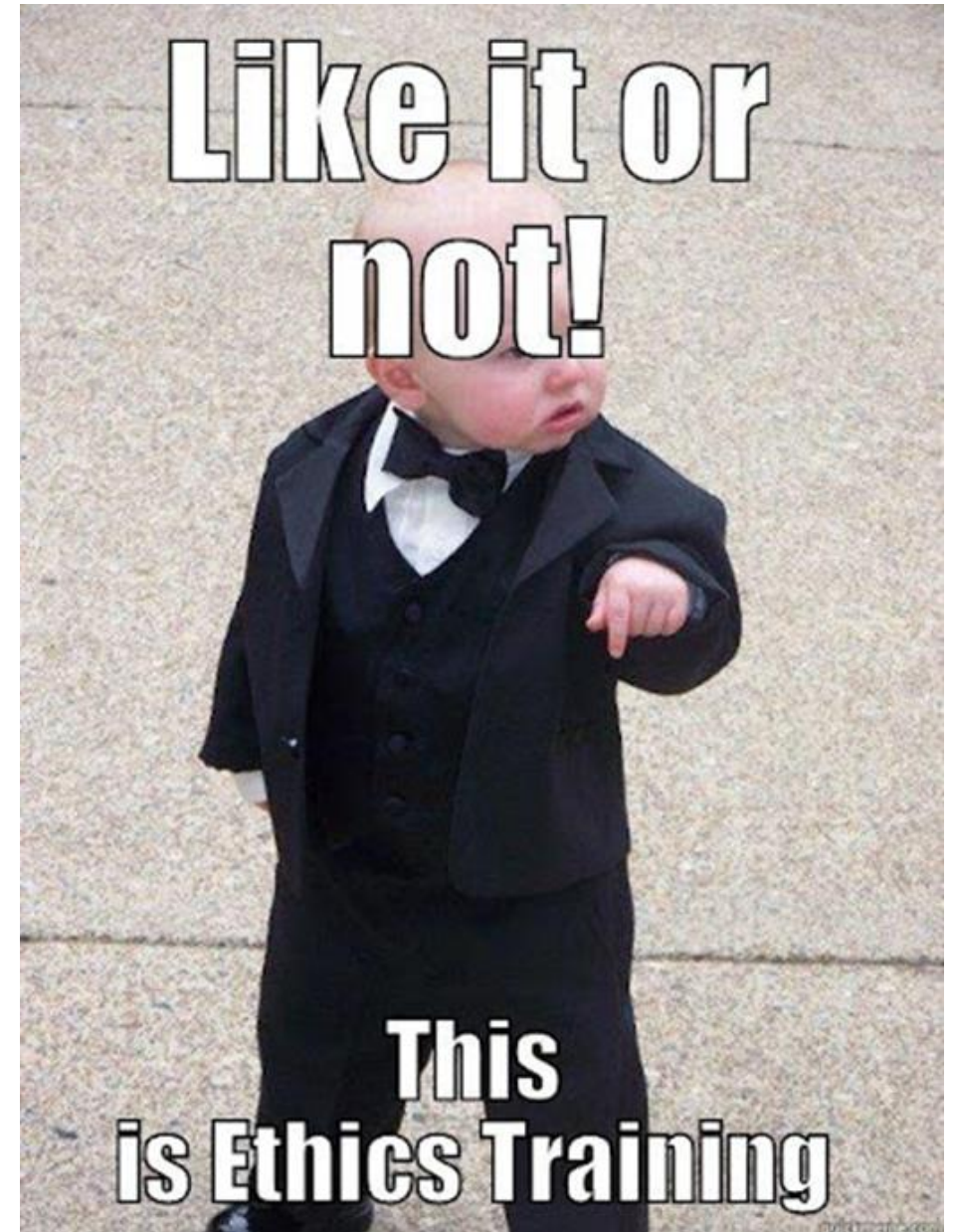


ETHICAL CHALLENGES FOR THE MODERN GEOTECHNICAL PROFESSIONAL - 2024

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Sponsored By:
American Society of Civil Engineers Nebraska Section
And Geo-Institute Nebraska Section



AGENDA

Professional Responsibility in General – Basis & Resources

Artificial Intelligence (AI) in Engineering – Use of AI in Daily Tasks

Competition for Work – Obtaining Work in Competitive Industry

Talent Acquisition – Finding & Keeping Good Employees

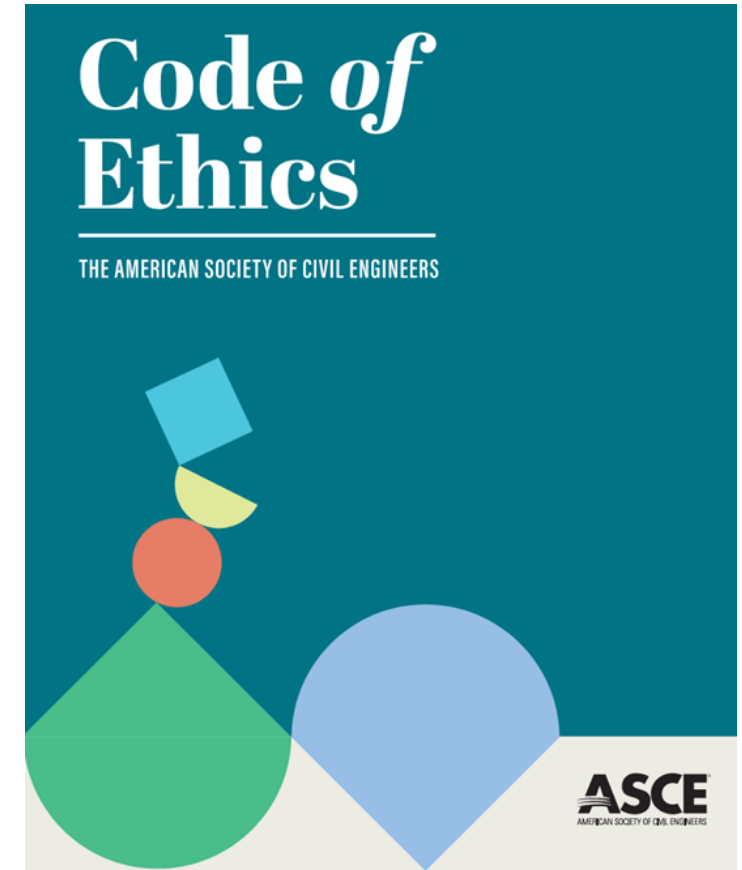
Questions



PROFESSIONAL RESPONSIBILITY IN GENERAL – BASICS & RESOURCES

Applicable Resources:

1. State Board of Engineers & Architects Handbook
2. Nebraska State Statutes
3. ASCE Code of Ethics
4. NSPE Code of Ethics for Engineers



WHY ARE WE HERE

NEBRASKA STATE STATUTES CHAPTER 81

81-3401. Act, how cited.

Sections 81-3401 to 81-3455 shall be known and may be cited as the Engineers and Architects Regulation Act.

81-3407. Continuing education, defined.

Continuing education means lifelong learning and training relevant to a licensee's professional practice.

81-3416. Good ethical character, defined.

Good ethical character means such character as will enable a person to discharge the fiduciary duties of an architect or professional engineer to his or her client and to the public for the protection of the public health, safety, and welfare.

NEBRASKA ADMINISTRATIVE CODE TITLE 110

CHAPTER 9. CONTINUING EDUCATION

9.1 Introduction

- 9.1.1 Every architect and professional engineer must meet the Continuing Education requirements of these regulations as a condition for license renewal or reinstatement.
- 9.2.2 Professional engineers must complete 30 actual hours of engineering-related learning every biennial period to satisfy the continuing education requirement.
- 9.3.2 At least one hour of the biennial continuing education requirements must be directly related to ethical issues of a licensee's professional practice.

ARTIFICIAL INTELLIGENCE (AI) IN ENGINEERING – USE OF AI IN DAILY TASKS



Carl Weathers in The Mandalorian



EXAMPLE

IN AN EFFORT TO SAVE TIME IN DRAFTING A REPORT FROM SCRATCH AND ANALYZING DATA YOU DECIDE TO TRY OUT SOME ARTIFICIAL INTELLIGENCE TOOLS TO COMPLETE THE ASSIGNMENT.

- CHAT GPT IS USED TO DRAFT THE REPORT AND IT LOOKS AMAZINGLY GOOD.
- MICROSOFT EXCEL'S NEW AI FUNCTIONS ARE USED TO ANALYZE DATA WITHIN THE REPORT, AND THE RESULTS SEEM REASONABLE AS WELL.
- ANY ETHICAL CONCERNS WITH THIS, ASSUMING THIS IS A TECHNICAL SUBMISSION REQUIRING A STAMP?

ANALYSIS

NEBRASKA STATUTES

81-3416. Good ethical character, defined.

Good ethical character means such character as will enable a person to discharge the fiduciary duties of an architect or professional engineer to his or her client and to the public for the protection of the public health, safety, and welfare.

81-3437.01. Seal; contents; use; prohibited acts.

(4) The seal and date shall be placed on all originals, copies, tracings, or other reproducible drawings and the first and last pages of specifications, reports, and studies in such a manner that the seal, signature, and date will be reproduced and be in compliance with rules and regulations of the board. The application of the licensee's seal shall constitute certification that the work was done by the licensee or under the licensee's control.

81-3454. Technical submissions by professional engineer; affix seal and signature; conditions.

(1) A professional engineer shall not affix his or her seal and signature to technical submissions that are subject to the Engineers and Architects Regulation Act unless the technical submissions were:

- (a) Prepared entirely by the professional engineer;
- (b) Prepared entirely under the direct supervision of the professional engineer; or
- (c) Prepared partially by others if the professional engineer has reviewed and integrated the work into his or her own technical submissions.

(2) A professional engineer may affix his or her seal to technical submissions not subject to the act if the professional engineer has reviewed or adapted in whole or in part such submissions and integrated them into his or her work.

ANALYSIS (CONT.)

NEBRASKA REGULATIONS

CHAPTER 5. CODE OF PRACTICE

- 5.1.3 The licensee shall undertake to perform professional services only when they, together with those whom the licensee may engage as consultants, is qualified by education, training, and experience in the specific technical areas involved.
- 5.1.6 The licensee shall not sign, seal, or attest to any work pertaining to any technical discipline or specialty that the licensee does not have professional training and experience.
- 5.5.2 The licensee shall not sign or seal drawings, specifications, reports, or other professional work for which they do not have direct supervision. If the portions of such professional work were prepared by the licensee's consultants who are licensed under the law of the State of Nebraska or another state, the licensee may sign or seal that portion of the professional work if the licensee has reviewed such portion, has coordinated its preparation, and accepts responsibility for its adequacy.
- 5.5.6 The licensee shall not knowingly aid or abet the practice or the performance of activities requiring a license by a person not licensed to conduct such practice or activity.

ANALYSIS (CONT.)

CHAPTER 6. THE LICENSEE SEAL

- 6.1.4 The responsible architect or professional engineer shall identify all work that they have prepared, as well as all work that has been prepared under their direct supervision, by applying their seal to each sheet of original drawings.
- 6.4.1 In order to exercise full professional knowledge of and control over work, a licensee in direct supervision of architectural or engineering work must:
 - 6.4.1.1 Have and exercise the authority to review and to change, reject, or approve both the work in progress and the final work product, through a continuous process of examination, evaluation, communication, and direction throughout the development of the work;
 - 6.4.1.2 Be personally aware of the project's scope, needs, parameters, limitations, and special requirements;
 - 6.4.1.3 Be capable of answering questions relevant to the architectural or engineering decisions made as part of the services provided, in sufficient detail to demonstrate reasonable knowledge of and proficiency in the work; and
 - 6.4.1.4 Be reasonably satisfied with the product of the services rendered and accept full responsibility for the work.
- 6.4.2 The Board has final authority regarding the determination of whether technical documents were actually prepared under the direct supervision of a licensee.



CONCLUSION

SIMILAR TO LEGAL CASES WHERE LAWYERS USED AI TO GENERATE LEGAL BRIEFS THAT WERE SUBMITTED TO THE COURT, USE OF AI IS PROBABLY O.K. SO LONG AS THE ENGINEER IS COMPETENT IN THE TECHNICAL AREAS INVOLVED AND HAS REVIEWED AND ACCEPTS FULL RESPONSIBILITY FOR THE CONTENTS THEREIN.

DO NOT STAMP ANYTHING THAT HAS NOT BEEN THOROUGHLY CHECKED!

COMPETITION FOR WORK – OBTAINING WORK IN COMPETITIVE INDUSTRY



EXAMPLE

A DOT ISSUES A REQUEST FOR QUALIFICATIONS (RFQ) TO PERFORM ENGINEERING SERVICES FOR THE REPAIR OF A FAILING ROADWAY SLOPE. ANTICIPATED SERVICES WILL INCLUDE; PRELIMINARY ENGINEERING TO EVALUATE REPAIR ALTERNATIVES, DESIGN SERVICES, AND CONSTRUCTION-PHASE SERVICES. THE RFQ DOES NOT REQUEST ANY INFORMATION REGARDING FEES OR ENGINEERING COSTS.

ENGINEER A, IN AN EFFORT TO IMPROVE ITS CHANCES OF BEING SELECTED BY THE DOT, OFFERS TO PROVIDE FREE PRELIMINARY ENGINEERING FOR THE PROJECT.

ANY ETHICAL CONCERNS WITH ENGINEER A'S OFFER?

ANALYSIS

CHAPTER 5. CODE OF PRACTICE

- 5.4.2 The licensee shall neither offer nor give any gift of significant value, or any monetary payment with the intent of influencing a government official's judgment in connection with a prospective or existing project in which the architect or professional engineer is interested.
- 5.5.3 The licensee shall not engage in conduct involving fraud or deliberate disregard of the rights of others.

Was the offer of free Preliminary Engineering a 'gift of significant value'?
If the answer is "yes", then could be a troublesome Quid Pro Quo.

CONCLUSION

IN THIS EXAMPLE, THE TERM “FREE OR NO CHARGE” WAS USED, WHICH PRODUCES A LOGICAL CONCLUSION IN THE PUBLIC’S PERCEPTION THAT IT WAS ESSENTIALLY A “GIFT”. IT COULD BE CONSTRUED AS UNETHICAL, SINCE IT MAY HAVE PROVIDED AN UNFAIR ADVANTAGE OVER THE OTHER FIRMS.

ADDITIONALLY, BECAUSE PRICE INFORMATION WAS NOT REQUESTED, ENGINEER A PROVIDED INFORMATION OUTSIDE THAT WHICH WAS REQUESTED WHICH COULD BE UNFAIR AND CONSTITUTE “DELIBERATE DISREGARD OF THE RIGHTS OF OTHERS”.

ENGINEER A GAVE SOMETHING, WITH THE IDEA THAT SOMETHING MIGHT BE GOTTEN IN RETURN (QUID PRO QUO...SOMETHING FOR SOMETHING...TIT FOR TAT.

SEE NSPE CASE NO. 21-03 (2022).

TALENT ACQUISITION – FINDING AND KEEPING GOOD EMPLOYEES



EXAMPLE

ENGINEERING FIRM A, IN ITS EFFORTS TO HIRE EMPLOYEES UNDERTOOK THE FOLLOWING TWO ACTIONS:

1. SENT AN INFORMATIONAL PACKET TO ALL EMPLOYEES OF ENGINEERING FIRM B. THE PACKET INCLUDED THE HISTORY, GOALS, OBJECTIVES, BENEFITS, AND POLICIES OF FIRM A. A FINAL STATEMENT SAID, “IF YOU LIKE WHAT WE HAVE TO OFFER, COME JOIN US.”
2. MADE UNSOLICITED OFFERS TO SEVERAL OF FIRM B’S EMPLOYEES, OFFERING HIGHER SALARIES AND BETTER BENEFITS.

ANY ETHICAL ISSUES WITH FIRM A’S ACTIONS?



ANALYSIS

CHAPTER 5. CODE OF PRACTICE

5.5.5 The licensee shall not in advertisements or public statements engage in misleading, untruthful, or improbable statements, or flamboyant, exaggerated or extravagant claims concerning the architect's or professional engineer's professional excellence or abilities.

CONCLUSION

1. INFORMATIONAL PACKETS - AS LONG AS FIRM A DOESN'T MAKE NEGATIVE OR UNTRUTHFUL STATEMENTS ABOUT FIRM B AND DOESN'T MAKE OVERLY EXAGGERATED STATEMENTS ABOUT FIRM A, IS LIKELY NOT A VIOLATION OF THE ETHICAL STANDARDS. IT DOES SEEM KIND OF UNDERHANDED...PERHAPS A VIOLATION OF PROFESSIONAL COURTESY!
2. UNSOLICITED OFFERS – LIKELY NOT A VIOLATION OF THE CODE OF ETHICS. THE TENDENCY IS TO FAVOR AN EMPLOYEE'S RIGHT TO GAIN HIGHER PAY & BETTER WORKING CONDITIONS, AND THE BEST JUDGE OF THAT WOULD BE THE EMPLOYEE.

QUESTIONS?



THANK YOU

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