

PROPOSED RULEMAKING

FISH AND BOAT COMMISSION

[58 PA. CODE CH. 65]

Fishing; Special Fishing Regulations

The Fish and Boat Commission (Commission) proposes to amend Chapter 65 (relating to special fishing regulations). The Commission is publishing this proposed rulemaking under the authority of 30 Pa.C.S. (relating to the Fish and Boat Code) (code). The proposed amendments modify and update the Commission's fishing regulations.

A. Effective Date

The proposed rulemaking, if approved on final-form, will go into effect upon publication in the *Pennsylvania Bulletin*.

B. Contact Person

For further information on the proposed rulemaking, contact Wayne Melnick, Esq., P. O. Box 67000, Harrisburg, PA 17106-7000, (717) 705-7810. This proposed rulemaking is available on the Commission's web site at www.fish.state.pa.us.

C. Statutory Authority

The proposed amendment to § 65.24 (relating to miscellaneous special regulations) is published under the statutory authority of section 2307 of the code (relating to waters limited to specific purposes).

D. Purpose and Background

The proposed rulemaking is designed to improve, enhance and update the Commission's fishing regulations. The specific purpose of the proposed amendment is described in more detail under the summary of proposal.

E. Summary of Proposal

Opossum Lake, a 59-acre impoundment owned by the Commission, is located in Lower Frankford Township, Cumberland County, approximately 6 miles west-northwest of the Borough of Carlisle. This lake was completely dewatered in 2008 to make dam and spillway repairs and modifications per Department of Environmental Protection dam safety standards. The dam, constructed in 1960, impounds Opossum Creek approximately 1/2 mile upstream from the mouth at Conodoguinet Creek. Access to the shoreline is primarily from the eastern shore where a paved road parallels 75% of this shoreline. Additionally, two concrete boat ramps provide boat access for nonpowered and electric motor craft. Prior to the drawdown, the lake offered angling opportunities for multiple warm and coolwater fish species and adult stocked trout originating from Commission spring, fall and winter plants. This is the second time the lake has been subject to a full drawdown, the first occurring in 1985. A successful grass roots effort was launched to secure funding to assist in the rebuilding of the dam structure. As a result, refilling of the lake is anticipated to begin in Spring 2012.

The Commission plans to reclaim the lake and establish a high quality warm and coolwater fishery through fingerling plants of select species and a 2-year morato-

rium on adult trout stocking. This approach is necessary to facilitate development of a self-sustaining shiner population, which will provide forage for game and panfish populations. The Commission proposes to open the lake to fishing under a miscellaneous special regulation that will allow for the harvest of trout under Commonwealth inland seasons, sizes and creel limits but allow only catch and release fishing for all other fish species. The Commission believes this approach will allow the fishery to develop under protective regulations while offering acceptable levels of recreational angling opportunities.

The positive aspect of this proposed rulemaking is that the lake will provide anglers the opportunity to fish for adult trout beginning 2 years following refilling and provide immediate angling opportunities for warm and cool water fish populations as they grow and reach acceptable lengths for angling. The 2-year loss of recreational angling opportunities for stocked adult trout is a negative aspect of this restoration plan; however, the Commission believes that the benefits outweigh the short-term loss of recreation. Commission staff will monitor the fish populations and recommend appropriate special regulations prior to 2016 should the fish populations develop more quickly than anticipated. The black bass population previously residing in Opossum Lake was managed through the Big Bass Program. With respect to the catchable trout program, there are numerous alternative stream fishing opportunities throughout the Cumberland Valley and surrounding areas and several lakes in the area stocked with adult trout have been providing recreational angling opportunities during the current draw down period.

The Commission proposes that § 65.24 be amended to read as set forth in Annex A.

F. Paperwork

The proposed rulemaking will not increase paperwork and will not create new paperwork requirements.

G. Fiscal Impact

The proposed rulemaking will not have adverse fiscal impact on the Commonwealth or its political subdivisions. The proposed rulemaking will not impose new costs on the private sector or the general public.

H. Public Comments

Interested persons are invited to submit written comments, objections or suggestions about the proposed rulemaking to the Executive Director, Fish and Boat Commission, P. O. Box 67000, Harrisburg, PA 17106-7000 within 30 days after publication of this proposed rulemaking in the *Pennsylvania Bulletin*. Comments submitted by facsimile will not be accepted.

Comments also may be submitted electronically by completing the form at www.fishandboat.com/regcomments. If an acknowledgment of electronic comments is not received by the sender within 2 working days, the comments should be retransmitted to ensure receipt. Electronic comments submitted in any other manner will not be accepted.

JOHN A. ARWAY,
Executive Director

Fiscal Note: 48A-233. No fiscal impact; (8) recommends adoption.

Annex A
TITLE 58. RECREATION
PART II. FISH AND BOAT COMMISSION
Subpart B. FISHING
CHAPTER 65. SPECIAL FISHING REGULATIONS

§ 65.24. **Miscellaneous special regulations.**

The following waters are subject to the following miscellaneous special regulations:

<i>County</i>	<i>Name of Water</i>	<i>Special Regulations</i>
	* * * * *	
Cumberland	Opossum Lake	<p>All species except trout—Catch and release/no harvest; it is unlawful to take, kill or possess any fish except trout. All fish caught other than trout must be immediately returned unharmed.</p> <p>Trout—Inland regulations apply. See § 61.1 (relating to Commonwealth inland waters). This miscellaneous special regulation will remain in effect until June 18, 2016.</p>
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[Pa.B. Doc. No. 11-2218. Filed for public inspection December 30, 2011, 9:00 a.m.]

STATE REGISTRATION BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS AND GEOLOGISTS

[49 PA. CODE CH. 37]
Qualifications for Licensure

The State Registration Board for Professional Engineers, Land Surveyors and Geologists (Board) proposes to amend §§ 37.1, 37.31—37.33, 37.36, 37.37 and 37.47—37.49 to read as set forth in Annex A.

Effective Date

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

Statutory Authority

Section 4(l) of the Engineer, Land Surveyor and Geologist Registration Law (act) (63 P. S. § 151(l)) authorizes the Board to promulgate regulations that it deems necessary and proper for enforcement of the act.

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.

Description of Proposed Amendments

§ 37.1. *Definitions*

Section 37.1 defines words and phrases used in Chapter 37. To simplify the organizational structure of Chapter 37, the proposed rulemaking would delete the following definitions and incorporate the amended definitions into the text of the one or two sections where the terms are used: “engineering curriculum,” “professional geologic work,” “progressive experience in engineering work,” “progressive experience in surveying work,” “progressive teaching experience,” “responsible position,” “similarly qualified engineer” and “similarly qualified surveyor.” The Board proposes to incorporate these definitions in §§ 37.31, 37.36, 37.37 and 37.47, as applicable.

The proposed rulemaking would add a definition for “NCEES,” which is the acronym of the National Council of Examiners in Engineering and Surveying (NCEES). NCEES is the National organization of licensing boards and section 4(k) of the act authorizes the Board to be a member of NCEES. The proposed rulemaking would also add a definition for “ABET,” which is the acronym of the organization formerly known as the Accreditation Board of Engineering and Technology, Inc. (ABET). ABET, an affiliate of NCEES, accredits undergraduate engineering programs. Finally, the proposed rulemaking would include a definition for “ASBOG,” which is the acronym for the National Association of State Boards of Geology.

§ 37.31. *Requirements for certification as an engineer-in-training and for licensure as a professional engineer*

Section 37.31 is a companion regulation to section 4.2 of the act (63 P. S. § 151.2), which sets forth the requirements for certification as an engineer-in-training (EIT) and licensure as a professional engineer. The proposed

rulemaking would reorganize and retitle § 37.31 and provide updated interpretative guidance about the education and experience requirements for nongrandfather applicants for EIT certification and professional engineer licensure. Section 4.2 of the act was added by the act of December 19, 1990 (P. L. 782, No. 192) (Act 192). Act 192 provides that section 4.2 of the act applies to candidates who received qualifying academic degrees on or after June 30, 1994, or who began receiving qualifying experience on or after February 19, 1991. Other candidates would be evaluated according to requirements in existence as of February 18, 1991, the day prior to the effective date of Act 192. Those requirements would now be in § 37.33 (relating to grandfather requirements for certification as an engineer-in-training and for licensure as a professional engineer).

The introductory paragraph of existing § 37.31 provides that a candidate for licensure as a professional engineer shall pass the fundamentals of engineering examination (FE examination) and become certified as an EIT, and that a candidate who is certified as an EIT retains this status without time limitation until the candidate becomes licensed as a professional engineer. The proposed rulemaking would replace that introductory paragraph and provide that the requirements in § 37.31 apply to a candidate who received a qualifying academic degree or began obtaining qualifying experience by the dates previously stated.

Current § 37.31(1) provides that a candidate for certification as an EIT shall meet qualifying education or experience requirements. Subparagraph (i) provides that qualifying education for an EIT candidate is graduation from an approved engineering curriculum of 4 or more years. "Engineering curriculum" is currently defined in § 37.1 (relating to definitions) as a curriculum of 4 or more years approved by a National accrediting association recognized by the Board. Because there are no other National organizations that accredit engineering programs, the Board has always intended this definition to encompass accreditation by ABET or its predecessors, but no others. Current § 37.1 also defines "engineering curriculum" in the case of a degree awarded by a foreign institution as a curriculum of 4 or more years that a Board-recognized professional credentials evaluation service determines to be equivalent to a bachelor's degree from a college or university in the United States. Third- and fourth-year students in approved engineering programs within the United States are permitted to sit for the FE examination, but they are not eligible for EIT certification until they provide proof of graduation. Subparagraph (ii) provides that qualifying experience for an EIT candidate is 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. "Progressive experience in engineering work" in the context of EIT certification is currently defined in § 37.1 as experience of a grade and character that enables the candidate to learn through practice the principles of mathematics and science attained through formal education.

The proposed rulemaking would amend § 37.31(1) to provide that a candidate for EIT certification shall be a person of good moral character and pass the FE examination. Good moral character is a prerequisite for licensure as a professional engineer under section 4(b) of the act. Because EIT certification is a condition precedent to licensure, it follows that an EIT candidate be a person of good moral character. The proposed rulemaking would further provide that a candidate may not be admitted to

the FE examination without possessing one of the qualifications in subparagraphs (i)—(iii). The proposed rulemaking would amend § 37.31(1)(i) to provide that a candidate may qualify for the FE examination through graduation from an undergraduate engineering program in the United States approved by ABET or from a foreign undergraduate engineering program approved by ABET's Engineering Credentials Evaluation International (ECEI) or by NCEES's Center for Professional Engineering Education Services (CPEES) as substantially equivalent to ABET approval. A federation of professional and technical societies, ABET is a Nationally-recognized accrediting body that accredits undergraduate programs offered by colleges and universities in the United States in the areas of applied science, computing, engineering and technology. The Board, like engineering licensing bodies in other states, relies on ABET accreditation in determining the quality of undergraduate engineering programs in the United States. Although ABET does not accredit engineer programs offered in other countries, it has entered into a number of mutual recognition agreements that recognize the substantial equivalency of engineering programs in other countries. NCEES, the National umbrella group of state licensing boards for engineers and land surveyors, is one of the member societies of ABET and its predecessor was one of the founders of the original predecessor of ABET. ABET's subsidiary, ECEI, and NCEES's affiliate, CPEES, both evaluate the academic qualifications of engineering candidates educated outside the United States against prescribed substantial equivalency criteria. The Board relies on evaluations by ECEI and CPEES in assessing the quality of a candidate's engineering education from a foreign institution. A candidate who is a third- or fourth-year student in an ABET-approved engineering program in the United States may, with the Board's permission, be admitted to the FE examination, but will not be issued EIT certification without proof of graduation.

The proposed rulemaking would replace current § 37.31(1)(ii) with a provision that would permit a candidate to qualify for the FE examination through graduation from a graduate-level engineering curriculum from a college or university in the United States that has an ABET-approved undergraduate curriculum in the same engineering discipline, provided the candidate has completed basic engineering courses. This provision, which codifies the Board's longstanding interpretation of section 4.2 of the act, reflects the fact that a candidate with a graduate degree in engineering but without an undergraduate degree from an ABET-approved program may nevertheless have satisfactory academic preparation to be admitted to the FE examination. Although ABET does not accredit graduate-level engineering programs, a graduate-level engineering program at a college or university that has an ABET-accredited undergraduate program in the same engineering discipline is likely to be of similar quality. Requiring a candidate with a graduate degree in engineering to demonstrate completion of basic engineering courses provides an additional level of assurance about the candidate's academic preparation. It also allows the Board to consider a candidate whose undergraduate degree is not in an engineering discipline. The proposed rulemaking would amend and relocate current § 37.31(1)(ii) to proposed § 37.31(1)(iii), which would permit a candidate to qualify for the FE examination based upon section 4.2(b)(1)(ii) of the act by having 8 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 quality and

character that reflects a candidate's mastery of relevant mathematical and scientific principles. One or more years of academic training in engineering subjects may be applied towards the experience requirement.

Current § 37.31(2) provides that a candidate for licensure as a professional engineer shall possess EIT certification and have qualifying work experience or teaching experience, obtained after EIT certification, for admission to the principles and practices of engineering examination (license examination). Subparagraph (i) provides that qualifying work experience consists of 4 or more years of progressive experience in engineering work under the supervision of professional engineer, or similarly qualified engineer, that is of a grade and character that permits the candidate to assume responsible charge of the work involved in the practice of engineering. "Similarly qualified engineer" is currently defined in § 37.1 as a nonlicensee who, by means of education and experience, has attained a level of expertise in a recognized branch of engineering that the Board considers sufficient for purposes of supervising a licensure candidate's progressive work experience. Experience deemed unacceptable includes sales, construction and nondesign work that does not involve the use of engineering knowledge and principles; the mere selection of data or equipment from a company catalog or similar publication; the mere execution of work as a superintendent; and the operation and maintenance of machinery and equipment. Work segments of less than 6 months' duration must be supported by adequate references. Subparagraph (ii) provides that qualifying teaching experience consists of 4 or more years of progressive teaching experience under the supervision of a professional engineer, or similarly qualified engineer, that is of a grade and character that permits the candidate to assume responsible charge of the work involved in the practice of engineering. "Progressive teaching experience" is currently defined in § 37.1 as a full-time faculty position that includes teaching third-year, fourth-year or graduate-level engineering courses, covering the breadth and depth of the curriculum.

The proposed rulemaking would amend § 37.31(2) to provide that a candidate for licensure as a professional engineer be a person of good moral character, be certified as an EIT and pass the license examination in one of the branches of engineering. The proposed rulemaking would further provide that a candidate may not be admitted to the license examination without having acquired the experience qualifications in subparagraph (i) or (ii) between the time of issuance of EIT certification and the submission of an examination application, as is required under section 4.2(c)(1) of the act. The proposed rulemaking would amend § 37.31(2)(i) to provide that a candidate may qualify for the license examination by meeting the requirement in section 4.2(c)(1) of the act of 4 years of progressive experience in a major branch of engineering 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 enable the candidate to assume responsible charge of the work involved in the practice of engineering. Proposed § 37.31(2)(i) would retain the categories of unacceptable work experience and would require a candidate to support all work experience, regardless of duration, with appropriate references.

The proposed rulemaking would amend § 37.31(2)(ii) to provide that a candidate may qualify for the license examination by having 4 years of progressive, full-time

teaching experience in an ABET-approved engineering curriculum under the supervision of a professional engineer or an engineer who, through education and experience, has the equivalent level of expertise as that of a professional engineer. The teaching experience must include courses at the third-year, fourth-year or graduate level, covering the breadth and depth of the curriculum and be of a grade and character to prepare the candidate to assume responsible charge of engineering work. The requirement that the teaching experience be obtained in an ABET-approved engineering program provides an additional level of quality assurance since ABET accreditation includes an evaluation of faculty qualifications.

The proposed rulemaking would add paragraph (3), which would provide that a graduate degree may be substituted for each year of experience required under § 37.31(2)(i) and (ii), up to a maximum of 2 years, if the following conditions are met: the degree is from an academic institution that has an ABET-approved undergraduate curriculum; the degree is in the same discipline as the earned undergraduate degree; and the academic time is not concurrent with earned experience. This provision tracks section 4.2(d) of the act, which was added by the act of November 25, 2003 (P. L. 210, No. 35).

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

Section 37.32 requires a candidate for licensure as a professional engineer, as well as a candidate for EIT certification based on experience, to submit five references to support the candidate's experience qualifications, including three references who are professional engineers licensed in the United States and not related to the applicant. In the case of a candidate for licensure as a professional engineer, the professional engineer references shall include those who directly supervised the candidate's experience. The Board will not review an application until all references have been received. If a reference reflects adversely on a candidate's experience or character, the Board may conduct an investigation into the matter and, based on the results of the investigation, require the candidate to submit additional references.

The proposed rulemaking would retitle and reorganize § 37.32. Proposed § 37.32(a) would clarify that references shall be able to vouch for the candidate's good moral character as well as verify the candidate's experience. References who are not professional engineers shall be professional land surveyors, professional geologists or unlicensed engineers who, through education and expertise, have an equivalent level of expertise as that of a professional engineer. References who are not professional engineers also shall submit curricula vitae. Requiring higher standards for references who are not professional engineers increases the likelihood that they can provide the Board with meaningful assessments of the candidate's fitness for professional practice. Proposed § 37.32(b) would restate the current language regarding the prerogative of the Board to conduct further investigation into a candidate's character and qualifications when a reference provides an adverse assessment and, if necessary, to direct the candidate to submit additional references.

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

Section 37.33 currently provides a cross reference to the "grandfather" provisions for certification as an EIT and licensure as a professional engineer under a prior version of the act. The proposed rulemaking would replace the

cross reference with the actual requirements in effect as of February 18, 1991, which, until now, had been reproduced by the Board in booklet form and available on its web site but which has not previously appeared in the Board's regulations. Proposed subsection (a) provides that these grandfather requirements apply to a candidate who received a qualifying academic degree before June 30, 1994, or who began acquiring qualifying experience before February 19, 1991.

Proposed subsection (b) would provide that a candidate for certification as an EIT shall be of good moral character and pass the FE examination, except that a candidate who received a qualifying academic degree before July 1, 1968, is not required to pass the FE examination. To be admitted to the FE examination, a candidate shall possess one of the following qualifications: (1) graduation from an undergraduate engineering program in the United States approved by ABET or graduation from a foreign undergraduate engineering program recognized by ECEI or CPEES as substantially equivalent to ABET approval; (2) graduation from a graduate-level engineering curriculum in the United States that has an ABET-approved undergraduate program in the same discipline; or (3) 4 years of experience in engineering work, having acquired knowledge, skill and education approximating that attained through graduation from an approved engineering curriculum.

The grandfather requirements for EIT certification principally differ from current requirements in that the FE examination is waived for a candidate with a qualifying academic degree before July 1, 1968. A candidate who lacks a qualifying academic degree shall show only 4 years of qualifying experience rather than 8 years and a candidate may not take the FE examination while still a student.

Proposed subsection (c) would provide that a candidate for licensure as a professional engineer shall be of good moral character and pass the license examination. To be admitted to the license examination, a candidate shall possess one of the following sets of qualifications: (1) EIT certification and 4 years of progressive engineering or teaching experience, in the case of a candidate who is a graduate of an approved engineering curriculum under subsection (b)(1) or (2); or (2) successful completion of the FE examination and 8 years of progressive engineering experience (excluding the experience required to sit for the FE examination) in the case of a candidate who is not a graduate of an approved engineering curriculum under subsection (b)(1) or (2). The engineering and teaching experience must meet the standards applicable to regular candidates that are in § 37.31(2) (relating to requirements for certification as an engineer-in-training and for licensure as a professional engineer). However, a candidate may not substitute a graduate-level engineering degree for any part of the requirements.

The grandfather provisions for licensure as a professional engineer principally differ from current requirements in that a candidate may obtain qualifying experience prior to EIT certification, a candidate who lacks a qualifying academic degree shall show 8 years of qualifying experience and education (excluding that required to sit for the FE examination) and a candidate may not use a graduate-level degree as a substitute for qualifying experience.

§ 37.36. Requirements for certification as a geologist-in-training and for licensure as a professional geologist

Section 37.36 is a companion regulation to section 4.4 of the act, which took effect February 16, 1993, and sets forth the requirements for licensure as a professional geologist, as amended by Act 25 to provide for certification as a geologist-in-training (GIT). The proposed rulemaking would retitle § 37.36, reorganize the section for clarity, incorporate requirements for certification as a GIT and provide updated interpretive guidance of education and experience requirements.

The existing introductory paragraph of § 37.36 states that a candidate for licensure as a professional geologist shall be a person of good moral character, meet education and experience requirements and pass an examination adopted by the Board. The proposed rulemaking would replace the introductory paragraph and provide in subsection (a) that the requirements of this section apply to both candidates for certification as a GIT and for licensure as a professional geologist. Additionally, because section 4.4 of the act does not include a requirement that geology experience be obtained after being certified as a GIT, the introductory paragraph would provide that a candidate who meets the requirements may apply to sit for the principles and practice of geology examination to become licensed as a professional geologist at the same time as applying to sit for the fundamentals of geology examination (FG examination) to become certified as a GIT. These two examinations comprise "the examination adopted by the board" as provided in section 4.4(b)(4) of the act and are the two standardized examination components developed by ASBOG, the National organization of state geologist licensing boards.

Current § 37.36(1) sets forth three permissible education qualifications: (1) graduation from an institution of higher learning with a major in geology, geophysics, geochemistry or engineering geology, having completed 30 semester hours or 45 quarter hours in the major; (2) 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 in equivalent geological education, including 24 semester hours or its equivalent in third-year, fourth-year or graduate-level courses; or (3) graduation from a foreign college or university with educational credentials that a Board-approved professional evaluation service deems the equivalent of bachelor's degree in geology, geophysics, geochemistry or engineering geology from an accredited institution of higher learning in the United States.

The proposed rulemaking would replace § 37.36(1) to provide in subsection (b) that a candidate for GIT certification shall be a person of good moral character and pass the FG examination. Good moral character is a prerequisite for licensure as a professional geologist under section 4(b) of the act. Because GIT certification, when granted, is a step in the licensure process, it follows that a GIT candidate shall be a person of good moral character. The proposed rulemaking would further provide that a candidate may not be admitted to the FG examination without possessing one of the educational qualifications in subsection (b)(1)(i)–(iii). The proposed rulemaking would repeat in subsection (b)(1)(i)–(iii) the current academic requirements for geologic education. It would amend subsection (b)(1)(i) and (ii) to include the opportunity to sit for the FG examination upon completing 2 years of the approved program, subject to certification as a GIT upon proof of graduation, as authorized by section 4.4(c)(2) of the act.

The proposed rulemaking also would identify in § 37.36(b)(1)(iii) the World Evaluation Service as one of the professional evaluation services approved by the Board for determining whether a candidate's degree from a foreign college or university is equivalent to a bachelor's degree in geology or related major from an accredited institution of higher learning in the United States. Proposed § 37.36(b)(2) would also provide that a candidate's formal education, whether obtained in the United States or abroad, shall include field geology and structural geology coursework that is sufficient to demonstrate that the candidate has educational experience in tectonics and fractured bedrock geology as well as the field methods needed to measure, map and evaluate geologic data. Proficiency in field geology and structural geology is not only necessary to pass the license examination, but it is also essential for general practice as a professional geologist.

Current § 37.36(2) provides that a candidate for licensure shall have at least 5 years of experience performing professional geological work, including 3 years under the supervision of a professional geologist (or other qualified unlicensed geologist if obtained before February 16, 1993) or 5 years in a responsible position. "Professional geological work" is currently defined in § 37.1 as the performance of geological work or service that requires the utilization, application and interpretation of fundamental and practical principles of geology. The term includes technical completeness reviews and inspections of unfinalized work product but not routine sampling, laboratory work and geological drafting. "Responsible position" is currently defined in § 37.1 as a job that requires the exercise of independent judgment, competence and accountability in the performance of professional geological work. A graduate degree in geology, geophysics, geochemistry or engineering geology may be substituted for each year of experience up to a maximum of 2 years.

The proposed rulemaking would provide in subsection (c) that a candidate for licensure as a professional geologist shall be a person of good moral character, be certified as a GIT and pass the principles and practice of geology examination. The proposed rulemaking would further provide that a candidate may not be admitted to the license examination without having acquired the experience qualifications in subsection (c)(1)(i), (ii) or (iii) prior to submission of an examination application. Those experience qualifications are as follows: (1) 5 years of experience performing geological services or work in a position that requires independent judgment, competence and accountability; (2) 5 years of experience performing geological services or work, including 3 years under the supervision of a professional geologist, except that experience acquired before February 16, 1993, may be under the supervision of a geologist who, through education and experience, possesses the equivalent level of expertise as that of a professional geologist; or (3) 5 years of progressive full-time teaching experience in a geologic curriculum, including senior-level and graduate-level coursework, at an accredited institution of higher learning. The requirements in subsection (c)(1)(i) are taken directly from section 4.4(c)(3) of the act, considering a responsible position in professional geological work to be one that requires independent judgment, competence and accountability. The requirements in subsection (c)(1)(ii) are taken directly from section 4.4(c)(3) of the act. The Board considers progressive full-time teaching experience in a geological curriculum to be the equivalent of performing professional geological services in a position that requires

independent judgment, competence and accountability. The proposed rulemaking also would provide that qualifying experience must reflect the utilization, application and interpretation of fundamental and practical principles of geological sciences and that it also must be of a grade and character to permit the candidate to assume responsible charge of the work involved in the practice of geology. The proposed rulemaking would further specify that acceptable experience may include technical completeness reviews or inspections of unfinalized work product, but that it may not include routine sampling, laboratory work and geological drafting. Proposed § 37.36(c)(2) also would retain the language regarding the permissible substitution of a relevant graduate degree for a year of required experience, as is suggested by section 4.4(c)(3) of the act.

§ 37.37. References for licensure as a professional geologist

Section 37.37 sets forth requirements regarding references for a candidate for licensure as a professional geologist. Subsection (a) provides that a candidate whose experience qualifications include 3 years of experience performing professional geological work under the supervision of a professional geologist or other qualified geologist shall submit three references who can attest to the candidate's moral character and verify the candidate's experience. The references should include the professional geologists or other qualified geologists who supervised the candidate's experience. The Board will not review an application until all references have been received. Subsection (b) provides that a candidate whose experience qualifications include 5 years of experience in a responsible position performing professional geological work shall submit three references who can attest to the candidate's good moral character and verify the candidate's experience. Subsection (c) provides that if a reference reflects adversely on a candidate's character or experience, the Board may conduct an investigation into the matter and, based on the results of the investigation, require the candidate to submit additional references.

The proposed rulemaking would retitle § 37.37 and reorganize it by deleting subsection (b) and redesignating subsection (c), with editorial changes, as proposed subsection (b). Subsection (a) would be amended to provide that a candidate shall submit as references at least three professional geologists who can attest to the candidate's good moral character and who either supervised the candidate or can otherwise verify the candidate's experience. A candidate may submit additional experience references who are professional engineers, professional land surveyors or unlicensed geologists who, through education and experience, have an equivalent level of expertise to that of a professional geologist. References who are not professional geologists shall submit *curricula vitae*. The higher standards for references should improve the assessments made of a candidate's fitness for professional practice.

§ 37.47. Requirements for certification as a surveyor-in-training and for licensure as a professional land surveyor

Section 37.47 is a companion regulation to section 4.3 of the act (63 P. S. § 151.3), which sets forth the requirements for certification as a surveyor-in-training (SIT) and licensure as a professional land surveyor. The proposed rulemaking would retitle and reorganize § 37.47 and provide updated interpretative guidance about the educational and experience requirements for nongrandfather candidates for SIT certification and professional land

surveyor licensure. Section 4.3 was added to the act by Act 192. Act 192 provided that the requirements in section 4.3 of the act (mistakenly referred to as section 4.1 of the act) apply to candidates who received qualifying academic degrees on or after June 30, 1994, or who began obtaining qualifying experience on or after February 19, 1991. Other candidates would be evaluated according to the requirements in existence as of February 18, 1991.

The introductory paragraph of current § 37.47 provides that a candidate for licensure as a professional land surveyor shall pass the fundamentals of surveying examination (FS examination) and become certified as an SIT and that a candidate who is certified as an SIT retains the status without time limitation until the candidate becomes licensed as a professional land surveyor. The proposed rulemaking would add a new introductory paragraph providing that the requirements in § 37.47 apply to a candidate who obtained a qualifying academic degree or who began obtaining qualifying experience on or after the dates previously stated.

Current § 37.47(1) provides that a candidate for certification as an SIT shall meet qualifying education or experience requirements. Subparagraphs (i) and (ii) provide that qualifying education of an SIT candidate is graduation from an approved engineering curriculum, including a minimum of 10 credit hours of instruction in surveying, or graduation from an associate's degree program in an approved surveying technology curriculum, respectively. Subparagraph (iii) provides that qualifying experience for an SIT candidate is 6 or more years of progressive experience in surveying work and knowledge, skill and education approximating that attained through graduation from an approved land surveying or civil engineering curriculum. "Progressive experience in surveying work" in the context of SIT certification is defined in § 37.1 as experience of a grade and character that enables the candidate to independently learn the surveying skills and principles of mathematics attained through an associate's degree program in surveying. Qualifying experience must show diversification between field and office work, with no less than 25% of the experience in either area.

The proposed rulemaking would amend § 37.47(1) to provide that a candidate for SIT certification shall be a person of good moral character and pass the FS examination. As with licensure as a professional engineer, good moral character is a prerequisite for licensure as a professional land surveyor under section 4(b) of the act. Inasmuch as SIT certification is a condition precedent to licensure, it follows that a candidate for SIT certification be a person of good moral character. The proposed rulemaking would further provide that a candidate may not be admitted to the FS examination without possessing one of the qualifications in subparagraphs (i)—(iv). The proposed rulemaking would amend § 37.47(1)(i) to provide that a candidate may qualify for the FS examination through graduation from an ABET-approved undergraduate civil engineering program in the United States that includes a minimum of 10 credit hours of instruction in surveying or through graduation from an ABET-approved undergraduate 4-year surveying curriculum in the United States. A third- or fourth-year student in an approved surveying program would be permitted to take the FS examination, but the student would not be eligible for SIT certification until after graduation. The proposed rulemaking would amend § 37.47(1)(ii) to provide that a candidate may qualify for the FS examination through graduation from an ABET-approved program in the United States that confers an associate's degree in sur-

veying. ABET accredits 2-year and 4-year surveying programs offered by institutions of higher learning in the United States. Although section 4.3 of the act does not specifically recognize graduation from a 4-year surveying program as qualifying education for SIT certification, recognition is implicit in the provision, added by the act of November 25, 2002 (P. L. 1113, No. 136), that authorizes surveying students who have completed at least 2 or more years of an approved curriculum to take the FS examination. The proposed rulemaking would amend § 37.47(1)(iii) to provide that the 6 years of qualifying experience for the FS examination may not only be equivalent to that attained through graduation from an approved land surveying or civil engineering program, but must also be of a grade and character that reflects the candidate's mastery of relevant surveying skills and principles of mathematics. The required diversification of experience between field and office work would be retained.

Current § 37.47(2) provides that a candidate for licensure as a professional land surveyor shall possess SIT certification and have qualifying work experience or teaching experience, obtained after SIT certification, for admission to the principles and practices of surveying examination (license examination). Subparagraph (i) provides that the qualifying work experience consists of 4 or more years of progressive experience in land surveying under the supervision of a professional land surveyor, or similarly qualified surveyor, that is of a grade and character that permits the candidate to assume responsible charge of the work involved in the practice of land surveying. "Similarly qualified surveyor" is currently defined in § 37.1 as a nonlicensee who has attained a level of expertise in land surveying by means of education and experience that the Board considers sufficient for purposes of supervising a licensure candidate's progressive work experience. Work segments of less than 6 months' duration must be supported by adequate references. Subparagraph (ii) provides that qualifying teaching experience consists of 4 or more years of progressive teaching experience in an approved curriculum under the supervision of a professional land surveyor, or similarly qualified surveyor, that is of a grade and character that permits the candidate to assume responsible charge of the work involved in the practice of land surveying.

The proposed rulemaking would amend § 37.47(2) to provide that a candidate for licensure as a professional land surveyor shall be a person of good moral character, be certified as an SIT and pass the license examination. The proposed rulemaking would further provide that a candidate may not be admitted to the license examination without having acquired the experience qualifications in subparagraph (i) or (ii) between the time of SIT certification and submission of an examination application, as is required under section 4.3(c)(1) of the act. Proposed amendments to § 37.47(2)(i) and (ii) would provide that a candidate may qualify for the license examination by having obtained 4 years of progressive work experience or 4 years of progressive full-time teaching experience in an approved surveying curriculum, respectively. The experience shall be obtained 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, as is required under section 4.3(c)(1) of the act. The experience also must be of a grade and character to enable the candidate to assume responsible charge of the work involved in the practice of land surveying. The teaching

experience must include courses at the third-year, fourth-year or graduate-level and cover the breadth and depth of the curriculum.

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

Section 37.48 requires a candidate for licensure as a professional land surveyor, as well as a candidate for SIT certification based on experience, to submit five references, including three professional land surveyors, who are qualified to evaluate the candidate's experience and who are not related to the candidate. The references must include professional land surveyors or professional engineers who directly supervised the candidate's work. The Board will not review an application until all references have been received. If a reference reflects adversely on the candidate's character or experience, the Board may conduct an investigation into the matter and, based on the results of the investigation, require the candidate to submit additional references.

The proposed rulemaking would retitle and reorganize § 37.48. Proposed § 37.48(a) would clarify that references shall be able to vouch for the candidate's good moral character as well as verify the candidate's experience. References who are not professional land surveyors shall be professional engineers, professional geologists or unlicensed surveyors who, through education and experience, have an equivalent level of expertise as that of a professional land surveyor. References who are unlicensed surveyors are required to submit curricula vitae. As with the engineering and geology professions, requiring higher standards for references will result in more meaningful assessments of a candidate's fitness for practice as a professional land supervisor. Proposed § 37.32(b) would restate the current language relating to the prerogative of the Board to conduct a further investigation into a candidate's character and experience when a reference provides an adverse assessment and, if necessary, to direct the candidate to submit additional references.

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

Section 37.49 currently provides a cross reference to the grandfather requirements for licensure as a professional land surveyor under Act 192. The proposed rulemaking would delete the cross reference and instead set forth the grandfather requirements for professional land surveyor license candidates based on the version of the act in effect as of February 18, 1991. These requirements apply to a candidate who received a qualifying academic degree before June 30, 1994, or who began acquiring qualifying experience before February 19, 1991.

Proposed § 37.49(b) would provide that a candidate for licensure as a professional land surveyor shall be of good moral character and pass the FS and license examinations. To be admitted to the examinations, a candidate shall possess one of the following qualifications: (1) graduation from an ABET-approved undergraduate civil engineering curriculum in the United States, 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 ABET-approved associate's degree curriculum in surveying and 4 years of progressive experience in land surveying work; or (3) 10 years of progressive experience in land surveying work, including 5 years in responsible charge of primary land surveying functions. Subsection (c) would set forth the experience requirements. The experience must have been obtained 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 must be of a grade and character to enable the candidate to assume responsible charge of the work involved in the practice of land surveying. The experience must also reflect a diversification of field and office work, with no less than 25% of the experience in either area.

The grandfather requirements for licensure principally differ from the current requirements in that a candidate may take the FS and license examinations at the same time; there is not a provision for being certified as a SIT; there is not an education option that permits a surveying student to take the FS examination in advance of graduation; and there is not an experience option regarding teaching experience in an approved surveying curriculum.

Fiscal Impact and Paperwork Requirements

The proposed rulemaking would require the Board to make minor changes to its application forms. The proposed rulemaking would not have a fiscal impact on, or create additional paperwork for, the regulated community, the general public or the Commonwealth and its political subdivisions.

Sunset Date

The Board continuously monitors the effectiveness of its regulations. Therefore, a sunset date has not been assigned.

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 this proposed rulemaking and a copy of a Regulatory Analysis Form to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House Professional Licensure Committee and the Senate Consumer Protection and Professional Licensure Committee. A copy of this material is available to the public upon request.

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

Public Comment

Interested persons are invited to submit written comments, recommendations or objections regarding this proposed rulemaking to the Regulatory Unit Counsel, Department of State, P. O. Box 2649, Harrisburg, PA 17105-2649, ST-ENGINEER@pa.gov within 30 days of publication of this proposed rulemaking in the *Pennsylvania Bulletin*. Reference No. 16A-4711 (qualifications for licensure) when submitting comments.

THOMAS GILLESPIE, PG,
President

Fiscal Note: 16A-4711. No fiscal impact; (8) recommends adoption.

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 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 engineer-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 engi-

neering 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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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 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 by ABET or graduation from a foreign undergraduate engineering curricu-

lum 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 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.

(ii) [*Experience.*] Graduation from 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, provided the candidate has completed basic engineering courses.

(iii) 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 and [show satisfactory evidence to the Board of having met one of the following experience requirements:] satisfactorily complete the NCEES principles and practice of engineering examination in one of the branches of engineering. To qualify for the principles and practice examination, the engineer-in-training shall have obtained one of the following experience qualifications between the issuance of the engineer-in-training certificate and 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 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 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 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 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 engineering curriculum in the United States approved by ABET or graduation from a foreign undergraduate engineering curriculum recognized by ABET's Engi-

neering Credentials Evaluation International or by NCEES's Center for Professional Engineering Education Services as substantially equivalent to ABET approval.

(2) Graduation from a graduate-level engineering curriculum in the United States that has an ABET-approved undergraduate curriculum in the same discipline.

(3) 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 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 and 4 years of progressive engineering or teaching experience, in the case of a candidate who is a graduate from an approved engineering curriculum under subsection (b)(1) or (2).

(ii) Successful completion of the fundamentals of engineering examination and 8 years of progressive engineering experience (excluding the experience required to sit for the fundamentals of engineering examination) in the case of candidate who is not a graduate of an approved engineering curriculum under subsection (b)(1) or (2).

(2) The engineering and teaching experience required under this subsection must comply with the standards 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.

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 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 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 an geologist-in-training until the student provides proof of graduation.

(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.

(iii) Graduation from a foreign college or university that World Evaluation 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.

(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 the ASBOG principles and practice of geology examination.

(1) To qualify for the principles and practice examination, the geologist-in-training 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 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 in-

clude 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.

§ 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 who can attest to the applicant's good moral character and who either supervised the candidate or can otherwise verify the candidate's experience. A candidate may provide as additional experience references the names and addresses of 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 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 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 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.

(ii) Graduation from an [associate] associate's degree program in [an approved] surveying technology curriculum approved 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 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 the NCEES principles and practice of surveying examination.

To qualify for the principles and practice examination, the surveyor in training shall have obtained one of the following experience qualifications between the issuance 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 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 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, 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. 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 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 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 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.

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