to the three new engineering deans:

- J. Ronald Bailey, Ph.D. UT/Arlington
- Ben G. Streetman, Ph.D., P.E. UT/Austin
- John C. (Jack) Wolfe, Ph.D. University of Houston

Issues Considered by the Industry and Education Advisory Committees

During the past year, studies on several topics were considered by the two advisory committees. These include:

- Ethics Exam for Engineers Seeking Texas Registration
- Concept of Establishing Peer Review Panels for Technical and Ethical Considerations
- Registration of Engineering Faculty
- Responsible Supervision of Engineering Work
- Continuing Professional Development
- Continuing Competency Training
- Distance Learning Needs
- Potential equipment fund for Engineering Schools supported by portion of registration fee

The ethics exam has been completed and is explained in some detail in this issue of the TexethicS newsletter. The other topics are still under consideration by the committees. These and related matters are on the agenda for the January 7, 1997 meeting of the two committees in Austin.

About this Issue of TexethicS

This issue of TexethicS is devoted to resource materials that can be used in engineering classes and/or by young engineers starting their careers. Included in this issue are:

- Concepts of the State Board's ethics exam
- Professional Conduct and Ethics Section of the Texas Engineering Practice Act
- Actual cases recently acted upon by the board
- An extensive list of ethics references
- List of members of the Board
- List of members of the Industry Advisory Committee
- List of members of the Education Advisory Committee

PROFESSIONAL CONDUCT AND ETHICS EXAM DEVELOPED

Starting in 1997, all applicants for professional engineering registration in Texas will be required to complete a take-home exam on professional responsibilities with emphasis on conduct and ethics. The purpose of the exam is two-fold: first to assure the state board that the applicant is familiar with the state law and board rules, and secondly, to give the applicant experience in using the Act and Board Rules as guidance in professional conduct and ethics in the practice of engineering in Texas.

The exam consists of a life-long case history of an engineer named Joe. It is a story starting with Joe in college and progresses through his entire professional career to retirement. During his career, Joe is faced with a number of professional and ethical problems. The questions on the exam then ask the applicant where in the Texas Engineering Practice Act he or she could get guidance regarding the specific problems encountered. The applicant is furnished with a copy of the Act along with the exam. The problems encountered by Joe are real situations taken from board records, from personal experiences, and from the National Society of Professional Engineers' Board of Ethical Review.

The following sections are taken from the Texas Engineering Practice Act concerning professional conduct and ethics. They are included in this issue of the TexethicS newsletter to aid the practicing engineer and/or the engineering student in understanding the responsibilities of ethics in their profession and to become acquainted with the conduct and ethics aspects of the Act. It is from these sections that Joe obtained much of the guidance as he was faced with the ethical dilemmas in his career.

PROFESSIONAL CONDUCT AND ETHICS taken from the TEXAS ENGINEERING PRACTICE ACT Rev: 01-01-97

§131.151. Professional Responsibility.

The engineer shall not prepare, complete, revise, alter, sign, or seal any designs, plans, specifications, reports, analyses, or orders, or in any manner participate in any engineering practice, judgment, or decisions which, when measured by generally accepted engineering standards or procedures, is reasonably likely to result in any utility, structure, building, machine, equipment, process, product, device, work, or project endangering the property, lives, safety, health, or welfare of the general public.

§131.152. Independent Professional Judgment.

(a) Except with the consent of his client or employer after full disclosure, the engineer shall not accept employment when there is a reasonable probability that the exercise of his professional judgment, decisions, or practices on behalf of his client or employer may be affected by his own financial, business, property, or personal interests.

(b) The engineer shall avoid all conflicts of interest with his client or employer, but when a conflict of interest is unavoidable, the engineer shall promptly inform his employer or client of any business association, interest, or circumstances, which might tend to influence his professional judgments, decisions, or practices, or the quality of his services.

(c) The engineer shall not accept compensation, material favors, or benefits of any substantial nature, financial or otherwise, from more than one party for services on the same project or assignment, or for services pertaining to the same project or assignment, unless the circumstances are fully disclosed to all interested parties. The phrase "benefits of any substantial nature" is defined to mean any act, article, money, or other material possession which is of such value or proportion that its acceptance creates a clandestine obligation on the part of the receiver or otherwise compromises his ability to exercise his own judgment, without regard to such benefit.

(d) The engineer shall not solicit or accept, directly or indirectly, any financial or other valuable considerations, material favors, or benefits of any substantial nature from any supplier of materials or equipment for any project on which he is performing or has contracted to perform engineering services.

(e) The engineer shall not solicit or accept any gratuity, material favor, or benefits of any substantial nature, directly or indirectly, from contractors, their agents, servants, or employees, or from any other party dealing with his client or employer in connection with any project on which he is performing or has contracted to perform engineering services.

(f) The engineer shall not solicit or accept, directly or indirectly, any engineering contract or employment from a governmental body, agency or department in which a person in the engineer's organization serves as a member or employee in a position to influence the award of the contract.

(g) Registrants may actively participate in elective and appointive public service in keeping with each registrant's personal conviction. When in such public service as a member or employee of a governmental body, agency, or department, the engineer shall not participate, directly or indirectly, in deliberations or actions with respect to services offered or provided by him, his associates, or his organization to such governmental body, agency, or department.

(h) When in public service as a member or employee of any governmental body, agency, or department, the engineer shall not, directly or indirectly, use or make use of any property, facility, or service of such governmental body, agency, or department for the benefit of any private business or activity in which such engineer also may be engaged, unless prior, proper authority is obtained in writing.

(i) When in private practice or employment the engineer shall not, directly or indirectly, make use of any property, facility, or service of his client or employer for the benefit of said engineer, unless prior, proper authority is obtained in writing.

(j) The engineer shall submit to a client only that work (plans, specifications, reports, etc.) done by him or under his responsible supervision; however, an engineer, as a third party, may complete, correct, revise, or add to the work of another engineer when engaged to do so by a client, provided:

(1) the client furnishes the documentation of such work submitted to him by the first engineer;

(2) the first engineer is notified in writing by the second engineer of the engagement referred to in paragraph (1) of this subsection immediately upon acceptance of the engagement; and

(3) any work completed, corrected, revised, or added to shall have a seal affixed by and become the responsibility of the second engineer.

§131.153. Action Shall Be Competent.

(a) The engineer shall not accept any engineering employment or undertake any engineering assignment, for which he is not qualified by education or experience to perform or carry out adequately and competently; providing and excepting, however, that an engineer may accept an assignment requiring education and experience outside his field of competence to the extent only, that his personal engineering services are restricted solely to those phases of the service or project in which he is qualified and competent, and that all other phases of such services or project shall be performed by legally qualified consultants, associates, or employees. When sealing plans or documents on which two or more engineers have worked, each engineer shall place his seal on the plan or document with a notation describing the work done under his responsible charge.

(b) The engineer shall not affix his signature or seal to any engineering plan or document dealing with subject matter on which he is not qualified by education or experience to form a dependable judgment.

(c) The engineer shall not express an engineering opinion before a court, administrative agency, or other government forum on any subject:

(1) in which he is not qualified by education or experience; or

(2) which is contrary to generally accepted scientific and engineering principles without fully disclosing the basis and rationale for his conclusion.

§131.154. Confidences and Private Information.

(a) The engineer may reveal confidences and private information under the following circumstances:

(1) when he has obtained the consent of the client or clients, employer or employers, affected, but only after full disclosure to them; or

(2) when required by law or court order; or

(3) when necessary to establish legal proof of his relationship with a client or employer in a court action to recover salaries, fees, or other compensation due him as a result of his employment or association with such client or employer; or

(4) when necessary to defend himself or his employees or associates in a legal action alleging wrongful conduct.

(b) Except as permitted by subsection (a), the engineer shall not knowingly:

(1) reveal a confidence or private information regarding or in the possession of his client or employer; or

(2) use a confidence or private information regarding or in the possession of his client or employer to the disadvantage of such client or employer; or

(3) use a confidence or private information regarding or in the possession of his client or employer for the advantage of a third person, unless the client or employer consents after full disclosure.

(c) The engineer shall exercise reasonable care to prevent his employees' and associates' unauthorized disclosure or use of private information or confidences regarding or in the possession of a client or employer.

§131.155. Professional Practice and Reputation.

(a) The engineer shall not offer or promise to pay or deliver, directly or indirectly, any commission, political contribution, gift, favor, gratuity, benefit, or reward as an inducement to secure any specific engineering work or assignment; providing and excepting, however, that an engineer may pay a duly licensed employment agency its fee or commission for securing engineering employment in a salaried position.

(b) The engineer shall not solicit professional employment by advertising which is false, misleading, or deceptive.

(c) The engineer shall not make, publish, or cause to be made or published any representation or statement concerning his professional qualifications or those of his partners, associates, firm, or organization which is in any way misleading or tends to mislead the recipient thereof, or the public, concerning his engineering education, experience, specializations, or other engineering qualifications.

(d) A registrant shall not submit or request, orally or in writing, a competitive bid to perform engineering services, whether as prime contractor, subcontractor, or consultant, under a contract subject to the provisions of the Texas Professional Services Procurement Act, Article 664-4, V.T.C.S. (which includes but is not limited to any state agency, political subdivision, county, municipality, district, authority, or pub-

licly-owned utility of the State of Texas), or its federal counterpart, the Brooks Act, 40 U.S.C., §§541-544.

(1) For purposes of this section, the board considers competitive bidding to perform engineering services to include the submission of any monetary cost information in the initial step of selecting qualified engineers. Cost information or other information from which cost can be derived must not be submitted until the second step of negotiating a contract at a fair and reasonable cost.

(2) The engineer shall not be considered in violation of the Act in cases where his engineering services may legally be offered, furnished, or performed as an integral part of research and development programs, construction projects, manufactured products, processes, or devices, which are to be offered, performed, supplied, or obtained on the basis of competitive bids.

§131.156. Responsibility to the Engineering Profession.

(a) The engineer shall not:

(1) circumvent or attempt to circumvent any provision of the Texas Engineering Practice Act or general board rule through the actions of another;

(2) participate, directly or indirectly, in any plan, scheme, or arrangement attempting or having as its purpose the evasion of any provision of the Texas Engineering Practice Act or general board rule;

(3) fail to exercise reasonable care or diligence to prevent his partners, associates, and employees from engaging in conduct which, if done by him, would violate any provision of the Texas Engineering Practice Act or general board rule;

(4) violate any of the professional practice requirements of federal, state and local statutes, codes, regulations, rules or ordinances in providing engineering services;

(5) engage in any illegal conduct involving moral turpitude;

(6) engage in any conduct that discredits or tends to discredit the engineering profession;

(7) make, publish, or disseminate any statements, criticisms, or arrangements on engineering matters connected with public policy which are inspired or paid for by an interested party or parties, unless he has prefaced such statement or comment by explicitly identifying himself, disclosing the identities of the party or parties on whose behalf he is speaking and revealing the existence of any pecuniary interest he may have in such engineering matter;

(8) permit or allow himself, his professional identification, seal, firm or business name, or his services to be used or made use of, directly or indirectly, or in any manner whatsoever, so as to make possible to create the opportunity for the unauthorized practice of engineering by any person, firm, or corporation in this state;

(9) perform any acts, allow any omissions, or make any assertions or representations in the practice of engineering

which are fraudulent, deceitful, or misleading, or which in any manner whatsoever tend to create a misleading impression;

(10) associate with or permit or allow the use of his name, firm name or professional identification, or seal in any business venture, project, or enterprise which he knows or should have known is engaged in professional practices which violate any provision of the Texas Engineering Practice Act or any board rule;

(11) associate with or permit the use of his name, professional identification, seal, firm or business name in connection with any venture or enterprise which he knows, or should have known, is engaging in trade, business or professional practices of a fraudulent, deceitful, or dishonest nature;

(12) maliciously injure or attempt to injure or damage the professional reputation of another by any means whatsoever; provided and except, however, that this shall not relieve an engineer of the obligation to expose any fraud, gross negligence, incompetency, misconduct, unethical or illegal conduct to the proper authorities or preclude a frank but private appraisal of engineers or other persons or firms when requested by a client or prospective employer;

(13) aid or abet, directly or indirectly, any unlicensed person in connection with the unauthorized practice of engineering, or any firm or corporation in the practice of engineering unless carried on in accordance with the provisions of the Texas Engineering Practice Act, §17 and §18.

(14) directly or indirectly or in any manner whatsoever lend his license, seal, or professional identification to any unlicensed person or to any firm or corporation carrying on the practice of engineering contrary to the provisions of the Texas Engineering Practice Act, §17 and §18; or

(15) on his own authority as an employee of the State of Texas or any of its political subdivisions authorize or create any act or situation contrary to the requirements of the Texas Engineering Practice Act, §19.

(b) The engineer shall be personally and professionally responsible and accountable for the care, custody, control, and use of his engineer's seal, his professional signature, and identification. The engineer whose seal has been lost, misplaced, or stolen shall, upon discovery of its loss, report same immediately to the board, which may invalidate the stolen registration number of said seal, if it deems this necessary, and issue another registration number to said engineer.

* * *

NOTE: This material is taken from the "State of Texas Law and Rules Concerning the Practice of Engineering and Professional Engineering Registration" known as the Engineering Practice Act. A complete copy of the Act may be obtained from the Texas State Board of Registration for Professional Engineers, PO Drawer 18329, Austin, Texas 78760.

Professional Responsibilities of Engineers (Recent Actual Cases)

With 47,000 engineers licensed in 23 disciplines in the state, the Texas State Board of Registration for Professional Engineers receives approximately 1,200 inquiries each year concerning the legalities of practicing engineering in Texas. The state engineering board serves to protect the safety of the public by licensing engineers, enforcing the Texas Engineering Practice Act, and regulating the practice of engineering in Texas.

The following are recent examples of actual cases acted upon by the board. These cases would provide good discussion topics for students in engineering classes and for young EITs.

1. In December, 1995, the Texas State Board suspended the license of an engineer for his part in the improper design and construction of a running track for a school district. The engineer signed an agreed order based on his apparent failure to supervise the preparation of construction plans prepared by a non-engineering firm before placing his official engineer seal on the plans. His act of sealing documents he did not supervise violated the Texas Engineering Practice Act and the board rules concerning proper sealing procedures. "We're seeing an increase in cases involving non-engineering firms who offer engineering services to school districts," according to the Texas State Board spokesperson. "Although this particular running track may function properly, situations like this often cost the project owners more money to correct under-designed facilities or to pay for the cost of over designed facilities." The board suspended the engineer's license for a period of three years. Without a professional engineering license he cannot assume independent control of engineering work. School officials should beware of firms who do not employ licensed engineers on staff because by law that firm cannot legally provide design services for roofing, athletic facilities, and many other areas of construction to school districts. As in this case, contractors cannot circumvent this by hiring yet another consultant to "stamp" the drawings; this practice could cause the school board members, district staff and the consultant to incur additional expenses to rectify the illegal action.

2. In July, 1996, an engineer's license was suspended for work he had done as an expert witness in a court case involving leaning utility poles that provide service to the downtown business district of a major city in Texas. According to board records, the court case concerned the digging a trench line near utility poles located along a railroad. The utility company charged that the trench being dug near the poles caused them to lean. A formal complaint had been filed against the engineer with the state engineering board concerning the engineering calculations that he presented in a court case. "Professional engineers are bound by Texas engineering regulations to conduct their work according to generally accepted engineering practices," according to the Texas State Board of Registration for Professional Engineers. The board determined that the engineer had allegedly: 1) failed to conduct both a "before" and an "after" analysis of the conditions of pole foundations; 2) failed to include the bending moment loads in calculations to determine the adequacy of the foundation design; and 3)

failed to use a mathematical model that accurately reflected the situation found in the field. The engineer signed an agreed board order in which he agreed to the two-year suspension with terms for probation. In the agreed order, he neither admitted nor denied the board's charges. The terms of the engineer's probated license suspension require him to take a course in ethics and professionalism and to provide the board with written reports at three-month intervals specifying the identity and location of the projects worked on and the type of engineering services performed.

3. In October, 1996, the state engineering board suspended an engineer's license because he allegedly failed to provide responsible supervision over a set of plans that were submitted to the city. He placed his engineer seal and signature on a set of foundation and framing plans submitted to the city on which he allegedly did not provide responsible or active supervision over the documents, nor did he allegedly participate in the design. "When engineers place their seal on plans, they are in effect relaying to the public and to their client that they have either performed the work personally or supervised the product of their employees' labor," according to the state board spokesperson. Texas engineering law requires that the prime engineer on a project provide responsible supervision of subordinate employees' work. The state engineering board suspended the engineer's license for four years with terms for a probationary period. He signed an agreed board order in which he neither admitted nor denied the state engineering board's allegations. In the agreed board order, he agreed to refrain from practicing structural engineering, to include but not limited to, building structure and foundation design, until he passes the Structural I exam offered twice a year by the National Council of Examiners for Engineering and Surveying. The terms of his probation also required him to take an ethics course and to provide the board with a written report at three-month intervals specifying the identity and location of the projects on which he worked and the type of engineering services he performed.

4. Also in October, 1996, an engineer's license was suspended and must prove his competency before he can continue to practice engineering requiring hydrology or hydraulic designs. His license was suspended by the engineering board because of his design work for a subdivision in a small town in Texas. According to state engineering board records, the engineer allegedly utilized calculations for the subdivision's water routing and detention pond plans that would not have provided an adequate design and were unacceptable under the County Code; he also allegedly failed to seal, sign his name, and date the subdivision's plans for a road and a utility and drainage design drawing or "plat." The board will be reviewing his engineering projects to ensure he practices according to Texas engineering regulations. The board suspended his license for three years with terms for the entire period to be probated. The terms of the agreed board order restrict him from practicing any engineering which requires hydrology or hydraulic designs until he successfully passes a national civil engineering exam or completes undergraduate course work in hydrology and hydraulics. He must also inform the state engineering board of each engineering project and its location, as well as the engineering service performed by him on a monthly basis during the probationary period.

REFERENCES RELATED TO ENGINEERING ETHICS

Compiled by W. Pennington Vann, Ph.D., P.E.

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Students and occasionally practicing engineers search for references related to engineering ethics. The following list of references was developed by Dr. Vann during his Faculty Development Leave from Texas Tech University. It is included here as a resource for those seeking additional information on the subject of ethics.

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