

The Final Regulation was delivered on 5/2/13 and was withdrawn on 6/4/13. The Board has until 1/30/14 to redeliver the Final Regulation.

# Regulatory Analysis Form

(Completed by Promulgating Agency)

**INDEPENDENT REGULATORY  
REVIEW COMMISSION**

(All Comments submitted on this regulation will appear on IRRC's website)

(1) Agency:

**Department of State, Bureau of Professional and Occupational Affairs, State Registration Board for Professional Engineers, Land Surveyors and Geologists**

(2) Agency Number: 16A

Identification Number: 4711

IRRC Number: 2926

(3) PA Code Cite:

**49 Pa. Code §§ 37.1, 37.16, 37.17, 37.31-37.34, 37.36, 37.37, 37.47-37.49 and 37.57**

(4) Short Title:

**Qualifications for licensure**

(5) Agency Contacts (List Telephone Number and Email Address):

Primary Contact: **Thomas A. Blackburn, Regulatory Unit counsel, Department of State; (717)783-7200; P.O. Box 2649, Harrisburg, PA 17105-2649; (717)787-0251; tblackburn@pa.gov**

Secondary Contact: **Cynthia K. Montgomery, Regulatory Counsel, Department of State (717)783-7200; P.O. Box 2649, Harrisburg, PA 17105-2649; (717)787-0251; cymontgome@pa.gov**

(6) Type of Rulemaking (check applicable box):

Proposed Regulation

Final Regulation

Final Omitted Regulation

Emergency Certification Regulation;

Certification by the Governor

Certification by the Attorney General

(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

**Act 25 of 2010 amended section 4.4 of the Engineer, Land Surveyor and Geologist Registration Law (act) (63 P.S. § 151.4) to provide for a two-step licensing process for professional geologists, similar to those for professional engineers and land surveyors. This rulemaking implements that two-step process by providing for examination and certification of geologists in training. Additionally, this rulemaking conforms the Board's other regulations concerning qualification for licensure to current administrative practice and specifically identifies ABET as the accrediting body for U.S. engineering schools and provides that a graduate of a foreign school must have a professional evaluation to determine whether that education is equivalent.**

(8) State the statutory authority for the regulation. Include specific statutory citation.

**The rulemaking is authorized under Sections 4(b), 4(l), 4.2, 4.3, and 4.4 of the act (63 P.S. §§ 151.4(b), 151.4(l), 151.2, 151.3, and 151.4).**

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(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.

**To the extent it provides for certification of geologists-in-training, the rulemaking is mandated by Act 25 of 2010. As indicated above, Act 25 amended the act to provide for certification of geologists-in-training, as well as revising the requirements for continuing education and other provisions. Section 6 of Act 25 requires the Board to “promulgate regulations necessary to implement this act,” without distinguishing between certification of geologists-in-training and continuing education or other provisions of Act 25. The geologist-in-training provisions of this rulemaking are necessary to implement Act 25.**

**The rulemaking is not otherwise specifically mandated by any federal or state law or court or federal regulation. However, the rulemaking is necessary to effectuate the licensure standards of the act. In *Whymeyer v. State Reg. Bd. for Professional Engineers, Land Surveyors and Geologists*, 997 A.2d 1254 (Pa. Cmwlth. 2010), the court reversed the Board’s denial of permission to sit for the fundamentals of engineering examination because the applicant had graduated from an engineering school that was not accredited by ABET. The Board had applied its regulation at § 37.1 (defining “engineering curriculum” as a minimum 4-year program “approved by a National accrediting association recognized by the Board”) to conclude that ABET, as the only National accreditor of engineering programs known to the Board and an affiliate of the NCEES (of which the Board is required by statute to become a member), is the only acceptable accreditor; accreditation from the Middle State Commission or other regional accreditor of colleges is not sufficient. Against a challenge that the regulation is unconstitutionally vague, the court held that the Board applied the regulation in an unconstitutional manner by not looking beyond the lack of accreditation by ABET to independently determine whether the program should be approved by the Board. This rulemaking is intended to clarify that ABET is the only accreditor acceptable to the Board for U.S. engineering or land surveying programs.**

(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 General Assembly recognized the compelling public interest in permitting certification of geologist-in-training, and those provisions of the rulemaking are required to implement the statutory amendments. The other provisions of the rulemaking, which conform the regulations to current administrative practice, will provide increased clarity to applicants and permit the Board to more straightforwardly administer and enforce the act and apply the Board’s regulations.**

(11) 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.

**This rulemaking is not based upon any scientific data, studies, or references.**

(12) Describe who and how many people will be adversely affected by the regulation. How are they affected?

**Because the rulemaking conforms the Board's licensure qualification regulations to current administrative practice, and because the rulemaking provides the opportunity for certification as geologist-in-training as an initial step in geologist licensure (but not require it), the Board does not believe that the proposed rulemaking will have any adverse effect.**

**The Board has not identified any other group of individuals or entities that will be adversely affected by the rulemaking.**

(13) List the persons, groups or entities that will be required to comply with the regulation. Approximate the number of people who will be required to comply.

**All applicants will be required to comply with the rulemaking. The Board has approximately 32,200 licensed professional engineers, 9,800 certified engineers-in-training, 2,800 licensed professional land surveyors, 200 certified land surveyors-in-training, and 2,600 licensed professional geologists.**

(14) 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 amended act and the rulemaking, geologists who have completed the required education may choose to wait until acquiring the necessary experience to apply to sit for both examinations and become licensed or may choose to sit for the fundamentals examination upon completing the education and be certified as a geologist-in-training and later sit for the professional examination upon acquiring the necessary experience and then become licensed. Because the Board would process two separate applications, those geologists who choose to obtain geologist-in-training certification prior to seeking licensure as a professional geologist would be required to pay the Board's portion of the examination application fee (\$50) twice.**

**Because the other provisions of the rulemaking conform the regulations to current administrative practice, there are no other costs or savings to the regulated community associated with compliance with the rulemaking.**

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

**There are no costs or savings to local governments associated with compliance with the rulemaking.**

(16) Provide a specific estimate of the costs and/or savings to **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.

**The Board will modify its application forms to allow for certification of geologists in training, as well as professional geologist licensure. The cost to do so would be minimal. Because the Board's fees (and the Board's portion of the fees charged by a testing service) are set solely to recover the cost of providing the service, the cost to the Board to process applications for certification as geologist-in-training would be covered by the additional fee. Because the rulemaking otherwise conforms the regulations to current administrative practice, no other actions would be required.**

**There are no other costs or savings to state government associated with implementation of the rulemaking.**

(17) 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.

	<b>Current FY Year</b>	<b>FY +1 Year</b>	<b>FY +2 Year</b>	<b>FY +3 Year</b>	<b>FY +4 Year</b>	<b>FY +5 Year</b>
<b>SAVINGS:</b>	\$	\$	\$	\$	\$	\$
<b>Regulated Community</b>						
<b>Local Government</b>						
<b>State Government</b>						
<b>Total Savings</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>COSTS:</b>						
<b>Regulated Community</b>						
<b>Local Government</b>						
<b>State Government</b>						
<b>Total Costs</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>REVENUE LOSSES:</b>						
<b>Regulated Community</b>						
<b>Local Government</b>						
<b>State Government</b>						
<b>Total Revenue Losses</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

(17a) Provide the past three year expenditure history for programs affected by the regulation.

<b>Program</b>	<b>FY -3 (2009-10)</b>	<b>FY -2 (2010-11)</b>	<b>FY -1 (2011-12)</b>	<b>Current FY (2012-13)</b>
<b>State Reg. Bd. for Professional Engineers, Land Surveyors and Geologists</b>	(actual) \$978,966	(actual) \$1,081,488	(actual) \$1,166,935	(budgeted) \$1,145,000

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

**Any costs are minimal, and there are no identified adverse effects from compliance with the proposed rulemaking. The benefit of increased clarity and ease of application of the regulations, coupled with effectuation of the General Assembly's desire for geologist-in-training certification, outweighs any cost or adverse effect.**

(19) Describe the communications with and input from the public and any advisory council/group in the development and drafting of the regulation. List the specific persons and/or groups who were involved.

**In drafting a prior version of the proposed rulemaking, the Board solicited comments from the Pennsylvania Society of Professional Engineers, Professional Society of Land Surveyors, and Pennsylvania Council of Professional Geologists. These are the major organizations that represent the engineering, land surveying, and geology professions in Pennsylvania. With the passage of Act 25, the Board revised the draft provisions for geologist licensure to be analogous to the two-step process for engineers and land surveyors, maintaining the applicable substantive requirements. The Board continued to discuss this rulemaking at its public meetings in May and July, 2010. After publication as proposed, the Board discussed all comments and discussed revisions to the rulemaking in public session at its meeting March, July and September, 2012. All public sessions are open to the public, and representatives of the three professions generally attend the public sessions of all Board meetings.**

(20) 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 schemes were considered, because no other regulatory schemes would effectuate the act and its recent amendments.**

(21) 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.

**The rulemaking is not more stringent than and does not overlap or conflict with any federal requirements.**

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

**Most jurisdictions, including Pennsylvania, pattern their engineer and land surveyor practice acts on the Model Law adopted by NCEES. The rulemaking is consistent with the provisions of the Model Law.**

**This rulemaking will not put Pennsylvania at a competitive disadvantage with other states.**

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

**This rulemaking will not affect other regulations of the Board or other state agencies.**

(24) 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.

**This rulemaking will not require any additional recordkeeping or other paperwork for implementation.**

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

**The Board has determined that there are no special needs of any subset of its applicants or licensees for whom special accommodations should be made.**

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

- |   |                                |
|---|--------------------------------|
| A. The date by which the agency must receive public comments:                               | <b><u>Jan. 31, 2012</u></b>    |
| B. The date or dates on which public meetings or hearings will be held:                     | <b><u>N/A</u></b>              |
| C. The expected date of promulgation of the proposed regulation as a final-form regulation: | <b><u>By Jan. 31, 2014</u></b> |
| D. The expected effective date of the final-form regulation:                                | <b><u>Upon publication</u></b> |
| E. The date by which compliance with the final-form regulation will be required:            | <b><u>Effective date</u></b>   |
| F. The date by which required permits, licenses or other approvals must be obtained:        | <b><u>N/A</u></b>              |

(27) Provide the schedule for continual review of the regulation.

**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, generally the third Wednesday of each odd-numbered month. More information can be found on the Board's website ([www.dos.state.pa.us/eng](http://www.dos.state.pa.us/eng)).**



FACE SHEET  
FOR FILING DOCUMENTS  
WITH THE LEGISLATIVE REFERENCE BUREAU

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(Pursuant to Commonwealth Documents Law)

DO NOT WRITE IN THIS SPACE

Copy below is hereby approved as to form and legality. Attorney General

Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by:

Copy below is approved as to form and legality. Executive or Independent Agencies.

State Registration Board for Professional Engineers, Land Surveyors and Geologists

*[Handwritten signature]*  
BY: SHAWN E. SMITH

BY: \_\_\_\_\_  
(DEPUTY ATTORNEY GENERAL)

(AGENCY)

DOCUMENT/FISCAL NOTE NO. 16A-4711

APR 19 2013  
DATE OF APPROVAL

\_\_\_\_\_  
DATE OF APPROVAL

\_\_\_\_\_  
DATE OF ADOPTION

(Deputy General Counsel  
(~~Chief Counsel,~~  
~~Independent Agency~~  
(Strike inapplicable title)

BY: *[Handwritten signature]*  
Thomas D. Gillespie, PG

[ ] Check if applicable  
Copy not approved.  
Objections attached.

TITLE: President  
(EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)

[ ] Check if applicable.  
No Attorney General approval  
or objection within 30 day  
after submission.

FINAL 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 §§ 37.1, 37.16-37.17,  
37.31-37.34, 37.36-37.37, 37.47-37.49, 37.57  
QUALIFICATIONS FOR LICENSURE

The State Registration Board for Professional Engineers, Land Surveyors and Geologists (Board) hereby amends §§ 37.1, 37.16, 37.17, 37.31-37.34, 37.36, 37.37, 37.47-37.49 and 37.57, to read as set forth in Annex A.

### Background and Need for the Rulemaking

The act of May 12, 2010 (P.L. 192, No. 25) (Act 25) amended section 4.4 of the act (63 P.S. § 151.4) to provide for certification of geologists-in-training, in addition to licensure of professional geologists. This two-stage process is analogous to the two-stage processes for certification of engineers-in-training and licensure of professional engineers and for certification of surveyors-in-training and licensure of professional land surveyors. Additionally, in looking at and amending its regulations concerning the licensure process for geologists in response to Act 25, the Board also reviewed its regulations concerning the licensure process for engineers and land surveyors and concluded that it should also update those regulations to conform to current administrative practice.

### Summary of Comments and Responses to Proposed Rulemaking

The Board published notice of proposed rulemaking at 41 Pa.B. 6975 (December 31, 2011), followed by a 30-day public comment period. The Board received no comments from the public. The Board received comments from the House Professional Licensure Committee (HPLC) and the Independent Regulatory Review Commission (IRRC) as part of their review of proposed rulemaking under the Regulatory Review Act (71 P.S. §§ 745.1-745.12). The Board did not receive any comments from the Senate Consumer Protection and Professional Licensure Committee (SCP/PLC).

HPLC first commented that the change in term from “applicant” to “candidate” was not consistent throughout the proposed rulemaking. IRRC agreed and recommended that the Board use one term consistently. The Board has revised §§ 37.16, 37.32(a), 37.34(b), 37.37(a), 37.47(2)(ii) to use the term “candidate” when referring to one whose qualifications are at issue, rather than “applicant.” To the extent the references in § 37.34(b)(relating to branches of engineering) concern the practice of a professional engineer, the Board has used the term “professional engineer” rather than “applicant” or “candidate.” Because these provisions focus on the act of applying and the supporting documentation rather than the applicant’s qualifications, the Board has not amended §§ 37.18, 37.37, 37.61 and 37.71 to replace the term “applicant” with the term “candidate.” Additionally, because § 37.61 (relating to temporary practice) addresses the process by which a professional engineer, professional land surveyor or professional geologist licensed to practice in another jurisdiction may apply for a temporary permit to practice in Pennsylvania, the term “candidate” is not appropriate for such an applicant who has already been licensed. To be consistent with the other provisions concerning the registration number and seal, the Board has replaced the term “applicant” in § 37.57 (relating to registration number) with the term “registrant.” Because there is no need to make the method of determining the registration number into a regulatory requirement, the Board has also deleted the second sentence of § 37.57 concerning the assignment of consecutively issued registration numbers and inserted into the first sentence a notation that the assigned registration number will be unique. Similarly, for additional clarity the Board has used the term “accredited” and not the

term “approved” when referring to an engineering or land surveying curriculum accredited by ABET. HPLC also commented that the organization mentioned in § 37.36 (relating to requirements for certification as a geologist-in-training and for licensure as a professional geologist) should read “World Education Services.” The Board has revised § 37.36(b)(1)(iii) to reflect the correct name as suggested.

IRRC first commented about consistency with caselaw. Because an issue raised by the petitioner but not decided by the court in *Whymeyer v. State Reg. Bd. for Professional Engineers, Land Surveyors and Geologists*, 997 A.2d 1254 (Pa. Cmwlth. 2010) was whether the Board “abdicated its statutory responsibility” to approve engineering programs by delegating that authority to ABET, IRRC questioned whether the Board would independently approve programs under section 4(a) of the act (63 P.S. § 151(a)), despite providing in this rulemaking for ABET to be the exclusive accreditor. Absent extraordinary circumstances and except where the regulations specify an evaluation of the candidate’s educational program, the Board will not independently review engineering or surveying programs; instead it will defer exclusively to ABET.

At the end of its opinion, the *Whymeyer* majority noted:

Because of our disposition of the issues [of whether the regulation at issue is unconstitutionally vague and whether the Board erred in refusing to independently evaluate the program Whymeyer attended], we need not address whether a regulation which clearly specified graduation from a program with ABET accreditation as a mandatory prerequisite to taking the initial exam would amount to an abdication of the Board’s statutory responsibilities and an unlawful delegation of the authority vested in it by the General Assembly.

*Whymeyer* at 1260 n. 7. In dissent, Judge Pellegrini wrote:

In *Appeal of Murphy*, 482 Pa. 43, 393 A.2d 369 (1978), our Supreme Court addressed the issue of whether the Board of Law Examiners properly refused admission of one applicant to sit for the bar exam and another applicant admission by comity (recognizing five or more years of practice in a reciprocating sister state and good standing). Both applicants graduated from law schools which were not accredited by the American Bar Association (ABA). The applicants argued that the “selection of the American Bar Association as the accrediting agency ... [was] an unconstitutional delegation of judicial authority to a non-governmental body such as the ABA.” *Id.*, 482 Pa. at 47, 393 A.2d at 371.

In determining that the Board properly refused admission due to the lack of accreditation of the law schools, the Court stated that it had not delegated any judicial function to the ABA and “Pennsylvania, like every other state in the union, has chosen to avail itself of the results of the ABA accreditation procedure, and accepts and adopts the ABA listing. The ABA’s long-standing concern with the quality of legal education in the United States needs no documentation here.” 482 Pa. at 48, 393 A.2d at 372. The Court went on to explain the credentials of the ABA and then stated:

[W]e see no virtue either in allowing a school unapproved by the ABA to seek independent recognition from Pennsylvania, or in permitting a bar examination applicant to attempt to prove to this Court that his unapproved school does in fact measure up to ABA standards. Our holding today is in accord with longstanding and unanimous authority which has rejected the non-delegation argument here advanced as well as a host of other constitutional attacks on the requirement that an applicant for admission to the bar be a graduate of an ABA-approved law school. See, e.g., *Potter v. New Jersey Supreme Court*, 403 F.Supp. 1036 (D.N.J. 1975), *aff'd* 546 F.2d 418 (3d Cir. 1976); *Rossiter v. Colorado State Board of Law Examiners*, No. C-4767 (D. Colo., filed August 26, 1975) (three-judge court); *Lombardi v. Tauro*, 470 F.2d 798 (1st Cir. 1972) (no unlawful delegation).

482 Pa. at 52, 393 A.2d at 374.

Similarly, in this case, the Board has the authority to delegate the accreditation function to ABET to ensure that future engineers meet all of the necessary requirements before beginning their careers. Here, Whymeyer did not graduate from a curriculum approved by ABET.

*Whymeyer* at 1261. Thus, the Board is permitted to – and via these regulations has – determined that it is appropriate to rely on accreditation by ABET and approve only those engineering and surveying programs that have been accredited by ABET.

IRRC next noted that although the regulatory analysis form of the proposed rulemaking cited as the Board’s authority for the rulemaking sections 4(b), 4(l), 4.2, 4.3 and 4.4 of the act, the preamble cited only section 4(l) of the act. The Board has included all these provisions in the final preamble as its statutory authority for this rulemaking.

In its next comment, IRRC addressed the clarity of certain terms used by the Board in § 37.31 (relating to requirements for certification as an engineer-in-training and for licensure as a professional engineer) and similar sections. IRRC noted that § 37.31(1) and (2) require candidates to “successfully complete” the required examinations and suggested that the final form regulation specify what constitutes “satisfactory” completion. IRRC expressed similar concerns with §§ 37.33(b) and (c), 37.36(b) and (c), 37.47(1) and (2), and 37.49(b). The Board has revised these provisions to use the phrase “achieve a passing score.” IRRC noted that § 37.31(1)(i) permits a qualified student to sit for the fundamentals of engineering examination but requires the student to provide “proof of graduation” before being certified as an engineer-in-training and suggested that the Board clarify the type of documentation required to demonstrate that proof. IRRC expressed similar concerns about §§ 37.36(b)(1)(i) and (ii), and 37.47(1)(i) (relating to requirements for certification as a surveyor-in-training and for licensure as a professional land surveyor). Virtually every candidate who has applied based upon graduation from an approved program has been able to prove graduation by having the school provide a transcript showing that the candidate has graduated, as directed by the application forms. In

those extremely rare instances in which the candidate could not have a transcript provided directly by the school (such as the school is out of operation and adequate provisions to maintain records were not made), the candidates have been able to provide other documentary proof of graduation. Because there have been no instances of confusion and in order to avoid being overly prescriptive, the Board has not revised these provisions.

IRRC next noted that the required “grade and character” of experience necessary under § 37.31(1)(iii) to qualify for the principles and practice of engineering examination was vague and suggested clarifying the intent of this language in the final form regulation. IRRC expressed similar concerns about §§ 37.31(2)(i), 37.47(1)(iii), 37.47(2)(i), and 37.49(c). As stated in section 4.2(c)(1) of the act (63 P.S. § 151.2(c)(1)), an engineer-in-training must obtain 4 or more years of experience that, among other things, is “of a grade and character to fit [the candidate] to assume responsible charge of the work involved in the practice of engineering.” Throughout its history, the Board has been applying this standard in reviewing candidate qualifications. The Board does not set any certain criteria for the grade or character of the work; instead, the standard is whether it has prepared the candidate to assume responsible charge of the work involved in the practice of engineering. Adopting criteria for the grade and character of the experience would be overly prescriptive for the engineers-in-training who have a tremendously wide variety of experience. Accordingly, the Board has not revised this provision in response to this comment. IRRC also noted that § 37.31(1)(iii) – renumbered as (iv) – permits “academic training in engineering subjects” to be counted as part of the experience to qualify to sit for the fundamentals of engineering examination without a degree and recommended that the Board define this term and specify how this training will be counted toward the experience requirement. Section 4.2(b)(1)(iii) of the act permits a candidate to qualify for the fundamentals of engineering examination by having 8 or more years of “progressive experience in engineering work and knowledge, skill and education approximating that attained through graduation from an approved engineering curriculum.” This regulation implements that statutory provision and permits a candidate to use academic training that is similar to that in an accredited engineering program to be counted toward the requirement. Because it views this provision as sufficiently clear, the Board has not revised it.

IRRC next noted that § 37.31(2) requires a candidate to sit for the “NCEES principles and practice of engineering examination in one of the branches of engineering” and suggested that the Board cross-reference this provision with § 37.34. The Board has revised § 37.31(2) to include this cross-reference. Finally, IRRC noted that § 37.31(2)(ii) requires that the teaching experience a candidate could use to qualify to sit for the principles and practice of engineering must include teaching at a third or fourth year or graduate level “covering the breadth and depth of the curriculum” and suggested that the Board specify what it meant to cover through the use of this vague term. IRRC expressed similar concerns for § 37.47(2)(ii) for teaching in a land surveying curriculum. This phrase comes from the definition of “progressive teaching experience” that the board is now deleting from § 37.1 (relating to definitions) and incorporating in the substantive text of the regulation. The purpose of this provision is to assure that the candidate is gaining experience in a wider range of engineering subjects that are not merely what is required for entry-level practice. Because there has been no history of confusion with this term in administering the current regulations, the Board has not made any revisions in response to this comment.

IRRC's next set of comments address § 37.33 (relating to grandfather requirements for certification as an engineer-in-training and for licensure as a professional engineer). The act of December 16, 1990 (P.L. 780, No. 192) amended the act to raise the standards for licensure. Section 14 of act 192 provided that the new standards do not apply and instead the prior requirements apply to a candidate who by June 30, 1994, completed the educational requirements or by the effective date of the amendments (February 19, 1991) began the experience requirements. IRRC first recommended that the Board explain the significance of the date in providing in § 37.33(b) that candidates who received a degree prior to January 1, 1968, are not required to complete the fundamentals of engineering examination. This provision is statutorily required. Former section 4(a)(3) of the act (63 P.S. § 151(a)(3)) provided that, in order to become licensed a candidate was required to have 4 or more years of progressive experience in engineering work, under the supervision of a professional engineer or a similarly qualified engineer, of a grade and character to fit him to assume responsible charge of the work involved in the practice of engineering and be either an engineer-in-training or a graduate in engineering of an approved institution or college having a course in engineering of 4 or more years. Former section 4(a)(3) also provided that the candidate was required to successfully pass the examinations prescribed by the board for both professional engineers and engineers-in-training, except that "graduates in engineering who were graduated prior to January 1, 1968, or engineers-in-training who received a certificate from the board prior to January 1, 1968, shall not be required to take the examination prescribed for engineers-in-training."

IRRC next asked the Board to explain the difference between "satisfactory completion" of the fundamentals of engineering examination in § 37.33(b) and "successful completion" of the same examination in § 37.33(c)(ii). As noted above, the Board has revised these provisions to refer to "achieving a passing score" on the examination. IRRC also noted that § 37.33(c)(1)(i) requires a graduate of an approved engineering curriculum to have 4 years of progressive experience, and § 37.33(c)(1)(ii) requires a candidate who is not a graduate to have 8 years of progressive experience; IRRC asked the Board to explain how these timeframes were determined to be appropriate. These timeframes are statutorily required. As noted previously, former section 4(a)(3) of the act required a candidate who is either an engineer-in-training or a graduate of an approved engineering program to have at least 4 years of experience meeting the standard in order to sit for the licensure examination. Former section 4(a)(4) permitted a candidate to qualify to sit for the examinations if the candidate has had 12 or more years of progressive experience in engineering work, at least 8 years of which shall have been under the supervision of a professional engineer or similarly qualified engineer of a grade and character to fit him to assume responsible charge of the work involved in the practice of engineering.

IRRC also commented on § 37.36. Under § 37.36(b)(1)(iii), a candidate educated in a foreign country must have an evaluation from WES or "other Board-approved professional evaluation service" to qualify to sit for the fundamentals of geology examination. IRRC inquired as to what other professional evaluation services are approved by the Board and recommended that they either be identified in the regulation or maintained in a list on the Board's website in a way that cross-references the regulation. At this time, the Board is not aware of any other appropriate evaluation services; no candidate has inquired about using any service other than WES. However, the Board will post on its website a notice about approved professional

evaluation services for foreign geology education. IRRC also noted that under § 37.36(c)(2) acceptable experience may include “technical completeness reviews” and suggested that the final-form regulation define this term. Current § 37.1 defines the term “professional geological work” as the performance of geological service or work, “including technical completeness reviews.” The term “technical completeness review” is generally understood in the geology profession as verifying that all required documentation is included with necessary topics addressed based upon an appropriate utilization of the principles of the geological sciences. Because this term of art is understood in the profession, the Board has not provided a separate definition.

IRRC next commented on § 37.37 (relating to references for licensure as a professional geologist). In contrast to analogous provisions for engineers and land surveyors at §§ 37.32(a) and 37.48(a) (relating to references for certification as an engineer-in training or licensure as a professional engineer; and references for certification as a surveyor-in-training or licensure as a professional land surveyor), respectively, § 37.37(a) does not require that references be unrelated to the candidate for licensure as a professional geologist. The Board has revised all three subsections to be essentially identical and require that at least three of the references are licensees unrelated to the candidate.

IRRC also commented on § 37.47 asking how the Board determined that it was appropriate for § 37.47(1)(iii) to require that a candidate qualifying to sit for the fundamentals of land surveying examination without a qualifying degree have at least 6 years of appropriate diversified field and office experience that includes at least 25% in each area. This requirement is continued from current § 37.47(1)(iii), which requires an applicant to show “diversification of field and office experience, with a minimum of 25% of the experience in each area.”

IRRC’s final comment addressed § 37.49 (relating to grandfather requirements for licensure as a professional land surveyor). IRRC first asked the Board to further explain the basis and need for changes to the grandfathering requirements for land surveyors. The existing regulation merely provides that, for those applicants who completed the prior educational requirements by June 30, 1994, or who began the prior experience requirements before February 19, 1991, the prior requirements apply instead of the current requirements. However, because the regulation gave no indication of what those requirements were, the Board is amending § 37.49 so that applicants who qualify for treatment under the prior provisions will know exactly what is required of them. IRRC then asked how the Board determined that it was appropriate for § 37.49(c) to require that a candidate qualifying to sit for the land surveying examinations without a qualifying degree have at least 6 years of appropriate diversified field and office experience that includes at least 25% in each area. This requirement is statutorily mandated by former section 4(d)(2) of the act (63 P.S. § 1514(d)(2)), which required that all applicants for licensure as a professional land surveyor “show a diversification in both field and office experience, with the smallest percentage of time allowed in either category to be twenty-five percent.” IRRC also asked how the Board determined that it was appropriate for § 37.49(b)(1) and (2) to require that a candidate qualifying to sit for the land surveying examinations with a qualifying degree have at least 4 years of progressive experience in land surveying work and for § 37.49(b)(3) to require that a candidate qualifying to sit for the land surveying examinations without a qualifying degree have at least 10 years of progressive experience in land surveying

work that includes at least 5 years in responsible charge of primary land surveying functions. These requirements are statutorily mandated by former section 4(d)(1) of the act, which required that an applicant for licensure as a professional land surveyor with a qualifying degree have “four or more years’ progressive experience in land surveying, under the supervision of a professional land surveyor or a similarly qualified land surveyor of a character indicating that the applicant is competent to assume responsible charge of the practice of land surveying,” and by former section 4(d)(2) of the act, which required that an applicant for licensure as a professional land surveyor without a qualifying degree have “ten or more years’ progressive experience in land surveying work half of which time shall have been spent in responsible charge of primary land surveying functions, under the supervision of a professional land surveyor or a similarly qualified surveyor of a character indicating that the applicant is competent to assume responsible charge of the work involved in the practice of land surveying.”

In addition to the revisions made in response to comments, the Board has significantly reorganized § 37.31(1) in the final rulemaking. First, the Board has revised § 37.31(1)(i) to limit this provision to graduates of ABET-accredited undergraduate programs in the United States – the only category of candidates who may sit for the fundamentals of engineering examination while still a student. The Board has further revised this provision to make clear that the effective date of certification as an engineer-in-training is the later of graduation or notification from NCEES of passing the fundamentals examination. Because ABET accredits a limited number of graduate programs in the United States as well as a limited number of both undergraduate and graduate programs in foreign countries, the Board has provided in new § 37.31(1)(ii) that graduates of such a program are eligible to sit for the fundamentals of engineering examination. Subsequent to the Board’s preparation of the draft proposed rulemaking, the method of evaluating qualifications of certain candidates who did not attend an ABET-accredited program has changed dramatically. Both ABET’s Engineering Credentials Evaluation International and NCEES’s Center for Professional Engineering Education services have gone out of existence and no longer evaluate credentials. However, NCEES has a credentials evaluations division that now provides this service. Previously, only foreign education would be evaluated and not education in the United States at other than an ABET-accredited program. NCEES now will evaluate the education of a candidate with a graduate degree in engineering from a school in the United States who completed an undergraduate engineering program in the United States that was not accredited by ABET. On the theory that holding a graduate degree qualifies one at least as well as holding an undergraduate degree, all other things being equal, the Board proposed in § 37.31(1)(ii) to permit a graduate of a graduate engineering curriculum at a school that has an ABET-accredited curriculum in the same discipline and has completed basic engineering courses to sit for the exam. Because NCEES will evaluate the education of a candidate with a graduate degree in engineering, there is no need for the Board to conduct this independent review; the Board has provided in § 37.31(1)(iii) that one with a graduate degree in engineering from a school in the United States who also graduated from an undergraduate engineering curriculum in the United States that is not ABET-accredited may sit for the fundamentals of engineering examination if an evaluation by NCEES’s credentials evaluation division shows that the candidate’s education was substantially equivalent to an ABET-accredited curriculum. The Board acknowledges that this does not allow for those with a graduate degree in engineering whose undergraduate degree was in a field other than engineering. However, such a candidate may be considered with 8 years of experience, giving appropriate credit for engineering



education. Qualifying to sit for the fundamentals of engineering examination based upon an evaluation of a foreign education has been moved to § 37.31(1)(iv) revising the permitted evaluator and allowing that the foreign education may include graduate study in engineering. Qualifying for the fundamentals of engineering examination on the basis of experience has been moved to § 37.31(1)(v) without change to the substantive provisions.

The Board has also revised § 37.31(2) setting forth requirements to sit for the principles and practice of engineering examination. Because often a candidate sat for the fundamentals of engineering examination and became certified as an engineer-in-training in another state, the Board should allow for candidates who were certified in the other state, but also assure that the certification was based upon criteria substantially similar to those of Pennsylvania. Accordingly, the Board has revised § 37.31(2) to provide for a candidate who has been certified as an engineer-in-training “in this Commonwealth or another jurisdiction having satisfied the requirements . . . to sit for the fundamentals of engineering examination.” Additionally, because not all other states require that the experience be gained after certification as an engineer-in-training, the Board has also revised this paragraph to provide that the effective date of certification for one who was certified as an engineer-in-training in another jurisdiction is the date the certificate was first issued, unless otherwise stated by that jurisdiction.

Similar to the revisions to § 37.31(1) under the current provisions of the act, the Board has revised § 37.33(b) to provide the requirements for a candidate under the former provisions of the act to sit for the fundamentals of engineering examination. Because no candidate will be permitted to sit for the examination while a student, the provisions for a graduate of any ABET-accredited program have been consolidated into § 37.33(b)(1). The provision for the evaluation of the education of a candidate with both graduate degree and undergraduate engineering degrees in the United States has been placed in § 37.33(b)(2), and the provision for the evaluation of a candidate’s foreign engineering education has been placed in § 37.33(b)(3). The previously-proposed provision for a candidate qualifying on the basis of experience has been moved to § 37.33(b)(4) without change to the substantive provisions. Similar to the revisions to § 37.31(2) under the current provisions of the act, the Board has also revised § 37.33(c)(1)(i) to provide that a candidate under the former provisions of the act who has been certified as an engineer-in-training “in this Commonwealth or another jurisdiction having satisfied the requirements . . . to sit for the fundamentals of engineering examination” may sit for the principles and practice of engineering examination upon meeting the additional experience requirement. The Board also looked more closely at this section for consistency with the prior provisions of the act. Because former section 4(c) would permit a candidate to be certified as an engineer-in-training based upon experience in lieu of engineering education, the Board has revised § 37.33(c)(1) to remove the limitation that it applies to a candidate who “is a graduate from an approved engineering curriculum” and replaced that with who “also satisfies the requirements under subsection (b) to sit for the fundamentals of engineering examination.” Also, the language used by the Board in proposed § 37.33(c)(1)(ii) in attempting to describe it in terms of the experience required in addition to what was required to sit for the fundamentals of engineering examination was not a clear and accurate statement about the requirement to qualify for licensure as a professional engineer based upon experience alone without engineering education. Upon further review, the Board has revised this to track the language of former section 4(b)(4) of the act to require “at least 12 years of progressive engineering experience, at least 8 years of which shall have been

under the supervision of a professional engineer or a similarly qualified engineer.” Because that statutory provision did not provide for certification as an engineer-in-training, the Board has further revised § 37.33(c)(1)(ii) to provide that a candidate qualifying under this provision who has not already achieved a passing score on the fundamentals of engineering examination may sit for that examination but may not sit for the principles and practice of engineering examination until achieving a passing score on the fundamentals examination.

Similar to the revision to allow for candidates for the principles and practice of engineering examination who sat for the fundamentals of engineering examination and were certified as engineers-in-training in another state, the Board has revised § 37.36(c)(1) to provide for a candidate who has been certified as a geologist-in-training “in this Commonwealth or another jurisdiction having satisfied the requirements . . . to sit for the fundamentals of geology examination.” Because certification as a geologist-in-training is not a mandatory step in licensure as a professional geologist and a candidate could first apply after meeting all criteria to sit for both examinations, the Board has added § 37.36(c)(3) to provide that a candidate qualifying under this provision who has not already achieved a passing score on the fundamentals of geology examination may sit for that examination but may not sit for the principles and practice of geology examination until achieving a passing score on the fundamentals examination.

Similar to § 37.31(1)(i) for engineering students who sat for the fundamentals of engineering examination prior to graduation, the Board has revised § 37.36(b)(1)(i) and (ii) to make clear that the effective date of certification as a geologist-in-training for one who sat for the fundamentals of geology examination while a geology student is the later of graduation from an accredited program or notification from ASBOG of passing the fundamentals examination. In order to make clear that those candidates who sat for the fundamentals examination while a geology student must comply with the additional provisions about the content of the geology program, the Board has added to the requirement of providing proof of graduation that this include compliance with § 37.36(b)(2). Similarly, the Board has revised § 37.36(b)(1)(iii) to make clear that a graduate of a foreign education program must also satisfy that requirement.

The Board has also revised § 37.47(1)(i) to make clear that the effective date of certification as a surveyor-in-training for one who sat for the fundamentals of surveying examination while a surveying student is the later of graduation from an accredited surveying program or notification from NCEES of passing the fundamentals examination. Additionally, because not all other states require that the experience be gained after certification as a surveyor-in-training, the Board has also revised § 37.47(2) to provide that the effective date of certification for one who was certified as a surveyor-in-training in another jurisdiction is the date the certificate was first issued, unless otherwise stated by that jurisdiction. Because certification as a surveyor-in-training was not a mandatory step in licensure as a professional land surveyor under the prior provisions of the act and a candidate could first apply after meeting all criteria to sit for both examinations, the Board has added § 37.49(c) to provide that a candidate qualifying under this provision who has not already achieved a passing score on the fundamentals of land surveying examination may sit for that examination but may not sit for the principles and practice of land surveying examination and the state-specific land surveying examination until achieving a passing score on the fundamentals examination, similar to § 37.33(c)(1)(iv) for

engineers.

As indicated above, NCEES has changed its process for evaluating education other than at an ABET-accredited program. NCEES is also changing its examination means. Beginning with the administration in April, 2014, the fundamentals of engineering and the fundamentals of land surveying examinations will be computer-based instead of “pencil and paper.” The principles and practice of engineering and the principles and practice of land surveying examinations will later also become computer-based. Once the principles and practice of land surveying examination is computer-based, the Board’s state-specific land surveying examination will also be computer-based. The computer-based exams will be offered not on a single day twice each year, but instead on any business day within a testing window each quarter. As a result of these changes, the Board is also amending §§ 37.16 and 37.17 (relating to general information; application and examination; and schedule of fees). Current § 37.16(a) provides that the examination applications will be available by contacting the Board. The Board has replaced this provision first to require that applications for certification or licensure – most typically by reciprocity – in addition to any applications to sit for the examinations, are to be submitted to the Board office along with the appropriate application fee and supporting documentation and second to make clear that the fee is nonrefundable and nontransferable. Current § 37.16(b) addresses reexamination. As discussed above, the Board has replaced the term “applicant” with the term “candidate” and made clear that these requirements apply to a candidate who did not sit for the examination, as well as a candidate who failed the examination. Because both NCEES and ASBOG require candidates to submit a scheduling form or other documentation directly to these organizations, the Board has also revised this subsection to provide that a reexamination candidate may be required by NCEES or ASBOG to submit the paperwork directly to the testing organization and pay an additional fee. Current § 37.16(c) provides that “written examination will be held in Pittsburgh, Harrisburg and Philadelphia ... during the months of April and October of each year.” Because the examinations will be computer-based, the Board has removed the word “written.” Because the examinations will be available in windows throughout the year, the Board has also removed the requirement that the examination be held in those specific months. The Board has also revised this subsection to delete the two application deadline dates and instead require the candidate to apply at least 120 days in advance of the testing organization registration deadline so that the Board will have adequate time to review the application without guaranteeing that the review will be completed for that administration of the examination. Because both NCEES and ASBOG require candidates to submit a scheduling form or other documentation directly to these organizations, the Board has also revised this subsection to require the candidate to submit the paperwork directly to the testing organization as required by the testing organization.

Current § 37.17 is inconsistent in the way in which fees are listed. It identifies fees for engineers and land surveyors in subsection (a), fees for geologists in subsection (b), and then other fees in subsection (c). However, there are no “other” classifications of licensees. Moreover, the applications are not listed under subsection (a) for engineers and land surveyors, as these fees are listed under subsection (b) for geologists. The Board has reorganized § 37.17 so that subsection (a) addresses renewal fees, subsection (b) addresses non-renewal application fees, and subsection (c) addresses fees for other services, such as certification of licensure. These changes do not in any way alter the fees charged by the Board, but merely place the recitation of

the fee in a more understandable user-friendly location. The Board has amended § 37.17(d) to clarify that only the fees for the state-specific examination are set by agreement between the Commonwealth and the third-party testing organization; the fee for the NCEES and ASBOG examinations are set by the national organizations and must be paid directly to NCEES or ASBOG separate from the fees paid to the Board.

#### Fiscal Impact and Paperwork Requirements

The final-form rulemaking will have no fiscal impact on the regulated community or on the Commonwealth or its political subdivisions and will impose no additional paperwork requirements upon the Commonwealth, political subdivisions or the private sector.

#### Effective date

The final-form rulemaking will become effective upon publication in the *Pennsylvania Bulletin*.

#### Statutory Authority

The final rulemaking is authorized by sections 4(b), 4(l), 4.2, 4.3, and 4.4 of the act (63 P.S. §§ 151.4(b), 151.4(l), 151.2, 151.3, and 151.4).

#### Regulatory Review

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on December 15, 2011, the Board submitted a copy of the notice of proposed rulemaking, published at 41 Pa.B. 6975 (December 31, 2011), to IRRC and the chairpersons of the HPLC and the SCP/PLC for review and comment.

Under section 5(c) of the Regulatory Review Act, the Board must provide IRRC, the HPLC and the SCP/PLC with copies of the comments received during the public comment period, as well as other documents when requested. Because no comments were received from the public, the Board had no public comments to forward. In preparing the final-form rulemaking, the Board has considered all comments received from IRRC and the HPLC; the SCP/PLC also did not comment.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on \_\_\_\_\_, 2013, the final-form rulemaking was approved by the HPLC. On \_\_\_\_\_, 2013, the final-form rulemaking was deemed approved by the SCP/PLC. Under section 5.1(e) of the Regulatory Review Act, IRRC met on \_\_\_\_\_, 2013, and approved the final-form rulemaking.

#### Additional Information

Persons who require additional information about the final-form rulemaking should submit inquiries to Regulatory Unit Counsel, Department of State, by mail to P.O. Box 2649,

Harrisburg, PA 17105-2649, by telephone at (717) 783-5540, or by e-mail at st-engineer@pa.gov.

### Findings

The Board finds that:

- (1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.
- (2) A public comment period was provided as required by law and all comments were considered.
- (3) The amendments to this final-form rulemaking do not enlarge the scope of proposed rulemaking published at 41 Pa.B. 6975.
- (4) The final-form rulemaking adopted by this order is necessary and appropriate for the administration of the act.

### Order

The Board, acting under its authorizing statute, orders that:

- (a) The regulations of the Board at 49 Pa. Code Chapter 37 are amended, by amending §§ 37.1, 37.16, 37.17, 37.31-37.34, 37.36, 37.37, 37.47-37.49 and 37.57, to read as set forth in Annex A.
- (b) The Board shall submit this order and Annex A to the Office of Attorney General and the Office of General Counsel for approval as required by law.
- (c) The Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.
- (d) The final-form rulemaking shall take effect upon publication in the *Pennsylvania Bulletin*.

**ANNEX A**

**TITLE 49. PROFESSIONAL AND VOCATIONAL STANDARDS**

**PART I. DEPARTMENT OF STATE**

**Subpart A. PROFESSIONAL AND OCCUPATIONAL AFFAIRS**

**CHAPTER 37. STATE REGISTRATION BOARD FOR PROFESSIONAL  
ENGINEERS, LAND SURVEYORS AND GEOLOGISTS**

**GENERAL PROVISIONS**

**§ 37.1. Definitions.**

The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

ABET – A THE Nationally-recognized accrediting body that accredits undergraduate engineering programs offered by colleges and universities in the United States. ABET was formerly known as the Accreditation Board for Engineering and Technology, Inc.

ASBOG – The National Association of State Boards of Geology.

\* \* \* \* \*

[*Engineering curriculum* – A curriculum of 4 or more years approved by a National accrediting association recognized by the Board which leads to a baccalaureate degree. In the case of a degree issued from an institution outside of the United States, an engineering curriculum is a curriculum of 4 or more years which a Board recognized professional credentials evaluation service has determined to be equivalent to a baccalaureate degree issued from a college or university in the United States.]

\* \* \* \* \*

NCEES – The National Council of Examiners for Engineering and Surveying.

*[Professional geological work* – The performance of geological service or work, including technical completeness reviews or inspections of unfinalized work product, that requires the utilization, application and interpretation of fundamental and practical principles of the geological sciences in the practice of geology. The term does not include routine sampling, laboratory work or geological drafting.

*Progressive experience in engineering work* – Within the context of the engineering-in-training, experience of a grade and character sufficient to enable an individual to learn through practice the principles of math and science attained through formal education.

*Progressive experience in surveying work* – Within the context of a surveyor-in-training, experience of a grade and character sufficient to qualify an individual to personally and independently attain the equivalent surveying skills and math attained through an associate degree program in surveying.

*Progressive teaching experience* – Full-time faculty teaching experience, attained after the issuance of an engineer-in-training certificate or a surveyor-in-training certificate which includes teaching engineering courses or land surveying courses at the junior, senior or graduate level, covering the breadth and depth of the curriculum.

*Responsible position* – A job which requires independent judgment, competence and accountability in the performance of professional geological work.

*Similarly qualified engineer* – A natural person who is not registered as a professional engineer in this Commonwealth, or in another jurisdiction which licenses professional engineers, who has attained a level of expertise in a recognized branch of engineering by means of experience and education which, in the opinion of the Board, would qualify the person to provide supervision of the applicant's progressive work experience in the major branch of engineering in

which the applicant indicates proficiency.

*Similarly qualified surveyor* – A natural person who is not registered as a professional land surveyor in this Commonwealth, or in another jurisdiction which licenses professional land surveyors, who has attained a level of expertise in land surveying by means of experience and education which, in the opinion of the Board, would qualify the person to provide supervision of the applicant's progressive work experience in land surveying.]

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## QUALIFICATIONS FOR LICENSURE

### § 37.16. General information; application and examination.

(a) *Applications.* Applications to take the A licensing examination TO BE CERTIFIED AS AN ENGINEER-IN-TRAINING, SURVEYOR-IN-TRAINING OR GEOLOGIST-IN-TRAINING, OR TO BE LICENSED AS A PROFESSIONAL ENGINEER, PROFESSIONAL LAND SURVEYOR OR PROFESSIONAL GEOLOGIST ~~together with instructions for applicants, including deadlines for filing and paying fees, may be obtained from~~ SHALL BE SUBMITTED DIRECTLY TO the Administrative office of the Board ~~by writing or telephoning the State Registration Board for Professional Engineers, Land Surveyors and Geologists,~~ AT Post Office Box 2649, Harrisburg, Pennsylvania 17105-2646 ~~(717) 783-7049~~. APPLICATIONS SHALL BE SUBMITTED WITH THE APPROPRIATE APPLICATION FEE IN § 37.17 (RELATING TO SCHEDULE OF FEES) AND REQUIRED SUPPORTING DOCUMENTATION. APPLICATION FEES ARE NON-REFUNDABLE AND NON-TRANSFERRABLE.

(b) *Reexaminee applications.* An approved EXAMINATION application shall entitle the ~~applicant~~ CANDIDATE to take the ~~written~~ examination once upon payment of one fee. If



the ~~applicant~~ CANDIDATE fails the examination OR FAILS TO SIT FOR THE EXAMINATION, the ~~applicant~~ CANDIDATE shall submit a ~~reexamine~~ REEXAMINATION application TO THE BOARD and pay a new fee. ~~Additional references or experience information, or both, on a candidate may be requested in writing by the Board for purposes of updating the applicant's file.~~ IF THE CANDIDATE FAILS AN EXAMINATION OR FAILS TO SIT FOR THE EXAMINATION, THE CANDIDATE MAY ALSO BE REQUIRED TO SUBMIT A REEXAMINATION APPLICATION, SCHEDULING FORM AND EXAMINATION FEES DIRECTLY TO NCEES OR ASBOG OR THE EXAMINATION SERVICE ON BEHALF OF THE BOARD. NCEES OR ASBOG MAY LIMIT THE NUMBER OF REEXAMINATION ATTEMPTS. REEXAMINATION FEES ARE NON-REFUNDABLE AND NON-TRANSFERRABLE.

(c) *Examinations.* ~~Written examinations~~ EXAMINATIONS will be held in ~~Pittsburgh, Harrisburg, Philadelphia and other~~ places designated by the Board, NCEES OR ASBOG during ~~the months of April and October~~ of AT LEAST TWO EXAMINATION WINDOWS each year. Applications for examination eligibility shall be submitted to the Board office by ~~December 1 for the April examination and by July 1 for the October examination~~ AT LEAST 120 DAYS PRIOR TO THE EXAMINATION REGISTRATION DEADLINE ESTABLISHED BY NCEES, ASBOG OR THE EXAMINATION SERVICE ON BEHALF OF THE BOARD. THE CANDIDATE SHALL REGISTER WITH NCEES OR ASBOG AS REQUIRED AND COMPLY WITH ALL DEADLINES SET BY NCEES, ASBOG OR THE EXAMINATION SERVICE ON BEHALF OF THE BOARD.

(d) *ELIGIBILITY DETERMINATION.* THE BOARD WILL NOT REVIEW AN APPLICATION UNTIL THE COMPLETED APPLICATION, REQUIRED SUPPORTING

DOCUMENTS, IF ANY, AND REQUIRED FEES HAVE BEEN RECEIVED BY THE BOARD OFFICE. SUBMISSION OF AN APPLICATION TO SIT FOR AN EXAMINATION DOES NOT GUARANTEE THAT THE BOARD WILL APPROVE OR DISAPPROVE THE APPLICATION WITHIN A SPECIFIED TIMEFRAME.

**§ 37.17. Schedule of fees.**

(a) ~~Professional engineers and professional land surveyors~~ RENEWAL FEES. The Board will charge the following RENEWAL fees:

Biennial renewal of registration.....\$50

(b) ~~Professional geologists~~ APPLICATION FEES. The Board will charge the following NONREFUNDABLE APPLICATION fees:

~~Application for registration~~ PERMISSION TO SIT FOR EXAMINATION .....\$50

~~Biennial renewal of~~ CERTIFICATION, LICENSURE OR registration.....\$50

Temporary permit .....\$25

(c) *Other fees.* The Board will charge the following fees:

Certification of license, registration, permit or scores.....\$25

Verification of license, registration or permit.....\$15

(d) *Fees to testing organizations.* Examination fees FOR STATE-SPECIFIC EXAMINATIONS are established by agreement between the Commonwealth and the THIRD-PARTY testing organizations that develop, administer and grade the examinations. EXAMINATION FEES FOR THE NATIONAL EXAMINATIONS ARE ESTABLISHED BY NCEES OR ASBOG. Examination candidates SHALL pay ALL REQUIRED examination fees directly to the RELEVANT testing organizations. EXAMINATION FEES ARE PAID SEPARATE FROM THE APPLICATION FEES.

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**REGISTERED PROFESSIONAL ENGINEERS**

\* \* \* \* \*

**§ 37.31. [Eligibility for certification or licensure, or both.] Requirements for certification as an engineer-in-training and for licensure as a professional engineer.**

[Before an applicant takes the examination for licensure as a professional engineer, the applicant shall satisfactorily complete the engineering fundamentals examination and become certified as an engineer-in-training. An applicant who is certified as an engineer-in-training shall remain certified without time limitation until the applicant becomes licensed as a professional engineer.] The following requirements apply to a candidate who received a qualifying academic degree on or after June 30, 1994, or who began acquiring qualifying experience on or after February 19, 1991.

(1) *Engineer-in-training.* [An applicant] A candidate for certification as an engineer-in-training shall [show satisfactory evidence to the Board of having met one of the following education or experience requirements:] be of good moral character and satisfactorily complete ACHIEVE A PASSING SCORE ON the NCEES fundamentals of engineering examination. To qualify for the fundamentals of engineering examination, the candidate shall possess one of the following qualifications:

(i) [*Education.* Graduation from an approved engineering curriculum of 4 or more years, except that an engineering student who has completed 2 or more years of an approved program in engineering may take the engineering fundamentals examination. The student is not eligible for certification as an engineer-in-training until proof of graduation is provided to the Board.]

Graduation from an undergraduate engineering curriculum in the United States approved ACCREDITED by ABET or graduation from a foreign undergraduate engineering curriculum recognized as substantially equivalent to ABET approval by ABET's Engineering Credentials Evaluation International or by NCEES's Center for Professional Engineering Education Services. A student who has completed 2 years in an ABET-approved ABET-ACCREDITED undergraduate curriculum in the United States and has maintained current enrollment may, with Board approval, sit for the fundamentals of engineering examination, but will not be eligible for certification as an engineer-in-training until the student provides proof of graduation. THE EFFECTIVE DATE OF CERTIFICATION WILL BE THE LATER OF THE DATE OF GRADUATION OR THE DATE OF NOTIFICATION FROM NCEES OF ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS OF ENGINEERING EXAMINATION.

(ii) [*Experience.*] Graduation from a AN ABET-ACCREDITED graduate-level engineering curriculum at a college or university in the United States that has an ABET-approved undergraduate curriculum in the same discipline, provided the candidate has completed basic engineering courses OR FROM A FOREIGN ABET-ACCREDITED UNDERGRADUATE OR GRADUATE ENGINEERING CURRICULUM. ENROLLMENT IN A GRADUATE-LEVEL OR FOREIGN ENGINEERING CURRICULUM DOES NOT AUTHORIZE THE STUDENT TO SIT FOR THE FUNDAMENTALS OF ENGINEERING EXAMINATION PRIOR TO GRADUATION.

(iii) GRADUATION FROM BOTH A GRADUATE-LEVEL

ENGINEERING CURRICULUM AT A COLLEGE OR UNIVERSITY IN THE UNITED STATES AND FROM AN UNDERGRADUATE ENGINEERING CURRICULUM AT A COLLEGE OR UNIVERSITY IN THE UNITED STATES THAT WAS SUBSTANTIALLY EQUIVALENT TO AN ABET-ACCREDITED CURRICULUM, AS SHOWN BY AN EVALUATION OF THE CANDIDATE'S CREDENTIALS BY NCEES'S CREDENTIALS EVALUATION DIVISION.

(iv) GRADUATION FROM A FOREIGN UNDERGRADUATE OR GRADUATE, OR BOTH, ENGINEERING CURRICULUM THAT WAS SUBSTANTIALLY EQUIVALENT TO AN ABET-ACCREDITED CURRICULUM, AS SHOWN BY AN EVALUATION OF THE CANDIDATE'S CREDENTIALS BY NCEES'S CREDENTIALS EVALUATION DIVISION.

(v) Eight [or more] years of progressive experience in engineering work and knowledge, skill and education approximating that attained through graduation from an approved engineering curriculum. The experience must be of a grade and character sufficient to enable the candidate to independently learn through practice the principles of mathematics and science attained through formal education. Academic training in engineering subjects may be counted towards the experience requirement.

(2) *Professional engineer.* [An applicant] A candidate for licensure as a professional engineer shall be of good moral character, be certified as an engineer-in-training IN THIS COMMONWEALTH OR ANOTHER JURISDICTION HAVING

SATISFIED THE REQUIREMENTS UNDER PARAGRAPH (1) TO SIT FOR THE FUNDAMENTALS OF ENGINEERING EXAMINATION, and [show satisfactory evidence to the Board of having met one of the following experience requirements:] satisfactorily complete ACHIEVE A PASSING SCORE ON the NCEES principles and practice of engineering examination in one of the branches of engineering AS LISTED IN § 37.34 (RELATING TO BRANCHES OF ENGINEERING). UNLESS OTHERWISE STATED BY THE APPROPRIATE LICENSING AUTHORITY OF THAT JURISDICTION, THE EFFECTIVE DATE OF THE ENGINEER-IN-TRAINING CERTIFICATE OF A CANDIDATE WHO WAS CERTIFIED IN A JURISDICTION OTHER THAN THIS COMMONWEALTH WILL BE THE DATE THE CERTIFICATE WAS FIRST ISSUED. To qualify for the principles and practice examination, the engineer-in-training shall have obtained one of the following experience qualifications between the issuance AFTER THE EFFECTIVE DATE of the engineer-in-training certificate and BEFORE the submission of the examination application:

- (i) [*Work experience.* Four or more years of progressive experience in engineering work performed after the issuance of the engineer-in-training certificate. The experience shall be obtained by working under the supervision of a professional engineer or a similarly qualified engineer, and shall be of a grade and character to qualify the applicant to assume responsible charge of the work involved in the practice of engineering. Experience of short periods of duration; that is, 6 months or less, which is used to comprise the minimum requirements shall be supported by adequate references. The experience shall be in the major branch of engineering in which the applicant indicates proficiency. For sales,

construction and similar nondesign experience to be acceptable, an applicant shall demonstrate conclusively to the Board that engineering principles and engineering knowledge were actually employed. The mere selection of data or equipment from a company catalog or a similar publication is not acceptable work experience. The mere execution as a contractor of work designed by a professional engineer, or the supervision of the construction of the work as a superintendent, or the operation or maintenance of machinery or equipment is not acceptable work experience.] Four years of progressive experience in a major branch of engineering, acquired under the supervision of a professional engineer licensed in the United States or an engineer who, through education and experience, possesses the equivalent level of expertise as that of a professional engineer licensed in the United States. The experience must be of a grade and character to qualify the candidate to assume responsible charge of the work involved in the practice of the major branch of engineering in which the candidate indicates proficiency. For sales, construction and similar nondesign experience to be acceptable, the candidate shall demonstrate that engineering principles and engineering knowledge were actually employed. Unacceptable experience includes the selection of data or equipment from a company catalog or similar publication, the execution as a contractor of work designed by a professional engineer, the supervision of construction work as a superintendent, and the operation or maintenance of machinery or equipment. The candidate shall support all work experience, regardless of duration, with adequate references.

(ii) [*Teaching experience.*] Four [or more] years of progressive full-

time teaching experience in an ~~ABET-approved~~ ABET-ACCREDITED engineering curriculum under the supervision of a professional engineer or [similarly qualified] an engineer who, through education and experience, possesses the equivalent level of expertise as a professional engineer. The [teaching] experience [shall] must include the teaching of engineering courses at the third-year, fourth-year or graduate level, covering the breadth and depth of the curriculum, and be of a grade [or] and character to qualify the [applicant] candidate to assume responsible charge of the work involved in the practice of engineering.

(3) A post-baccalaureate engineering degree may be substituted for each year of experience required under paragraph (2), up to a maximum of 2 years, if all of the following conditions are met:

(i) The degree is from an academic institution that has an ~~ABET-approved~~ ABET-ACCREDITED undergraduate curriculum.

(ii) The degree is in the same discipline as an earned undergraduate degree.

(iii) The academic time is not concurrent with earned experience.

**§ 37.32. References for certification as an engineer-in-training or licensure as a professional engineer.**

[As part of the application process, an applicant applying under § 37.31(1)(ii) and (2) (relating to eligibility for certification or licensure, or both), shall give the names and addresses of five references, three of whom are licensed professional engineers in this Commonwealth or another state or territory of the United States. Professional engineers used as references shall be



qualified to evaluate the applicant's training and experience, and know the applicant personally, but may not be related to the applicant. Individuals named as references should include professional engineers under whose direct supervision the applicant has worked. The Board will not review an application until five acceptable references have been received. If, in the opinion of the Board, references reflect adversely on the applicant's character or qualifications, the Board may withhold processing the application until an investigation into the applicant's character or qualifications, or both, is completed. Based upon the results of an investigation, additional references may be required by the Board.]

(a) A candidate for licensure as a professional engineer, and a candidate for certification as an engineer-in-training who seeks to qualify for the examination based on experience, shall provide as references the names and addresses of at least five persons who can attest to the applicant's CANDIDATE'S good moral character and who either directly supervised the candidate or can otherwise verify the candidate's experience. At least three of the references shall be professional engineers licensed in the United States who are unrelated to the candidate. The remaining references may be professional land surveyors, professional geologists, or unlicensed engineers who, through education and experience, possess an equivalent level of expertise as that of a professional engineer. A reference who is not a professional engineer licensed in the United States is required to submit a curriculum vitae.

(b) If, in the opinion of the Board, the references adversely reflect on the candidate's character or qualifications, the Board may withhold processing the candidate's application until an investigation into the candidate's character or qualifications, or both, is completed. The candidate will be notified in writing of any investigation that is being conducted. Based on the results of the investigation, the Board may require the candidate to submit additional references.

**§ 37.33. Grandfather [provision] requirements for certification as an engineer-in-training and for licensure as a professional engineer.**

[Under section 14 of the act (63 P.S. § 151.1, note), an applicant who has completed the educational requirements for licensure as a professional engineer by June 30, 1994, or who has commenced the experience requirements for licensure as a professional engineer prior to February 19, 1991, shall comply with the education and experience requirements of the act of May 23, 1945 (P.L. 913, No. 367) as they existed on February 15, 1991, the day prior to the effective date of Act 192 of 1990.]

(a) Scope. This section applies to a candidate who received a qualifying academic degree before June 30, 1994, or who began acquiring qualifying experience before February 19, 1991.

(b) Engineer-in-training. A candidate for certification as an engineer-in-training under this subsection shall be of good moral character and ~~satisfactorily complete~~ ACHIEVE A PASSING SCORE ON the NCEES fundamentals of engineering examination, except that completion of the fundamentals of engineering examination is not required of a candidate who received a qualifying academic degree before January 1, 1968. To qualify for the fundamentals of engineering examination, the candidate shall possess one of the following qualifications:

(1) Graduation from an undergraduate OR GRADUATE-LEVEL engineering curriculum in the United States ~~approved~~ ACCREDITED by ABET or graduation from a foreign undergraduate OR GRADUATE-LEVEL engineering curriculum ~~recognized by ABET's Engineering Credentials Evaluation International or by NCEES's Center for Professional Engineering Education services as substantially equivalent to ABET approval~~ ACCREDITED BY ABET.

(2) Graduation from BOTH a graduate-level engineering curriculum AT A COLLEGE OR UNIVERSITY in the United States that has an ABET-approved undergraduate curriculum in the same discipline AND FROM AN UNDERGRADUATE ENGINEERING CURRICULUM AT A COLLEGE OR UNIVERSITY IN THE UNITED STATES THAT WAS SUBSTANTIALLY EQUIVALENT TO AN ABET-ACCREDITED CURRICULUM, AS SHOWN BY AN EVALUATION OF THE CANDIDATE'S CREDENTIALS BY NCEES'S CREDENTIALS EVALUATION DIVISION.

(3) GRADUATION FROM A FOREIGN UNDERGRADUATE OR GRADUATE, OR BOTH, ENGINEERING CURRICULUM THAT WAS SUBSTANTIALLY EQUIVALENT TO AN ABET-ACCREDITED CURRICULUM, AS SHOWN BY AN EVALUATION OF THE CANDIDATE'S CREDENTIALS BY NCEES'S CREDENTIALS EVALUATION DIVISION.

(4) Four years of experience in engineering work, having acquired knowledge, skill and education approximating that attained through graduation from an approved engineering curriculum.

(c) Professional engineer. A candidate for licensure as a professional engineer under this subsection shall be of good moral character and ~~satisfactorily complete~~ ACHIEVE A PASSING SCORE ON the NCEES principles and practice examination in one of the branches of engineering.

(1) To qualify for the principles and practice examination, the candidate shall possess one of the following sets of qualifications prior to submission of the examination application:

(i) Possession of an engineer-in-training certificate IN THIS COMMONWEALTH OR ANOTHER JURISDICTION and 4 years of progressive engineering or teaching experience, in the case of a candidate who is a graduate from an approved engineering curriculum ALSO SATISFIES THE REQUIREMENTS under subsection (b)(1) or (2) TO SIT FOR THE FUNDAMENTALS OF ENGINEERING EXAMINATION.

(ii) Successful completion of the fundamentals of engineering examination and 8 AT LEAST 12 years of progressive engineering experience (excluding the experience required to sit for the fundamentals of engineering examination), AT LEAST 8 YEARS OF WHICH SHALL HAVE BEEN UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER OR A SIMILARLY QUALIFIED ENGINEER in the case of candidate who is not a graduate of an approved engineering curriculum under subsection (b)(1) or (2). A CANDIDATE WHO OTHERWISE QUALIFIES UNDER THIS SUBPARAGRAPH BUT HAS NOT ACHIEVED A PASSING SCORE ON THE FUNDAMENTALS OF ENGINEERING EXAMINATION MAY BE ADMITTED TO SIT FOR THE FUNDAMENTALS OF ENGINEERING EXAMINATION, BUT MAY NOT BE ADMITTED TO SIT FOR THE PRINCIPLES AND PRACTICE OF ENGINEERING EXAMINATION UNTIL ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS OF ENGINEERING EXAMINATION.

(2) The engineering and teaching experience required under this subsection must comply with the standards set forth in § 37.31(2) (relating to requirements for certification as an engineer-in-training and for licensure as a professional engineer). A

candidate may not substitute a post-baccalaureate engineering degree for any part of the required experience.

**§ 37.34. Branches of engineering.**

(a) The Board recognizes the following as major branches of engineering practice and may eliminate or add other branches of engineering practice it deems necessary in the interest of the profession.

\* \* \* \* \*

(b) ~~An applicant~~ A CANDIDATE who has passed an examination in one of the major branches of engineering listed in subsection (a), or in other branches of engineering as are subsequently recognized by the Board, will be granted registration as a professional engineer. The ~~applicant~~ PROFESSIONAL ENGINEER may then practice any branch of engineering in which the ~~applicant~~ PROFESSIONAL ENGINEER has proven proficiency by reason of education and experience, and in which the ~~applicant~~ PROFESSIONAL ENGINEER is willing to accept full legal, financial and professional responsibility. A professional engineer may not be limited to the practice of any one major branch of engineering because the professional engineer has passed a written examination based upon the major branch of engineering, subject to this chapter and the provisions of the act relating to Code of Ethics.

**REGISTERED PROFESSIONAL GEOLOGISTS**

**§ 37.36. [Eligibility for licensure] Requirements for certification as a geologist-in-training and for licensure as a professional geologist.**

[An applicant for licensure as a professional geologist shall be of good moral character, meet the following education and experience requirements and pass an examination adopted by the Board.

(1) *Education.*

(i) An applicant shall submit evidence to the Board of having graduated from an accredited institution of higher learning with a major in geology, geophysics, geochemistry or engineering geology, with a minimum of 30 semester or 45 quarter hours in geology, geophysics, geochemistry, engineering geology or their subdivisions.

(ii) An applicant who has graduated from an accredited institution of higher learning which does not grant semester or quarter hours in geological science courses leading to a major in geology, shall submit evidence to the Board of having completed 30 semester or 45 quarter hours or an equivalent amount of geological education, of which at least 24 semester hours or an equivalent amount are in third or fourth year undergraduate courses or graduate courses. The applicant shall submit documentation from the institution certifying that at the time the applicant attended the institution, the institution did not offer semester or quarter hours in geological science courses leading to a major in geology. The certification shall accompany the application materials.

(iii) Graduates of a foreign college or university shall have their educational credentials reviewed by a professional evaluation service approved by the Board. To be acceptable, the applicant's educational credentials shall be equivalent to a Bachelor Degree in geology, geophysics, geochemistry, engineering geology or their subdivisions from an accredited United States college or university.

(2) *Experience.* An applicant shall complete at least 5 years of professional geological work. The applicant's experience shall include either a minimum of 3 years of professional geological work under the supervision of a licensed professional geologist or a minimum of 5 years in a responsible position in professional geological work. Professional geological work

performed prior to February 16, 1993, shall satisfy the requirement of this subsection if it was performed under the supervision of either a licensed professional geologist or a qualified geologist who was not licensed. Experience, to be acceptable, shall demonstrate the applicant's ability to apply principles of geology, geophysics, geochemistry, engineering geology or their subdivisions to the actual practice of geology. Routine sampling, laboratory work and geological drafting is not professional geological work and will not be credited as acceptable experience. A Graduate Degree in geology, geophysics, geochemistry, engineering geology or their subdivisions may be substituted as part of the total experience requirements for licensure, at the rate of 1 year for a Master's Degree and 1 year for a Doctor's Degree. Credit for a Graduate Degree may not exceed a total of 2 years toward meeting the required number of years of professional geological work.]

(a) General. The requirements in this section apply to candidates for certification as a geologist-in-training and candidates for licensure as a professional geologist. A candidate who meets the applicable requirements may apply at the same time both to sit for the fundamentals of geology examination in order to be certified as a geologist-in-training and to sit for the principles and practice of geology examination to be licensed as a professional geologist.

(b) Geologist-in-training. A candidate for certification as a geologist-in-training shall be of good moral character and satisfactorily complete ACHIEVE A PASSING SCORE ON the ASBOG fundamentals of geology examination.

(1) To qualify for the fundamentals of geology examination, the candidate shall possess one of the following qualifications:

(i) Graduation from an accredited institution of higher learning in the United States, having majored in geology, geophysics, geochemistry or

engineering geology and having completed 30 semester hours or 45 quarter hours in the major. A student who has completed 2 years in a program and has maintained current enrollment may, with Board approval, sit for the fundamentals of geology examination, but will not be eligible for certification as a geologist-in-training until the student provides proof of graduation, INCLUDING COMPLIANCE WITH THE EDUCATIONAL CONTENT REQUIREMENTS OF PARAGRAPH (2). THE EFFECTIVE DATE OF CERTIFICATION WILL BE THE LATER OF THE DATE OF GRADUATION OR THE DATE OF NOTIFICATION FROM ASBOG OF ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS OF GEOLOGY EXAMINATION.

(ii) Graduation from an accredited institution of higher learning in the United States that does not offer a major in geology, geophysics, geochemistry or engineering geology, having completed 30 semester hours or 45 quarter hours or an equivalent amount of geological education, including 24 semester hours or an equivalent amount in third- or fourth-year courses or graduate courses. A student who has completed 2 years in a program and has maintained current enrollment may, with Board approval, sit for the fundamentals of geology examination, but will not be eligible for certification as an geologist-in-training until the student provides proof of graduation, INCLUDING COMPLIANCE WITH THE EDUCATIONAL CONTENT REQUIREMENTS OF PARAGRAPH (2). THE EFFECTIVE DATE OF CERTIFICATION WILL BE THE LATER OF THE DATE OF GRADUATION OR THE DATE OF NOTIFICATION FROM ASBOG OF ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS



OF GEOLOGY EXAMINATION.

(iii) Graduation from a foreign college or university that World Evaluation EDUCATION Services or other Board-approved professional evaluation service deems equivalent to a bachelor's degree in geology, geophysics, geochemistry, or engineering geology from an accredited institution of higher learning in the United States AND WHICH SATISFIES THE EDUCATIONAL CONTENT REQUIREMENTS OF PARAGRAPH (2).

(2) The formal education required under this subsection must include field geology and structural geology coursework that is sufficient to demonstrate that the candidate has educational experience in tectonics and fractured bedrock geology and the field methods needed to measure, map and evaluate geologic data.

(c) Professional geologist. A candidate for licensure as a professional geologist shall be of good moral character, be certified as a geologist-in-training and satisfactorily complete ACHIEVE A PASSING SCORE ON the ASBOG principles and practice of geology examination.

(1) To qualify for the principles and practice examination, the geologist-in-training CERTIFIED IN THIS COMMONWEALTH OR ANOTHER JURISDICTION WHO ALSO SATISFIES THE REQUIREMENTS UNDER SUBSECTION (b) TO SIT FOR THE FUNDAMENTALS OF GEOLOGY EXAMINATION shall have obtained one of the following experience qualifications prior to the submission of the examination application:

(i) Five years of experience performing geological services or work in a position that requires independent judgment, competence and accountability.

(ii) Five years of experience performing geological services or work, including 3 years under the supervision of a professional geologist, except that experience acquired prior to February 16, 1993, may be under the supervision of an unlicensed geologist who, through education and experience, possesses the equivalent level of expertise as that of a professional geologist.

(iii) Five years of progressive full-time teaching experience in a geological curriculum, including senior-level or graduate-level coursework, at an accredited institution of higher learning.

(2) The experience required under this subsection must require the utilization, application and interpretation of fundamental and practical principles of the geological science, and must be of a character and grade to qualify the candidate to assume responsible charge of the work involved in the practice of geology. Acceptable experience may include the technical completeness reviews or inspections of unfinalized work product. Unacceptable experience includes routine sampling, laboratory work, and geological drafting. A graduate degree in geology, geophysics, geochemistry or engineering geology may be substituted as part of the experience requirements in this paragraph, at a rate of 1 year for a masters degree and 1 year for a doctoral degree. Credit for graduate degrees may not exceed 2 years of experience.

(3) A CANDIDATE WHO OTHERWISE QUALIFIES TO SIT FOR THE EXAMINATIONS UNDER PARAGRAPH (1) BUT HAS NOT ACHIEVED A PASSING SCORE ON THE FUNDAMENTALS OF GEOLOGY EXAMINATION MAY BE ADMITTED TO SIT FOR THE FUNDAMENTALS OF GEOLOGY EXAMINATION, BUT MAY NOT BE ADMITTED TO SIT FOR THE PRINCIPLES

AND PRACTICE OF GEOLOGY EXAMINATION UNTIL ACHIEVING A PASSING  
SCORE ON THE FUNDAMENTALS OF GEOLOGY EXAMINATION.

**§ 37.37. References for licensure as a professional geologist.**

(a) [As part of the application process, an applicant whose experience under § 37.36(2) (relating to eligibility for licensure) includes a minimum of 3 years of professional geological work under the supervision of either a licensed professional geologist or, in the case of work performed prior to February 16, 1993, a qualified geologist who was not licensed, shall give the names and addresses of at least three references who, collectively, can verify the required experience claimed by the applicant and attest to the applicant's good moral character. Individuals used as references should include either licensed professional geologists under whose direction the applicant has worked or unlicensed geologists who are qualified to evaluate the applicant's training and experience. The Board will not review an application until three acceptable references have been received.] A candidate for licensure as a professional geologist shall provide as references the names and addresses of at least three professional geologists FIVE PERSONS who can attest to the applicant's CANDIDATE'S good moral character and who either DIRECTLY supervised the candidate or can otherwise verify the candidate's experience. AT LEAST THREE OF THE REFERENCES SHALL BE PROFESSIONAL GEOLOGISTS LICENSED IN THE UNITED STATES WHO ARE UNRELATED TO THE CANDIDATE. A candidate may provide as additional experience references the names and addresses of THE REMAINING REFERENCES MAY BE professional engineers, professional land surveyors, or unlicensed geologists who, through education and experience, possess an equivalent level of expertise as that of a professional geologist. A reference who is an unlicensed geologist is required to submit a curriculum vitae.

(b) [An applicant whose experience under § 37.36(2) includes a minimum of 5 years experience in a responsible position in professional geological work shall give the names and addresses of at least three references who, collectively, can verify the experience claimed by the applicant and attest to the applicant's good moral character. The Board will not review an application until three acceptable references have been received.

(c) If, in the opinion of the Board, the references reflect adversely on the [applicant's] candidate's character or qualifications, the Board may withhold processing the candidate's application until an investigation into the [applicant's] candidate's character or qualifications, or both, is completed. The [applicant] candidate will be notified in writing of any investigation [which] that is being conducted [relative to the content of the applicant's application]. Based upon the results of [an] the investigation, the Board may require the candidate to submit additional references [may be required by the Board].

### REGISTERED PROFESSIONAL LAND SURVEYORS

**§ 37.47. [Eligibility for certification or licensure, or both] Requirements for certification as a surveyor-in-training and for licensure as a professional land surveyor.**

[Before an applicant takes the examination for licensure as a professional land surveyor, the applicant shall satisfactorily complete the surveying fundamentals examination and become certified as a surveyor-in-training. An applicant who is certified as a surveyor-in-training shall remain certified without time limitation until the applicant becomes licensed as a professional land surveyor.] The following requirements apply to a candidate who received a qualifying academic degree on or after June 30, 1994, or who began obtaining qualifying experience on or after February 19, 1991.

(1) *Surveyor-in-training.* [An applicant] A candidate for certification as a

surveyor-in-training shall [show satisfactory evidence to the Board of having met one of the following requirements:] be of good moral character and satisfactorily complete ACHIEVE A PASSING SCORE ON the NCEES fundamentals of surveying examination. To qualify for the fundamentals of surveying examination, the candidate shall possess one of the following qualifications:

(i) Graduation from an [approved] undergraduate civil engineering curriculum [of at least 4 years] in the United States ~~approved~~ ACCREDITED by ABET, including a minimum of 10 credit hours of instruction in surveying or graduation from an undergraduate 4-year surveying curriculum in the United States ~~approved~~ ACCREDITED by ABET. A student who has completed 2 years of a 4-year surveying curriculum and has maintained current enrollment may, with Board approval, sit for the fundamentals of surveying examination, but will not be eligible for certification as a surveyor-in-training until the student provides proof of graduation. THE EFFECTIVE DATE OF CERTIFICATION WILL BE THE LATER OF THE DATE OF GRADUATION OR THE DATE OF NOTIFICATION FROM NCEES OF ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS OF SURVEYING EXAMINATION.

(ii) Graduation from an [associate] associate's degree program in [an approved] A surveying technology curriculum ~~approved~~ ACCREDITED by ABET.

(iii) [Completion of 6 or more] Six years of progressive experience in surveying, and knowledge, skill and education equivalent to that attained through graduation from an approved land surveying or civil engineering curriculum. [For

experience to be acceptable to the Board, an applicant shall show diversification of field and office experience, with a minimum of 25% of the experience in each area.] The experience must reflect diversification of field and office work, with no less than 25% of the experience in either area, and must be of a grade and character sufficient to enable the candidate to independently learn through practice the surveying skills and principles of mathematics attained through formal education.

(2) *Professional land surveyor.* [An applicant] A candidate for licensure as a professional land surveyor shall be of good moral character, be certified as a surveyor-in-training and [show satisfactory evidence to the Board of having met one of the following requirements:] ~~satisfactorily complete~~ ACHIEVE A PASSING SCORE ON the NCEES principles and practice of surveying examination. UNLESS OTHERWISE STATED BY THE APPROPRIATE LICENSING AUTHORITY OF THAT JURISDICTION, THE EFFECTIVE DATE OF THE SURVEYOR-IN-TRAINING CERTIFICATE OF A CANDIDATE WHO WAS CERTIFIED IN A JURISDICTION OTHER THAN THIS COMMONWEALTH WILL BE THE DATE THE CERTIFICATE WAS FIRST ISSUED. To qualify for the principles and practice examination, the surveyor-in-training shall have obtained one of the following experience qualifications between the issuance EFFECTIVE DATE of the surveyor-in-training certificate and the submission of the examination application:

(i) [*Work experience.* Four or more years of progressive experience in land surveying work performed after the issuance of the surveyor-in-training certificate. The experience shall be obtained by working under the supervision of

a professional land surveyor or similarly qualified surveyor and shall be of a grade and character to qualify the applicant to assume responsible charge of the work involved in the practice of land surveying. Experience of short periods of duration; that is, 6 months or less, which is used to comprise the minimum requirements shall be supported by adequate references.] Four years of progressive experience in surveying work acquired under the supervision of a professional land surveyor or a land surveyor who, through education and experience, possesses the equivalent level of expertise as that of a professional land surveyor. The experience shall be of a grade and character to qualify the candidate to assume responsible charge of the work involved in the practice of land surveying.

(ii) [*Teaching experience.*] Four [or more] years of progressive full-time faculty teaching experience in [an approved] a surveying curriculum approved ACCREDITED by ABET under the supervision of a professional land surveyor or a [similarly qualified] surveyor who, through education and experience, possesses the equivalent level of expertise as a professional land surveyor. The [teaching] experience [shall] must include the teaching of surveying courses at the third-year, fourth-year or graduate level, covering the breadth and depth of the curriculum, and be of a grade or character to qualify the ~~applicant~~ CANDIDATE to assume responsible charge of the work involved in the practice of land surveying.

**§ 37.48. References for certification as a surveyor-in-training or licensure as a professional land surveyor.**

[As part of the application process, an applicant applying under § 37.47(1)(iii) and (2) (relating to eligibility for certification or licensure, or both) shall give the names and addresses of five references, three of whom shall be licensed professional land surveyors in this Commonwealth or another state or territory of the United States. Individuals used as references shall be qualified to evaluate the applicant's training and experience and know the applicant personally, but may not be related to the applicant. Individuals used as references shall include professional land surveyors or professional engineers under whose direct supervision the applicant has worked. The Board will not review an application until five acceptable references have been received. If, in the opinion of the Board, references reflect adversely on the applicant's character or qualifications, the Board may withhold processing the application until an investigation into the applicant's character or qualifications, or both, is completed. Based upon the results of an investigation, additional references may be required by the Board.]

(a) A candidate for licensure as a professional land surveyor, and a candidate for certification as a surveyor-in-training who seeks to qualify for the certification examination based on experience, shall provide as references the names and addresses of at least five references, unrelated to the candidate, PERSONS who can attest to the candidate's good moral character and who either directly supervised the candidate or can otherwise verify the candidate's experience. At least three of the references shall be professional land surveyors LICENSED IN THE UNITED STATES WHO ARE UNRELATED TO THE CANDIDATE. The remaining references may be professional engineers, professional geologists, or unlicensed surveyors who, through education and experience, possess an equivalent level of expertise as that of a professional land surveyor. A reference who is an unlicensed surveyor is required to submit a curriculum vitae.



(b) If, in the opinion of the Board, the references reflect adversely on the candidate's character or qualifications, the Board may withhold processing the candidate's application until an investigation into the candidate's character or qualifications, or both, is completed. The candidate will be notified in writing of any investigation that is being conducted. Based on the results of the investigation, the Board may require additional references.

**§ 37.49. Grandfather [provision] requirements for licensure as a professional land surveyor.**

[Under section 14 of the act (63 P.S. § 151.1, note), applicants who have completed their educational requirements for licensure as a professional land surveyor by June 30, 1994, or who have commenced their experience requirements for licensure as a professional land surveyor prior to February 19, 1991, shall comply with the education and experience requirements of the act of May 23, 1945 (P.L. 913, No. 367), as they existed on February 15, 1991, the day prior to the effective date of Act 192 of 1990.]

(a) This section applies to a candidate who received a qualifying academic degree before June 30, 1994, or who began obtaining qualifying experience before February 19, 1991.

(b) A candidate for licensure as a professional land surveyor under this section shall be of good moral character and ~~satisfactorily complete~~ ACHIEVE PASSING SCORES ON the NCEES fundamentals of surveying examination and principles and practice of surveying examination. To qualify for the examinations, the candidate shall possess one of the following sets of qualifications prior to submission of the examination application:

(1) Graduation from an undergraduate civil engineering curriculum in the United States ~~approved~~ ACCREDITED by ABET, including a minimum of 10 credit hours of instruction in surveying, and 4 years of progressive experience in land surveying

work.

(2) Graduation from an associate's degree program in a curriculum in surveying approved ACCREDITED by ABET and 4 years of progressive experience in land surveying work.

(3) Ten years of progressive experience in land surveying work, including 5 years in responsible charge of primary land surveying functions.

(c) The experience required under this section must have been acquired under the supervision of a professional land surveyor or an unlicensed surveyor who, through education and experience, possesses the equivalent level of expertise as that of a professional land surveyor. The experience must be of a grade and character to qualify the candidate to assume responsible charge of the work involved in the practice of land surveying. The experience must reflect diversification of field and office work, with no less than 25% of the experience in either area.

(d) A CANDIDATE WHO OTHERWISE QUALIFIES TO SIT FOR THE EXAMINATIONS UNDER SUBSECTION (b) BUT HAS NOT ACHIEVED A PASSING SCORE ON THE FUNDAMENTALS OF LAND SURVEYING EXAMINATION MAY BE ADMITTED TO SIT FOR THE FUNDAMENTALS OF LAND SURVEYING EXAMINATION, BUT MAY NOT BE ADMITTED TO SIT FOR THE PRINCIPLES AND PRACTICE OF LAND SURVEYING EXAMINATION AND THE STATE-SPECIFIC LAND SURVEYING EXAMINATION UNTIL ACHIEVING A PASSING SCORE ON THE FUNDAMENTALS OF LAND SURVEYING EXAMINATION.

### **REGISTRATION NUMBER AND SEAL**

**§ 37.57. Registration number.**

Upon registering with the Board, each ~~applicant~~ REGISTRANT will be assigned a UNIQUE registration number. ~~Registration numbers will be issued consecutively in the order in which applications are approved by the Board.~~

\* \* \* \* \*



**COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF STATE  
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS  
STATE REGISTRATION BOARD FOR PROFESSIONAL ENGINEERS,  
LAND SURVEYORS AND GEOLOGISTS  
Post Office Box 2649  
Harrisburg, Pennsylvania 17105-2649  
(717) 783-7049**

May 2, 2013

The Honorable Silvan B. Lutkewitte, III, Chairman  
INDEPENDENT REGULATORY REVIEW COMMISSION  
14<sup>th</sup> Floor, Harristown 2, 333 Market Street  
Harrisburg, Pennsylvania 17101

Re: Final Regulation  
State Registration Board for Professional Engineers, Land Surveyors and Geologists  
16A-4711: QUALIFICATIONS FOR LICENSURE

Dear Chairman Lutkewitte:

Enclosed is a copy of a final rulemaking package of the State Registration Board for Professional Engineers, Land Surveyors and Geologists pertaining to Qualifications for Licensure.

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

Sincerely,

A handwritten signature in cursive script, reading "Elizabeth A. Cantania".

Elizabeth A. Cantania, PE, President  
State Registration Board for Professional Engineers,  
Land Surveyors and Geologists

EAC/CKM:rs

Enclosure

cc: Katie True, Commissioner  
Bureau of Professional and Occupational Affairs  
Rebecca Oyler, Director of Policy, Department of State  
Steven V. Turner, Chief Counsel  
Department of State  
Cynthia Montgomery, Regulatory Counsel  
Department of State  
Jeffrey W. Wood, Counsel  
State Registration Board for Professional Engineers, Land Surveyors and Geologists  
State Registration Board for Professional Engineers, Land Surveyors and Geologists

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

I.D. NUMBER: 16A-4711

SUBJECT: QUALIFICATIONS OF LICENSURE

AGENCY: DEPARTMENT OF STATE  
BUREAU OF PROFESSIONAL AND OCCUPATIONAL AFFAIRS  
STATE BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS  
AND GEOLOGISTS

**TYPE OF REGULATION**

- Proposed Regulation
- X 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 Tolled Regulation
  - a. With Revisions
  - b. Without Revisions

2013 MAY -2 AM 10: 29

RECEIVED  
IRRC

**FILING OF REGULATION**

DATE	SIGNATURE	DESIGNATION
5/2/13	<i>Michele Warren</i>	HOUSE COMMITTEE ON PROFESSIONAL LICENSURE
		MAJORITY CHAIR <u>Julie Harhart</u>
5/2/13	<i>Mary Walmer</i>	SENATE COMMITTEE ON CONSUMER PROTECTION & PROFESSIONAL LICENSURE
		MAJORITY CHAIR <u>Robt. M. Tomlinson</u>
5/2/13	<i>Step. F. Hoff</i>	INDEPENDENT REGULATORY REVIEW COMMISSION
_____	_____	ATTORNEY GENERAL (for Final Omitted only)
_____	_____	LEGISLATIVE REFERENCE BUREAU (for Proposed only)