



Oregon

Kate Brown, Governor

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Art Noxon, PE, Team Liaison
Acoustic Engineering Examination Team - Oregon State Board of Examiners for Engineering
and Land Surveying
3690 County Farm Rd.
Eugene, OR 97408

Dear Mr. Noxon,

You and Mr. Kerrie Standlee, PE, have both contacted the Board recently, expressing concern over the suspended status of the Oregon-specific Acoustic Engineering Examination and over the future of acoustic engineering. You have also notified us of the work you have undertaken to collaborate with the Institute of Noise Control Engineering – U.S.A. (INCE), promoting and assisting INCE in the creation and future offering an acoustic, professional engineering examination in Oregon. To begin, let me thank you on behalf of the Board for your continuing commitment to the acoustic engineering examination. We appreciate your dedication.

Then, although we value your passion, please understand that your work with INCE is not being done at the request of, or with the permission of, the Board. Nor is it being done on the Board's behalf, or the Board's Acoustic Engineering Examination Team's behalf. We believe it is important to clarify that any work or communication you are conducting with INCE is being done by you personally, as individual professionals in the field.

That being said, because we understand and respect your interest in the status of professional acoustic engineering in Oregon, we want to address three important issues with you directly. We have heard statements from you and Mr. Standlee in our public meetings, which suggest that both the exam team members, and the general Oregon acoustic engineering community, may have missed the various task force and board meetings where we have explained: (1) our unwillingness to recognize the INCE Board Certification Examination as a qualifying PE exam in Oregon; (2) our concerns with the Oregon-specific Acoustic Engineering exam, generally; and, (3) our perspective on the status of acoustic engineering in Oregon, irrespective of whether the Oregon-specific acoustic exam is reinstated. Please allow us to provide those explanations here.

(I) INCE Board Certification Examination.

As you know, INCE is a non-profit member of the society of the [International Institute of Noise Control Engineering \(I-INCE\)](#), "an international consortium of organizations with interests in acoustics and noise control." We decline to recognize the INCE exam for several reasons, but will detail the primary two: exam integrity and exam security. We, as a board, are solely responsible for the defensibility of any Oregon-specific PE exams we recognize. The two primary bases for successful exam challenges – both nationally and internationally – are flaws in the examination's integrity (does it test without bias or discrimination, is it sufficiently challenging, and does it test accurately for its purpose?) or flaws in the examination's security (are the questions and answer keys confidential and secure?). An exam that is found to lack integrity or security can see its results overturned for certain candidates, can be invalidated wholesale, can be used as a basis for unsuccessful candidates from other examinations (here, other PE examinations) to contest their own failures to pass national exams when the national exams were more difficult than the Oregon-specific exams, and can lead to the Board being responsible for financial damages (*See,*

e.g., Gulino v. Board of Education, 1:96-cv-08414, Dist. Ct., SD New York (2012), holding teacher certification examination was discriminatory and failed to accurately test for teacher competence, damages allowed for class-action plaintiffs who took the examination as far back as 1995).

The INCE exam has not established integrity for professional engineering; in fact, it appears to affirmatively lack the quality of accurately testing for professional competence as an engineer. Additionally, the security of the INCE exam is not established.

Regarding integrity, although INCE has recently claimed its “exam is at least as difficult as those used to obtain professional engineering (PE) licenses,” that claim does not appear to be supported by facts. First, the INCE exam tests only for comprehension of noise control. Second, it does not appear to test to the breadth of a national PE examination that addresses noise control. Third, it does not appear to cover the breadth of the currently suspended Oregon-specific Acoustical Engineering PE exam. Because an Oregon registered Professional Engineer may lawfully practice in *any* branch of engineering once registered, for a PE exam to have integrity with respect to Oregon licensure, it must test accurately for minimum competence in professional engineering generally. The INCE exam does not do so. It tests depth of knowledge in noise control. Moreover, the INCE exam does not even test for minimum competence in the various practice areas of acoustical engineering (e.g., Oregon Department of Environmental Quality compliance in rural settings, concert hall design to enhance sound, etc.). Again, it tests only in the area of general noise control. Last, this recent claim conflicts with what INCE executives have already acknowledged: the INCE exam is not designed to test for professional engineering competence; it is designed to test for understanding of noise control by various types of professionals (“perhaps most of whom are not engineers (biologists, physics)* * *”), and is specifically designed to establish noise control subject-matter expertise, “**for those who do not have an engineering degree, and are not eligible for P.E.**” The INCE exam does not, therefore, possess the quality of PE examination integrity.

Regarding security, INCE provides no public exam security protocols for review, except “Participants are not permitted to exchange any reference material or computational aids with one another during the examination.” Examinees are, in fact, allowed to bring personal laptops into the examination. It is, therefore, unclear whether the INCE exam questions and score keys are in fact secure. Contrast the INCE information with the publicly available NCEES information on exam security protocols, which include many pages of details and requirements. Moreover, in 2015 INCE determined that the Oregon-specific acoustical engineering exam was equivalent to the INCE exam, and did so directly after an INCE member who had just taken the Oregon-specific acoustical engineering examination reported back to INCE on the Oregon-specific exam, and INCE executives consulted with the individual responsible for the Oregon-specific Acoustical Engineering examination at the time, as well as with another Oregon-registered acoustical engineer involved with the Oregon-specific exam. It was also at this time that INCE offered to be Oregon’s acoustical engineering examination provider. No investigation was initiated, so there is no evidence that the security of the Oregon-specific acoustical examination was compromised by INCE members, or that it was done so in order to provide a pathway for INCE to generate income from providing Oregon’s examination, but those possibilities remain unresolved.

For the reasons detailed above – poor examination integrity and uncertain examination security -- we have not accepted INCE’s proposal to adopt its examination as its Oregon-specific acoustical examination.

(II) Oregon-Specific Acoustic Engineering Examination.

Our concerns with the Oregon-Specific Acoustic PE exam are similar to those with the INCE certification exam, although the details differ. We are concerned with examination integrity and security.

Regarding examination integrity, the abnormally high pass rate (90% or above) for the examination is inherently worrisome. It deviates significantly from the average pass rate of any national PE exam, or any other Oregon-specific exam offered by the Board. The PE examination is a test of professional-level knowledge, competence, and judgment. Passing a PE examination allows the successful candidate to exercise tremendous power over public lives, health, and safety. The Board is responsible for ensuring that individuals with that level of authority meet high standards. An examination passed by almost every individual who takes it does not appear to have developed sufficiently rigorous standards for the Board to be confident the exam is testing for truly professional qualifications.

Further, because of the extremely small number of examinees and practitioners, no exam development team this Board could organize would ever be able to produce statistically relevant conclusions that the examination questions were unbiased, and tested for accurately for engineering competence.

Regarding examination security, we simply do not have adequate assurance that the examination questions and answer keys have been secure and confidential. Moreover, because it is our understanding that the majority of questions and answer keys are in hard copy only, transferring them to an electronic, revisable format would be required. In light of the examination integrity issues, which this Board fundamentally cannot resolve, obtaining and using those resources does not appear to be justified.

(III) Acoustic Engineering in Oregon


Finally, we would like to share our perspective on the status of acoustic engineering in Oregon, with or without an Oregon-specific acoustic examination. Respectfully, it is our view that deep concern expressed by you, Mr. Standlee, and the Oregon acoustic engineering community members who have appeared at some of our public meetings, may be unwarranted. Even if the Oregon-specific acoustic engineering exam is never reinstated, the opportunities to learn acoustic engineering will not change, nor will a licensee's ability to practice acoustic engineering in Oregon.

When the acoustic PE examination was being offered, we were able to locate only one accredited acoustic engineering bachelor's degree program in the United States, and it was not in Oregon. We believe this is still the case, in spite of the fact that our acoustic PE examination has been suspended for some time. It is, perhaps, the lack of acoustic-specific educational opportunities that resulted in such a small number of acoustic engineering applicants over the years, even when the examination was being offered. The suspension of the exam has not, however, conversely affected the educational opportunities. Anyone who was able to obtain a degree in acoustic engineering before the exam was suspended is still able to do so.

Finally, because of how we structure our rules, acoustic engineering will be recognized as a separate branch of engineering for as long as the individuals currently registered as professional engineers, "specially qualified" in the acoustic branch of engineering are active. Then, even if the Oregon-specific examination is never reinstated, acoustic engineering will simply become a specialty within other recognized branches of engineering (e.g., architectural engineering, mechanical engineering, HVAC engineering, etc.); it will not disappear. It will continue to be recognized as the practice of engineering in Oregon, and will still be a potential career path for new Oregon engineers. You may look to OSBEELS history for examples of other types of engineering that were once separate branches but then, due lack of educational opportunities and exam interest, were subsumed as specialties within larger branches (e.g., traffic engineering, now a specialty within the civil branch of engineering, but the work is still considered the practice of engineering in Oregon, it is still part of the curriculum of some bachelor of engineering programs, and it is still practiced by Oregon engineers). Last, there would be nothing to preclude any Oregon registered PE who is seeking an employment credential specifically in noise control from sitting for the INCE certification exam.

We hope this clarifies our positions and perspective, and helps to allay concerns you and other practitioners may have about the survival of acoustic engineering in Oregon. Thank you again for your time and interest.

Sincerely,



Shelly Duquette, PE, SE
President

Oregon State Board of Examiners for Engineering and Land Surveying