

Expert Witness—Discovery of New Data Following Submission of Report

Case No. 16-7

Facts:

Engineer A is a professional engineer. Part of Engineer A's duties is to perform forensic engineering services for attorneys in connection with pending litigation. Engineer A is retained by Attorney X to perform a forensic engineering investigation and prepare a written report in connection with a mechanical product failure, which resulted in extensive injuries to the Attorney's client. Engineer A conducts the investigation for Attorney X, prepares the written report along with conclusions regarding the cause of the accident, and submits the written report to Attorney X. Attorney X is in the process of settlement negotiations with the defendant's attorney in the case. Following Engineer A's investigation and Engineer A submitting the report to Attorney X, but before the settlement negotiations are concluded, Engineer A discovers that the data upon which Engineer A based his report conclusions was inaccurate and that if the more accurate data had been used in his investigation, Engineer A's conclusions would be different.

Question:

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

NSPE Code of Ethics References:

- Section II.3.a. - Engineers shall be objective and truthful in professional reports, statements, or testimony. They shall include all relevant and pertinent information in such reports, statements, or testimony, which should bear the date indicating when it was current.*
- Section II.3.b. - Engineers may express publicly technical opinions that are founded upon knowledge of the facts and competence in the subject matter.*
- Section III.1.a. - Engineers shall acknowledge their errors and shall not distort or alter the facts.*
- Section III.1.b. - Engineers shall advise their clients or employers when they believe a project will not be successful.*
- Section III.3.a. - Engineers shall avoid the use of statements containing a material misrepresentation of fact or omitting a material fact.*

NSPE BER Case Reference: 95-5

Discussion:

Professional engineers are frequently called upon and play a critical role as forensic engineering experts in connection with civil litigation. These professional engineers have an ethical responsibility to perform these services with honesty and integrity and to be truthful and honest in their professional reports.

Over the years, the NSPE Board of Ethical Review has reviewed a series of issues relating to the important role that engineering experts perform and their obligation to be honest and truthful.

One such case was NSPE Board of Ethical Review Case 95-5. In that case, Engineer A was retained by a municipality to design a dock on a supporting foundation of 90 piles. Following construction, there was a contractor's extra claim and Engineer A and the municipality were both sued by the contractor. The claim was settled by mediation. Engineer A and the municipality shared the cost of the settlement with the contractor for \$300,000.

During the mediation, the municipality brought in expert witnesses to support their case. One expert testified that the pile driving records indicated that many of the piles did not, at the time of initial driving, meet driving resistance sufficient to satisfy the load carrying requirements of the design calculations. Engineer A testified that the geotechnical firm's report expected that the piles would gain sufficient additional strength within 30 days to meet driving-resistance requirements. To test this, the municipality retained Engineer B to supervise the driving of several test piles to see whether the piles would gain sufficient strength to meet the design calculation requirements.

An independent geotechnical consultant was retained by Engineer A to observe the test. The geotechnical consultant testified and showed that dynamic test equipment had failed during the test and that the test piles were not driven to the same depth of penetration that apparently was required for the plug to form in the original piles. Driving conditions were not duplicated in driving the test piles in that a vibratory hammer was used for the test piles and not used in the original driving. Also, after the 30-day set up, the driving hammer was dropped several times to start the hammer before the record of blow counts commenced. In the opinion of Engineer A's geotechnical consultant, this would have broken the pile bond and undervalued the skin friction value reported by Engineer B's tests. However, the test piles were driven and after a 30-day set, the increase in set-up strength with time was confirmed.

Engineer B's concluding report stated that approximately 19 of the 90 piles did not meet the safety factor required by the design calculations. This opinion was based on the fact that the 19 piles did not reach sufficient depth to develop the full strength when applying skin friction resistance value to the square footage of pile penetration. Engineer B did not state anywhere in the report that these 19 piles, according to the pile driving records, had been driven to essential refusal and that, applying accepted wave equation calculations, the piles would have indicated a strength several multiples over the calculated load requirements. Additionally, Engineer B did not report that the dynamic test equipment had failed. At no time during the development of Engineer B's report did Engineer B talk to any representative of Engineer A, even though Engineer A's on-site representatives were available to testify as to the accuracy of the pile driving records. No effort was made by Engineer B to inquire from contractors, workers, or others on the job to verify or refute his theories about why the 19 piles met driving refusal prior to predicted depth. When queried by Engineer A after the report was issued by Engineer B, Engineer B said: "We just did not believe the driving records and there was also the issue of whether the pile was vented to allow air to escape from below a closure plate that was included in the pile to separate

the concrete fill in the pile from the clay. The driving records look suspicious.” Previously, Engineer B had said, “We didn’t look at the pile driving records because it was not in our scope of work.”

In reviewing the facts, the Board concluded that Engineer B appears to have assumed a responsibility to defend the client municipality by the selective use of data. This was an egregious denial of the duties and responsibilities of a professional engineer in any setting, whether legal, quasilegal, or nonlegal, said the Board.

While the facts in BER Case 95-5 are somewhat different than the present case, the Board of Ethical Review believes that BER Case 95-5 is instructive regarding the expectations when a professional engineer serves as an engineering expert. As with BER Case 95-5, under the current facts, once Engineer A discovered that the data upon which Engineer A based his report conclusions was inaccurate and that if the more accurate data had been used in his investigation, Engineer A’s conclusions would be different, Engineer A had an affirmative obligation to step forward and immediately advise Attorney X. Since Attorney X was in the middle of negotiations with the defendant’s attorney, which may or may not have resulted in a settlement of the case, this was critically important information for Attorney X to have in his possession.

Conclusion:

Engineer A had an affirmative obligation to step forward and immediately advise Attorney X. Since Attorney X was in the middle of negotiations with the defendant’s attorney, which may or may not have resulted in a settlement of the case, this was critically important information for Attorney X to have in his possession.

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