

<h1>Regulatory Analysis Form</h1> <p>(Completed by Promulgating Agency)</p> <p><small>(All Comments submitted on this regulation will appear on IRRC's website)</small></p>		<p style="text-align: center;"><i>INDEPENDENT REGULATORY REVIEW COMMISSION</i></p> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <p><b>RECEIVED</b></p> <p>AUG 11 2020</p> <p>Independent Regulatory Review Commission</p> </div> <p>IRRC Number: 3264</p>
<p>(1) Agency                  Department of State, Bureau of Professional and Occupational Affairs, State Registration Board for Professional Engineers, Land Surveyors and Geologists</p>		
<p>(2) Agency Number: 16A                  Identification Number: 16A-4712</p>		
<p>(3) PA Code Cite:                  49 Pa. Code §§ 37.56a, 37.57-37.60</p>		
<p>(4) Short Title:                  Digital Signature and Seal</p>		
<p>(5) Agency Contacts (List Telephone Number and Email Address):</p> <p>Primary Contact: C. William Fritz, II, Board Counsel, Department of State, P.O. Box 69523, Harrisburg, PA 17106-9523 (phone 717-783-7200) (fax 787-0251) <a href="mailto:chfritz@pa.gov">chfritz@pa.gov</a></p> <p>Secondary Contact: Cynthia K. Montgomery, Regulatory Counsel, Department of State, P.O. Box 69253, Harrisburg, PA 17106-5923 (phone 717-783-7200) (fax 787-0251) <a href="mailto:cymontgome@pa.gov">cymontgome@pa.gov</a></p>		
<p>(6) Type of Rulemaking (check applicable box):</p> <p><input checked="" type="checkbox"/> <b>PROPOSED REGULATION</b></p> <p><input type="checkbox"/> Final Regulation</p> <p><input type="checkbox"/> Final Omitted Regulation</p>		<p><input type="checkbox"/> Emergency Certification Regulation:</p> <p><input type="checkbox"/> Certification by the Governor</p> <p><input type="checkbox"/> Certification by the Attorney General</p>
<p>(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less)</p> <p>This regulation has two purposes. First, the State Registration Board of Professional Engineers, Land Surveyors and Geologists (Board) proposes to update its current regulations on seals to make them as consistent as possible with the other design professional boards in Pennsylvania, which are the State Architects Licensure Board and the State Board of Landscape Architects. Second, the Board would propose new regulations on digital seals in conjunction with the other design professional boards. The proposed rulemaking would incorporate the provisions of National Council of Examiners for Engineering and Surveying (NCEES) Model Rule 240.20 regarding seals on documents. See attachment A.</p>		
<p>(8) State the statutory authority for the regulation. Include <u>specific</u> statutory citation.</p> <p>Subsection 4(l) of the Engineer, Land Surveyor and Geologist Registration Law (act) (63 P.S. § 151(l)) authorizes the Board to promulgate regulations, not inconsistent with the act, that it deems necessary and proper to carry into effect the powers conferred by the act. Further, section 7 of the</p>		

act (63 P.S. § 154) and the Board's regulations at 49 Pa. Code §§ 37.58-59 provide the requirement that every registrant utilize a seal approved by rules and regulations promulgated by the Board.

(9) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

**This regulation is not mandated by any Federal or State law or court order or any Federal regulation.**

(10) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

**The purpose of the seal for a design professional is to assure the user of the work product that the work has been performed by the individual licensee named on the seal. Providing all design professionals in the Commonwealth with regulations that are as consistent as possible with respect to both traditional seals and digital seals will benefit not only the design professionals but also their clients in the public and private sectors. Providing consistency regarding all seals will help eliminate confusion among clients in the public and private sectors and those members of the public who may view documents prepared by design professionals.**

**The Board will allow its licensees to use digital signatures and seals to increase electronic commerce and electronic communications, increase electronic filing of documents, help establish uniformity of rules and standards regarding the authentication and integrity of electronic records and promote public confidence in the integrity and reliability of electronic records. The requirements in these regulations for detecting alterations in documents sealed digitally will minimize the incidence of forged digital records and reduce fraud in electronic commerce.**

**As more documents are created using digital seals and signatures, the design professionals and their clients will save time, money and paper by converting work product to an electronic format, which is beneficial for consumers, the environment and a firm's bottom line.**

(11) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

**No, the regulation of the seals used by design professionals occurs at the State rather than the Federal level. However, there is a Federal law, the Electronic Signatures in Global and National Commerce Act of 2000 (ESIGN Act), Pub.L. No. 106-229, 15 U.S.C. §§ 7001–7006, which provides a general rule of validity for electronic records and signatures for transactions in or affecting interstate or foreign commerce. A similar law, the Uniform Electronic Transactions Act (UETA) has been adopted by many states, including Pennsylvania. In Pennsylvania, UETA was enacted as the Electronic Transactions Act (73 P.S. §§ 2260.101–2260.5101). As noted in the preamble, the Board has adopted definitions and provisions consistent with the Electronic Transactions Act for these regulations. The provisions in this regulation are not more stringent than the Federal standards.**

(12) How does this regulation compare with those of the other states? How will this affect Pennsylvania's ability to compete with other states?

**This regulation will not adversely affect Pennsylvania's ability to compete with other states.**

**In Delaware, each engineering and geologist licensee must obtain an embossing seal of the design authorized by the Delaware Council bearing the licensee's name, license number and the legend "professional engineer" or "professional geologist." Documents that are to be electronically transmitted that are signed using a digital signature shall contain the authentication procedure in a secure mode and a list of the hardware, software and parameters used to prepare the documents. The digital signature must be unique to the license using it, capable of verification, under the sole control of the licensee, and linked to the document in such a manner that the digital signature is invalidated if any data in the document is changed. These four criteria for the digital signature are the same criteria as set forth under § 37.60(a)(1) – (4) of the Board's proposed regulations for digital seals. In the Board's proposed amendments to its regulations, geologists and land surveyors would be subject to the same seal requirements as engineers and geologists in Delaware. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of Delaware. The Delaware Board of Professional Land Surveyors does require licensees to use a seal, but they have not yet approved digital seals for their land surveyors.**

**In Maryland, a licensee who engages in the practice of engineering or land surveying must obtain an impression seal or a rubber stamp. Maryland does not license geologists. A licensee's seal shall consist of the pictorial device of the Great Seal of Maryland as a center, surrounded by the words "State of Maryland" and "Professional Engineer" or "Professional Land Surveyor" and the licensee's name and license number. A licensee may sign and seal plans, specifications, drawings, reports, or other documents that are required to be signed and sealed either by handwritten signature in permanent ink or by digital signature, provided that the digital signature contains an identification unique to a licensee using it, such as the licensee's name and license number; is under the exclusive control of the licensee using it; cannot be repudiated and is independently verifiable; and is linked to the document in such a manner that any subsequent modifications to the document after the digital signature was appended to it will result in the document no longer being prepared or approved by the licensee. In the Board's proposed amendments to its regulations, land surveyors and engineers would be subject to the same seal requirements as land surveyors and engineers in Maryland. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of Maryland.**

**In New Jersey, geologists do not require licensure. All sealing of documents done by licensed engineers or land surveyors must be done with either a digital or an impression-type seal. A digital signature and seal shall carry the same weight, authority, and effect as a handwritten signature and impression-type seal when the following criteria are met: Specific to the licensee; verifiable by a trusted third party or some other approved process as belonging to the licensee; under the licensee's direct and exclusive control; and linked to a document in such a manner that the digital signature and seal is invalidated if any data in the document is changed. Once the digital signature and seal are applied to the document, the document shall be available in read-only format if the document is to be digitally transmitted. A licensee who digitally signs and seals a document shall maintain a digital copy of the electronically transmitted document that has also been digitally signed and sealed for future verification purposes pictorial representation of the digital signature and seal shall be readily available to the Board upon Board request and shall be produced in a manner acceptable to**

**the Board. It shall contain the same words and shall have substantially the same graphic appearance and size as when the image of the digitally transmitted document is viewed at the same size as the document in its original form. Licensees are responsible for the use of their private digital keys. A lost or compromised key shall not be used and the licensee shall cause a new key pair to be generated in accordance with the criteria described above. A licensee shall take all reasonable steps to ensure that a compromised key is invalidated and shall inform all affected clients that the digital key has been compromised. In the Board's proposed amendments to its regulations, land surveyors, geologists and engineers would be subject to the same seal requirements as land surveyors and engineers in New Jersey. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of New Jersey.**

**In New York, the seal and signature of a land surveyor, geologist and/or an engineer licensee on a document indicates that the licensee takes professional responsibility for the work and to the best of the licensee's knowledge and ability, the work represented in the document is accurate and in conformance with applicable codes at the time of submission. The document must be prepared in conformance with normal and customary standards of practice and with a view to the safeguarding of life, health, property and public welfare. Every professional engineer, geologist or land surveyor must have a seal. There is no specification on the type of seal to be used, with an embossing seal, rubber stamp or electronic version all being acceptable to the New York Department and the State Board of Professional Engineering, Land Surveying and Professional Geology. The use of electronic signatures is voluntary by both public and private entities. A state or local municipality is not required to accept electronic signatures. In the Board's proposed amendments to its regulations, geologists, engineers and land surveyors would be subject to the same seal requirements as those in New York. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of New York.**

**In Ohio, geologists do not require a license. Applicants to the State Board of Registration for Professional Engineers and Surveyors must, upon payment of the registration fee, register and issue a certificate showing initial registration of an applicant who, in the opinion of the board, has satisfactorily met all the requirements. Each licensee may, upon completing registration, obtain a seal of the design authorized by the board. Plans, specifications, plats, reports, and all other engineering or surveying work products issued by a licensee shall be stamped with the seal and be signed and dated by the licensee. The document can bear a computer-generated seal and electronic signature and date, but no person may stamp. Plans, specifications, plats, reports and all other engineering or surveying work product bearing a computer-generated seal and electronic signature and date must have an electronic authentication process attached to or logically associated with the electronic document. The electronic signature must be unique to the person using it, capable of verification, under the sole control of the person using it, and linked to a document in such a manner that the electronic signature is invalidated if any data in the document is changed. In the Board's proposed amendments to its regulations, engineers and land surveyors would be subject to the same seal requirements as those in Ohio. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of Ohio.**

**In Virginia, geologists do not require a license. The application of a professional seal for engineers and land surveyors shall indicate that the professional has exercised direct control and personal supervision over the work to which it is affixed. An appropriately licensed or certified engineer and land surveyor professional shall apply a seal to final and complete original cover sheets of plans, drawings, plats, technical reports and specifications and to each original sheet of plans, drawings or**

plats, prepared by the professional or someone under his direct control and personal supervision. An electronic seal, signature and date are permitted to be used in lieu of an original seal, signature and date when the following criteria, and all other requirements are met: it is a unique identification of the professional, it is verifiable, and it is under the professional's direct control. Application of the seal and signature indicates acceptance of responsibility for work shown thereon. In the Board's proposed amendments to its regulations, geologists and land surveyors would be subject to the same seal requirements as engineers and land surveyors in Virginia. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of Virginia.

In West Virginia, geologists do not require a license. The West Virginia board shall issue a certificate of registration to any engineer and/or land surveyor applicant who, in the opinion of the board, has met all requirements. Every licensee must obtain a seal for use in identifying his or her official professional work. The seal may be a rubber stamp. Whenever the seal is applied, the licensee's written signature shall be adjacent to or across the seal. No further words or wording are required. A licensee's seal and signature shall appear on the first or title page of all final and or record documents of specifications, reports, drawings, plans, design information and calculations presented to a client or any public or government agency to certify that the work was done by the licensee or under the control of the licensee. Each licensee is solely responsible for the use of his or her seal. It is the responsibility of each licensee to report the loss or theft of his or her seal to the Board as soon as practical after the loss or theft. The Board authorizes the electronic reproduction of a seal when the resulting facsimile meets the specifications. As for land surveyors, digital signatures, signature stamps or other such facsimiles are prohibited on all certified survey documents. Other survey related documents may have either a digital seal or digital signature, or facsimile, but both cannot be on the same document. Licensees shall not attach their seal or their signature to any survey document unless their status is active with the Board; the survey work related to the document was performed under their professional charge, and they are competent to perform the survey related work by virtue of education or experience. Digital seals may be used on final original plats and drawings provided a handwritten signature is placed adjacent to or across the seal and the date is written below the seal. Certified survey documents may be transmitted electronically but must have the digital seal, if any, removed before transmitting. The proposed amendments to the Board's regulations would be no more restrictive than the seal requirements in the State of West Virginia.

Based on these regulations from surrounding states, this regulation will not place Pennsylvania at a competitive disadvantage. The proposed rulemaking will place Pennsylvania on an even playing field with those states that permit digital signatures by allowing Pennsylvania licensees to use a digital signature. This regulation will also give Pennsylvania an advantage as being more competitive within the industry as compared to those states that do not permit digital seals and signatures.

(13) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

Other state agencies, such as the Department of General Services, Department of Environmental Protection, Department of Transportation and the Department of Labor and Industry, will be affected in many ways. Several state agencies employ licensees of the Board who will use seals and signatures in compliance with this regulation once it is promulgated. To the extent that these state agencies encourage their employees, who are licensees, to use digital seals and signatures, they will

save money by reducing the cost and time necessary to use traditional seals on paper, as noted in the answer to question 18. Finally, other state agencies must comply with the Pennsylvania Electronic Transactions Act under 73 P.S. § 2260.303(a) in that they may not deny the legal effect or enforceability of a seal solely because it is in electronic form.

(14) Describe the communications with and solicitation of input from the public, any advisory council/group, small businesses and groups representing small businesses in the development and drafting of the regulation. List the specific persons and/or groups who were involved. ("Small business" is defined in Section 3 of the Regulatory Review Act, Act 76 of 2012.)

**On July 17, 2013, the Board distributed an exposure draft to interested parties. The Board received comments from the Pennsylvania Department of Environmental Protection (DEP), the Pennsylvania Department of Transportation, the Pennsylvania Department of Labor and Industry, the Pennsylvania School Boards Association, the Pennsylvania Association of Township Supervisors, and two professional engineers. Furthermore, the Board discussed these regulations during regular meetings of the Board during 2013, 2014 and 2018, at which representatives of interested parties attended. On January 8, 2014, the Seals Regulations Committee held a public meeting prior to the Board meeting, at which representatives of interested parties attended, including representatives of DEP, the Pennsylvania Society of Professional Engineers (PSPE) and the Pennsylvania Society of Land Surveyors (PSLS). The PSPE formally and the PSLS informally have indicated their support of the Board's proposed regulation on seals and digital seals.**

(15) Identify the types and number of persons, businesses, small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012) and organizations which will be affected by the regulation. How are they affected?

**All licensees will be required to comply with the rulemaking. The Board currently has approximately 30,790 licensed professional engineers, 1,908 licensed professional land surveyors, and 2,298 licensed professional geologists.**

**According to the Pennsylvania Department of Labor and Industry (L&I), in 2016, of the professional engineers employed in Pennsylvania, approximately 303,500 of those were civil engineers. Of the civil engineers, in 2016, the majority worked in architectural and engineering services (48%), while a minority of civil engineers worked in Federal or State government (15%), Local government (10%), and nonresidential building construction (6%). Other engineers worked in scientific research and development services, utility system construction, power generation and supply, other heavy construction and rail transportation.**

**L&I classifies professional geologists as geoscientists, and in 2016, geoscientists worked in Federal or State government (14%); architectural and engineering services (26%); mining, quarrying and oil and gas extraction (24%); or for colleges, universities and professional schools (6.0%). About 30% of geoscientists were employed in Texas in 2016, because of the prominence of oil and gas activities in that state.**

**For land surveyors, L&I states that in 2016, surveyors worked in architectural and engineering services (71%); government (11%); nonresidential building construction (8%); mining, quarrying and oil and gas extraction (2%) or were self-employed (2%).**

For the business entities listed above, small businesses are defined in Section 3 of Act 76 of 2012, which provides that a small business is defined by the U.S. Small Business Administration's (SBA) Small Business Size Regulations under 13 CFR Ch. 1 Part 121. Specifically, the SBA has established these size standards at 13 CFR 121.201 for types of businesses under the North American Industry Classification System (NAICS). In applying the NAICS standards to the types of businesses where most professional engineers, geologists and land surveyors work, a small business in the categories of engineering services, geophysical surveying and mapping services, and surveying and mapping (except for geophysical services), all have \$15.0 million or less in average annual receipts. Furthermore, the professionals who are self-employed obviously work in small businesses. The NAICS codes do not include professionals who work in Federal, State and local governments. In considering all of these small business thresholds set by NAICS for the businesses in which professional engineers, land surveyors and geologists work, it is probable that most of the licensed professional engineers, land surveyors and geologists work in small businesses.

According to the Small Business Administration (SBA), there are approximately 1,041,905 businesses in Pennsylvania; of which 1037,737 are small businesses. Of the 1,037,737 small businesses, 225,847 are small employers (those with fewer than 500 employees) and the remaining 811,890 are non-employers. Thus, the vast majority of businesses in Pennsylvania are considered small businesses.

The Board's licensees will not be adversely affected by this rulemaking. Under this rulemaking, licensees may continue to apply the traditional metal embossing seal or rubber stamp with signature and may apply a digital seal in lieu of the traditional metal embossing seal if they so desire. As noted in the answer to question 18, the benefits of this regulation allowing for digital seals far outweigh the costs of purchasing digital seal and signature technology.

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(16) List the persons, groups or entities, including small businesses, that will be required to comply with the regulation. Approximate the number that will be required to comply.

All licensees will be required to comply with the rulemaking. The Board currently has approximately 28,374 licensed professional engineers, 1,795 licensed professional land surveyors, and 2,120 licensed professional geologists. A total of approximately 32,289 licensees of the Board will be required to comply with this regulation.

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(17) Identify the financial, economic and social impact of the regulation on individuals, small businesses, businesses and labor communities and other public and private organizations. Evaluate the benefits expected as a result of the regulation.

Under the proposed rulemaking, no licensee will be required to use a digital seal and signature. Licensees who decide to use digital seals and signatures will be required to utilize appropriate security software that meets the requirements for digital seals as set forth in the rulemaking at § 37.60. This software is available from a variety of vendors. Costs will vary from one vendor to another, and costs will also vary depending on the number of individuals who will use a digital seal and signature within a firm. For example, according to DocuSign and Adobe, sole proprietor firms using digital seals and signatures and purchasing a user license will likely select a plan where the cost for a single user license is \$15 per month or \$165 per year, which allows one month at no charge. For the same vendors, firms with more than 10 licensees using digital seals and signatures and purchasing user licenses for their licensees may be able to negotiate a lower fee, depending on the

number of licensees, with a higher number of licensees paying a lower fee. Under both plans offered by these vendors, there is no limit on the number of digital seals or signatures that a licensee may use. The Board also anticipates that as the number of users of digital seals and signatures increases over time, it is likely that the costs of purchasing digital seal and signature technology will decrease.

(18) Explain how the benefits of the regulation outweigh any cost and adverse effects.

The benefits of the regulation greatly outweigh any costs and adverse effects. As stated in the answer to question 10, the initial purpose of this regulation is to provide all design professionals with regulations that are as consistent as possible with respect to both traditional seals and digital seals. Doing so will benefit not only the design professionals but also their clients in the public and private sectors. Providing consistency regarding all seals will help to eliminate confusion not only among clients in the public and private sectors, but it will also reduce confusion for those members of the public who may view documents prepared by design professionals.

The second purpose of this regulation is to allow licensees to use digital seals and signatures, provided that they follow the requirements set forth in § 37.60. There are three distinct major advantages to licensees for using digital seals and signatures.

1. **Protection** – The requirements in these regulations under § 37.60(a)-(b) for containing a unique identification of the licensee, for being verifiable, for being under the licensee’s direct and sole control, and for detecting alterations in documents sealed digitally will provide integrity for the work products, minimize the incidence of forged digital records and reduce fraud in electronic commerce.
2. **Cost savings** – There are tremendous cost savings for those firms that use digital seals and signatures, compared with those that use traditional paper-based metal embossing seals or rubber stamps. According to Cadalyst (a reviewer of computer aided design (CAD) software and hardware), the architecture, engineering and construction industry spends an estimated \$500 million or more each year moving plans from one discipline to another by way of such courier services as FedEx and UPS. One vendor of digital seals estimates that the average cost of toner, ink and paper costs 3 cents per page, and further states that costs are even greater for firms and organizations with multiple locations or field staff that need to submit formal reports or contracts. According to Oasis Systems (a provider of information technology, systems engineering, professional services and enterprise applications to federal agencies), the average paper document is copied 9 to 11 times at a cost of approximately \$18 and filed at a cost of approximately \$20, plus the added cost of storage, media, space, postage and distribution. Pitney Bowes estimates that the average cost of Fortune-500 paper documents is \$10 per document. Pfizer estimates the cost of one “wet signature” at \$30, including the time to track down the signer, plus storage and scanning costs.
3. **Time savings** – According to a survey conducted in 2013 by the Association for Information and Image Management (AIIM), it is much faster to use email attachments than move paper from place to place to get seals and signatures. The AIIM survey found that 65% of businesses add more than 1 day to processes just to collect signatures. Also, the AIIM survey shows that 48% of businesses print more than half of their documents just to add signatures. After deploying digital signatures, AIIM survey results show that

68 % of businesses saved time scanning, copying and routing documents, while 65% accelerated their signature-dependent processes. Considering both the cost and time savings, AIIM found that after deploying digital signatures, 25% of businesses reached their return on investment in 90 days, while 81% reached their return on investment in under 12 months. There will be at least a 20 % savings in traditional engineering costs for moving from paper to electronic documents, according to the National Conference of States on Building Codes and Standards (NCSBCS). In 2008, the Alliance for Building Regulatory Reform in the Digital Age at Fiatch (the Alliance) published a white paper entitled “From Paper to Digits” with financial support from the American Institute of Architects (AIA). The Alliance describes itself as an industry-led consortium administratively housed at The University of Texas at Austin that provides global leadership in identifying and accelerating the development, demonstration, and deployment of emerging technologies and innovative practices to deliver the highest business value through the life cycle of capital projects.) The Alliance found that “electronic plans submittal, tracking, review and storage reduce traditional plan processing up to 50 percent by reducing the number of physical trips to and from government offices and by making these services available 24/7/365 and enabling jurisdictions to shift staff resources to other areas in need of attention.” The Alliance also noted the following key benefits from the submittal, review, tracking and storage of electronic plans:

- Improved accuracy of transmitted data contained on the plans and reduced number of building permits and plans being filed by non-licensed architects, engineers or contractors.
- Enhanced collection of revenues owed to the jurisdiction by getting buildings up and on the tax rolls sooner.
- Enhanced ability of government departments to conduct parallel plan review rather than perform them sequentially.
- Reduced or eliminated space and retrieval problems associated with storing paper blueprints.
- Significantly reduced travel time and energy use/expenses of customers helping the community meet sustainability and green community goals.
- Preparing communities for the adoption of future technology in a non-disruptive manner.

In the Fiatch white paper, the Alliance noted that electronic plan storage allows for storage on multiple sites both inside and outside the jurisdiction of the client. This would afford protection in the event of a major manmade or natural disaster, such as an earthquake and hurricane. This would apply to state agencies, which presently store electronic data offsite as well as local governments that can do likewise. Finally, firms and licensees retaining copies of their electronically sealed and signed documents in an electronic database may afford themselves of this opportunity.

There are also public policy advantages for providing requirements for digital seals and signatures. The use of digital seals and signatures will increase electronic commerce and electronic communications, increase electronic filing of documents, help establish uniformity of rules and standards regarding the authentication and integrity of electronic records and promote public confidence in the integrity and reliability of electronic records. As more documents are created using digital seals and signatures, the design professionals and their clients will be reducing paperwork by converting their work products to an electronic format, which is beneficial for consumers, the environment and a firm's bottom line.

(19) Provide a specific estimate of the costs and/or savings to the **regulated community** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Under the proposed rulemaking, no licensee will be required to purchase or use digital seal and signature technology. For those who do decide to use digital seals and signatures once this regulation is promulgated, they will be required to utilize appropriate security software that meets the requirements for digital seals that is available from a variety of vendors. As noted above in the answer to question 17, those costs for digital seal technology will be approximately \$165 per license per year. However, as noted in the answer to question 18, the Board anticipates that these costs will be more than offset by at least an overall 20% savings in traditional professional engineering, land surveying and geology costs for moving from paper to electronic documents.

The Board estimates that at least 10% of licensees will initially use digital seals. In five years, it is possible that the percentage of design professional licensees using digital seals may be as high as 50% to 60%, so the usage of digital seals may increase at the approximate rate of 10% per year. As noted in the answer to question 16, there are approximately 28,374 licensees for this Board. In the first year, 10% of the licensees may begin to use digital seals at a cost of \$165 or less, with approximately 2,837 licensees spending approximately \$468,105 a year for digital seal technology. During the next fiscal year, 5,674 licensees may spend approximately \$936,210 a year. In 2 years, 30 % or 8,511 licensees may spend up to \$ 1,404,315 annually. In 3 years, 40% or 11,348 licensees may spend up to \$1,872,420 a year. In 4 years, 50 % or 14,187 licensees may spend up to \$2,340,855 a year. In 5 years, 60% or 17,024 licensees may spend up to \$2,808,960 a year for digital seals. However, these costs will be more than offset by at least a 20% savings in traditional engineering costs for moving from paper to electronic documents, according to the NCSBCS.

(20) Provide a specific estimate of the costs and/or savings to the **local governments** associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

To the extent that local governments request or express a preference for digital seals and signatures for the documents created by design professional licensees, they will save money and time for moving from a paper-based system to an electronic system, as noted in the answer to question 18 above. In 2005, NCSBCS estimated that there would be a 20 % savings for moving from paper to electronic documents. In 2008, the Alliance published a white paper entitled "From Paper to Digits" with financial support from the American Institute of Architects (AIA). The Alliance found that communities that are receiving plans electronically, marking them up and then granting online access to them for their architects, engineers, owners, and contractors have eliminated or, at minimum, greatly reduced the number of trips being made to and from city or county offices to

drop off and pick up plans. The Alliance estimated the following cost savings from reduced storage of plans for a community issuing 3,000 permits annually:

- 312,000 miles driven and 20,800 gallons of gas
- 457,600 lbs. carbon monoxide emitted
- \$57,200 in fuel costs
- 12,480 hours of drive-time
- 192,000 lbs. of paper used (239 trees) and
- Approximately 12,000 lbs. of paper requiring storage.

(21) Provide a specific estimate of the costs and/or savings to the state government associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

To the extent that state government agencies and departments request or express a preference for digital seals and signatures for the documents created by design professional licensees, they will save money and time for moving from a paper-based system to an electronic system, as noted in the answer to question 18 above. NCSBCS estimates that there will be a 20 % savings in costs by moving from paper to electronic documents.

(22) For each of the groups and entities identified in items (19)-(21) above, submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulation and an explanation of measures which have been taken to minimize these requirements.

To provide flexibility for its licensees, the Board allows its licensees to use metal embossing seals, rubber stamps or digital seals. Under the proposed rulemaking, no licensee will be required to purchase and use digital seal technology. For those licensees who decide to use digital seals, they will be required to utilize appropriate security software that meets the requirements for digital seals set forth in § 37.60 that is available from a variety of vendors. As noted above in the answers to questions 17 – 19, it is estimated that the savings for using digital seals will exceed the costs. In granting flexibility to its licensees, the Board is allowing its licensees to conduct their own cost benefit analysis and determine whether or not to implement digital seals.

22a) Are forms required for implementation of the regulation?

**No forms are required for implementation of the regulation.**

(22b) If forms are required for implementation of the regulation, attach copies of the forms here. If your agency uses electronic forms, provide links to each form or a detailed description of the information required to be reported. Failure to attach forms, provide links, or provide a detailed description of the information to be reported will constitute a faulty delivery of the regulation.

N/A

(23) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and state government for the current year and five subsequent years.

	Current FY 2019-20	FY +1 2020-21	FY +2 2021-22	FY +3 2022-23	FY +4 2023-24	FY +5 2024-25
<b>SAVINGS:</b>	\$	\$	\$	\$	\$	\$
Regulated Community			20% reduction	20% reduction	20% reduction	20% reduction
Local Government			20% reduction	20% reduction	20% reduction	20% reduction
State Government			20% reduction	20% reduction	20% reduction	20% reduction
Total Savings	N/A	N/A				
<b>COSTS:</b>						
Regulated Community	N/A	N/A	\$468,105	\$936,210	\$1,404,315	\$1,872,420
Local Government						
State Government						
Total Costs	N/A	N/A	\$468,105	\$936,210	\$1,404,315	\$1,872,420
<b>REVENUE LOSSES:</b>						
Regulated Community						
Local Government						
State Government						
Total Revenue Losses	\$0	\$0	\$0	\$0	\$0	\$0

(23a) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY -2 2017-18	FY -2 2018-19	Current FY 2018-19	Proposed FY 2020-21
State Reg. Bd. for Prof. Engineers, Land Surveyors and Geologists	(actual) \$1,213,274.64	(actual) \$1,154,318.14	(budget) \$1,183,000.00	(proposed budget) \$1,189,000.00

(24) For any regulation that may have an adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), provide an economic impact statement that includes the following:

- (a) An identification and estimate of the number of small businesses subject to the regulation.
- (b) The projected reporting, recordkeeping and other administrative costs required for compliance with the proposed regulation, including the type of professional skills necessary for preparation of the report or record.

- (c) A statement of probable effect on impacted small businesses.
- (d) A description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

**As stated in the answers to questions 17 – 19 above, this regulation will not have an adverse impact on small businesses.**

(25) List any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, the elderly, small businesses, and farmers.

**This regulation will meet the needs of all licensees, irrespective of their race, age and business size.**

(26) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

**No alternative regulatory provisions were considered. The Board considers this proposal to be the least burdensome acceptable means to achieve the purpose of the Board.**

(27) In conducting a regulatory flexibility analysis, explain whether regulatory methods were considered that will minimize any adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), including:

- a) The establishment of less stringent compliance or reporting requirements for small businesses;
- b) The establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
- c) The consolidation or simplification of compliance or reporting requirements for small businesses;
- d) The establishment of performance standards for small businesses to replace design or operational standards required in the regulation; and
- e) The exemption of small businesses from all or any part of the requirements contained in the regulation.

**As stated in the answers to questions 17 – 19 above, this regulation will not have an adverse impact on small businesses.**

(28) If data is the basis for this regulation, please provide a description of the data, explain in detail how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. Please submit data or supporting materials with the regulatory package. If the material exceeds 50 pages, please provide it in a searchable electronic format or provide a list of citations and internet links that, where possible, can be accessed in a searchable format in lieu of the actual material. If other data was considered but not used, please explain why that data was determined not to be acceptable.

**The proposed regulation was not based upon any scientific data, studies or references.**

(29) Include a schedule for review of the regulation including:

- |   |  |
|---|--|
| A. The length of the public comment period:   | <u>30 days after publ. as proposed</u>                                     |
| B. The date or dates on which any public meetings or hearings will be held:                   | <u>All rulemakings are considered at public meetings as listed in (30)</u> |
| C. The expected date of delivery of the final-form regulation:                                | <u>Within two years of publ. as proposed</u>                               |
| D. The expected effective date of the final-form regulation:                                  | <u>Upon final promulgation</u>   |
| E. The expected date by which compliance with the final-form regulation will be required:     | <u>Effective date</u>  |
| F. The expected date by which required permits, licenses or other approvals must be obtained: | <u>N/A</u>   |

(30) Describe the plan developed for evaluating the continuing effectiveness of the regulations after its implementation.

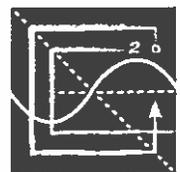
**The Board continually reviews the efficacy of its regulations, as part of its annual review process under Executive Order 1996-1. The Board reviews its regulatory proposals at regularly scheduled public meetings. The Board will meet on the following dates in 2020: March 11, May 20, July 8, September 9 and November 13. More information can be found on the Board's website (linked under boards & commissions from professional licensing on the Department's website at [www.dos.pa.gov](http://www.dos.pa.gov)).**

# ATTACHMENT A

# MODEL RULES

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August 2018



**NCEES**



# **MODEL RULES**

Revised August 2018

**Vision**

The vision of NCEES is to provide leadership in professional licensure of engineers and surveyors through excellence in uniform laws, licensing standards, and professional ethics in order to safeguard the health, safety, and welfare of the public and to shape the future of professional licensure.

**Mission**

The mission of NCEES is to advance licensure for engineers and surveyors in order to safeguard the health, safety, and welfare of the public.

This mission is supported through its member boards, board of directors, staff, board administrators, and volunteers by:

- Providing outstanding nationally normed examinations for engineers and surveyors
- Providing uniform model laws and model rules for adoption by the member boards
- Promoting professional ethics among all engineers and surveyors
- Coordinating with domestic and international organizations to advance licensure of all engineers and surveyors



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National Council of Examiners for Engineering and Surveying®

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## **PREFACE**

### **Purpose of the NCEES *Model Law* and *Model Rules***

The vision of the National Council of Examiners for Engineering and Surveying (NCEES) is to provide leadership in professional licensure of engineers and surveyors through excellence in uniform laws, licensing standards, and professional ethics in order to safeguard the health, safety, and welfare of the public and to shape the future of professional licensure. The mission of NCEES is to advance licensure for engineers and surveyors in order to safeguard the health, safety, and welfare of the public.

NCEES serves as an organization through which its members—the engineering and surveying licensure boards in all U.S. states and territories—can counsel and act together to better discharge their duties as individual, autonomous regulatory agencies. One of the primary ways NCEES fulfills its vision and supports its mission is by providing the *Model Laws* and *Model Rules* for adoption by its member boards.

The NCEES *Model Law* sets forth broad ideas about the regulation of engineering and surveying licensure. It is an enabling document that defines the board's powers and duties. It is designed to assist legislative counsels, legislators, and NCEES members in preparing new or amendatory legislation. Each line in the sections is numbered to facilitate use of this document as a working model.

The *Model Rules* complements the *Model Law* by providing model rules and regulations for the ways member boards can carry out the general concepts introduced and set forth in the law. While it is designed to explain broad provisions stated in the *Model Law* by offering the details from an administrative perspective, the *Model Rules*, just like a board's regulations or rulemaking process, functions only within the authority granted by the *Model Law*. The *Model Rules* is designed to assist NCEES member board members, board counsel, and board administrators in preparing and updating board rules.

The bracketed and italicized language throughout the *Model Law* and *Model Rules* indicates areas where language may need to be customized for a jurisdiction.

By vote, the majority of NCEES member boards have agreed that the language in the *Model Law* and *Model Rules* represents the gold standard for engineering and surveying licensure requirements in the United States. Revisions to the *Model Law* and *Model Rules* are decided at the NCEES annual business meeting, and any motion to amend the *Model Law* or the *Model Rules* presented at an annual business meeting by an entity other than the Committee on Uniform Procedures and Legislative Guidelines (UPLG) shall be referred to the UPLG Committee for review and revision of the language for inclusion before it is presented for Council vote at the next scheduled annual meeting.

The intent of NCEES in preparing these uniform model documents is to present its member boards with a high-level benchmark—and yet a sound and realistic guide—that will provide greater uniformity of qualifications for licensure, raise these qualifications to a higher level of accomplishment, and simplify the interstate licensure of engineers and surveyors.

## **210 INTRODUCTION**

### **210.10 Introduction**

The purpose of adopting rules is to safeguard the health, safety, and welfare of the public by ensuring the proper performance of the duties of the board and the regulation of its procedures, meetings, records, examinations, and the conduct thereof.

### **210.20 Definitions**

The NCEES *Model Law*, Section 110.20, Definitions, provides definitions that also apply to these *Model Rules*.

### **210.25 Inclusions and Exclusions to the Practice of Surveying**

#### **A. Activities Included within the Practice of Surveying**

Activities that must be accomplished by or under the responsible charge of a professional surveyor (unless specifically exempted in subsection B of this section) include, but are not limited to, the following:

1. The creation of maps or georeferenced databases representing authoritative locations for boundaries, the location of fixed works, or topography. This includes maps and georeferenced databases prepared by any person or government agency where that data is provided to the public as a surveying deliverable.
2. Original data acquisition, or the resolution of conflicts between multiple data sources, when used for the authoritative location of features within the following data themes: geodetic control, orthoimagery, elevation and hydrographic, fixed works, private and public boundaries, and cadastral information
3. Certification of positional accuracy of maps or measured survey data
4. Adjustment or authoritative interpretation of raw survey data
5. Geographic Information System (GIS)-based parcel or cadastral mapping used for authoritative boundary definition purposes wherein land title or development rights for individual parcels are, or may be, affected
6. Authoritative interpretation of maps, deeds, and other land title documents to resolve conflicting data elements
7. Acquisition of field data required to authoritatively position fixed works or cadastral data relative to geodetic control
8. Analysis, adjustment or transformation of cadastral data of the parcel layers with respect to the geodetic control layer within a GIS resulting in the affirmation of positional accuracy

#### **B. Activities Excluded from the Practice of Surveying**

A distinction must be made in the use of electronic systems between making or documenting original measurements in the creation of surveying deliverables, versus the copying, interpretation, or representation of those measurements in such systems. Further, a distinction must be made according to the intent, use, or purpose of measurements derived from electronic systems to determine an authoritative location versus the use of those measurements as a reference for planning, infrastructure management, and general information. The following items are not to be included as activities within the definition of the practice of surveying:

1. The creation of general maps
  - a. Prepared by private firms or government agencies for use as guides to motorists, boaters, aviators, or pedestrians
  - b. Prepared for publication in a gazetteer or atlas as an educational tool or reference publication

- c. Prepared for or by education institutions for use in the curriculum of any course of study
  - d. Produced by any electronic or print media firm as an illustrative guide to the geographic location of any event
  - e. Prepared by laypersons for conversational or illustrative purposes. This includes advertising material and users guides.
2. The transcription of previously georeferenced data into a GIS or LIS by manual or electronic means, and the maintenance thereof, provided the data are clearly not intended to indicate the authoritative location of property boundaries, the shape or contour of the earth, or fixed works
  3. The transcription of public record data, without modification except for graphical purposes, into a GIS- or LIS-based cadastre (tax maps and associated records) by manual or electronic means, and the maintenance of that cadastre, provided the data are clearly not intended to authoritatively represent property boundaries. This includes tax maps and zoning maps.
  4. The preparation of any document by any federal government agency that does not define real property boundaries. This includes civilian and military versions of quadrangle topographic maps, military maps, satellite imagery, and other such documents.
  5. The incorporation or use of documents or databases prepared by any federal agency into a GIS/LIS, including but not limited to federal census and demographic data, quadrangle topographic maps, and military maps
  6. Inventory maps or databases created by any organization, in either hard-copy or electronic form, of physical features, facilities, or infrastructure that are wholly contained within properties to which they have rights or for which they have management responsibility. The distribution of these maps or databases outside the organization must contain appropriate metadata describing, at a minimum, the accuracy, method of compilation, data sources and dates, and disclaimers of use clearly indicating that the data are not intended to be used as a surveying deliverable.
  7. Maps and databases depicting the distribution of natural resources or phenomena prepared by foresters, geologists, soil scientists, geophysicists, biologists, archeologists, historians, or other persons qualified to document such data
  8. Maps and georeferenced databases depicting physical features and events prepared by any government agency where the access to that data is restricted by statute. This includes georeferenced data generated by law enforcement agencies involving crime statistics and criminal activities.

### **210.30 Offering to Practice Engineering and Surveying**

If the engineer or surveyor is licensed in another jurisdiction, the following items are not considered an offer to practice engineering or surveying:

- A. Advertisements published in print or electronic media, if professional services are not offered in jurisdictions where the engineer or surveyor is not licensed
- B. Responses to inquiries regarding requests for proposals, if there is written disclosure that the engineer/surveyor and firm are not currently licensed in the jurisdiction and the response is limited to inquiries regarding scope of project and to demonstrate interest
- C. Responses to inquiries from prospective clients, if there is written disclosure that the engineer/surveyor and firm are not currently licensed in the jurisdiction and the response is limited to inquiries regarding scope of project and to demonstrate interest
- D. Using the title/designation professional engineer, licensed engineer, P.E., professional surveyor, licensed surveyor, P.S., or other indicia of licensure in correspondence or on business cards from an office in the jurisdiction where licensure is held

Proposals may not be submitted, contracts signed, or work commenced until the engineer/surveyor and firm become licensed or authorized in the jurisdiction where the work is to be performed.

## **220 THE LICENSING BOARD**

### **220.10 Board Operations**

#### **A. Meetings**

1. Notices of meeting dates and times are normally given *[insert amount of time required]* in advance for all the regular meetings of the year. For special meetings, *[insert number of days]* notice must be given.
2. Place of meetings is determined in advance by members of the board.
3. All meetings are open to the public unless the meeting is closed for reasons defined by the laws of this jurisdiction.

#### **B. Voting**

All members of the board, including the chairperson, are entitled to vote and to make or to second motions. A majority vote of those present is required to pass a motion. The chairperson shall vote as a member of the board.

#### **C. Rules of Order**

The latest edition of *Roberts Rules of Order, Newly Revised* shall govern the normal proceedings of the board. Exceptions include hearings that may be disciplinary in nature.

#### **D. Use of Forms**

All applications and requests for which the board has prescribed a form must be presented on these forms.

#### **E. Roster**

A roster of all licensees and firms holding a certificate of authorization will be updated annually and shall be accessible to the public.

### **220.20 Adoption and Amendment of Rules and Regulations**

All rules or regulations adopted, amended, or repealed by this board shall comply with the provision of the administrative procedures act of this jurisdiction *[insert chapter, title, code, jurisdiction, date]*.

### **220.30 Fees**

#### **A. Application Fees**

1. *[\$insert amount]*—For professional engineer and professional surveyor licensure, as provided in the *NCEES Model Law, Section 130.20 B*
2. *[\$insert amount]*—For engineer intern and surveyor intern certification, as provided in the *NCEES Model Law, Section 130.20 B*
3. *[\$insert amount]*—For firm certificate of authorization, as provided in the *NCEES Model Law, Section 160.40 B*
4. When the issuance of a certificate to an applicant is denied, the fee paid shall be retained as an application fee, as provided in the *NCEES Model Law, Sections 130.20 C and 160.40 C*. Applications received without the proper fee will be returned to the applicant.

#### **B. Examination Fees**

1. Examination fees are determined from time to time by the board in accordance with the provisions of *[insert applicable jurisdiction law]*.
2. The current fees in effect may be obtained from the board.
3. Fees for manual verification of exam results are the same as those charged by NCEES.
4. The examination fees will not be returned to an applicant.

C. Roster

The fee for a copy of the *[insert annual, biennial, or other]* roster shall be determined by the board based on costs for its publication.

D. Renewal Fees

1. Renewal fees are payable before the last day of the month of *[insert month]* each year *[or other intervals]*.
2. Each licensee and firm holding a certificate of authorization will be notified by the board of the expiration date of his or her certificate of licensure or authorization and the amount of the renewal fee at least one month before the expiration date.
3. Amount of Renewal Fee—The renewal fee is set by regulation of the board in accordance with the provisions of *[insert applicable jurisdiction law]*.
4. Penalties for Late Renewal—Renewal fees in arrears are subject to a penalty for late renewal in accordance with jurisdiction law.

E. Duplicate Certificate Fees

The fee for the issuance of a duplicate certificate or enrollment document to a licensee, firm, or intern is determined by regulation of the board in accordance with the provision of *[insert applicable jurisdiction law]*.

## 230 CANDIDATES FOR LICENSURE

### 230.10 Education Requirements Approved by the Board

A. Engineering Program

The term “an engineering program of four years or more” used in Section 130.10 B.1.a of the NCEES *Model Law* is interpreted by this board to mean the following:

1. A degree from a bachelor’s or master’s engineering program accredited by the Engineering Accreditation Commission of ABET (EAC/ABET) at the time of the awarding of the degree. The board may accept the degree if accreditation is received within *[insert the prescribed time]*.
2. A degree from an engineering program not accredited by EAC/ABET but that meets the requirements of the NCEES *Engineering Education Standard*

B. Surveying Program

The following shall be considered as minimum evidence to the board that the applicant is qualified in terms of education for certification as a surveyor intern:

1. Graduation from a surveying program of four years or more accredited by EAC/ABET, the Engineering Technology Accreditation Commission of ABET (ETAC/ABET), or the Applied and Natural Science Accreditation Commission of ABET (ANSAC/ABET) at the time of awarding the degree or from a program that meets the requirements of the NCEES *Surveying Education Standard* as described in Section 130.10 C.1.a in NCEES *Model Law*. The board may accept the degree if accreditation is received within *[insert the prescribed time]*.
2. Graduation from a program related to surveying of four years or more as described in Section 130.10 C.1.b in NCEES *Model Law* is interpreted to be a bachelor’s degree including surveying courses, mathematics, and physical science.
3. Graduation from a program of four years or more as described in NCEES *Model Law* 130.10 C.1.c is interpreted to mean a program other than those defined in 1 or 2 above that is accepted by the board.

## 230.20 Experience

### A. As a Professional Engineer<sup>1</sup>

In evaluating experience that indicates to the board that the applicant may be competent to practice engineering, the following will be considered:

1. Experience must be progressive on engineering projects and must demonstrate an increasing quality and responsibility. Experience must be obtained in accordance with *Model Law 130.10*.
2. Only work of an engineering nature that follows graduation from a program that meets the criteria set forth in *Model Law 130.10 B.2.a(1)* is acceptable.
3. A graduate degree that is used to satisfy education requirements cannot be applied for experience credit toward licensure. To be eligible for experience credit, graduate degrees shall be relevant to the applicant's area of professional practice. Experience credit for a graduate degree cannot be earned concurrently with work experience credit.
4. Experience must be obtained in compliance with the licensure act.
5. Experience gained in the armed services must be of a character equivalent to that which would have been gained in the civilian sector doing similar work.
6. Experience should be gained under the supervision of a licensed professional engineer; if it is not, an explanation must be made showing why the experience should be considered acceptable. Experience gained under the technical supervision of an unlicensed individual may be considered if the appropriate credentials of the unlicensed supervisor are submitted to the board.
7. Sales experience must demonstrate that engineering principles were required and used in gaining the experience.
8. Teaching experience must be in engineering or engineering-related courses at a junior-, senior-, or graduate-level in a college or university offering an engineering program of four years or more that is approved by the board.
9. Experience may be gained in engineering research and design projects by members of an engineering faculty where the program is approved by the board.
10. Experience may be gained in engineering research by industry or government employees.
11. Experience must have been gained by the time of the application.
12. Experience in construction must demonstrate the application of engineering principles.
13. Experience must include demonstration of a knowledge of engineering mathematics, physical and applied science, properties of materials, and the fundamental principles of engineering design.
14. Experience must include demonstration of the application of engineering principles in the practical solution of engineering problems.
15. The board may deem professional experience acquired by applicants outside the United States to be equivalent to the minimum board requirements established by regulations for professional experience in that jurisdiction.

### B. As a Professional Surveyor<sup>2</sup>

In evaluating experience that indicates to the board that the applicant may be competent to practice surveying, the following will be considered:

1. Experience must be progressive on surveying projects and must demonstrate an increasing quality and responsibility. Experience must be obtained in accordance with *Model Law 130.10*.
2. Experience must be obtained in compliance with the licensure act.

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<sup>1</sup> Experience may be summarized as shown in Appendix A, Suggested Guidelines for Evaluating Progressive Engineering Experience. Appendix A is for reference only, and the language should not be adopted into the board rules.

<sup>2</sup> Experience may be summarized as shown in Appendix B, Suggested Guidelines for Evaluating Progressive Surveying Experience. Appendix B is for reference only, and the language should not be adopted into the board rules.

3. Experience gained in the armed services must be of a character equivalent to that which would have been gained in the civilian sector doing similar work.
4. Experience should be gained under the supervision of a licensed professional surveyor or, if not, an explanation must be made showing why the experience should be considered acceptable. Experience gained under the technical supervision of an unlicensed individual may be considered if the appropriate credentials of the unlicensed supervisor are submitted to the board.
5. Teaching experience must be in surveying or surveying-related courses at a junior-, senior-, or graduate-level in surveying or surveying-related courses approved by the board.
6. Experience related to property conveyance and/or boundary line determination must be demonstrated.
7. Experience in the technical field aspects of the profession must be demonstrated.
8. Experience must have been gained by the time of the application.
9. Experience must include demonstration of the application of surveying principles in the practical execution of surveying tasks.
10. Experience may be gained in surveying research projects by members of a surveying faculty where the program is approved by the board.
11. Experience may be gained in surveying research by industry or government employees.
12. The board may deem professional experience acquired by applicants outside the United States to be equivalent to the minimum board requirements established by regulations for professional experience in that jurisdiction.

### **230.30 References**

References are individuals who have personal knowledge of an applicant and are able to assess an applicant's experience, ability, character, or reputation.

- A. For licensure as a professional engineer or professional surveyor, an applicant must submit five references, three of whom shall be licensed engineers, licensed surveyors, or other individuals deemed acceptable to the board, who have personal knowledge of the applicant's engineering or surveying experience. In addition, for each employment period, individuals familiar with the applicant's experience for that period must be identified. Engineering applicants must have licensed engineer references, and surveying applicants must have licensed surveyor references.
- B. Relatives may not be used as references.
- C. No current board member shall be used as a reference.
- D. Each applicant should inform the individuals being used as references that they will be sent a reference form to complete and return.
- E. It is the responsibility of the applicant to ensure that the individuals giving the reference return a completed reference form to the board within a reasonable time. All reference materials must be complete before any board action may be taken on an application.
- F. References are considered to be confidential, nonpublic records that will not be divulged except as required by law.

## **230.40 Examinations**

### **A. Classification of Engineering Examinations**

This jurisdiction or its designee will provide the following examinations, prepared and furnished by NCEES, meeting the requirements of this jurisdiction for licensure as a:

1. NCEES Fundamentals of Engineering (FE) examination—The examination consists of subject matters in the fundamentals of engineering. Passing this examination qualifies the examinee for certification as an engineer intern, provided the examinee has met all other requirements for certification required by these Rules.
2. NCEES Principles and Practice of Engineering (PE) examination—The examination consists of subject matters in applied engineering. Passing this examination qualifies the examinee for licensure as a professional engineer, provided the examinee has met the other requirements for licensure required by these Rules.

### **B. Eligibility of Applicant for Engineering Examinations**

1. NCEES Fundamentals of Engineering (FE) Examination
  - a. Individuals who are in the final year of a program leading to a bachelor's degree in engineering may register with NCEES directly to take the FE examination or, if required, apply to the board for admission to the FE examination.
  - b. To be certified as an engineer intern, an application for certification may be submitted to the board upon passing the FE examination and meeting the education requirements.
2. NCEES Principles and Practice of Engineering (PE) Examination
  - a. Applicants for licensure as a professional engineer will be permitted to sit for the PE examination upon satisfactorily fulfilling all application requirements of the jurisdiction.
  - b. No applicant may sit for the PE examination until the board has established that the applicant is eligible for the examination.
  - c. Engineering doctorate degree applicants with an undergraduate degree from a program accredited by the Engineering Accreditation Commission of ABET (EAC/ABET) and with a doctorate degree in engineering from an institution that offers EAC/ABET-accredited undergraduate programs in the doctorate degree field of engineering and with experience that meets the qualifications defined by the board may sit for the PE examination without having taken or passed the FE examination.

### **C. Classification of Surveying Examinations**

This jurisdiction will provide the following examinations, prepared and furnished by NCEES, meeting the requirements of this jurisdiction for licensure:

1. NCEES Fundamentals of Surveying (FS) examination—The examination consists of subject matters in the fundamentals of surveying. Passing this examination qualifies the examinee for certification as a surveyor intern, provided the examinee has met all other requirements for certification required by this Act.
2. NCEES Principles and Practice of Surveying (PS) examination—The examination consists of subject matters in applied surveying, divided in separate parts as determined by the board. Passing these parts qualifies the examinee for licensure as a professional surveyor, provided the examinee has met the other requirements for licensure required by this Act.

Jurisdictions have the right to administer separate modules on jurisdiction laws and procedures for the practice of surveying.

- D. Eligibility of Applicant for Surveying Examinations
1. NCEES Fundamentals of Surveying (FS) Examination
    - a. Individuals who are in the final year of a program leading to a bachelor's degree in a surveying or surveying-related program may register with NCEES directly to take the FS examination or, if required, apply to the board for admission to the FS examination.
    - b. To be certified as a surveyor intern, an application for certification may be submitted to the board upon passing the FS examination and meeting the education and experience requirement.
  2. NCEES Principles and Practice of Surveying (PS) Examination
    - a. An applicant for licensure as a professional surveyor will not be permitted to sit for the PS examination until the FS examination has been passed.
    - b. No applicant may sit for the PS examination until the board has established that the applicant is eligible for the examination.
- E. Examination Dates and Locations
1. Examinations are offered on dates set by NCEES.
  2. Locations at which the examinations are given are designated by the board or by NCEES.
- F. Language of the Examination
- The language of the examination shall be English.
- G. Exam Preparation Materials
- The board may publish and make available exam preparation materials for all examinations that are specific to the jurisdiction. Exam preparation materials for NCEES examinations are available through NCEES.
- H. Instructions for Examinees
1. Instructions provided prior to each examination will declare an examination to be open- or closed-book. Instructions will communicate what materials are allowed in the examination room in accordance with established NCEES policy.
  2. Failure to Attend an Examination
    - a. An applicant who fails to attend an examination for which he or she has been scheduled will forfeit the fee paid for the exam, except in the case of illness, death in the family, or military deployment. Refunds, if any, will be determined based upon NCEES or jurisdictional policies.
    - b. Failure of an applicant to attend an examination for which he or she has been scheduled to attend does not count as a failure of the examination.
- I. Pencil-and-Paper Examination Offerings
1. All applicants for an NCEES pencil-and-paper examination must register with NCEES after being approved by the licensing board of their jurisdiction.
  2. A candidate failing an NCEES pencil-and-paper examination may apply to retake the examination in accordance with *[insert the rules/regulations of the licensing board]*.
  3. An applicant for an NCEES pencil-and-paper examination will be notified by the board at least *[insert number]* days before the examination date of approval to take the examination. The applicant must notify the board whether he or she plans to sit for the examination at least *[insert number]* days before the examination date.
- J. Computer-Based Examination Offerings
1. An applicant must register with NCEES to take an NCEES computer-based examination.
  2. An applicant failing an NCEES computer-based examination may be allowed to retake the examination in accordance with NCEES policy and *[insert rules/regulations of licensing board]*.

K. Examination Results

Examination results will be released in accordance with established NCEES policy.

L. Review of Examinations

There shall be no post-administration access to, or review of, NCEES examination questions. Member boards may request that NCEES manually verify an examinee's results from a pencil-and-paper examination. Such verification shall be conducted in accordance with NCEES policy.

M. Examination for Record Purposes

1. Any professional engineer licensed by this board may take for Record purposes the FE examination and/or a PE examination in a chosen discipline offered by NCEES upon payment of *[insert fee set by board regulation and/or NCEES]*.
2. Failure to pass either or both examinations will in no way affect current licensure.

**230.50 Classifications and Disciplines of Engineers and Surveyors**

A. Classification of Engineers

Engineering applicants shall be licensed or certified under one of the classifications as prescribed by the laws of this jurisdiction:

1. Engineer intern—by education and examination
2. Professional engineer—by education, examination, and experience, or by comity
3. Discipline professional engineer—by verification of discipline competence

B. Classification of Surveyors

Surveying applicants shall be licensed or certified under one of the classifications as prescribed by the laws of this jurisdiction.

1. Surveyor intern—by education and/or experience, and examination
2. Professional surveyor—by education, examination, and experience, or by comity (and appropriate jurisdiction-specific examination)

**230.60 Applications**

A. Applications Process

1. All applications made to this board must be completed on the forms prescribed and furnished by the board. Applications for licensure properly executed and issued with verification by NCEES may be accepted in lieu of the same information that is required on the form prescribed and furnished by this board.
2. To allow sufficient time for processing and for securing pencil-and-paper examinations, all applications that may require pencil-and-paper examinations must be filed with this board at least *[insert number]* days before the date set for the appropriate pencil-and-paper examinations.
3. Withholding information or providing statements that are untrue or misrepresent the facts may be cause for denial of an application or revocation of license or certification.
4. It is the responsibility of the applicant to supply correct contact information for all references and to be sure that the references are supplied as requested. If a reference fails to respond, this could delay the processing of an application either until a reply is obtained or another reference is given.
5. In relating experience, the applicant must account for all employment or work experience that has elapsed since the beginning of the employment record. If not employed or employed in other kinds of work, this should be indicated in the experience record.

**B. Applicants with Degrees from Foreign Schools**

1. All foreign language documentation submitted with the completed application must be accompanied by certified translations. The translation report shall be sent directly from the translation service to the board for review.
2. All applicants must be able to communicate in the language of commerce.
3. Applicants who, for political or other valid reasons, are unable to obtain their college transcript shall be processed on a case-by-case basis by the board.
4. The board may require an independent evaluation of the foreign undergraduate education of an applicant who was educated outside the United States.

**C. Reconsideration of Applications**

Reconsideration may be requested of an application that has been denied when the request is based on additional information and/or evidence that could affect the original decision. A reconsideration request or request for a hearing must be made within *[insert number]* days after the applicant has been notified that the decision was made to reject the original application.

**D. Disposition of Applications**

Applications may be approved, deferred for further information (more experience, questionable references, or other reasons), or denied.

1. Approved applications—When an application is approved by the board showing that the applicant has met all the requirements for licensure or certification required by the licensure act, the applicant shall be granted licensure or certification with notification by the board.
2. Deferred applications—Applications deferred for any reason are retained until such date as a proper remedy is presented or until *[insert deadline for responding to board's inquiry]*.
3. Denied applications—When an application is denied by the board, it is kept on file for at least one year before being destroyed.

**E. Licensure by Comity**

1. The board is authorized to review and evaluate the applications of all comity applicants to determine if they meet or exceed the criteria to be licensed as a professional engineer or professional surveyor as defined in Section 130.10 of the *Model Law*.
2. The board administrator is authorized to review and evaluate the applications of all comity applicants to determine if they meet or exceed the criteria of a Model Law Engineer or Model Law Surveyor as set forth in the *NCEES Manual of Policy and Position Statements*. If the applicant meets or exceeds these requirements, the board administrator may issue a contingent license authorizing that individual to offer or provide engineering or surveying services in this jurisdiction. A list of all engineers issued contingent licenses will be placed on the agenda of the next meeting of the board for formal approval by the board. A list of all surveyors who have been issued contingent licenses and who have passed the appropriate jurisdiction-specific examination will be placed on the agenda of the next meeting for formal approval by the board.

**240 LICENSEES**

**240.10 Licensure**

**A. License Number as a Professional Engineer or Professional Surveyor**

Each licensee is assigned a license number at the time licensure is granted by the board. Numbers are issued consecutively in the order in which applicants are granted licensure. The licensee will be advised of the number by the board.

**B. Certificates of Licensure**

The board shall issue a certificate of licensure to an applicant who has met the requirements of this jurisdiction and who has paid the application fee. The information shown on the certificate shall be in accordance with *Model Law 140.10 Certificates of Licensure, Seals*.

**C. Retirement of Licensure Option**

When a licensee in good standing desires to retire his or her license, he or she may do so upon application to the board. Upon meeting the requirements established by the board, a permanent identification card may be issued and the retired licensee shall receive all rights and benefits as established by the board. Upon retirement of said license, the retiree shall not practice the profession.

**D. Reissuance of Certificate**

When a certificate of licensure, certificate of authorization, or enrollment card is lost, destroyed, or mutilated, it will be replaced upon request by a licensee, firm, or intern in good standing who has paid a fee established by the jurisdiction.

**240.15 Rules of Professional Conduct**

To safeguard the health, safety, and welfare of the public and to maintain integrity and high standards of skill and practice in the engineering and surveying professions, the rules of professional conduct provided in this section shall be binding upon every licensee and on all firms authorized to offer or perform engineering or surveying services in this jurisdiction.

**A. Licensee's Obligation to the Public**

1. Licensees shall be cognizant that their first and foremost responsibility is to safeguard the health, safety, and welfare of the public when performing services for clients and employers.
2. Licensees shall sign and seal only those plans, surveys, and other documents that conform to accepted engineering and surveying standards and that safeguard the health, safety, and welfare of the public.
3. Licensees shall notify their employer or client and such other authority as may be appropriate when their professional judgment is overruled when the health, safety, or welfare of the public is endangered.
4. Licensees shall, to the best of their knowledge, include all relevant and pertinent information in an objective and truthful manner within all professional documents, statements, and testimony.
5. Licensees shall express a professional opinion publicly only when it is founded upon an adequate knowledge of the facts and a competent evaluation of the subject matter.
6. Licensees shall issue no statements, criticisms, or arguments on engineering and surveying matters that are inspired or paid for by interested parties, unless they explicitly identify the interested parties on whose behalf they are speaking and reveal any interest they have in the matters.
7. Licensees shall not partner, practice, or offer to practice with any person or firm that they know is engaged in fraudulent or dishonest business or professional practices.
8. Licensees who have knowledge or reason to believe that any person or firm has violated any rules or laws applying to the practice of engineering or surveying shall report it to the board, may report it to appropriate legal authorities, and shall cooperate with the board and those authorities as requested.
9. Licensees shall not knowingly provide false or incomplete information regarding an applicant in obtaining licensure.
10. Licensees shall comply with the licensing laws and rules governing their professional practice in each of the jurisdictions in which they practice.

**B. Licensee's Obligation to Employer and Clients**

1. Licensees shall undertake assignments only when qualified by education or experience in the specific technical fields of engineering or surveying involved.
2. Licensees shall not affix their signatures or seals to any plans or documents dealing with subject matter in which they lack competence, nor to any such plan or document not prepared under their responsible charge.
3. Licensees may accept assignments and assume responsibility for coordination of an entire project if each technical segment is signed and sealed by the licensee responsible for preparation of that technical segment.
4. Licensees shall not reveal facts, data, or information obtained in a professional capacity without the prior consent of the client, employer, or public body on which they serve except as authorized or required by law or rules.
5. Licensees shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties in connection with work for employers or clients.
6. Licensees shall disclose to their employers or clients all known or potential conflicts of interest or other circumstances that could influence or appear to influence their judgment or the quality of their professional service or engagement.
7. Licensees shall not accept compensation, financial or otherwise, from more than one party for services pertaining to the same project, unless the circumstances are fully disclosed and agreed to in writing by all interested parties.
8. Licensees shall not solicit or accept a professional contract from a governmental body on which a principal or officer of their organization serves as a member. Conversely, licensees serving as members, advisors, or employees of a government body or department, who are the principals or employees of a private concern, shall not participate in decisions with respect to professional services offered or provided by said concern to the governmental body that they serve.
9. Licensees shall not use confidential information received in the course of their assignments as a means of making personal profit without the consent of the party from whom the information was obtained.

**C. Licensee's Obligation to Other Licensees**

1. Licensees shall not falsify or permit misrepresentation of their, or their associates', academic or professional qualifications. They shall not misrepresent or exaggerate their degree of responsibility in prior assignments nor the complexity of said assignments. Presentations incidental to the solicitation of employment or business shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, or past accomplishments.
2. Licensees shall not offer, give, solicit, or receive, either directly or indirectly, any commission, or gift, or other valuable consideration in order to secure work, and shall not make any political contribution with the intent to influence the award of a contract by public authority.
3. Licensees shall not injure or attempt to injure, maliciously or falsely, directly or indirectly, the professional reputation, prospects, practice, or employment of other licensees, nor indiscriminately criticize other licensees' work.
4. Licensees shall make a reasonable effort to inform another licensee whose work is believed to contain a material discrepancy, error, or omission that may impact the health, safety, or welfare of the public, unless such reporting is legally prohibited.

#### **240.20 Seal on Documents**

- A. The seal and signature of the licensee and the date of signing shall be placed on all final engineering specifications, reports, drawings, plans, design information, and calculations or surveys, reports, plats, drawings, plans, and calculations whenever presented to a client or any public agency to certify that the work thereon was done by the licensee or under the responsible charge of the licensee. Working drawings or preliminary documents are not required to have a seal and signature if the working drawing or preliminary document contains a statement in large bold letters to the effect "PRELIMINARY, NOT FOR CONSTRUCTION, RECORDING PURPOSES, OR IMPLEMENTATION."
- B. The seal and signature shall be placed on all original copy, tracings, or other reproducible documents so that the seal and signature will be reproduced when copies are made.
- C. When the document contains more than one sheet, the first or title page shall be sealed and signed by the licensee who was in responsible charge. Two or more licensees may affix their signatures and seals provided that a note under the seal designates the specific subject matter for which each is responsible. In addition, each sheet shall be sealed and signed by the licensee or licensees responsible for that sheet. When a firm performs the work, each sheet shall be sealed and signed by the licensee or licensees who were in responsible charge of that sheet.
- D. The seal and signature shall be placed on work only when it was under the licensee's responsible charge. The licensee shall sign and seal only work within the licensee's areas of competence.
- E. Plans, plats, specifications, drawings, reports, and other documents will be deemed to have been prepared under the responsible charge of a licensee only when all the following conditions have been met and documented:
1. The client requesting preparation of such plans, plats, specifications, drawings, reports, or other documents makes the request directly to the licensee, or a member or employee of the licensee's firm;
  2. The licensee supervises the preparation of the plans, plats, specifications, drawings, reports, or other documents and has input into their preparation prior to their completion;
  3. The licensee reviews the final plans, plats, specifications, drawings, reports, or other documents; and
  4. The licensee has the authority to, and does, make any necessary and appropriate changes to the final plans, plats, specifications, drawings, reports, or other documents.
- The licensee is responsible for meeting all of the preceding requirements whether the work is being performed remotely or locally.
- F. Any revision to a document containing the seal and signature of a licensee shall be described and dated. If the revisions are not done by the original licensee, the revisions must also be signed and sealed by the licensee in responsible charge of those revisions.
- G. In circumstances where a licensee in responsible charge of the work is unavailable to complete the work, or the work is a site adaptation of a standard design plan, or the work is a design plan signed and sealed by an out-of-jurisdiction licensee, a successor licensee may take responsible charge by performing all professional services to include developing a complete design file with work or design criteria, calculations, code research, and any necessary and appropriate changes to the work. The non-professional services, such as drafting, need not be redone by the successor licensee but must clearly and accurately reflect the successor licensee's work. The burden is on the successor licensee to show such compliance. The successor licensee shall have control of and responsibility for the work product and the signed and sealed originals of all documents.

H. When a licensee is required to seal and sign engineering/surveying documents, one of the following methods must be used:

1. Physical placement of a seal and a handwritten signature in permanent ink containing the name of the licensee
2. Digital placement of a seal and a handwritten signature in permanent ink containing the name of the licensee
3. Digital placement of a seal and a digital signature containing the name of the licensee

Drawings, reports, and documents that are signed using a digital signature must have an electronic authentication process attached to or logically associated with the electronic document. The digital signature must be

1. Unique to the individual using it
2. Capable of verification
3. Under the sole control of the individual using it
4. Linked to a document in such a manner that the digital signature is invalidated if any data in the document is changed.

A digital signature that uses a process approved by the board will be presumed to meet the criteria set forth in Section H above. Any hard copy printed from the transmitted electronic file shall bear the facsimile of the signature and seal and be a confirmation that the electronic file was not altered after the initial digital signing of the file. Any alterations to the file shall cause the facsimile of the signature to be voided.

#### **240.30 Continuing Professional Competency**

The purpose of the continuing professional competency requirement is to demonstrate a continuing level of competency of licensees.

##### **A. Introduction**

Every licensee shall meet the continuing professional competency requirements of these regulations for professional development as a condition for licensure renewal.

##### **B. Definitions**

Terms used in this section are defined as follows:

1. Professional Development Hour (PDH)—One contact hour (nominal) of instruction or presentation. The PDH is the common denominator for other units of credit.
2. Ethics/Business-Related Course or Activity—A qualifying course or activity with content areas related to (1) the awareness of ethical concerns and conflicts; (2) an enhanced familiarity with the codes of conduct; (3) an understanding of standards of practice or care; (4) project management and risk-assessment management; or (5) other similar topics aimed at maintaining, improving, or expanding the skills set and knowledge relevant to the licensee's field and methods of practice.
3. Continuing Education Unit (CEU)—Unit of credit customarily used for continuing education courses. One continuing education unit equals 10 contact hours in an approved continuing education course.
4. College Semester/Quarter Hour—Credit for course in ABET-accredited programs or other related college course approved in accordance with subsection E of this section.
5. Course/Activity—Any qualifying course or activity with a clear purpose and objective that will maintain, improve, or expand the skills and knowledge relevant to the licensee's field of practice. Regular duties are not considered qualified activities.
6. Dual Licensee—An individual who is licensed as both a professional engineer and a professional surveyor

C. Qualifying Activities

PDHs may be earned as follows:

1. Successful completion of college courses
2. Successful completion of short courses, tutorials, webinars, and distance-education courses offered for self-study, independent study, or group study and through synchronous or asynchronous delivery methods such as live, correspondence, archival, or the Internet
3. Presenting or attending qualifying seminars, in-house courses, workshops, or professional or technical presentations made at meetings, conventions, conferences, or educational institutions
4. Teaching or instructing in 1 through 3 above
5. Authoring published papers, articles, books, or accepted licensing examination items
6. Active participation in professional or technical societies
7. Patents
8. Active participation in educational outreach activities pertaining to professional licensure or the surveying/engineering professions that involve K-12 or higher education students

D. Units

The conversion of other units of credit to PDHs is as follows:

1. 1 semester hour ..... 45 PDHs
2. 1 quarter hour..... 30 PDHs
3. 1 continuing education unit ..... 10 PDHs
4. 1 hour of professional development in coursework, seminars, or professional or technical presentations made at meetings, conventions, or conferences ..... 1 PDH
5. For teaching in 1 through 4 above, apply multiple of 2\*
6. Publications
  - a. Each published peer-reviewed paper or book in the licensee's area of professional practice ..... 10 PDHs
  - b. Each published paper or article (other than 6.a above) in the licensee's area of professional practice ..... 5 PDHs
7. Active participation in professional and technical society (each organization) ..... 2 PDHs
8. Each patent ..... 10 PDHs
9. 1 hour of outreach activities ..... 1 PDH (not to exceed 3 PDHs)

\*Teaching credit is valid only for the first offering or presentation. Full-time faculty may not claim teaching credit associated with their regular duties.

E. Determination of Credit

The board has final authority with respect to approval of courses, credit, PDH value for courses, and other methods of earning credit.

1. Credit for college or community college approved courses will be based upon course credit established by the college.
2. Credit for qualifying seminars and workshops will be based on 1 PDH for each hour of attendance. Attendance at qualifying programs presented at professional and/or technical society meetings will earn PDHs for the actual time of each program.
3. Credit determination for activities in subsections D.6 and D.8 is the responsibility of the licensee (subject to review as required by the board).
4. Credit for activity in subsection D.7, active participation in professional and technical societies (limited to 2 PDHs per organization), requires that a licensee serve as an officer and/or actively participate in a committee of the organization. PDHs are not earned until the end of each year of service is completed.

**F. Recordkeeping**

The licensee is responsible for maintaining records to be used to support credits claimed. Records required include, but are not limited to (1) a log showing the type of activity claimed, sponsoring organization, location, duration, instructor's or speaker's name, and PDHs earned; and (2) attendance verification records in the form of completion certificates or other documents supporting evidence of attendance.

**G. Exemptions**

A licensee may be exempt from the continuing professional competency requirements for one of the following reasons:

1. New licensees by way of examination or comity shall be exempt for their first renewal period.
2. A licensee serving on temporary active duty in the armed forces of the United States for a period of time exceeding 120 consecutive days in a year shall be exempt from obtaining the PDHs required during that renewal period.
3. Licensees experiencing physical disability, illness, or other extenuating circumstances may apply for an exemption or an extension of time to obtain the credits, subject to the review and approval of the board. Supporting documentation must be furnished to the board.
4. Licensees who list their occupation as "Retired" or "Inactive" on the board-approved renewal form and who further certify that they are no longer receiving any remuneration from providing professional engineering or surveying services shall be exempt from the PDHs required.

**H. Reinstatement**

A licensee may bring a retired or inactive license to active status by obtaining all delinquent PDHs. However, if the total number required to become current exceeds 30, then 30 shall be the maximum number required.

**I. Requirements for Renewal**

To renew a license, an applicant must meet either of the following:

1. The requirements of the NCEES *CPC Standard*
2. The requirements of *[insert jurisdiction name]*

**J. Dual Licensees**

The number of PDHs required per year shall be as stated in the NCEES *CPC Standard*. At least one-third of the PDHs shall be obtained in each profession.

**K. Certification**

All renewal applications will require the certification of CPC credits as specified by the board. The licensee must supply sufficient detail and backup documentation with the renewal application, if required, or upon notification of audit.

**240.40 Expirations, Renewals, and Reinstatement to Active Practice**

- A. A renewal notice will be sent annually or as required by this jurisdiction by the board *[insert number of days]* prior to the license expiration date to every individual licensed under the licensure act and to every firm holding a certificate of authorization showing the expiration date of their license or certificate and the amount of the fee for renewal.
- B. The annual *[or insert other amount of time]* renewal fee is established by the board.
- C. Renewal fees must be received by the board prior to the expiration date. Fees received within one month or more after the renewal date will be assessed an additional fee established by the board.
- D. Renewal fees not paid within a period established by the board after the expiration date voids the license or certificate and will require a new application for licensure or certification in order to continue to practice engineering or surveying.

- E. A licensee or firm who supplies the board before the expiration date of his/her/its license/certificate with an affidavit that he/she/it is no longer practicing and will not practice engineering or surveying in this jurisdiction may retain his/her/its license/certificate for later use upon payment of delinquent fees.
- F. The responsibility for the timely renewal of a licensee's license rests solely with the individual licensee. The responsibility for the timely renewal of a firm's certificate rests solely with the firm's managing agent.
- G. The applicant for renewal or reinstatement may be required to demonstrate to the board that he or she has maintained the required minimum level of professional competence in a manner acceptable to the board.

## **250 DISCIPLINARY ACTIONS**

### **250.10 Knowledge of Rules**

All licensees and interns and all firms authorized under the provisions of the licensure act, as well as applicants, are charged with having knowledge of these Rules as well as amendments that are made known in writing to every licensee, intern, firm, and applicant.

### **250.20 Compliance**

Professional surveyors and surveying firms shall comply with the minimum standards codified for surveys in this jurisdiction.

### **250.30 Disciplinary Action Procedures**

#### **A. Summons and Notice of Charges**

1. In the event the investigative committee determines that a probable cause exists, the legal counsel of the board is requested to prepare a summons and notice of charges.
2. The summons and notice of charges shall be personally served or mailed to the last known address of the respondent at least 30 days before the date fixed for hearing.
3. The summons and notice of charges shall show the time, place, and nature of the hearing, a statement of legal authority and jurisdiction under which the hearing is to be held, a reference to the particular section of the licensure act and rules involved, and a short and plain statement of the matters asserted. The notice of the summons and notice of charges shall indicate that at any hearing the respondent shall have the right to appear in person or by counsel or both to cross-examine witnesses in his or her or its defense and to produce evidence and witnesses of his or her or its own defense. If the respondent fails or refuses to appear, the board may proceed to hear and determine the validity of the charges. The notice shall be in substantial compliance with the requirements of the laws of this jurisdiction.

#### **B. Evidentiary Matters**

In contested cases, irrelevant, immaterial, or unduly repetitious evidence shall be excluded. The rules of evidence as applied in civil cases in the court of common pleas shall be followed. The board shall give effect to the rules of privilege recognized by law. Objection to evidentiary offers may be made and shall be noted in the record. Subject to these requirements, any part of the evidence may be received in written form when a hearing will be expedited and the interest of the parties involved will not be prejudiced substantially. Documentary evidence may be received in the form of copies or excerpts if the original is not readily available. Any party may conduct cross-examination. Notice may be taken of judicially cognizable facts. In addition, notice may be taken of generally recognized technical or scientific facts within the board's specialized knowledge. Parties shall be notified either before or

during the hearing or by reference in preliminary reports or otherwise of the material noticed, including any staff memoranda or data, and they shall be afforded an opportunity to contest the material so noticed. The board's experience, technical competence, and specialized knowledge may be utilized in the evaluation of evidence.

**C. Conduct of Hearing**

The conduct of the hearing and evidence submitted shall be as required by the laws of this jurisdiction.

1. At its discretion, the board may appoint an individual [*preferably an attorney or someone familiar with the laws and procedures*] to act as a hearing examiner. The hearing examiner shall preside at the hearing and shall rule on all questions of evidence and procedure.
2. In the event a hearing examiner is not appointed, the chair of the board shall preside over the hearing and shall rule on all questions of evidence and procedure with the advice of the attorney for the board.
3. The proceeding shall follow those used by a civil court in which an opening statement is made by the prosecutor and the respondent. Then evidence is presented by both sides with rebuttals. Witnesses may be examined by the prosecutor and respondent or their attorneys and by members of the board. Redirect, recross, and reexaminations are permitted. Closing statements by both the prosecutor and respondent or their attorneys are permitted.

**D. Record of Hearing**

The record of the hearing of the case shall include

1. All motions, intermediate ruling, and depositions
  2. Evidence received or considered
  3. Statement of matters officially noted
  4. Questions and offers of proof, objections, and rulings thereon
  5. Proposed findings and exceptions
  6. Any decision, opinion, or report by the officer presiding at the hearing
- Oral proceedings or any part thereof shall be transcribed on request of any party.

**250.40 Bias**

No board member shall be entitled to participate in discussion or to vote in any disciplinary action if the board member is personally biased in favor of or against the respondent.

**260 MISCELLANEOUS**

**260.10 Severability**

If any of the rules and regulations, or any part thereof, of this board promulgated under the provisions of the rule-making authority for jurisdiction agencies, are found by the courts to be invalid for any reason, it is the intention of the board that the remainder shall continue in full force and effect or it is the intention of the board that each rule and/or any portions thereof are severable.

**APPENDIX A**

**Suggested Guidelines for Evaluating Progressive Engineering Experience**

The following is a partial list of work experiences that may be useful in guiding, mentoring, and verifying acceptable experience of engineer interns and/or intern applicants. There are no correct answers to the following questions. The profile of each applicant will provide the board a basis for more specific questions.

**Practical Application of Theory**

1. **Analysis:** Of operating conditions; performance assessment; feasibility studies; constructability; value engineering; safety; environmental issues; economic issues; risk assessment; reliability; other *[list]*:  

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2. **Design:** Construction plan or specification preparation; product specifications; component selection; maintenance and social implications of final product; other *[list]*:  

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3. **Testing:** Developing or specifying testing procedures; verifying functional specifications; implementing quality control and assurance; maintenance and replacement evaluation; other *[list]*:  

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4. **Implementation:** Of engineering principles in design, construction, or research; performance of engineering cost studies; process flow and time studies; implementation of quality control and assurance; safety issues; and environmental issues; other *[list]*:  

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5. **Systems Application:** Evaluation of components of a larger system; evaluation of the reliability of system parts; design and evaluation of equipment control systems while considering ergonomics, utility, manufacturing tolerances, and operating and maintenance concerns; the engineering required to establish programs and procedures for the maintenance and management of buildings, bridges, and other types of structures where failure or improper operation would endanger the health, safety, or welfare of the public; other *[list]*:  

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6. **Time in the Engineering Process:** Difficulties of workflow; scheduling; equipment life; corrosion rates and replacement scheduling; other *[list]*:  

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7. **Knowledge and Understanding:** Codes, standards, regulations and laws that govern applicable activities; other *[list]*:  

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**Management**

Management in engineering works includes supervising staff, managing engineering projects, and managing and administering technology as it is applied in the field or in construction. It may involve:

- 1. Planning: Developing concepts, evaluating alternative methods \_\_\_\_\_
- 2. Scheduling: Preparing task breakdowns and schedules \_\_\_\_\_
- 3. Budgeting and Contracting: Cost estimating and control, contract development \_\_\_\_\_
- 4. Supervising: Organizing human resources, motivating teams, directing and coordinating project resources \_\_\_\_\_
- 5. Project Control: Complete or partial project control \_\_\_\_\_
- 6. Risk Assessment: Assessment of risk associated with the progression of the project \_\_\_\_\_

**Communication Skills**

- 1. Accumulates project knowledge through interpersonal communication with supervisors, clients, subordinates, or team interaction \_\_\_\_\_
- 2. Transmits project knowledge in verbal or written methods to clients, supervisors, subordinates, general public, or team members. Examples would be via meetings, written reports, public hearings and reporting of findings and suggestions, other written correspondence and/or verbal briefings. \_\_\_\_\_

**Social Implications**

- 1. Promotes and safeguards the health, safety, and welfare of the public as demonstrated in daily work activities \_\_\_\_\_
- 2. Demonstrates an awareness of the consequences the work performed may incur and a desire to mitigate or eliminate any potential negative impact \_\_\_\_\_
- 3. Follows a code of ethics that promotes a high degree of integrity in the practice of professional engineering \_\_\_\_\_

**APPENDIX B**  
**Suggested Guidelines for Evaluating Progressive Surveying Experience**

The following is a partial list of work experiences that may be useful in guiding, mentoring, and verifying acceptable experience of surveyor interns and intern applicants. There are no correct answers to the following questions. The profile of each applicant will provide the board a basis for more specific questions.

**Practical Application of Theory**

1. **Research:** Easements; rights-of-way; plats; instruments of conveyance; corner information; government survey information; other pertinent surveys; other *[list]*:  

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2. **Measurement/Location:** Field measurements of topography and features; measurements to locate particular boundaries, parcels or points; level loops; GPS measurements; construction staking; other *[list]*:  

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3. **Computation/Analysis:** Traverse closure and adjustment; boundary interpretations; section computations; coordinate translations; coordinate calculations; survey accuracy; vertical curves; horizontal curves; other *[list]*:  

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4. **Legal Principles:** Legal description preparation and interpretation; corner filings; boundary determination; section corner opinions; adverse possession; easement and right-of-way preparation; other *[list]*:  

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5. **Land Planning:** Platting; zoning issues; subdivision regulations and layout; utility coordination; on-site wastewater systems and regulations; permits; other *[list]*:  

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6. **Time in the Surveying Process:** Difficulties of workflow; scheduling; equipment adjustments; construction staking coordination; other *[list]*:  

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7. **Knowledge and Understanding:** Codes, standards, regulations, and laws that govern applicable activities; other *[list]*:  

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**Management**

Management in surveying includes supervising staff, managing surveying projects, and managing and administering technology as it is applied in surveying. It may involve:

- 1. Planning: Developing concepts, planning surveying projects, evaluating alternative methods \_\_\_\_\_
- 2. Scheduling: Preparing task breakdowns and schedules \_\_\_\_\_
- 3. Budgeting and Contracting: Cost estimating and control, contract development \_\_\_\_\_
- 4. Supervising: Organizing human resources, motivating teams, directing and coordinating equipment \_\_\_\_\_
- 5. Project Control: Complete or partial project control by using and developing control tools such as network plans and Gantt charts \_\_\_\_\_
- 6. Risk Assessment: Assessment of risk associated with the progression of the project using surveying analysis and quantification methods to determine degree of risk of known hazards in proposed designs \_\_\_\_\_

**Communication Skills**

- 1. Accumulates project knowledge through interpersonal communication with supervisors, subordinates, clients, regulators, other surveyors or team interaction \_\_\_\_\_
- 2. Transmits project knowledge in verbal or written methods to clients, regulators, supervisors, subordinates, general public, or team members. Examples would be via meetings, written reports, other written correspondence and/or verbal briefings. \_\_\_\_\_

**Social Implications**

- 1. Promotes and safeguards the health, safety, and welfare of the public as demonstrated in daily work activities \_\_\_\_\_
- 2. Demonstrates an awareness of the consequences the work performed may incur and a desire to mitigate or eliminate any potential negative impact \_\_\_\_\_
- 3. Follows a code of ethics that promotes a high degree of integrity in the practice of professional surveying \_\_\_\_\_

**APPENDIX C**

**Index for *Model Rules* with General Cross-Reference to *Model Law***

The following table is for reference only and is not intended to be all-inclusive or adopted into board law/rules. *Italic font* indicates summary paraphrase of paragraph contents.

<i>Model Rules</i> Section	Descriptor	Corresponding <i>Model Law</i> Section
<b>SECTION 210</b>	<b>INTRODUCTION</b>	
<b>Section 210.10</b>	<b>Introduction</b>	
<b>Section 210.20</b>	<b>Definitions</b>	
210.20 A	<i>Model Law definitions</i>	110.20
210.25	Inclusions and Exclusions to the Practice of Surveying	110.20 B.4
210.25 A	Activities Included within the Practice of Surveying	110.20 B.4
210.25 B	Activities Excluded from the Practice of Surveying	110.20 B.4
210.30	Offering to Practice Engineering and Surveying	
<b>SECTION 220</b>	<b>THE LICENSING BOARD</b>	
<b>Section 220.10</b>	<b>Board Operations</b>	
220.10 A	Meetings	120.50
220.10 B	Voting	
220.10 C	Rules of Order	
220.10 D	Use of Forms	130.20 A
220.10 E	Roster	120.90
<b>Section 220.20</b>	<b>Adoption and Amendment of Rules and Regulations</b>	120.60 A
<b>Section 220.30</b>	<b>Fees</b>	
220.30 A	Application Fees	130.20 B, C; 160.40 B, C
220.30 B	Examination Fees	
220.30 C	Roster	
220.30 D	Renewal Fees	140.20, 160.50
220.30 E	Duplicate Certificate Fees	140.30, 160.60
<b>SECTION 230</b>	<b>CANDIDATES FOR LICENSURE</b>	
<b>Section 230.10</b>	<b>Education Requirements Approved by the Board</b>	
230.10 A	Engineering Program	130.10
230.10 B	Surveying Program	130.10
<b>Section 230.20</b>	<b>Experience</b>	
230.20 A	As a Professional Engineer	130.10 B
230.20 B	As a Professional Surveyor	130.10 C
<b>Section 230.30</b>	<b>References</b>	
230.30 A	<i>Applicant submits five references (three P.E./P.S.); references should have personal knowledge of applicant's experience</i>	130.10 A
230.30 B	<i>No relatives as references</i>	
230.30 C	<i>No current board member as a reference</i>	
230.30 D	<i>Applicant should inform individuals used as references that the references will be asked to complete and return a form</i>	
230.30 E	<i>Applicant has responsibility to ensure board receives reference forms; board may take action only when all references materials are complete</i>	
230.30 F	<i>Confidentiality of reference replies</i>	
<b>Section 230.40</b>	<b>Examinations</b>	
230.40 A	Classification of Engineering Examinations	130.30
230.40 B	Eligibility of Applicant for Engineering Examinations	130.10 B
230.40 C	Classification of Surveying Examinations	130.30

<b>Model Rules Section</b>	<b>Descriptor</b>	<b>Corresponding Model Law Section</b>
230.40 D	Eligibility of Applicant for Surveying Examinations	130.10 C
230.40 E	Examination Dates and Locations	130.30 A
230.40 F	Language of the Examination	
230.40 G	Exam Preparation Material	130.30 D
230.40 H	Instructions for Examinees	
230.40 I	Pencil-and-Paper Examination Offerings	
230.40 J	Computer-Based Examination Offerings	
230.40 K	Examination Results	
230.40 L	Review of Examinations	
230.40 M	Examination for Record Purposes	
<b>Section 230.50</b>	<b>Classifications and Disciplines of Engineers and Surveyors</b>	
230.50 A	Classification of Engineers <i>(E.I., P.E., discipline professional engineer)</i>	130.10 B
230.50 B	Classification of Surveyors <i>(S.I., P.S.)</i>	130.10 C
<b>Section 230.60</b>	<b>Applications</b>	
230.60 A	Application Process	130.20 A
230.60 B	Applicants with Degrees from Foreign Schools	
230.60 C	Reconsideration of Applications	
230.60 D	Disposition of Applications	
230.60 E	Licensure by Comity	130.10 B, C
<b>SECTION 240</b>	<b>LICENSEES</b>	
<b>Section 240.10</b>	<b>Licensure</b>	
240.10 A	License Number as a Professional Engineer or Professional Surveyor	140.10 B
240.10 B	Certificates of Licensure	140.10 B, C
240.10 C	Retirement of Licensure Option	110.20 A.3, B.2
240.10 D	Reissuance of Certificate	140.30, 160.60
<b>Section 240.15</b>	<b>Rules of Professional Conduct</b>	
240.15 A	Licensee's Obligation to the Public	150
240.15 B	Licensee's Obligation to Employer and Clients	150
240.15 C	Licensee's Obligation to Other Licensees	150
<b>Section 240.20</b>	<b>Seal on Documents</b>	
<b>Section 240.30</b>	<b>Continuing Professional Competency</b>	120.60 E, 140.20 B
240.30 A	Introduction	
240.30 B	Definitions	
240.30 C	Qualifying Activities	
240.30 D	Units	
240.30 E	Determination of Credit	
240.30 F	Recordkeeping	
240.30 G	Exemptions	
240.30 H	Reinstatement	
240.30 I	Requirements for Renewal	
240.30 J	Dual Licensees	
240.30 K	Certification	

<i>Model Rules Section</i>	<i>Descriptor</i>	<i>Corresponding Model Law Section</i>
<b>Section 240.40</b>	<b>Expirations, Renewals, and Reinstatement to Active Practice</b>	
240.40 A	<i>Renewal notice sent annually or as required by the board</i>	140.20, 160.50
240.40 B	<i>Renewal fee established by the board</i>	140.20, 160.50
240.40 C	<i>Board must receive renewal fees before expiration date; late fees assessed an additional fee</i>	
240.40 D	<i>Unpaid renewal fees void license or certificate and require new application for licensure or certification to continue practicing</i>	
240.40 E	<i>Licensee or firm who notifies board before expiration that they are no longer practicing may retain license/certificate for later use upon payment of fees</i>	
240.40 F	<i>Licensees solely responsible for timely renewal of their license and firm's managing agent solely responsible for timely renewal of firm's certificate</i>	
240.40 G	<i>Applicants for renewal or reinstatement may be asked to demonstrate they have maintained the required minimum level of professional competence</i>	
240.40 H	<i>Licensees who do not maintain active status in any jurisdiction for three years preceding requested date of reinstatement must take the PE and PS and jurisdiction-specific exams before reinstatement</i>	
<b>SECTION 250</b>	<b>DISCIPLINARY ACTIONS</b>	
<b>Section 250.10</b>	<b>Knowledge of Rules</b>	
<b>Section 250.20</b>	<b>Compliance</b>	
<b>Section 250.30</b>	<b>Disciplinary Action Procedures</b>	
250.30 A	Summons and Notice of Charges	120.60 B, 150.20 D, 160.80 D
250.30 B	Evidentiary Matters	
250.30 C	Conduct of Hearing	
250.30 D	Record of Hearing	
<b>Section 250.40</b>	<b>Bias</b>	
<b>SECTION 260</b>	<b>MISCELLANEOUS</b>	
<b>Section 260.10</b>	<b>Severability</b>	

**APPENDIX D****References to Internal Sections in *Model Law***

The following table is to be used for general representative, informational purposes only.

<b><i>Model Rule Citation</i></b>	<b><i>Model Law Citation Referenced within Citations in Column 1</i></b>
210.20	110.20
220.30 A.1	130.20 B
220.30 A.2	130.20 B
220.30 A.3	160.40 B
220.30 A.4	130.20 C, 160.40 C
230.10 A	130.10 B.1.a
230.10 B.1	130.10 C.1 a
230.10 B.2	130.10 C.1.b
230.10 B.3	130.10 C.1.c
230.20 A.2	130.10 B 2.a(1)
240.10 B	140.10

## APPENDIX E NCEES Publications

Publications available on [ncees.org](http://ncees.org) in the About NCEES section

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- The NCEES **annual report** highlights the Council's leadership, mission, initiatives, and financial activities. An interactive version of the annual report is available at [ncees.org/annualreport](http://ncees.org/annualreport).
- The NCEES **Bylaws** outlines the structure of the Council.
- The **Continuing Professional Competency Guidelines** provides best practices for state licensing boards that have CPC requirements for licensees.
- NCEES uses its “**Criteria for Evaluating the Administration of NCEES Examinations at Non-U.S. Sites**” when assessing whether or not to administer its exams in other countries.
- The **History of the National Council of Examiners for Engineering and Surveying, 1920–2004** provides an in-depth history of U.S. licensure and NCEES. A more recent short history of the Council is also available.
- **Licensure Exchange** is the NCEES bimonthly newsletter for the exchange of information, opinions, and ideas regarding the licensure of engineers and surveyors.
- The **Manual of Policy and Position Statements** describes Council administrative, examination, financial, and professional policies as well as the official NCEES position on licensure issues.
- The **Model Law** reflects best practices as determined by the NCEES member boards. It is a model for state practice legislation.
- The **Model Rules** provides licensure boards with guidelines for engineering and surveying licensing laws and ethics.
- When it conducts a credentials evaluation, NCEES compares the candidate's college-level education against the NCEES **Engineering Education Standard** or the NCEES **Surveying Education Standard**. These standards reflect generally agreed-upon educational qualifications for entering the profession.
- NCEES **Squared** is the official NCEES source for engineering and surveying licensure statistics.
- The NCEES white paper “**Using the FE Exam as an Outcomes Assessment Tool**” describes in detail how engineering departments can use the FE exam to assess program outcomes.

Additional publications available on MyNCEES (Member Resources portion of the NCEES website)

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- Annual meeting *Action Items and Conference Reports*
- NCEES board of directors minutes
- *Investigation and Enforcement Guidelines*
- *Investigative Training Manual*
- Zone minutes
- *Zone Meeting and Continuity Guidelines*

## APPENDIX F

### Model Language for Member Boards that License Structural Engineers

*Model Rules 230.40* provides model language for classification of engineering exams and eligibility of applicants for engineering exams, and *Model Rules 230.60 A* provides language for types of applications. The language highlighted in gray below is being provided in this appendix to the *Model Rules* so that boards that also license structural engineers will have model language for structural engineering. Adopting similar language can help with licensure mobility among the boards that license structural engineers. The language highlighted in gray below is provided for those boards. The language that is not highlighted in gray is currently in *Model Rules 230.40* and *230.60 A* for professional engineers and is provided as a reference for where to insert the structural engineering-related language in the *Model Rules*.

#### Model Language to Use for Structural Engineering Licensure

##### 230.40 Examinations

###### A. Classification of Engineering Examinations

This jurisdiction or its designee will provide the following examinations, prepared and furnished by NCEES, meeting the requirements of this jurisdiction for licensure.

1. NCEES Fundamentals of Engineering (FE) examination—The examination consists of subject matters in the fundamentals of engineering. Passing this examination qualifies the examinee for certification as an engineer intern, provided the examinee has met all other requirements for certification required by these Rules.
2. NCEES Principles and Practice of Engineering (PE) examination—The examination consists of subject matters in applied engineering. Passing this examination qualifies the examinee for licensure as a professional engineer, provided the examinee has met the other requirements for licensure required by these Rules.
3. NCEES Structural Engineering (SE) examination—The examination shall be considered and referred to as one 16-hour examination. The SE examination consists of two 8-hour components: the Vertical Forces (gravity/other) and Incidental Lateral component and the Lateral Forces (wind/earthquake) component. A candidate must receive acceptable results on both 8-hour components to pass the SE examination. A candidate may sit for each component in separate exam administrations but must receive acceptable results on both components within a 5-year period. Receiving acceptable results on only one 8-hour component shall not be sufficient for licensure purposes. Passing this examination qualifies the examinee for licensure as a professional structural engineer, provided the examinee has met the other requirements for licensure required by these Rules.

###### B. Eligibility of Applicant for Engineering Examinations

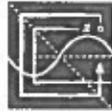
1. NCEES Fundamentals of Engineering (FE) Examination
  - a. Individuals who are in the final year of a program leading to a bachelor's degree in engineering may register with NCEES directly to take the FE examination or, if required, apply to the board for admission to the FE examination.
  - b. To be certified as an engineer intern, an application for certification may be submitted to the board upon passing the FE examination and meeting the education requirements.
2. NCEES Principles and Practice of Engineering (PE) Examination
  - a. Applicants for licensure as a professional engineer will be permitted to sit for the PE examination upon satisfactorily fulfilling all application requirements of the jurisdiction.
  - b. No applicant may sit for the PE examination until the board has established that the applicant is eligible for the examination.
  - c. Engineering doctorate degree applicants with an undergraduate degree from a program accredited by the Engineering Accreditation Commission of ABET (EAC/ABET) and with a doctorate degree in engineering from an institution that offers EAC/ABET-accredited undergraduate programs in the doctorate degree field of engineering and with experience that meets the qualifications defined by the board may sit for the PE examination without having taken or passed the FE examination.

3. NCEES Structural Engineering (SE) Examination
  - a. Applicants for licensure as a professional structural engineer will be permitted to sit for the SE examination upon satisfactorily fulfilling all application requirements of the jurisdiction.
  - b. No applicant may sit for the SE examination until the board has established that the applicant is eligible for the examination.
  - c. Engineering doctorate degree applicants with an undergraduate degree from a program accredited by the Engineering Accreditation Commission of ABET (EAC/ABET) and with a doctorate degree in engineering from an institution that offers EAC/ABET-accredited undergraduate programs in the doctorate degree field of engineering and with experience that meets the qualifications defined by the board may sit for the SE examination without having taken or passed the FE examination.

#### 230.60 Applications

##### E. Licensure by Comity

1. The board is authorized to review and evaluate the applications of all comity applicants to determine if they meet or exceed the criteria to be licensed as a professional engineer, professional structural engineer, or professional surveyor as defined in Section 130.10 of the *Model Law*.
2. The board administrator is authorized to review and evaluate the applications of all comity applicants to determine if they meet or exceed the criteria of a Model Law Engineer, Model Law Structural Engineer, or Model Law Surveyor as set forth in the *NCEES Manual of Policy and Position Statements*. If the applicant meets or exceeds these requirements, the board administrator may issue a contingent license authorizing that individual to offer or provide engineering or surveying services in this jurisdiction. A list of all engineers issued contingent licenses will be placed on the agenda of the next meeting of the board for formal approval by the board. A list of all surveyors who have been issued contingent licenses and who have passed the appropriate jurisdiction-specific examination will be placed on the agenda of the next meeting for formal approval by the board.



**NCEES**

*advancing licensure for  
engineers and surveyors*

P.O. Box 1686, Clemson, S.C. 29633  
[ncees.org](http://ncees.org)

CDL-1

FACE SHEET  
FOR FILING DOCUMENTS  
WITH THE LEGISLATIVE REFERENCE BUREAU  
(Pursuant to Commonwealth Documents Law)

RECEIVED  
AUG 11 2020  
Independent Regulatory  
Review Commission

DO NOT WRITE IN THIS SPACE

<p>Copy below is hereby approved as to form and legality. Attorney General</p> <p>BY: <u><i>Angela M. Elwell</i></u> (DEPUTY ATTORNEY GENERAL)</p> <p><u>4/9/2020</u> DATE OF APPROVAL</p> <p><input type="checkbox"/> Check if applicable Copy not approved. Objections attached.</p>	<p>Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by:</p> <p><u>State Registration Board for Professional Engineers, Land Surveyors and Geologists</u> (AGENCY)</p> <p>DOCUMENT/FISCAL NOTE NO. <u>16A-4712</u></p> <p>DATE OF ADOPTION: <u>January 8, 2020</u></p> <p>BY: <u><i>Francis J. Stanton, Jr., PE</i></u></p> <p>TITLE <u>President</u> (EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)</p>	<p>Copy below is hereby approved as to form and legality. Executive or Independent Agencies.</p> <p>BY: <u><i>Marisa H. Z. Lehr</i></u></p> <p><u>MAR 13 2020</u> DATE OF APPROVAL</p> <p>(Chief Counsel; Independent Agency Deputy General Counsel) (Strike inapplicable title)</p> <p><input type="checkbox"/> Check if applicable. No Attorney General approval or objection within 30 days after submission.</p>
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PROPOSED RULEMAKING

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF STATE  
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS  
STATE REGISTRATION BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS AND GEOLOGISTS

49 Pa. Code Ch. 37  
§§ 37.57—37.60

DIGITAL SEAL AND SIGNATURE

The State Registration Board for Professional Engineers, Land Surveyors and Geologists (Board) proposes to add § 37.56a (relating to definitions), amend §§ 37.57-37.59 and add § 37.60 (relating to digital signature and seal) to read as set forth in Annex A.

*Effective Date*

The proposed amendments would become effective upon publication of the final-form rulemaking in the *Pennsylvania Bulletin*.

*Statutory Authority*

Subsection 4(l) of the Engineer, Land Surveyor and Geologist Registration Law (act) (63 P.S. § 151(l)) authorizes the Board to promulgate regulations, not inconsistent with the act, that it deems necessary and proper to carry into effect the powers conferred by the act.

*Background and Need for the Rulemaking*

Subsection 7(a) of the act (63 P.S. § 154(a)) requires each licensee to obtain a seal of a design authorized by the Board and to stamp all work product issued by the licensee with that seal. The Board has promulgated §§ 37.58 and 37.59 (relating to seal; use of seal) to set standards for licensee use of the seal, including the requirement at § 37.59(2) that the licensee also sign the document. However, these regulations were developed when the seal was applied via a metal embosser or a rubber stamp; they did not contemplate that a seal or signature could be placed digitally through the personal use of computer technology by placing an image of the seal or signature on a document and did not contemplate that a document could be signed digitally other than by placing an image of the signature on the document. With such technology now available, the National Council of Examiners in Engineering and Surveying (NCEES), the national organization of engineering and land surveying licensing boards, has addressed its use in paragraph H of section 240.20 (relating to seals) of its Model Rules (<https://ncees.org/wp-content/uploads/ModelRules-2018.pdf>). Additionally, the Uniform Electronic Transactions Act (UETA) has been adopted by many states, including Pennsylvania. In Pennsylvania, UETA was enacted as the Electronic Transactions Act (73 P.S. §§ 2260.101—2260.5101). The Board has adopted definitions and provisions consistent with the Electronic Transactions Act for these regulations. Other state agencies must comply with the Pennsylvania Electronic Transactions Act under 73 P.S. § 2260.303(a) in that they may not deny the legal effect or enforceability of a seal solely because it is in electronic form.

The proposed regulation will allow licensees to use digital signatures and seals to increase electronic commerce and electronic communications, increase electronic filing of documents, help establish uniformity of rules and standards regarding the authentication and integrity of electronic records and promote public confidence in the integrity and reliability of electronic records. The Board believes that it is appropriate to amend its regulations to make it clear that licensees are permitted to take advantage of this technology and to set standards for its use.

### *Description of Proposed Amendments*

This rulemaking would add § 37.56a to provide definitions for the newly-used terms “digital seal,” “digital signature,” “electronic,” “sole control” and “verification,” as well as a definition for “handwritten signature” so as to differentiate this from digital signature. The definitions of these terms are consistent with the same terms as defined by other northeastern states’ professional licensure regulatory bodies, the Uniform Electronic Transactions Act, the Electronic Transactions Act, the Digital Signature and Electronic Authentication Law and the Electronic Signatures in Global and National Commerce Act. The profession makes a distinction between electronic versus digital signatures. An electronic signature may include scanned images of handwritten signatures or typed notations such as “/s/ Jane Doe” without any authentication or encryption system included. Consistent with NCEES Model Rules, the Board proposes digital signatures and seals because the digital approach more properly describes a system applied to an electronic document that uses specific technical processes to provide significant added signer authentication, document authentication, document encryption (if necessary) and efficiency.

This rulemaking would amend existing § 37.57 for clarification that the registrant will be assigned a unique registration number upon their application being approved by the Board, not upon simply applying with the Board. This amendment is necessary in that there may be certain circumstances where an applicant will apply for licensure and be provisionally denied for various reasons. An application must be approved before the registration number is assigned.

This rulemaking proposes to amend existing § 37.58(b) for clarification that the seal must also include a reference to the Commonwealth of Pennsylvania. The amendment aligns the section with the visual depictions of the seals as provided in § 37.58(a).

Additionally, the rulemaking would amend existing § 37.59 to add “or digital” in paragraph (2) in order to clarify that both facsimile or digital seals must appear on all subsequent pages of the final documents; and add paragraph (7) requiring that a licensee must (i) physically place the seal and handwritten signature in ink, (ii) digitally place the seal and handwrite the signature in ink, or (iii) digitally place the seal and a digital signature.

Finally, the rulemaking would add § 37.60, which provides the heart of the regulation by requiring – as does the Model Rule – that documents signed using a digital signature and seal must have an electronic authentication process attached to or logically associated with the document and that this signature and seal must be unique to the licensee, capable of verification, under the sole control of the licensee, and linked to the document in such a manner that the digital signature and seal are invalidated if any data in the document is changed. Subsection (c) adopts language from the Model Rule 240.20 by requiring that any hard copy printed from the transmitted document file must bear the digital facsimile of the signature and seal and be a confirmation that the electronic file was not altered after the initial signing of the file and that any alterations will cause the signature to be voided.

### *Fiscal Impact and Paperwork Requirements*

Because the use of digital signatures and seals are voluntary rather than mandatory, the rulemaking would not have a fiscal impact on, or create additional paperwork for, the regulated community, the general public, or the Commonwealth and its political subdivisions.

*Sunset Date*

The Board continuously monitors the effectiveness of its regulations. Therefore, no sunset date has been assigned.

*Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on August 11, 2020, the Board submitted a copy of this proposed rulemaking and a copy of a Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and to the Chairpersons of the Senate Consumer Protection and Professional Licensure Committee and the House Professional Licensure Committee. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections shall specify the regulatory review criteria which have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking, by the Board, the General Assembly and the Governor of comments, recommendations or objections raised.

*Public Comment*

Interested persons are invited to submit written comments, suggestions or objections regarding this proposed rulemaking to Regulatory Counsel, State Registration Board for Professional Engineers, Land Surveyors and Geologists, by mail at P.O. Box 69523, Harrisburg, PA 17106-5923 or by email at [RA-STRegulatoryCounsel@pa.gov](mailto:RA-STRegulatoryCounsel@pa.gov) within 30 days following publication of this proposed rulemaking in the *Pennsylvania Bulletin*. Please reference No. 16A-4712 (Digital Signature and Seal), when submitting comments.

Francis J. Stanton, Jr., PE  
President  
State Registration Board for Professional Engineers,  
Land Surveyors and Geologists

**ANNEX A**

**TITLE 49. PROFESSIONAL AND VOCATIONAL STANDARDS**

**PART 1. DEPARTMENT OF STATE**

**Subpart A. PROFESSIONAL AND OCCUPATIONAL AFFAIRS**

**CHAPTER 37. STATE REGISTRATION BOARD FOR PROFESSIONAL**

**ENGINEERS, LAND SURVEYORS AND GEOLOGISTS**

\* \* \* \* \*

**REGISTRATION NUMBER AND SEAL**

**§ 37.56a. Definitions.**

The following words and terms, when used in this section and §§ 37.59 and 37.60, have the following meanings, unless the context clearly indicates otherwise:

*Digital seal*— An electronic sound, symbol or process attached to or logically associated with a document and executed or adopted by a person with the intent to seal the document.

*Digital signature*—An electronic sound, symbol or process attached to or logically associated with a document and executed or adopted by a person with the intent to sign the document.

*Electronic*—Relating to technology having electrical, digital, magnetic, wireless, optical, electromagnetic or similar capabilities.

*Handwritten signature*—The scripted name or legal mark of an individual, written by that individual and executed or adopted with the present intention to authenticate a writing in a permanent form.

*Sole control*—A situation in which only the registrant decides when and where the seal is

applied.

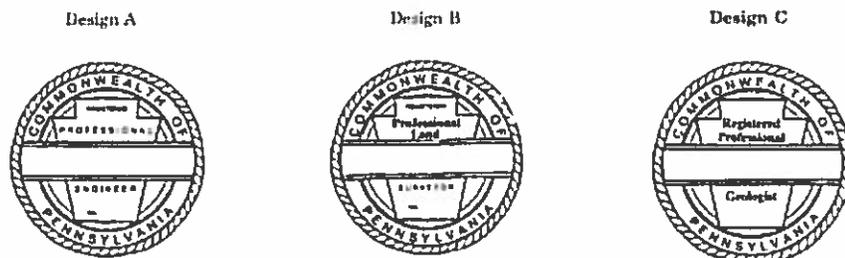
Verification—Confirmation that a signature is actually from the registrant whose name and registration number appears on the document.

**§ 37.57. Registration number.**

Upon [registering with] approval of an application for registration by the Board, each registrant will be assigned a unique registration number.

**§ 37.58. Seal.**

(a) A registrant shall obtain, at the registrant's own expense, a seal in the design authorized by the Board. The following are Board authorized seals for "Registered Professional Engineer" (Design A), "Registered Professional Land Surveyor" (Design B), and "Registered Professional Geologist (Design C):



(b) The seal shall contain the legend "Registered Professional Engineer," "Registered Professional Land Surveyor," or "Registered Professional Geologist" and the registrant's name and registration number together with a reference to the Commonwealth of Pennsylvania.

(c) The seal shall be 1 ¼ inch in diameter. The diameter of a pocket seal may be reduced to 1 ½ inch if the design is in the same relative proportions in subsection (a).

(d) A registrant may use a rubber stamp or computer image which is a facsimile of the seal, if the registrant first obtains a seal in accordance with this section.

**§ 37.59. Use of seal.**

The following rules govern the proper use of a registrant's seal:

(1) A registrant may use [his] the registrant's seal and signature only when the work being sealed and signed was prepared by the registrant or under the registrant's complete direction and control.

(2) When a registrant issues final or complete documents to a client for the client's records, or when a registrant submits final or complete documents to public or governmental agencies for final review, the seal and signature of the registrant who prepared or who directed and controlled the preparation of the documents, along with the date of issuance, shall be prominently displayed on the first page of all documents. Facsimile or digital seals shall appear on all subsequent pages of plans or plats.

(3) When multiple registrants prepare or direct and control the preparation of documents, each registrant's seal and signature shall appear on the first page of the documents, or on the first page of the identifiable portion or section of the documents, which were prepared or directed and controlled by that registrant, if the respective registrants' direction and control can be reasonably segregated.

(4) When a registrant's signature is applied, it shall be applied near or across the seal, but not in a location that obliterates the registration number.

(5) A registrant may not affix or permit a seal and signature to be applied to a document after the expiration of the registrant's licensure status, or for the purpose of aiding or abetting another person to evade or attempt to evade a provision of the act or this chapter.

(6) In the case of a temporary permit issued to an engineering, land surveying

or geology registrant of another state, the registrant shall use the seal of the registrant's home state and shall affix his signature and a copy of the temporary permit to work performed in this Commonwealth.

(7) When a registrant seals and signs engineering, surveying or geology documents, one of the following methods must be used:

(i) Physical placement of a seal and a handwritten signature in permanent ink containing the name of the registrant.

(ii) Digital placement of a seal and a handwritten signature in permanent ink containing the name of the registrant.

(iii) Digital placement of a seal and a digital signature containing the name of the registrant.

**§ 37.60. Digital signature and seal.**

(a) Drawings, reports, and documents that are signed using a digital signature must have an electronic authentication process attached to or logically associated with the electronic document. The digital signature must be:

(1) Unique to the registrant.

(2) Capable of verification.

(3) Under the sole control of the registrant.

(4) Linked to a document in such a manner that the digital signature is invalidated if any data in the document is changed.

(b) Drawings, reports, and documents that are sealed with a digital seal must have an electronic authentication process attached to or logically associated with the electronic document.

The digital seal must be:

(1) Unique to the licensee.

(2) Capable of verification.

(3) Under the sole control of the licensee.

(4) Linked to a document in such a manner that the digital seal is invalidated if

any data in the document is changed.

(c) Any hard copy printed from the transmitted electronic file shall bear the facsimile of the signature and seal and be a confirmation that the electronic file was not altered after the initial digital signing of the file. Any alterations to the file shall cause the signature to be voided.

\* \* \* \* \*



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF STATE  
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS  
STATE REGISTRATION BOARD OF PROFESSIONAL ENGINEERS,  
LAND SURVEYORS AND GEOLOGISTS

Post Office Box 2649  
Harrisburg, Pennsylvania 17105-2649  
(717) 783-7049

August 11, 2020

The Honorable George D. Bedwick, Chairman  
INDEPENDENT REGULATORY REVIEW COMMISSION  
14<sup>th</sup> Floor, Harristown 2, 333 Market Street  
Harrisburg, Pennsylvania 17101

Re: Proposed Regulation  
STATE REGISTRATION BOARD OF PROFESSIONAL ENGINEERS, LAND  
SURVEYORS AND GEOLOGISTS  
16A-4712: DIGITAL SIGNATURE AND SEAL

Dear Chairman Bedwick:

Enclosed is a copy of a proposed rulemaking package of the State Registration Board of Professional Engineers, Land Surveyors and Geologists pertaining to 16A-4712: Digital Signature and Seal.

The Board will be pleased to provide whatever information the Commission may require during the course of its review of the rulemaking.

Sincerely,

  
Francis J. Staton, Jr., PE, President  
State Registration Board of Professional Engineers,  
Land Surveyors and Geologists

DBM/CWF:aaw  
Enclosure

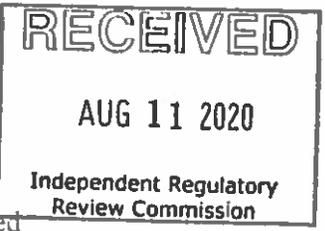
cc: K. Kalonji Johnson, Acting Commissioner of Professional and Occupational Affairs  
Sari Stevens, Executive Deputy Secretary, Department of State  
Marc Farrell, Deputy Director of Policy, Department of State  
Cynthia Montgomery, Deputy Chief Counsel, Department of State  
C. William Fritz, Counsel, State Registration Board of Professional Engineers, Land  
Surveyors and Geologists  
Jacqueline A. Wolfgang, Regulatory Unit Counsel, Department of State  
State Registration Board of Professional Engineers, Land Surveyors and Geologists

**TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE  
REGULATORY REVIEW ACT**

**I.D. NUMBER:** 16A-4712  
**SUBJECT:** Digital Signature and Seal  
**AGENCY:** DEPARTMENT OF STATE  
 Bureau of Professional and Occupational Affairs  
 State Registration Board for Professional Engineers, Land Surveyors, and Geologists

**TYPE OF REGULATION**

- Proposed Regulation
- Final Regulation
- Final Regulation with Notice of Proposed Rulemaking Omitted
- 120-day Emergency Certification of the Attorney General
- 120-day Emergency Certification of the Governor
- Delivery of Disapproved Regulation
  - a.  With Revisions
  - b.  Without Revisions



**FILING OF REGULATION**

<u>DATE</u>	<u>SIGNATURE</u>	<u>DESIGNATION</u>
		<i>HOUSE COMMITTEE ON PROFESSIONAL LICENSURE</i>
8/11/20	<i>Emily J. [Signature]</i>	MAJORITY CHAIR <u>David Hickernell</u>
8/11/20	<i>Susan [Signature]</i>	MINORITY CHAIR <u>Harry A. Readshaw</u>
		<i>SENATE COMMITTEE ON CONSUMER PROTECTION &amp; PROFESSIONAL LICENSURE</i>
		MAJORITY CHAIR <u>Robert M. Tomlinson</u>
		MINORITY CHAIR <u>Lisa M. Boscola</u>
		<i>INDEPENDENT REGULATORY REVIEW COMMISSION</i>
		<i>ATTORNEY GENERAL (for Final Omitted only)</i>
		<i>LEGISLATIVE REFERENCE BUREAU (for Proposed only)</i>

**Worthington, Amber**

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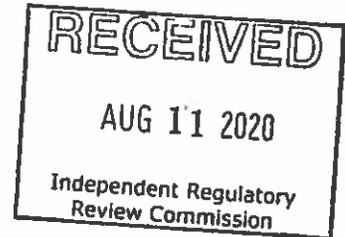
**From:** Livingston, Jerry <Jerry.Livingston@pasenate.com>  
**Sent:** Tuesday, August 11, 2020 9:29 AM  
**To:** Worthington, Amber  
**Subject:** RE: Proposed Rulemaking Delivery 16A-4712 Digital Signature and Seal

Received for Sen. Boscola.

*J.J. Livingston*

**Executive Director**  
**Senate Consumer Protection & Professional Licensure Committee**

**Senator Lisa M. Boscola, Democratic Chair**  
458 Main Capitol Building  
Harrisburg, PA 17120  
(717) 787-4236  
[Jerry.Livingston@pasenate.com](mailto:Jerry.Livingston@pasenate.com)



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**From:** Worthington, Amber <agontz@pa.gov>  
**Sent:** Tuesday, August 11, 2020 9:27 AM  
**To:** Bulletin <bulletin@palrb.us>; jmsmeltz@pasen.gov; Livingston, Jerry <Jerry.Livingston@pasenate.com>; Blauch, Tammy <tblauch@pasen.gov>  
**Subject:** Proposed Rulemaking Delivery 16A-4712 Digital Signature and Seal

■ EXTERNAL EMAIL ■

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Pursuant to SR 318, authorizing the Legislative Reference Bureau to transmit regulations to the appropriate committees for consideration, we are submitting Proposed Rulemaking – 16A-4712 Digital Signature and Seal to the Senate Committee on Consumer Protection & Professional Licensure. Please provide written (email) confirmation that this rulemaking was received by each of Committee chairs office's.

**Amber Worthington, PLS** | *Supervising Legal Assistant*  
Department of State | Counsel Division Legal Office | Clerical Supervisor 2  
2601 North Third Street, P.O. Box 69523  
Harrisburg, PA 17106-9523  
Phone: 717.783.7200 | Fax: 717.787-0251  
[www.dos.pa.gov](http://www.dos.pa.gov)

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## Worthington, Amber

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**From:** Bulletin <bulletin@palrb.us>  
**Sent:** Tuesday, August 11, 2020 10:27 AM  
**To:** rtomlinson@pasen.gov; jmsmeltz@pasen.gov; lboscola@pasen.gov; jerry.livingston@pasenate.com  
**Cc:** Martin, Megan; Worthington, Amber; A.J. Mendelsohn; Duane Searle; Vincent Deliberato  
**Subject:** [External] Proposed Rulemaking—State Registration Board of Professional Engineers, Land Surveyors and Geologists, Digital Signature and Seal, 16A-4712, Email 2 of 3  
**Attachments:** 16A-4712 Tomlinson.pdf; 16A-4712 Boscola.pdf; 16A-4712 proposed regulation digital signature and seal.pdf

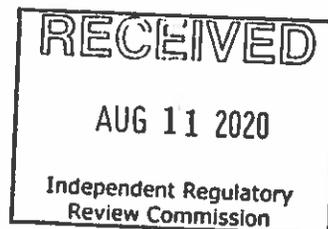
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We have attached Proposed Rulemaking No. 16A-4712 from the State Registration Board of Professional Engineers, Land Surveyors and Geologists.

Please confirm receipt of this email by replying to all.

Thank you.

*The Pennsylvania Code & Bulletin Office*



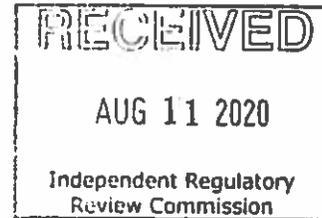
## Worthington, Amber

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**From:** Martin, Megan <Mtmartin@os.pasen.gov>  
**Sent:** Tuesday, August 11, 2020 12:19 PM  
**To:** Bulletin; Tomlinson, Senator Robert; Smeltz, Jennifer; Iboscola@pasen.gov; Livingston, Jerry  
**Cc:** Worthington, Amber; A.J. Mendelsohn; Duane Searle; DeLiberato, Vincent  
**Subject:** RE: Proposed Rulemaking—State Registration Board of Professional Engineers, Land Surveyors and Geologists, Digital Signature and Seal, 16A-4712, Email 2 of 3

Received. Thank you.

MEGAN MARTIN  
SECRETARY AND PARLIAMENTARIAN OF THE SENATE  
ROOM 462 MAIN CAPITOL BLDG.  
HARRISBURG, PA 17120  
717-787-5920  
717-343-4171(mobile)  
[mtmartin@os.pasen.gov](mailto:mtmartin@os.pasen.gov)  
<https://www.secretary.pasen.gov/>



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**From:** Bulletin <bulletin@palrb.us>  
**Sent:** Tuesday, August 11, 2020 10:27 AM  
**To:** Tomlinson, Senator Robert <rtomlinson@pasen.gov>; Smeltz, Jennifer <jmsmeltz@pasen.gov>; Iboscola@pasen.gov; Livingston, Jerry <Jerry.Livingston@pasenate.com>  
**Cc:** Martin, Megan <Mtmartin@os.pasen.gov>; Worthington, Amber <agontz@pa.gov>; A.J. Mendelsohn <amendelsohn@palrb.us>; Duane Searle <dsearle@palrb.us>; DeLiberato, Vincent <vdeliberato@palrb.us>  
**Subject:** Proposed Rulemaking—State Registration Board of Professional Engineers, Land Surveyors and Geologists, Digital Signature and Seal, 16A-4712, Email 2 of 3

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**\*\* External Email \*\***

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