



**Professional Engineers
Ontario**

2011

PEO Entry-to-Practice Review



PEO, 40 Sheppard Ave W, Toronto, Ontario

*Conducted by PEO for the Office of the Fairness
Commissioner*

Professional Engineers Ontario

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1 Executive Summary

As a result of the examinations conducted for the Entry-to-Practice Review it is found that the experience requirements are relevant and necessary, and that there are no significant barriers imposed by PEO on work placement, language, or citizenship requirements.

The necessity and relevance of the 48 months of engineering experience requirement with a minimum of 12 months in a Canadian jurisdiction under the supervision of a licensed professional engineer was found to be extremely important for ensuring the engineers that are licensed are properly experienced and are able to practice safely and competently in order that public safety not be compromised. This standard is endorsed by Engineers Canada, which is the national body of the provincial and territorial regulators of the practice of professional engineering in Canada, as well as by academics and employers. As 36 months of the experience may be obtained anywhere in the world, this does not present a barrier to foreign trained individuals. The remaining 12 months of experience supervised by a professional engineer in a Canadian jurisdiction is relevant and necessary to ensure that applicants are familiar with the technical, cultural, and business norms of the engineering work they do.

As PEO does not provide work placements or provide internships and applicants are free to choose from a wide variety of jobs available in the marketplace, there are no workplace barriers imposed by PEO. Work place barriers in the external marketplace may exist but are outside of PEO's purview. PEO does assist and support provincial and municipal government initiatives, agencies, or employers who wish to establish placements for experience to meet licensure requirements, for example, the establishment of a Structured EIT Program. These placements are under the control and management of the employers involved. PEO also supports a wide range of organizations who receive government funding related to assisting international engineering graduates to meet the requirements to be licensed to practice professional engineering.

There are many jobs in engineering, unlike many professions, that do not require a licence in order to perform the work. A Provisional Licence is available for those who meet all the licensure requirements with the exception of the 12 months of engineering experience supervised by a professional engineer in a Canadian jurisdiction. PEO encourages potential newcomers to have their credentials assessed by PEO and to obtain a Provisional License prior to landing in Canada. Recent *Professional Engineers Act* changes to the definition of engineering work experience to include the management of engineering will expand the scope of jobs classified as engineering.

PEO Council has recently passed a motion that the 12 months of engineering experience supervised by a professional engineer in a Canadian jurisdiction requirement may be obtained under the supervision of a professional engineer, as a temporary licence holder working with a professional engineer collaborator, or as an Engineering Intern working with a professional engineer monitor. The PEO's *Guide to the Required Experience for Licensing as a Professional*

Engineer in Ontario will be amended to include the role and requirements of a professional engineer as a supervisor, monitor, or collaborator.

PEO does not require formal language testing. English language proficiency is assumed and as long as the candidate is able to communicate in a manner so as to comprehend and be understood, then their communication skills are deemed to be adequate. If instances of deficiency are identified, which is extremely rare, then the applicant is given recommendations for areas of improvement and invited to be interviewed for assessment.

The Professional Practice Exam (PPE) is found to be a necessary component to ensure that candidates for licensure are familiar with the ethics, professional practice, engineering law and professional liability which govern the profession.

Recent changes to the *Professional Engineers Act* has eliminated the requirement that an applicant be a Canadian citizen or landed immigrant, hence making it much easier for an applicant from outside Canada to apply and obtain a licence.

Upon examination of the steps involved in the licensure process, the efficiency and timeliness in general appears to be fairly adequate and allows for efficient and fair review and assessment while not compromising the thoroughness and cost effectiveness of the process.

The following recommendations for some additional improvements to the licensure process are suggested:

1. **Encourage the Professional Practice Exam (PPE) to be written parallel to the licensing process.** This will reduce the time to licensure.
2. **Offer a free information session to applicants on the licensing process on a regular basis.** This will provide applicants with a better understanding of the PEO licensure process and will reduce delays in completion of steps.
3. **Create an online application and follow-up system.** This will decrease the licensing process time and provide applicants with automated reminders, such as to submit documents or register for exams, to reduce applicant delays.
4. **Create the ability for an applicant to check the status of the application online.** This will allow for greater ease and timeliness for the applicant to know where in the process his or her licence application stands.

Recommendation number one, to encourage the PPE to be written in parallel to the licensing process, may be implemented immediately. Recommendation number two, to offer free information sessions on the licensing application process, will be developed in the second quarter of 2011 and implemented in the third quarter of 2011. Implementation of recommendations three and four are dependent upon official government changes to the

Regulations under the *Professional Engineers Act*. Initial development work can begin in 2011, however the system cannot be completed and put online until the licensing regulation amendments have been filed with the Registrar of Regulation and are officially in place.

The setting of registration fees on a cost based manner provides for an objective basis for the amounts charged. The fees associated with obtaining a professional engineering licence are in fact lower than the actual costs incurred by PEO due to the subsidization of the fees by the annual membership dues of licensed members. Ontario has the largest number of licensed engineers within Canada.

The existence of a Financial Credit Program (FCP) available to Internationally Educated Graduates (IEG) who have landed in Canada within six months further reduces potential financial obstacles for newly landed internationally educated applicants. The program waives the P.Eng. licence application fee and the cost of first year of membership in the Engineering Intern Training (EIT) program. IEG applicants must ensure that all documents to support their FCP application are received by PEO within six months of the date they landed in Canada.

In comparison to other professional engineering associations within Canada, the fees associated with the licensing process such as the application fee, the PPE exam, registration fee, EIT program membership, also tend to be lower than the average. The fees were also found to be generally lower in comparison to other regulatory bodies such as pharmacists, lawyers, etc.

This review therefore finds that the registration fees charged by PEO are quite fair and very reasonable, and there are no recommendations for changes to these fees.

PEO strives to be inclusive and to enable all qualified applicants to become licensed. Via subsidization of application fees, financial waivers for newly landed immigrants, no additional charges for credential assessment, a process in place to assess credentials prior to coming to Canada, no official language testing requirements, and the trialing of innovative programs such as a Mentorship program which links volunteer licensed members to Engineering Interns seeking licensure in order to help guide them through the process, PEO works to lower barriers to entry to the profession.

In an article recently published in the Dec 2010 – Jan 2011 issue of the Canadian Association Management magazine¹ PEO is recognized as being a leader in helping foreign-trained engineers to integrate into the Canadian workforce. In the article, Wendy Sue Lyttle, a consultant and a principal at LAL Association Member Services, is referenced as follows - “Then there are professional organizations responsible for accrediting and licensing their members. They need to actively look at integrating foreign professionals into the country’s marketplace. Lyttle points to engineering groups such as Professional Engineers Ontario that have had tremendous success in determining how to get foreign-trained engineers up to speed so that they are able to integrate into the Canadian workforce.”

¹ *Membership Diversity should be on the Front Burner!*, Roma Ihnatowycz, p.30, Canadian Association Management Magazine, Dec 2010-Jan 2011 issue

PEO is proud of their reputation of being an accessible professional organization that upholds the standards of engineering and protects public safety and interest, and endeavours to maintain this status.

2 Objectives and Scope

2.1 Objective

The objective of the Entry-to-Practice Review is to review the entry-to-practice requirements of PEO – Professional Engineers Ontario in order to improve access to the profession for qualified applicants while continuing to protect public safety.

This review has been mandated by the Office of the Fairness Commissioner, an arm's length agency of the Ontario government, established under the Fair Access to Regulated Professions Act, 2006. Its mandate is to ensure that certain regulated professions have registration practices that are transparent, objective, impartial and fair.

According to the Office of the Fairness Commissioner guidelines, the reviews are the only real opportunity to probe:

- Why do we require this particular set of requirements for entry to the profession?
- Are the requirements necessary and relevant for the work to be performed?
- Are the requirements good indicators of the individual's capacity to practise the profession at the entry level?
- Do the requirements have an unintended or different impact on international applicants or other population groups?
- Are there viable alternatives to the requirements or the methods of assessing whether they have been met?

2.2 Scope

The scope of the Professional Engineers Ontario Entry-to-Practice Review includes the following:

- a) an analysis of the necessity and relevance of the requirements for practical training and or work experience, including any practicum, mentorship, internship or residency;
- b) an analysis of the efficiency and timeliness of decision-making, including decision related to assessment, registration and appeals;
- c) an analysis of the reasonableness of the fees charged by the regulated profession in respect of registrations

3 Methodology

3.1 Framework for Conducting Reviews

3.1.1 Vision and guiding principles

As articulated in the Office of the Fairness Commissioner guidelines, the following are the Vision and guiding principles which were followed for the reviews:

VISION

All registered professionals are qualified and all qualified applicants are registered.

The Entry-to-Practice Review is anchored in the following principles outlined in the *Conducting Entry-to-Practice Reviews: Guide for Regulators of Ontario Professions*:

- **Fair access** – Registration requirements and practices should help to ensure that qualified people are able to practise their profession in Ontario.
- **Making a difference** – Entry-to-Practice Reviews acknowledge the positive and lead to a concerted effort to implement change where needed. They embody the letter and the spirit of the legislation on fair access to regulated professions.
- **Adding value** – Entry-to-Practice Reviews will complement – and not duplicate – other work that Ontario regulatory bodies do, whether for the Fairness Commissioner, for the government, or on their own initiative.
- **Participation** – Entry-to-Practice Reviews will be participatory, inviting the input and reflecting the views of interested individuals and groups, including members, applicants, staff, and others who can contribute to the achievement of the review's goals.

3.1.2 Project scoping

A mind mapping of the project, as shown below in Figure 1, was conducted in order to outline the scope of the project and what needed to be done.

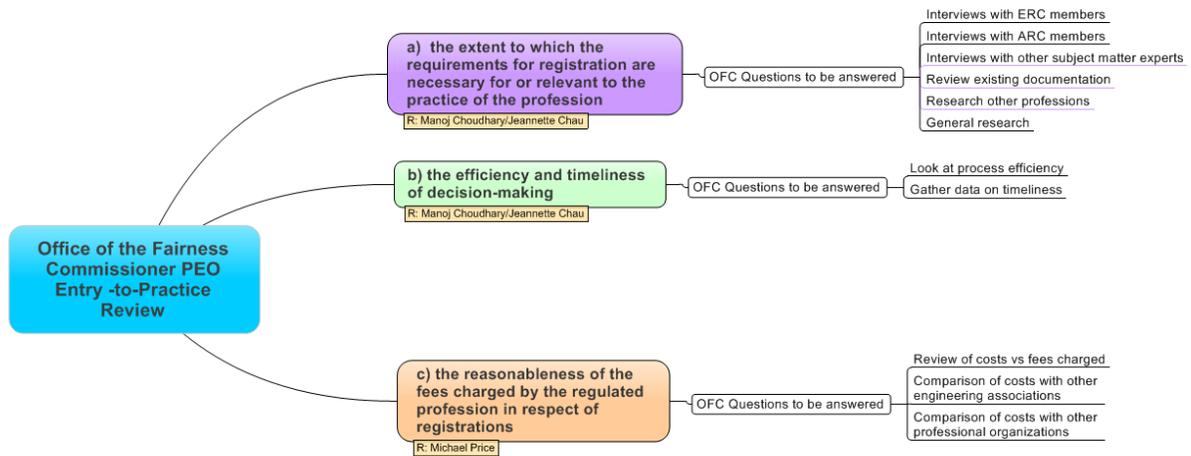


Figure 1: Mind Map for PEO Entry-to-Practice Review

The scope was broken down into the three main areas PEO was asked to examine, namely

- a) The extent to which the requirements for registration are necessary or relevant to the practice of the engineering profession
- b) The efficiency and timeliness of decision-making
- c) The reasonableness of the fees charged by PEO in respect to our registrations

Within each of these areas, specific questions proposed by the Office of the Fairness Commissioner were identified and the approach we would take to conduct the analysis and response was determined. The following sections detail the type of data required and the questions for analysis that were examined in the review.

3.1.3 Data required for analysis

Type of Data	Purpose
<i>Professional Engineers Act Regulation 941</i>	To identify the mandated components we are required to meet
Qualitative/Quantitative Data <ul style="list-style-type: none"> • ERC - Experience Requirements Committee • ARC - Academic Requirements Committee • Registration Committee • Employers – Government, Consulting Firms, Manufacturing, etc... • Licensed Members - <5 years, > 5 years (Canadian + International) • EIT – Engineering Intern Training • Unsuccessful or withdrew Applicants • Other Provincial Associations • Engineers Canada • Bridging Programs – Ryerson 	To identify positive and negative experiences and ideas for improvement
Generate statistics on appeals and applicant complaints	To identify trends or problems in general or for certain classes of applicants; flag issues to probe
Environmental scan – emerging fields, employment opportunities, internship opportunities	To understand trends and emerging issues
Financial Data	To identify the costs involved

Note: The Experience Requirements Committee, Academic Requirements Committee, and the Registration Committee are all statutory committees under the *Professional Engineers Act*.

3.1.4 Questions for analysis for Part A –Necessity and Relevance of the Requirements

Part A of the Professional Engineers Ontario Entry-to-Practice Review focuses on an analysis of the necessity and relevance of the requirements for practical training and or work experience, including any practicum, mentorship, internship or residency.

The following questions posed by the Office of the Fairness Commissioner in the *Conducting Entry-to-Practice Reviews: Guide for Regulators of Ontario Professions* were examined in order to provide this analysis. Research and interviews of internal and external sources were conducted.

- How did the four years of work experience requirement emerge? Why is it there?
- How well does the four years of work experience requirement predict competence?
- How does the four years of work experience relate to competent and safe practice at the entry level of the profession to ensure public safety?
- Are the length of time, conditions, location and nature of the required experience necessary and relevant to ensure competent practice?
- What changes could be made to the four years of work experience requirement to better predict competence or to reduce negative impact?
- To what extent is international experience sufficient to meet the objectives of a workplace or clinical experience requirement?
- Does the four years of work experience requirement have an unintended impact on any group? Does it unfairly exclude or limit certain groups such as internationally trained applicants?
- How does the one year minimum of Canadian work experience relate to competent and safe practice at the entry level of the profession to ensure public safety?
- How did the one year minimum of Canadian work experience requirement emerge? Why is it there?
- How well does the one year minimum of Canadian work experience requirement predict competence?
- To what extent is Canadian or Ontario experience necessary for applicants to become familiar with the specifics of practice in Ontario?

- What changes could be made to the one year minimum of Canadian work experience requirement to better predict competence or to reduce negative impact?
- Does the one year minimum of Canadian work experience requirement have an unintended impact on any group? Does it unfairly exclude or limit certain groups such as internationally trained applicants?
- Is there a rational basis for when French or English language proficiency will be assumed and when it must be assessed?
- Before taking a language proficiency test, are there ways for applicants to self-assess and if necessary, upgrade their relevant language skills?
- How are assessors of language proficiency trained to conduct impartial assessments (e.g. to avoid being unduly influenced by accent)?
- Before taking a language proficiency test, are there ways for applicants to self-assess and, if necessary, upgrade their relevant language skills?
- How does the required degree of language proficiency relate to the realities of professional practice? Is the required degree of language proficiency clearly defined?
- Have there been any changes in the practice of the profession or the environment in which it is practiced? Is it still relevant in the current context? Have legal requirements been taken into account?
- Is a requirement for citizenship or permanent residency status necessary? Would legal permission to work in Canada (e.g. as a temporary foreign worker or provincial nominee not yet provided permanent residence by the federal government) be sufficient?
- Are there barriers that may unfairly restrict access to workplace or clinical positions (e.g., not enough spaces, lack of supervisors, etc.)?

3.1.5 Questions for analysis for Part B – Efficiency and Timeliness

Part B of the Professional Engineers Ontario Entry-to-Practice Review focuses on an analysis of the efficiency and timeliness of decision-making, including decision related to assessment, registration and appeals.

The following questions posed by the Office of the Fairness Commissioner in the *Conducting Entry-to-Practice Reviews: Guide for Regulators of Ontario Professions* were examined in order to provide this analysis. Research and interviews of internal and external sources were conducted.

- How quickly are assessment decisions, registration decisions, and internal review and appeal decisions completed and communicated? What are the reasons for delays?
- Are the timelines significantly longer or shorter than those of comparable regulators (e.g. where volume of applications and size of the organization are similar)?
- What parts of the process could be streamlined? Could certain timelines be reduced?
- Can the assessment process begin while an applicant approved for immigration to Canada is still overseas?
- What monitoring does the regulator or qualifications assessment agency do to ensure procedures are followed and time standards are met?
- How consistently does the regulator or qualifications assessment agency follow its published timelines for decision making?
- Are assessors and decision-makers well trained and neutral?
- How are assessors trained to determine equivalencies?
- How are decision-makers trained to make objective registration decisions based on the documentation submitted and assessments conducted by the regulator?
- Are the criteria for assessing qualifications sufficient for making objective decisions? Or are there gaps in the criteria that could result in unduly subjective decision-making?
- What safeguards exist to reduce subjectivity in scoring?
- What safeguards exist to prevent bias based on the applicant's country of origin, race, ethnicity, name or other identifying features?
- Are all applicants assessed on the basis of their individual competence as opposed

to general assumptions about where they have studied or practiced?

- How do assessors of academic credentials keep up-to-date on educational equivalencies in other jurisdictions?
- In what ways could the exam format create an obstacle for internationally educated applicants?
- How well do registration exams administered by PEO test the knowledge and skills required to competently and safely practice the profession at an entry level?

3.1.6 Questions for analysis of Part C – Reasonableness of Fees

Part C of the Professional Engineers Ontario Entry-to-Practice Review focuses on an analysis of the reasonableness of the fees charged by the regulated profession in respect of registrations.

The following questions were examined with respect to the above:

- How were the fees originally set? What was the rationale for the amounts? Is there an objective basis for the amounts?
- Are the fees higher than the cost of providing the service?
- Are there measures to ensure that fees charged by qualifications assessors are reasonable?
- Do the fees discourage potentially qualified applicants or create hardship for those who do apply? In what circumstances can fees be waived or paid in installments?
- Are the fees higher than those charged for comparable services by other regulators?

3.1.7 Project Plan

Finally, once the questions that we would examine and the approach to obtain the answers was determined, a project plan was created of the resources, timing, and budget that would be required.

A Steering Committee comprised of Michael Price P.Eng., Deputy Registrar Licensing and Registration, Manoj Choudhary, P.Eng., Manager of Pre-Licensing, and Jeannette Chau, P.Eng., Engineering Intern Programs Officer was established.

A variety of internal and external resources were employed to gather data and conduct research. Interviews were held with employers, academics, members, applicants, academic requirements committee members, experience requirements committee members, members of other professional associations and internal staff. Research to determine historical basis, comparisons to other organizations, and factual data was conducted. In the final stage, analysis, vetting of findings, recommendations and a final comprehensive review of our results were done.

A general overview of the project plan is depicted in Figure 2.

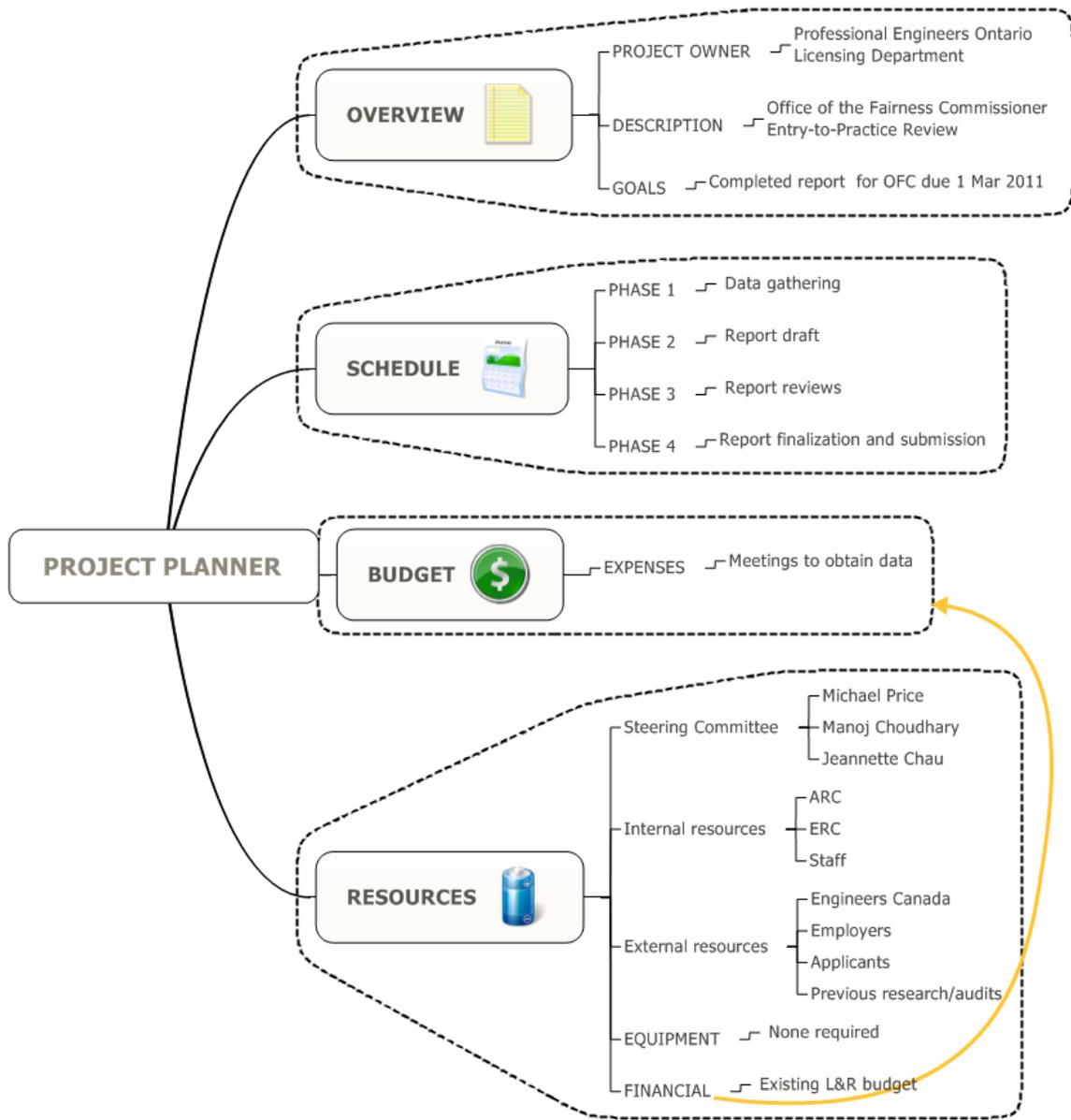


Figure 2 Project Plan for PEO Entry-to-Practice Review

4 Analysis and Findings

4.1 Analysis and Findings for Part A – Necessity and Relevance of the Requirements

4.1.1 Requirements for licensure

The following are the basic requirements for licensure as a professional engineer by Professional Engineers Ontario:

- Hold an undergraduate engineering degree from a Canadian Engineering Accreditation Board (CEAB) – accredited program or possess equivalent qualifications (Academic Requirements);
- 48 months of verifiable, acceptable engineering experience, including 12 months in a Canadian jurisdiction (Experience Requirements) under a licensed professional engineer (P.Eng);
- Be of good character;
- Successfully complete PEO's Professional Practice Exam; and
- Be at least 18 years old.

The necessity and relevance of the requirements for licensure are examined via specific questions posed by the Office of the Fairness Commissioner.

4.1.2 Four year work experience requirement

- *How did the four years of work experience requirement emerge? Why is it there?*
- *How well does the four years of work experience requirement predict competence?*
- *How does the four years of work experience relate to competent and safe practice at the entry level of the profession to ensure public safety?*
- *Are the length of time, conditions, location and nature of the required experience necessary and relevant to ensure competent practice?*
- *What changes could be made to the four years of work experience to better predict competence or to reduce negative impact?*
- *To what extent is international experience sufficient to meet the objectives of a workplace or clinical experience requirement?*
- *Does the four years of work experience requirement have an unintended impact on any group? Does it unfairly exclude or limit certain groups such as internationally trained applicants?*

Academic programs teach concepts and theory. It provides the base of knowledge which an engineer must draw upon when they practice engineering. However, theory is not sufficient

when encountering real world situations and problems, hence hands on experience is required to develop the judgment, intuition, and knowledge actually needed to practice engineering.

When the *Professional Engineers Act* was first formulated, the majority of applicants were freshly out of school and needed the hands on experience. Schools provided the theoretical knowledge however this was not enough to deal with the complex projects and situations that the engineer faced. Four years, a standard that has evolved over time based on experience, is a sufficient period of time that would provide a reasonable exposure and experience of the various facets of the engineering work to enable the new engineer to operate in a competent manner and produce proper judgments that would ensure public safety.

The amount of time required to gain competence has more to do with the quality and quantity of the experiences that the new engineer can obtain. Some could take a longer and some a shorter period of time to develop the required competence depending upon the complexity of the work that they are exposed to. Different individuals and areas of specialization also have their own learning curve and every engineering job is different. Experience means not doing something once, but doing it sufficiently enough times to have developed the intuition and judgment to know when it is done correctly and in a proper manner so as to ensure public safety.

The four years is simply a quantifiable number at which point in time the majority of applicants will have acquired the requisite exposure and experience. After four years, new engineers will have gained enough confidence to put their engineering stamp and seal of approval that the work has met professional standards, and had in fact by then proved their competence in prior work under the supervision of a licensed professional engineer.

The requirement of four years of practical experience under the supervision of a licensed engineer with a minimum of one year in Canada is a standard that has evolved over time based on experience. In the past the experience requirement was only two years, however in 1988 a sub-committee was formed to address the adequacy. In 1990 a draft *Guideline for Admission* by Engineers Canada (formerly known as CCPE – Canadian Council of Professional Engineers) was produced which included the requirement for four years of experience for the following reasons”

- “ the complexity of most engineering projects and the long time frame of many of them demands that a minimum of four years is required if meaningful experience is to be obtained...More importantly, if a range and progression of experience as specified in sections...are actually expected, then, indeed four years may be scarcely enough....”
- “...a four year requirement would be more consistent with the U.S.A., European community, and other countries...”
- “...several CCPE - Canadian Council of Professional Engineers constituent associations have in place (or are working towards) an ‘engineer of record’, ‘consultant’, or similar designation. It is believed that these were instituted, at least in part, because of the short experience duration requirement for a P.Eng...”

In May 1991 the CCPE Board of Directors approved the adoption of the Guideline.

The four years of experience requirement follows the amount of experience required throughout Canada and the United States, except in the case of Quebec which requires three years, and is within the range of practice throughout the world where 3 to 5 years is generally accepted.

The Washington Accord, which was signed in 1989, is a mutual agreement between countries (Australia, Canada, Hong Kong, Ireland, New Zealand, South Africa, UK, and USA) recognizing substantial equivalence in the accreditation of academic qualifications in professional engineering. Of the eight original Washington Accord signatory countries, other than Canada, only the US and Ireland have a strict quantitative requirement of a minimum of 4 years to gain the necessary experience. In the other five countries the emphasis is placed on the quality of the experience and the fulfillment of competencies or objectives that are well defined. The suggested times range from 3 years (Australia and South Africa) through 3.5 to 4.5 years for in New Zealand to no less than 4 years in the UK. Hong Kong maintains a minimum requirement of 4 years for the combination of training and responsible experience together, with a nominal 2-3 year time frame to complete the training portion and a minimum 1-2 year requirement to obtain the necessary responsible experience.

There has been debate as to whether the professional experience requirement should in fact be upgraded to require a Master degree as a baseline academic level and the experience time increased. Members of the Experience Requirements Committee, whose members are external employers, members of other associations, and who have wide external experience and background themselves, have told us that PEO has the best system of producing professional engineers who are widely respected in the international community for their competence, and that the four year experience requirement is a necessary minimum. The four year experience requirement is hence deemed satisfactory and sufficient for the present time.

International engineering experience is sufficient to meet the objectives of the workplace experience requirement and is accepted as valid experience for three of the four years of work experience requirement. The remaining year must be engineering work experience in Canada, the reasons for which are outlined in the next section. Internationally educated engineers who have satisfied all the requirements for licensure other than the one year of Canadian work experience, may apply for a Provisional Licence if they wish, which is a certificate from PEO acknowledging their experience and certifying that they have met all the other requirements.

The total of four years of engineering work experience is a requirement for all applicants no matter where they are from; hence it does not have any unintended impact on any groups or unfairly exclude or limit certain groups such as internationally trained applicants.

4.1.3 One year Canadian engineering work experience requirement

- *How does the one year minimum of Canadian work experience relate to competent and safe practice at the entry level of the profession to ensure public safety?*
- *How did the one year minimum of Canadian work experience requirement emerge? Why is it there?*
- *How well does the one year minimum of Canadian work experience requirement predict competence?*
- *To what extent is Canadian or Ontario experience necessary for applicants to become familiar with the specifics of practice in Ontario?*
- *What changes could be made to the one year minimum of Canadian work experience requirement to better predict competence or to reduce negative impact?*
- *Does the one year minimum of Canadian work experience requirement have an unintended impact on any group? Does it unfairly exclude or limit certain groups such as internationally trained applicants?*

48 months of engineering work experience is a requirement for all applicants. 36 months of the 48 months of engineering work experience may be acquired anywhere in the world, however at least 12 months of the total must be engineering experience acquired in a Canadian jurisdiction under the supervision of a professional engineer.

This minimum requirement evolved to allow for proper exposure and adequate experience within the Canadian environment in which the engineering work was being produced. This would ensure that practicing engineers not only have the general engineering experience required but that some part of the experience, twelve months, would also expose them to Canadian engineering practices, codes and standards, and other cultural, technical, and business practices to ensure public safety.

Basic engineering principles are the same worldwide, hence the required engineering experience may be attained anywhere and are acceptable for licensing within Professional Engineers Ontario. However here are several reasons why it was deemed necessary that twelve months of this experience be obtained in a Canadian environment, all of them which relate to ensuring reliable, safe practice conforming to Canadian norms.

1. Codes and Standards - the most important and obvious reason is to allow for proper exposure and experience to Canadian codes and standards to which the engineering work must be performed. Failure to know, understand, and practice accordingly would result in public safety being compromised. Engineering projects are usually lengthy in time, hence twelve months is considered an adequate period in which to be exposed to the various facets involved, and to learn and be guided by other experienced engineers in the proper standards.
2. Documentation level – different countries have differing standards of documentation levels that are required for their engineering projects. As the type, quantity, where and when information is required can vary quite a bit amongst countries, it is important to gain adequate

exposure to this for Canadian norms. In some countries it is considered sufficient for only certain elements to be indicated on drawings or reports; however Canadian documentation standards tend to be quite detailed and rigorous. Proper and complete documentation of engineering work performed is considered a vital component of public safety, as it allows for proper hand-offs, checking of work, communication to others as to what has been done so that all are aware and may be alerted to possible impacts on their portion of the project, and historical evidence. Learning what is required and gaining experience in this area allows engineers to meet the expectation level for Canadian norms.

3. Seasonal and geographic differences – Canada is a country with four seasons and a wide range of climate. Engineering work that is affected by weather and climatic differences must be conducted in such a manner as to account for these changes. Some countries do not have much variation in their temperature hence the experience that an engineer from such a country has acquired may not be adequate for the environment that they now encounter and must engineer for. Even within Canada there are geographic differences between provinces that may need to be accounted for. For example, British Columbia is more earthquake prone than Ontario. Twelve months is a sufficient time period in which the engineer can experience all four seasons of winter, spring, summer and fall, and can gain the experience and guidance in working under and meeting these conditions.
4. Safety standards – basic engineering work is standard, however safety considerations are adjunct components to the engineering and there are widely differing levels amongst various countries. Canada prides itself on its high safety standards. Many aspects which are not considered part of the engineering scope or an added cost to the project in other countries are accepted norms within our society. Backups, secondary fail-safes, safety procedures and standards are all areas where it is important that we ensure appropriate Canadian exposure, knowledge, and experience of.
5. Scope of responsibility – the scope of responsibility of the engineer also differs amongst various countries. What is considered the beginning or end of an engineer's work and the handoff to others differs. What may be considered the responsibility of a technician or other worker in another country may be deemed still the responsibility of the engineer in Canada. It is important for an engineer practicing in Canada to learn and know where their responsibility lies and ends, and to experience work in that area if they have not been previously exposed to it. Not knowing their scope of responsibility and having experience in it could result in the endangerment of public safety.
6. Communication – nuances and customs in how business and communication is normally conducted is a soft skill that is also particular to different cultures and is an important element of practicing engineering in Canada. While gaining Canadian engineering experience, exposure to the communications practices, business norms, and familiarity as to what is expected is of benefit to successfully practicing engineering. The appropriate level of communication expected in Canada is particularly important when working on large projects and where public safety is concerned. The opportunity to practice and gain guidance and

coaching in this area under an experienced professional engineer is a valuable component in successfully conducting engineering work specific to the Canadian work environment.

While it has been explained via the reasons mentioned above why engineering experience specific to the Canadian engineering environment is a valuable and necessary component of the engineering experience requirement for licensing to ensure proper work and public safety, the amount of time required, similar to that for the total four years of engineering experience, is always subject to debate. The length of time spent in itself cannot be an adequate predictor of competence. It is the quality and quantity of the experience that the engineer can obtain to the cultural, technical and business characteristics in that amount of time that will result in the ultimate demonstration of competence in the field.

To that end, it was felt that twelve months is the minimum amount of time whereby the majority of applicants will have gained the required exposure and experience to the Canadian engineering environment with its specific codes and standards, documentation levels, seasonal differences, safety standards, scope of responsibility, and communication requirements. This amount would enable the engineer time to gain experience and prove their competence in producing engineering work under the guidance and supervision of a licensed professional engineer and thus ensure confidence amongst all parties concerned that they are able to engineer to Canadian practice and standards. This requirement is not a barrier but an enabler for all engineers, particularly those who are foreign trained, to practice engineering successfully in Canada.

Less than twelve months would not allow for adequate exposure to a full project cycle and for sufficient time to learn and experience the various requirements and seasonal differences. More than twelve months is not considered necessary provided that adequate exposure was attained.

It is important to note that unlike other professions, for example in medicine or law, it is possible to do engineering work without being a licensed engineer. With the wide variety of engineering disciplines and specialties there are many engineering jobs available in the marketplace that do not require the applicant to be licensed and whereby engineering work experience may be obtained. For gaining experience that will count towards licensure, the requirement is that the engineering work experience be for a total of 48 months, of which a minimum of twelve months is done under the supervision of a licensed professional engineer in a Canadian jurisdiction, and that the experience encompass the five engineering experience components. These five components being Application of theory, Practical experience, Management of engineering, Communications, and Social implications of engineering as outlined in the PEO Experience Requirements Guide. Applicants are free to work wherever they choose and are not limited by the engineering profession to particular internship positions.

Other than requiring a total of 48 months of engineering work experience, of which twelve months is engineering work experience obtained under supervision of a professional engineer in a Canadian jurisdiction, there are no detailed specifications of the exact form that the experience must take. Applicants are free to source their experience from any engineering work with the only requirement is that it is performed in the Canadian jurisdiction under a licensed professional

engineer. This requirement is applied equally across the board to all applicants, including those who have received their engineering degree from an accredited Canadian engineering school, and does not unfairly limit any group.

4.1.4 Language proficiency

- *Is there a rational basis for when French or English language proficiency will be assumed and when it must be assessed?*
- *Before taking a language proficiency test, are there ways for applicants to self-assess and, if necessary, upgrade their relevant language skills?*
- *How are assessors of language proficiency trained to conduct impartial assessments (e.g., to avoid being unduly influenced by accent)?*
- *How does the required degree of language proficiency relate to the realities of professional practice? Is the required degree of language proficiency clearly defined?*

The language of operation amongst engineers within PEO's jurisdiction, the province of Ontario, is English hence French language skills are not a requirement nor are assessed. Applicants are not required to take an English language proficiency test in order to demonstrate their language skills. Engineering principles are universal and as long as an applicant can make themselves understood so that the work they have performed can be communicated adequately, then they are able to operate in the engineering work environment and no specific level of language proficiency is tested for, nor required. This basic level of communication functionality is all that is required for the realities of professional engineering practice.

Five components of experience are required for licensing: application of theory; practical experience; management of engineering; communications skills; and social implications of engineering. For the communications skills component, the applicant should demonstrate that they have had experience during their four years on engineering work experience, in areas such as:

- *preparing written work*, including day-to-day correspondence, design briefs, and participating in preparing major reports;
- *making oral reports or presentations* to co-workers, supervisors and senior management, and to clients or regulatory authorities;
- *making presentations to the general public* as such opportunities arise.

While English language proficiency is not specifically tested, if during the application process applicants are identified either through an ERC (Experience Requirements Committee) interview, the written Professional Practice Exam, or their referees, that they are unable to communicate their information in a reasonable manner that may be understood, then the candidate may be deemed deficient in the communications component of the licensing requirements. When instances of deficiency are identified, the applicant may be interviewed by the ERC, given recommendations for areas of improvement, and invited to come back for reassessment.

The instances of rejection due to English language deficiency are extremely rare and are not considered a significant barrier to entry-to-practice for the professional engineering profession.

4.1.5 Professional Practice Exam (PPE) requirement

In what ways could the exam format created an obstacle for internationally educated applicants? How well do registration exams administered by PEO test the knowledge and skills required to competently and safely practice the profession at an entry level?

The Professional Practice Exam (PPE) is a three-hour closed book exam that consists of two parts: Part A Ethics and Part B Law. The examination requires essay-type responses to questions that cover ethics, professional practice, engineering law and professional liability. All candidates towards licensure must write and successfully pass the PPE.

Basic understanding of English is required to read and write the exam. Essay-type responses are asked for rather than multiple choice answers, since essay-type responses provide for a better explanation of the reasoning behind the answers given. The correctness of the reasoning behind the answers rather than proper grammatical responses is evaluated in order to determine the candidates understanding of the ethical and legal considerations that bind the profession. The fact that the exam is written in English may pose a barrier to foreign trained individuals who may have a limited understanding of the language, however a basic working knowledge and understanding of English is assumed and must be present in order for the applicant to be able to successfully practice in a safe and competent manner.

At any given sitting there is usually an 80% successful pass rate. For those who do fail, they are allowed to rewrite the PPE three times. Candidates who fail the PPE three times need to attend an interview with a PPE sub-committee before a fourth and final attempt will be granted for the candidate to rewrite. The sub-committee provides an opportunity for the candidate to explain the reasoning for their answers and to receive feedback regarding the expected correct responses and how the candidate can improve. Fourth time failures are extremely rare.

Professional Practice Examinations (PPEs) are set by P.Eng. examiners and they are reviewed by the Academic Requirements Committee's PPE sub-committee to ensure the questions set are fair and fall within the scope of the syllabus. Samples of past Professional Practice examinations are mailed to applicants who are eligible to write the PPE. PEO provides the applicant with the titles of the suggested textbooks for the Professional Practice Examination. Preparatory courses are also available by third party suppliers.

The Professional Practice Examination questions are updated for every sitting. Since the exam is of an essay type, the questions may vary from one sitting to the next, but the objective is to test the fundamental understanding of a limited number of concepts. Fundamental understanding and not English writing skills are what is assessed, hence should not present an obstacle to internationally educated applicants. Familiarity with and understanding of the Ontario *Professional Engineers Act* and the regulations that bind the professional engineer is important for those who are seeking licensure. The social implications of engineering are an important aspect of engineering practice.

4.1.6 Changes and relevancy

- *Have there been any changes in the practice of the profession or the environment in which it is practiced? Is it still relevant in the current context? Have legal requirements been taken into account?*
- *Is a requirement for citizenship or permanent residency status necessary? Would legal permission to work in Canada (e.g. as a temporary foreign worker or provincial nominee not yet provided permanent residence by the federal government) be sufficient?*

Engineering is by nature a profession that deals with constant change and is the application of scientific principles to create or 'engineer' new things. Engineering is the bridge which takes scientific theory and applies it. However, it is this basic principle of engineering that is constant and hence changes in environment and the discovery of new scientific principles is a norm within the practice of engineering. Changes in the practice and environment of all the engineering disciplines occur constantly and have done so throughout time, however the engineering approach is constant and thus is still relevant in the current context.

In terms of legal requirements, the engineering profession is governed by the *Professional Engineers Act*. Recent changes to the Act in October 2010 has in fact made it more accessible to applicants who are applying from abroad, as there is longer a requirement to be a landed immigrant nor a Canadian citizen to be licensed nor even be living in Canada. Also the definition of engineering experience has been changed to include engineering management experience rather than pure technical engineering experience. This widens the potential applicant field particularly for those who have moved into engineering management and have not been working hands on directly in engineering for a number of years.

4.1.7 Workplace and clinical experience opportunities

Are there barriers that may unfairly restrict access to workplace or clinical positions (e.g. not enough spaces, lack of supervisors, etc)?

Candidates are expected to find their own workplace experience opportunities via the current marketplace under existing market conditions. The number of opportunities for work placements will vary depending upon economic conditions and the prevailing factors of supply and demand. Workplace barriers may exist within the marketplace but are outside of PEO's scope. Recent Act changes to the definition of engineering work experience to include the management of engineering will expand the scope of jobs classified as engineering.

The breadth and depth of the engineering profession is extremely wide, encompassing a large variety of disciplines and specialties making it extremely difficult for a single body to be able to assess, offer, and facilitate the various types of experience opportunities required. It is therefore incumbent upon the individual to seek out the appropriate workplace position commensurate with their skills. It is best not to limit opportunities for individuals to gain appropriate experience; hence PEO does not get involved in work experience placements thereby allowing candidates the ability to gain their experience in as wide a variety of possible positions as possible.

PEO does assist and support provincial and municipal initiatives, agencies, or employers who wish to establish placements for experience to meet licensure requirements, for example, the establishment of a Structured EIT Program. These placements are under the control and management of the organization involved.

As mentioned previously, in the engineering profession, unlike other professions such as law or medicine, it is possible to do engineering work without being a licensed engineer, thus making a large number of jobs available and accessible. For gaining experience that will count towards licensure, the requirement is that a total of 48 months of engineering work experience be done, with a minimum of twelve months under the supervision of a Canadian licensed professional engineer. Applicants are free to work wherever they choose and are not limited by the engineering profession to particular internship positions.

As the body responsible for assessing the quality and acceptability of the work experience it is also appropriate for the regulator to be at arm's length from the provider of the experience so that bias is not introduced into the assessment.

For those who are able to satisfy all the requirements of licensing other than the twelve months of Canadian experience, there is an option to obtain a Provisional Licence which states this. This is of particular benefit to foreign trained applicants who can use this as proof that they have met licensing requirements with the exception of the Canadian experience.

The wide marketplace potential of jobs provides significantly broader opportunities for workplace positions than other professions and barriers such as lack of positions are purely dictated by

economic and marketplace conditions. Access is not restricted by the engineering profession and lack of supervisors.

4.2 Analysis and Findings for Part B – Efficiency and Timeliness

The efficiency and timeliness of the licensure process is examined in this section. PEO will begin to process any application for license as long as the applicant meets the minimum criteria; being of age, and paying the fee for the application. Prior to being issued a licence, however, the applicant must fulfill a number of additional requirements. These additional requirements are summarized as follows:

- Hold an undergraduate engineering degree from a Canadian Engineering Accreditation Board (CEAB) – accredited program or possess equivalent qualifications (Academic Requirements);
- 48 months of acceptable engineering experience, including 12 months in a Canadian jurisdiction (Experience Requirements);
- Be of good character; and
- Successfully complete the professional practice exam;

The length of time from initial application to issuance of a license can range from weeks (for an applicant who has all the requirements at the time of application) to years (for an applicant who has only the minimum requirements (18 years of age) and pays an administration fee).

4.2.1 The licensure process

The professional engineering licensure process may be broken down into several steps. There are essentially two, essentially similar, process flows which the applicant can take depending upon whether they are a CEAB - Canadian Engineering Accreditation Board graduate (i.e. has graduated from an accredited Canadian Engineering school), or is a non-CEAB graduate (has received their engineering degree from another country).

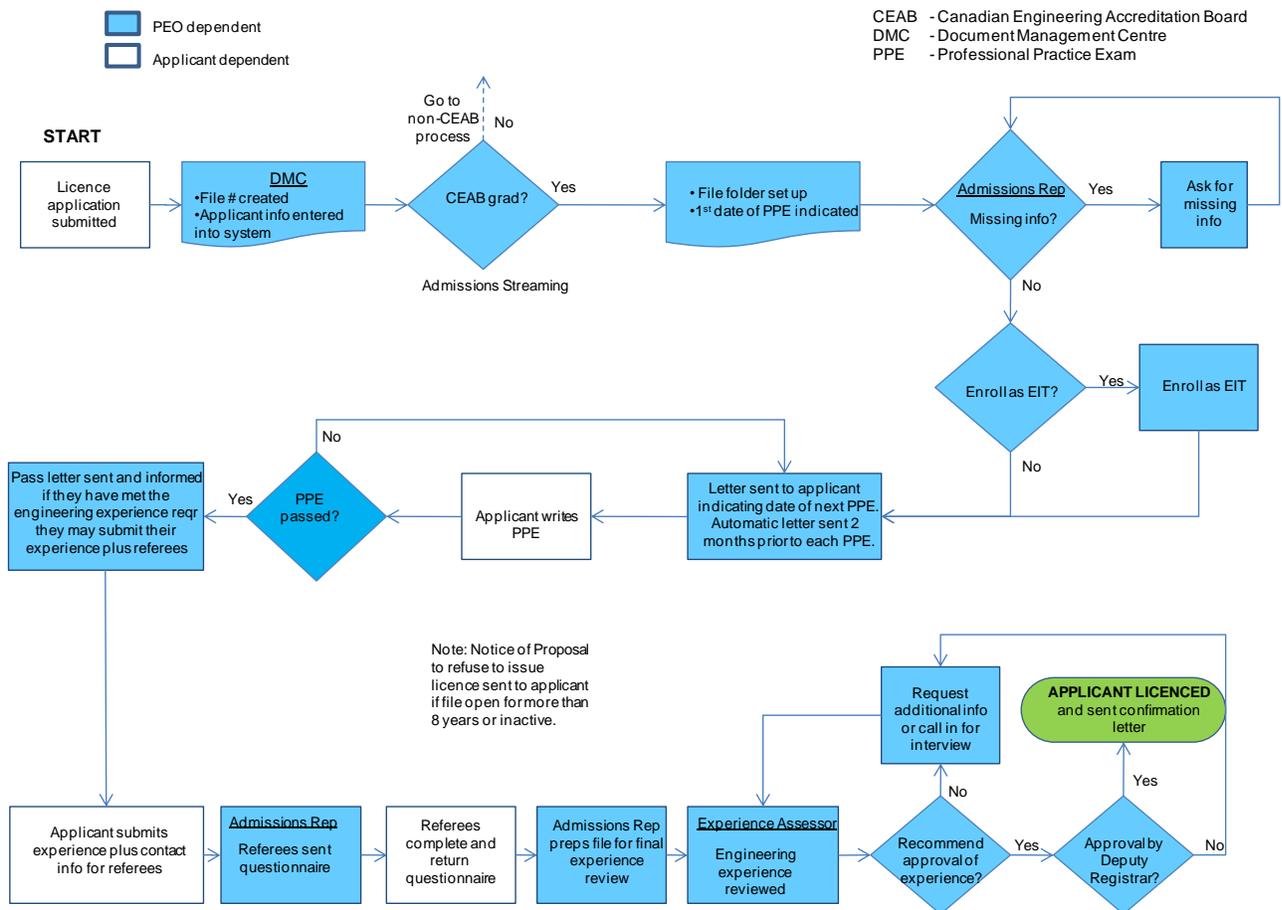
The slight difference at the beginning of the licensure process flow stems from the fact that academic credentials must be verified first for non-CEAB graduates, whereas CEAB graduates have already met the academic requirements by virtue of the obtainment of their engineering degree from an accredited institution and do not need to be verified again. After verification of the academics, the two processes are the same.

The following two process flows are depicted in Figure 4.1 Licensure process – CEAB graduates and Figure 4.2 Licensure process – non-CEAB graduates.

4.2.2 Licensure process – CEAB graduates

The following process flow diagram outlines the steps through which an applicant from a CEAB program (i.e. an applicant who has graduated from a Canadian engineering program that has been accredited by the Canadian Engineering Accreditation Board (CEAB), must go through during the licensure process.

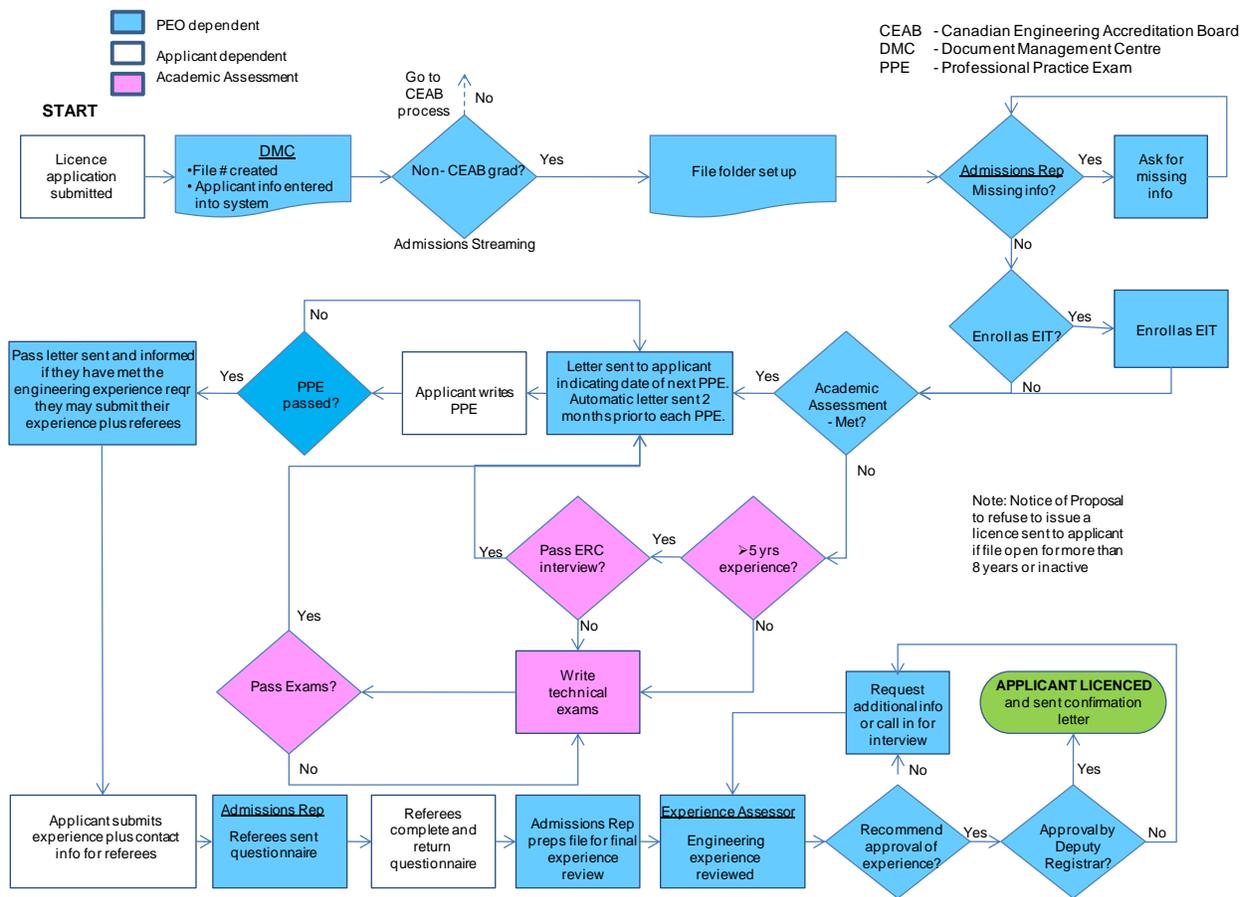
Figure 3: Licensure Process - CEAB Graduates



4.2.3 Licensure process – non CEAB graduates

The following process flow diagram outlines the steps through which an applicant who has graduated from an engineering program from another country must go through during the licensure process. Note that the steps are similar as that for CEAB graduates with the exception of the additional inclusion of academic verification steps.

Figure 4 Licensure Process - Non CEAB Graduates



4.2.4 Timeliness

How quickly are assessment decisions, registration decisions, and internal review and appeal decisions completed and communicated? What are the reasons for delays?

Are the timelines significantly longer or shorter than those of comparable regulators (e.g. where volume of applications and size of the organization are similar)?

Can the assessment process begin while an applicant approved for immigration to Canada is still overseas?

What parts of the process could be streamlined? Could certain timelines be reduced?

Once assessment decisions, registration decisions, and internal review and appeal decisions are made the applicant is informed via letter. Written responses and reasons are conveyed to applicants within six weeks and examination results are mailed to applicants within 45 working days as per Section 39 of the Regulations.

Letters are mailed within six weeks from the time a step is completed outlining the next steps, including alternatives and costs associated with each step depending on the option the applicant chooses.

The various steps and timings are described below along with reasons why applicants may require longer.

The current licensing process is applicant-driven and the length of the registration process is dependent on the number of requirements satisfied by the applicant prior to applying. If applicants have demonstrated the academic requirements and the 48 months of engineering experience at the time of their application, they may write the Professional Practice Examination and they could be registered within six weeks from the time they are notified that they have passed the exam. However, if applicants have not satisfied the academic requirements prior to their application, the *Professional Engineers Act* allows the applicant up to eight years to write exams, depending on how and when the applicant chooses to write exams, to fulfill the academic and experience requirements. Technical exams are offered twice each year and applicants may write in any of the 70 centres spread all over Canada. Applicants may also contact PEO for arrangements to write exams outside Canada. Results of exams are sent via mail within 45 working days from the date of the last exam sitting.

The registration process may take longer if the references do not submit their forms to PEO on time or if the applicant is a recent graduate who has yet to gain the required engineering experience in quantity and quality.

After satisfying the academic requirements, applicants are allowed up to two years to write the Professional Practice Examination, but there is no time limit for an applicant to satisfy the engineering experience requirements. The Professional Practice Examination is offered three times per year and applicants may write in any of the 70 centres spread all over Canada.

Applicants may also contact PEO for arrangements to write the exam outside Canada. Results of exams are sent via mail within 45 days from the date of the last exam sitting.

Engineering graduates who choose to apply as soon as they graduate will need to gain four years of acceptable engineering experience before a licence could be issued, hence it can reasonably take four years to satisfy the work experience requirements and obtain the licence.

PEO does not have a formal appeal process; however, applicants are entitled to request a Registration Committee Hearing. The Registration Committee is a tribunal that operates at arm's length from PEO's Licensing and Registration Department and is governed by the Statutory Powers Procedure Act of Ontario R.S.O. 1990, Chapter S.22. It is important to note that Registration Committee Hearings are **first instance hearings**, and the onus is on the applicant to demonstrate that he/she has satisfied all the licensure requirements or why he/she should be exempted from any or all of the requirements. As stated in Section 19. (7) of the *Professional Engineering Act*, the Powers of the Registration Committee are: 1) It can uphold the Registrar's Notice of Proposal to refuse to issue a licence, or 2) direct the Registrar to issue a licence.

Written responses and reasons are conveyed to applicants within six weeks for all internal reviews. However, PEO has no control over how long it will take an applicant to go through the Registration Committee Hearing process which is a formal legal process that is mostly administered by lawyers.

Recent changes to the *Professional Engineers Act* in Oct 2010 now require that notification of when a Hearing is scheduled must be sent within 30 days of receiving a request.

Either the applicant or PEO may appeal the Registration Committee Hearing decision to the Divisional Court which may introduce further delays.

Applicants who have satisfied all the licensure requirements could be registered as soon as they pay the registration fees.

The following is a summary of the approximate times in which decisions, responses and reasons are given by PEO. Some of the steps may be done in parallel to each other, or may not be required at all.

Registration Step	Approximate Time
Initial assessment of file to reach the Admissions representative's desk	6 weeks
ARC Review of file	6 weeks
Notification to schedule an interview for ERC interview (only for applicants that got referred to ERC from ARC)	6 weeks

Decision made on ERC interview from the interview date	6 weeks
Professional Practice Exam	45 days from exams sitting
Technical exam (if required)	45 days from exam sitting
Applicant is notified that application has been registered by Registrar and has been licensed, or refused by the Registrar	6 weeks
Notification of date of Registration Committee Hearing (independent Tribunal)	30 days upon receipt of request
Within the entire process, applicant can request for re-consideration through ARC and ERC at any time the time decision is made subsequent to the initial decision is 6 weeks	6 weeks

The standard processing time for an application is six weeks. The processing time starts at the point when all required documentation has been received by PEO and the application is complete. It could take a minimum of 4 years for an applicant who has no engineering experience upon application, as they will need to meet the 48 months of engineering work experience requirement prior to licensure.

These timelines are comparable to those of other provincial engineering regulators. Appendix A: *National Licensure Framework Constituent Association Assessment Times* details the various timelines of other regulators.

The assessment process may begin while an applicant is overseas. With the recent *Professional Engineers Act* changes in October 2010, applicants are not required to be a Canadian citizen or landed immigrant in order to obtain a professional engineering licence.

In 2010, PEO launched a pilot mentorship program which linked volunteer licensed members with engineering interns seeking licensure, to help guide and support the interns through the licensure process. The mentorship program has been well received to date.

Areas for improvement in efficiency and timeliness may be obtained by creation of an online application system. Currently all applications must be completed manually and mailed, faxed, or dropped off. Online files are then created and data input by PEO staff. Creation of an online application system would speed up this step of the process. In addition, the ability for an applicant to then check the status of their application online would also allow for greater efficiency and timeliness. Currently applicants are informed by mail or they may call their Admissions representative at any time to learn the status of their application. Automatic email follow-ups to the applicant for missing documentation would also enhance timeliness of completion.

4.2.5 Adherence to timelines

- *What monitoring does the regulator do to ensure procedures are followed and time standards are met?*
- *How consistently does the regulator or qualifications assessment agency follow its published timelines for decision making?*

PEO does not use an external qualifications assessment agency. All qualifications assessments are done internally by trained individuals.

To ensure that procedures are followed and time standards are met, the Licensing Department runs reports every month to monitor the adherence to the established timeframes for internal reviews. Academic assessments, Professional Practice Exam results, Technical exam results, and registration all meet published timelines for completion and communication. Furthermore, applicants' written requests/complaints are recorded in a log by the Assistant to the Deputy Registrar, Licensing and Registration.

A past Office of the Fairness Commissioner audit conducted by Deloitte which examined the Registration Practices of PEO found that of the 108 files examined over a one year period that went to the Academic Requirement Committee, 7 files were not decided upon in the 6 week time frame. Of these 7 files, 3 were just over 6 weeks due to administrative timing (i.e. holiday season), 3 were delayed because the ARC members who are expert in the applicants' discipline were not available on the review day, and 1 was delayed due to it being a new emerging engineering discipline and thus it took longer to find volunteers.

Deloitte examined 49 files that were referred to the ERC and noted that 4 files were not completed within the standard 6 weeks, but were still completed within a reasonable amount of time (shortly after the 6 week standard period).

In summary, PEO is consistent in following its published timelines for decision making and monitors to ensure procedures are followed and time standards are met.

4.2.6 Examination of the Academic Assessment process

- *Are assessors and decision-makers well trained and neutral?*
- *How are assessors trained to determine equivalencies?*
- *How are decision-makers trained to make objective registration decisions based on the documentation submitted and assessments conducted by the regulator? Are the criteria for assessing qualifications sufficient for making objective decisions? Or are there gaps in the criteria that could result in unduly subjective decision-making?*
- *What safeguards exist to reduce subjectivity in scoring?*
- *What safeguards exist to prevent bias based on the applicant's country of origin, race, ethnicity, name or other identifying features?*
- *Are all applicants assessed on the basis of their individual competence as opposed to general assumptions about where they have studied or practiced?*
- *How do assessors of academic credentials keep up-to-date on educational equivalencies in other jurisdictions?*

PEO conducts its own “peer review assessment of qualifications.” For this purpose, it depends on two legislated committees; namely, the Academic Requirements Committee (ARC) and the Experience Requirements Committee (ERC). Both committees are composed of professional engineers who volunteer their time for peer reviewing applicants’ credentials. Assessments’ criteria, tools and procedures are published in the following two guides which are available for download from the PEO website free of charge:

1. *The Licensing Guide and Application for Licence;* and
2. *Guide to the Required Experience for Licensing as a Professional Engineer in Ontario.*

In addition, applicants are assessed based on their own credentials, which are different from one applicant to another. Some applicants are deemed to have satisfied the academic requirements upon application and others would need to satisfy them by writing exams, depending on their academic preparation prior to applying.

Applicants who do not hold a Bachelor's degree in engineering from accredited Canadian programs must have their academic qualifications assessed by PEO, and to ensure fairness to each applicant, they are required to submit the following documents and information:

- Original or certified copies of diploma(s), degree(s), and full transcript(s), showing courses completed and marks; copies of these documents must be certified by a notary public or a professional engineer.
- Detailed descriptions of all engineering courses taken, attached to the application. PEO tries to compare the courses completed by each applicant with the CEAB accredited courses.

- If the academic documents are not in English, applicants must submit notarized English translations prepared by a service that is certified by the Association of Translators and Interpreters of Ontario (ATIO) or by a Canadian professional engineer who must certify that he/she is fluent in both languages.

In circumstances where the Internationally Educated Graduate (IEG) does not have access to official documents, the applicant will be advised through his/her Admissions Representative to provide his/her own written documentation. PEO will consider it on a case-by-case basis. In most cases, applicants are referred to the Experience Requirement Committee (ERC) for an interview to confirm what the applicant has submitted. In any case, since PEO accepts academic documents not submitted directly from their institutions, PEO has an obligation to confirm that no fraudulent documentation has been presented in order to protect the public where engineering is concerned. The ERC interview provides PEO with that opportunity.

Assessors and decision-makers are well trained and neutral, utilizing a manual of procedures and a mentor system of training. Academic Requirement Committee (ARC) and Experience Requirement Committee (ERC) members who assess the academic preparation and experience of applicants have received the same training and orientation on how to make the determinations, how to evaluate the information collected and how to be sensitive to all the principles of fairness, impartiality and transparency with special emphasis on the fact that approximately 50% of the applicants are individuals educated in countries other than Canada. Furthermore, close to 80% of the members of the ARC and ERC are themselves Internationally Educated Graduates who went through the same process and satisfied the very same requirements.

Applicants are informed at every step of the way when an assessment is made.

Academic Requirement Committee (ARC)

ARC members are trained to determine educational equivalencies by comparison of the applicant's academic engineering curriculum to the academic engineering curriculum outlined in syllabus developed from CEAB programs by Engineers Canada. The syllabus is a national standard and is available for applicants to view at no cost. The comparison to the syllabus ensures that decisions are made objectively based on the documents submitted and the curriculum outlined and is sufficient for ensuring objective decisions are made.

Subjectivity in assessing an applicant's academic qualifications or credentials for educational equivalency is reduced via use of the comprehensive Engineers Canada syllabi. The academic assessors do not see the applicant and base their assessment purely upon the documentation received. To ensure consistency in decision making, PEO maintains a database of previous ARC assessments from various academic institutions. Reports of these assessments are run for each applicant and comparisons are made. But these reports are used as guidelines only because engineering programs are flexible by nature and students may take different courses to fulfill their graduation requirements. In addition, the engineering curriculum in any institution or

jurisdiction may change from one year to another; consequently even though two applicants may seem to have similar academic qualifications, their academic knowledge may be very different depending on the year of graduation and any additional education obtained.

Bias based on the applicant's country of origin, race, ethnicity, name or other identifying feature is eliminated via the use of the syllabus. Comparisons to the syllabus eliminates any general assumptions regarding where an applicant has studied or practiced as it is based purely upon the comparison of the content of the academic studies and what is required. Decision makers do not assess applicants that they know and self-identify if this is the case, whereupon another member is assigned. Engineering principles are the same worldwide, however what components are studied in the curriculum may vary amongst institutions in other countries, hence the assessment of the academic content for educational equivalency.

All applicants are assessed on the basis of their individual competence as opposed to general assumptions about where they have studied or practiced. The engineering curriculum at an academic institution in any country may change from one year to another and in order for PEO to fulfill its mandate in protecting the public of Ontario where engineering is concerned, and in fairness to each applicant, it is incumbent upon PEO to assess applicants' academic qualifications and the knowledge they gained during their enrolment in the engineering program. Therefore, any changes in the recognition status of the institution in their home country, before or after the applicant graduated from it, should have no impact. This is part of the rationale as to why applicants' academic qualifications are assessed on a case-by-case basis.

Assessors keep up-to-date on educational equivalencies in other jurisdictions via use of the syllabus whose content is maintained and is referred to by the academic assessors when assessing whether there are gaps in the academic base of the applicant. Existing engineering disciplines are reviewed by Engineers Canada who provides the regulatory bodies with updated syllabus information for all CEAB accredited engineering curriculum. For new and emerging disciplines, syllabus information is provided by ARC members who are knowledgeable in the field.

Internationally trained engineering graduates may be assigned a technical examination program. However, PEO may exempt applicants if they have bachelor's degrees in engineering from institutions that have mutual recognition agreements with Engineers Canada (e.g. Washington Accord Members – Australia, Canada, Hong Kong, Ireland, New Zealand, South Africa, UK, and US) or if they have postgraduate degrees in the same discipline as their undergraduate engineering degree, which would confirm their undergraduate engineering knowledge. Furthermore, applicants who have five years or more of engineering experience are referred to the Experience Requirements Committee (ERC) for an interview, where they can demonstrate their academic knowledge as it has been applied to their engineering experience. Approximately two-thirds of internationally trained engineers satisfy the academic requirements without writing technical exams.

Experience Requirements Committee (ERC)

Those applicants whose academic curriculum may be missing elements and who have been assigned technical exams by the ARC to verify their knowledge, may have the exams waived if they have had more than 5 years of engineering work experience and are able to demonstrate that they have gained the required knowledge via their experience. This is done via an interview by the Experience Requirements Committee (ERC).

The ERC interview is an oral review conducted by two peers (peer practicing professional engineers) from PEO's Experience Requirements Committee (ERC) who assess the academic preparation and experience of applicants.

Experience Requirement Committee (ERC) members who assess the academic preparation and experience of applicants are well-trained and neutral and have received training and orientation on how to make the determinations, how to evaluate the information collected and how to be sensitive to all the principles of fairness, impartiality and transparency. Close to 80% of the members of the ARC and ERC are themselves Internationally Educated Graduates who went through the same process and satisfied the very same requirements.

Applicants are assessed on the basis of their individual competence as opposed to general assumptions about where they have studied or practiced. The methodology is validated by the fact that there are two independent assessments conducted by peers who record their comments separately in the report, thus reducing subjectivity in scoring. The interviews are also taped should there be any question afterwards as to what was actually said or had transpired. The questions are basic engineering questions. The result of the experience assessment is correlated with the educational base in order to ensure that the applicant is able to competently and safely put to practice his/her engineering education.

Once a decision has been made by either the ARC or ERC, PEO staff also reviews for consistency and fairness providing a cross-check. It takes 6 weeks for an ARC review and notification of decision. If referred to the ERC, it takes a maximum of 6 weeks to schedule an interview, and 6 weeks from the ERC interview date for formal notification of the decision made on the ERC interview.

It is important to note that the process is applicant driven. Many times delays incurred are due to waiting for applicant information or completion of a step (e.g. writing an exam) by the applicant. It is this portion that may perhaps be alleviated by perhaps holding information sessions for non-CEAB graduates so that they have a better understanding of the PEO licensure process and what is required. A one hour session offered once a month may be appropriate.

4.2.7 Examination of the work experience assessment

The process followed to assess the engineering experience is based on the *Professional Engineers Act* and the Regulations which require four years of experience with at least one of these four years gained in a Canadian jurisdiction under the supervision of a person legally authorized to practice professional engineering in that jurisdiction. The process also explains how engineering experience gained outside Canada can satisfy the requirements of this Canadian experience.

As far as the assessment of engineering experience is concerned, PEO has published in its website and always refers applicants to the publication called *Guide to the Required Experience for Licensing as a Professional Engineer in Ontario*. This publication includes the following information:

1. The full and detailed description of the experience requirements for licensure both in quantity (duration) and quality (five clearly identified and described criteria);
2. The process followed to determine whether or not an applicant meets this criteria with the assistance of the applicant's description of his/her engineering activity as well as the evaluation against each one of the criteria provided by adequate references who are identified by the applicant and contacted directly by PEO;
3. Information about who the references should be and what is their responsibility;
4. Information about credits towards the experience requirements by virtue of postgraduate degrees; and
5. Information about some of the more complicated types of engineering experience and how PEO evaluates its quality for licensure purposes.

The result of the experience assessment is correlated with the educational base in order to ensure that the applicant is able to competently and safely put to practice his/her engineering education which is basically what is being understood by the word "competency."

The process also includes the tools for determining whether an applicant meets the experience requirements in cases of doubtful or contentious types of experience where the references do not offer adequate support. In these cases, the applicant is invited to attend an interview with appropriate members of the Experience Requirements Committee where an opportunity is provided to the applicant to directly explain his/her experience to peers. Furthermore, in case of a negative result of this Experience Requirements Committee interview, the applicant is given every possible assistance and indication concerning his/her shortcomings and guidance to create a plan to address the deficiencies in collaboration with the applicant's selected P. Eng. supervisor.

4.2.8 Examination of the Technical exams

*In what ways could the exam format created an obstacle for internationally educated applicants?
How well do registration exams administered by PEO test the knowledge and skills required to competently and safely practice the profession at an entry level?
How quickly are assessment decisions completed and communicated?*

Following the review of the applicant's academic qualifications, PEO may accept the applicant's academic qualifications or may assign applicants a technical examination program. Technical exams are usually assigned to either:

- ascertain whether an applicant's academic preparation is equivalent to that provided by an undergraduate engineering program accredited by the CEAB, or
- remedy identified deficiencies in an applicant's academic preparation compared to the Engineers Canada syllabus.

Applicants may be assigned one of the following technical examination programs:

- *Confirmatory Examination Program.* Applicants whose academic preparation appears to be similar to that provided by a CEAB-accredited engineering program will normally be assigned a Confirmatory Examination Program (CEP).
- *Specific Examination Program.* Applicants whose academic qualifications are judged by PEO to fall between those of a technology diploma and those of an engineering degree will be assigned a Specific Examination Program.

The exams are based on engineering principles which are universal. The exams are set by P.Eng. examiner experts in the discipline (active or retired professors from accredited engineering programs) and the exam is reviewed by another examiner to ensure the exam is fair and falls within the scope of the exam outline. Basic understanding of English is required to read and write the exam. Grammatical errors are not taken into consideration when evaluating the applicant's answers, only the correctness of the technical answers to the engineering questions is evaluated as this is what demonstrates that the applicant has the ability to engineer competently. The fact that the exam is written in English may pose a barrier to foreign trained individuals who may have a limited understanding of the language, however a basic working knowledge and understanding of English is assumed and must be present in order for the applicant to be able to successfully practice in a safe and competent manner.

The purpose of the technical exams is merely to confirm their engineering knowledge. Experience is still required. In the United States all candidates must take technical exams.

Examination results are mailed to applicants within 45 working days as per Section 39 of the Regulations. Candidates have an option to request a re-read of their exam paper within 30 days of receipt of the result letter if the candidate disagrees with the result received. This re-read is done by an independent examiner that is not aware of the result assigned by the original examiner and the re-read result is the final decision.

4.2.9 Examination of the Professional Practice Exam (PPE)

How quickly are PPE decisions completed and communicated?

The Professional Practice Exam (PPE) must be written by all candidates towards licensure. This is a three-hour closed book exam that consists of two parts: Part A Ethics and Part B Law.

A minimum mark of 50% is required in both Part A and Part B of the PPE to pass. If the candidate fails one part of the PPE, he/she is only required to rewrite the failed part at the next attempt and only 1.5 hours are given if the candidate only has to rewrite one part of the PPE. The candidate is allowed to rewrite the PPE three times. Candidates who fail the PPE three times must attend a PPE interview with a PPE sub-committee before a fourth and final attempt will be granted for the candidate to rewrite. The sub-committee provides an opportunity for the candidate to explain the reasoning for their answers and to receive feedback regarding the expected correct responses and how the candidate can improve.

Should a fourth failure occur, the file will be closed but the candidate can re-apply again. The result history will be part of the new application and if the candidate passed one part of the PPE from a previous application, the candidate only has to rewrite the part that is outstanding and the candidate will be given three chances again to try and pass the PPE.

The PPE exam is offered three times per year and applicants may write in any of the 70 centres spread all over Canada. Applicants may also contact PEO for arrangements to write the PPE outside Canada. Timeliness of the process may be affected here depending upon when the candidate has applied and when the exam is being offered.

Professional Practice Examinations (PPEs) are set by P.Eng. examiners and they are reviewed by the Academic Requirements Committee's PPE sub-committee to ensure the questions set are fair and fall within the scope of the syllabus. Samples of past Professional Practice examinations are mailed to applicants who are eligible to write the PPE. The objective is to test the fundamental understanding to questions that cover ethics, professional practice, engineering law and professional liability.

Examination results are mailed to applicants within 45 days as per Section 39 of the Regulations. Candidates have an option to request a re-read of their exam paper within 30 days of receipt of the result letter if the candidate disagrees with the result received. This re-read is done by an independent examiner that is not aware of the result assigned by the original examiner and the re-read result is the final decision.

4.2.10 Examination of the Internal reviews and Appeals process

Internal Review:

In every step of the licensure process, applicants are advised to contact their Admissions Representative if they have any concerns or questions. Applicants are encouraged to make submissions in writing or electronically via email. Should an applicant disagree with the conclusions of either ARC or ERC, an applicant may request a new review be performed or a reconsideration. Applicants who raise concerns will have their file reviewed again and a written response is provided usually within six weeks. Sometimes, in cases where additional information is provided by the applicant or requested by PEO to support the applicant's concerns, it may take longer depending on when such information is provided. Applicants are also encouraged to request a review whenever they have acquired new academic credentials and/or engineering experience that were not reviewed before. There is no limit as to how many times a file may be reviewed and the applicant can request a review or reconsideration at any stage of the process.

For a review of an ERC interview, the tape recording of the initial interview is first reviewed by PEO staff for any discrepancies. The staff would then go back to the individuals who conducted the initial interview and ask them to review the applicant's answers again and determine if they wished to make any changes or alter their decision. If not, then a second panel of ERC interviewers would be convened and the applicant may be given a second interview.

For ERC second interviews, an oral review is conducted by two peers (peer review) from PEO's Experience Requirements Committee (ERC) who were not part of the initial review. Furthermore, the new panel is not informed that this is a second interview to ensure that the applicant has a new and impartial opportunity to present his/her case.

Paper assessments are usually conducted by at least two peers from PEO's Academic Requirements Committee (ARC), to ensure impartiality in the assessment. In the current licensing process, this is known as "ARC double vetting". This is for the initial decision. Reviews are conducted by different ARC members in the case of an applicant requested review.

Written requests/complaints are recorded in a log by the Assistant to the Deputy Registrar, Licensing and Registration. In 2009, PEO received about 80 requests from applicants for review and reconsideration. In 2010, PEO received 46 requests for review and reconsideration. In comparison, 1866 ARC assessments and 848 ERC interviews were conducted, and 2480 professional engineering licenses were issued to new applicants in 2010.

Registration Committee Hearings:

In accordance with Section 14, (2) of the *Professional Engineers Act*, the Registrar may refuse to issue a licence to an applicant where the Registrar is of the opinion, upon reasonable and probable grounds, that the past conduct of the applicant affords grounds for belief that the applicant will not engage in the practice of professional engineering in accordance with the law and with honesty and integrity. In accordance with Section 14.(1), the Registrar may propose to refuse to issue a licence because an applicant does not satisfy **all** the requirements stipulated in

that section. In both cases the Registrar will serve the applicant with a Notice of Proposal to Refuse to issue a licence, together with written reasons in accordance with section 19. (1). Furthermore, in accordance with section 19.(3), the notice shall state that the applicant is entitled to a hearing by the Registration Committee if the applicant delivers, within 30 days after the notice is served on the applicant, notice in writing requesting a hearing by the Registration Committee.

The final level of appeal within the process is the Registration Committee hearing. The Registration Committee is a tribunal that operates at arm's length from PEO's Licensing and Registration Department and is governed by the Statutory Powers Procedure Act of Ontario R.S.O. 1990, Chapter S.22. An applicant can only make such an appeal once the Registrar issues a Notice of Proposal to Refuse to Issue a licence. The applicant must request a hearing within 30 days to the Tribunal Office. The Tribunal Office operates independently of the Licensing department, and informs PEO upon the decisions made during the registration hearings. Members of the tribunal are not part of the initial decision-makers, in accordance with the Statutory Powers Procedure Act of Ontario R.S.O. 1990, Chapter S.22. It is important to note that Registration Committee are considered a "**de novo**" or **first instance hearing**, thus the decision made by this Tribunal is to determine whether the individual should be granted a license, and does not consider any previous decision made by PEO.

The Registration Committee Hearings legal proceeding allows both PEO and the applicant to make submissions to the Registration Committee as part of the legal proceeding. Applicants have a right to make opening statements, present evidence, call witnesses at the hearing, cross examine witnesses and make closing submissions.

Applicants are advised on how they can make a submission through their legal counsel or directly if legally unrepresented. In accordance with the Statutory Powers Procedure Act of Ontario R.S.O. 1990 (Appendix 14), a Registration Committee Hearing may be conducted in writing, orally or electronically. The Registration Committee panel and the lawyers (or the applicant if not represented by a lawyer) agree on the means of the hearing. Please note that PEO does not have control over how long it will take an applicant to go through the Registration Committee Hearing process which is a formal legal process that is mostly administered by lawyers.

Past concerns regarding the timeliness of when the applicant was informed of their hearing has been rectified by recent changes to the *Professional Engineers Act* in October 2010 which now requires that an applicant be notified of when a Hearing is scheduled within 30 days of the receipt of their request by PEO. In 2010 a total of three Registration Hearings were conducted.

The Powers of the Registration Committee are very limited as stated in Section 19.(7) of the *Professional Engineers Act*. It can uphold the Registrar's Notice of Proposal to refuse to issue a licence or direct the Registrar to issue a licence. Additional information, if required, can be obtained from the Tribunal Office.

Either the applicant or PEO may appeal the Registration Committee Hearing decision to the Divisional Court.

As the Registration Committee operates at arm's length from PEO and is a legal proceeding which does not consider any previous decision made by PEO, this provides the applicant with a fair and impartial hearing.

4.3 Analysis and Findings for Part C – Reasonableness of Fees

4.3.1 Fees

- *How were the fees originally set? What was the rationale for the amounts? Is there an objective basis for the amounts?*
- *Are the fees higher than the cost of providing the service?*
- *Are there measures to ensure that fees charged by qualifications assessors are reasonable?*

The fees for registration are set on a cost based manner.

The actual costs for the registration process are higher than the application fees charged to the candidate. They are subsidized by the annual membership fees from the 72,000+ members within PEO in order to ensure that the entry to licensure is not onerous for new applicants.

The costs are adjusted periodically for inflation and changes in processes and/or efficiency. The setting of fees on a cost-based manner provides for an objective basis for the amounts and are designed to recoup some of the overhead costs incurred by the applicant for the registration process.

A thorough review of the financials associated with the registration process based on 2010 actual costs was conducted to determine the current costs in relation to the fees being charged. It was found that in all cases the actual cost of providing the service was higher than the fees being charged to the applicant.

The initial application fee charged is \$300. The actual 2010 cost incurred by PEO to process an application is \$563. The initial application fee is the major fee associated with applying for a professional engineering licence. The only other mandatory fee is for the writing of the Professional Practice Exam (PPE), unless during the assessment of academic credentials it is determined that technical exams are required, and the final Registration fee once the applicant has met all requirements.

The fees charged for the applicant to write the PPE exam is \$165 vs. the actual cost to PEO of \$180.

The Registration fee once the applicant has met all licensing requirements is \$250 vs. the actual cost to PEO of \$291.

The fee charged for Technical exams, if the applicant is required to write them, is \$415 for one-time administration and \$165 for each exam. If technical exams are assigned, then usually two

to four technical exams are written. The actual cost of program administration incurred by PEO is \$552. The cost to PEO per technical exam is \$237.

The fees charged for the optional EIT program is also lower (\$75 fee vs. PEO cost of \$92).

PEO does not use external qualifications assessors, nor does it charge applicants an additional fee for the assessment of their academic credentials unlike some other regulatory bodies or other provincial engineering regulators within Canada.

Additional details on the 2010 financial actuals associated with the registration process are shown in Appendix B.

The current fees for 2011 registration remain unchanged from 2010. The fees cited above do not include any applicable taxes.

4.3.2 Financial Credit Program (FCP)

Do the fees discourage potentially qualified applicants or create hardship for those who do apply? In what circumstances can fees be waived or paid in installment?

While fees could discourage potentially qualified applicants or create hardship for those who do apply, PEO does have in place a Financial Credit Program (FCP) for Internationally Educated Graduates (IEG) with an engineering degree who have landed in Canada within six months, or for newly graduated students from an accredited CEAB program. Under this program, PEO will waive the P.Eng. licence application fee and the cost of the first year of membership in the Engineering Intern Training (EIT) program.

In terms of 2011 fees, this would result in a savings of \$300 for the Licence application, and \$75 for the EIT program membership for a net total savings of \$375.

Candidates, who complete the application for licensure and provide all required documents within six months of the date they landed in Canada for an Internationally Educated Graduate, or within six months of graduation from a CEAB program as measured from the intern's graduation convocation date, may be eligible for the Financial Credit Program (FCP).

IEG applicants must apply on-line and ensure that all documents to support their FCP application are received by PEO within six months of the date they landed in Canada.

The availability of the Financial Credit Program (FCP) lowers a potential barrier-to-entry due to financial considerations for newly landed internationally educated candidates.

4.3.3 Comparison of fees to other regulators

- *Are the fees higher than those charged for comparable services by other regulators?*

Online research was conducted to compare the fees charged by PEO with the other provincial engineering associations within Canada, as well as with other regulators within Ontario.

The following is a comparison of fees of engineering associations within Ontario:

Figure 5: Provincial Engineering Association fees

Provincial Association	Province	Application fees		Academic Assessment Fee	EIT/GIT Member-in-Training	PPE Prof. Practice Exam	Exams (if reqr)
		Description	Fee				
APEGBC	British Columbia	First time applicant - Foreign (others)	\$531	Nil	\$208	\$304	\$361
APEGGA	Alberta	First time applicant - Foreign (others)	\$430	Nil	\$140	\$140	\$165
APEGS	Saskatchewan	Member	\$300	\$200	\$200	\$305	Not available
APEGM	Manitoba	Applicant	\$125	\$440	\$175	\$140	\$300
PEO	Ontario	Applicant	\$300	Nil	\$75	\$165	\$165
OIQ	Quebec	Applicant - Type 3 degree holder (foreign)	\$790	Nil	\$327 (incl PPE)		\$169
APEGNB	New Brunswick	Applicant	\$605	\$140	\$113	\$200	Not available
APENS	Nova Scotia	New member	\$106	\$200	\$106 \$25 Registration + \$65 annual dues	\$200	\$200
APEPEI	Prince Edward Island	Member	\$250	Nil	\$123	\$165	Not available
PEGNL	Nfld & Labrador	Member	\$220	Nil	\$123	\$165	Not available
APEY	Yukon	First time applicant - Foreign (others)	\$430	Nil	\$140	\$140	\$165
NAPEG	NWT & Nunavut	Member/Licensee	\$300	Nil	\$125	\$140	Not available

The average application fee charged by other provincial engineering associations is \$372 vs. \$300 charged by PEO. PEO does not charge an additional academic assessment fee. PEO utilizes a body of trained volunteers as discussed in previous sections, and absorbs the cost. Costs are subsidized by the annual membership dues of licensed members.

The cost of the optional EIT membership is one of the lowest amongst the provincial engineering associations, and the cost to write the PPE exam is quite comparable.

PEO's technical exam fee is also one of the lowest, though it was difficult to compare as many associations do not post their exam fees on their online website information. This is due to the fact that not all candidates are required to write technical exams. Candidates who must write are notified separately at that time what the costs and procedures are, thus reducing any potential confusion amongst applicants of whether they need to pay technical exam costs or not. PEO provides information on all costs including technical exams in *The Licensing Guide and Application for Licence*. *The Licensing Guide and Application for Licence* is available both online and as a hardcopy free of charge.

The following is a comparison of fees of other regulatory bodies within Ontario:

Figure 6: Comparison of fees to other Ontario Regulators

Regulatory Body	Application		Exams		Annual dues
	Description	Fee	Description	Fee per exam	
OCP Pharmacists	PEBC Fees (incl examinations) - assesses candidate's competence	\$3,000	Exams included in PEBC Fee		\$2,700
	OCP Fees (incl annual registration fee as pharmacist)	\$2,700			
	IPG (Intl Pharmacy Graduate) Program	\$13,000			
Alliance PT Physiotherapists	Education credential assessment	\$780			\$635
CGA Certified General Accountant	Application fee	\$401	Various courses/exams		\$660 to \$1080
OACETT Engineering Technicians & Technologists	Application fee	\$155	Professional Practice Exam	\$250	\$198.68
OASW Social Workers	Application fee	\$75			\$270
	Registration fee (prorated)	\$270			
	Education credential assessment	\$250			
ODHA Dental Hygienists	NDHCB Assessment fee	\$425	NDHCB Exam	\$535	\$250
	CDHO application fee	\$75	CDHO clinical competency evaluation	\$500	
	Certificate of registration fee	\$250			
OAA Architects	Certification of Education	\$1,300	ExAC (4)	\$772	\$808
	Experience Requirements Interview	\$250	ARE (7)	\$1,470	
	Intern Architect	\$154			
	Certificate of Practice	\$412			
OCT Teachers	Registration fee	\$140			\$120
	Credential evaluation	\$222			
LSUC Lawyers	Licensing Process Fee (incl first write of Barister)	\$2,400	Exams		Cat. 1: \$2015
	Assessment of legal credentials	\$450			Cat. 2: \$1009
	Call to the Bar fee	\$250			
PEO Engineers	Application fee	\$300	Professional Practice Exam	\$165	\$220
	Registration fee	\$250	Technical exams (if req.)	\$165	

It is difficult to adequately compare PEO's costs with other professional regulatory bodies as the licensing requirements are quite different. It may be noted, however, that overall the costs to become a professionally licensed engineer in Ontario is generally lower than for the costs associated with most of the other professional regulatory bodies we reviewed, with the exception of the Ontario College of Teachers, and the Ontario Association of Engineering Technicians and Technologists (OACETT).

5 Recommendations

5.1 Recommendations for Part A – Necessity and Relevance of the Requirements

The necessity and relevance of the 48 months of engineering experience requirement with a minimum of 12 months in a Canadian jurisdiction under the supervision of a licensed professional engineer was found to be extremely important for ensuring the engineers that are licensed are properly experienced and are able to practice safely and competently in order that public safety not be compromised. This standard is endorsed by Engineers Canada, which is the nationally body of the provincial and territorial regulators of the practice of professional engineering in Canada, as well as by academics and employers. As 36 months of the experience may be obtained anywhere in the world, this does not present a barrier to foreign trained individuals. The remaining 12 months of engineering experience under the supervision of a professional engineer in a Canadian jurisdiction is relevant and necessary to ensure that applicants are familiar with the technical, cultural, and business norms of the engineering work they do, as outlined in detail in the preceding section.

There are no workplace barriers imposed by PEO as PEO does not provide work placements or internships. Applicants are free to choose from a wide variety of jobs available in the marketplace. Workplace barriers in the external marketplace may exist and are outside of PEO's purview. There are many jobs in engineering that unlike many professions, do not require a licence in order to perform the work. A Provisional Licence is available for those who meet all the licensure requirements with the exception of the 12 months of engineering experience supervised by a professional engineer in a Canadian jurisdiction. PEO encourages potential newcomers to have their credentials assessed by PEO and to obtain a Provisional Licence prior to landing in Canada. Recent *Professional Engineers Act* changes to the definition of engineering work experience to include the management of engineering will expand the scope of jobs classified as engineering.

PEO Council has recently passed a motion that the 12 months of engineering experience supervised by a professional engineer in a Canadian jurisdiction requirement may be obtained under the supervision of a professional engineer, as a temporary licence holder working with a professional engineer collaborator, or as an Engineering Intern working with a professional engineer monitor. The PEO's *Guide to the Required Experience for Licensing as a Professional Engineer in Ontario* will be amended to include the role and requirements of a professional engineer as a supervisor, monitor, or collaborator.

PEO does assist and support provincial and municipal government initiatives, agencies, or employers who wish to establish placements for experience to meet licensure requirements, for example, the establishment of a Structured EIT Program. These placements are under the control and management of the organization involved.

PEO does not require formal language testing. English language proficiency is assumed and as long as the candidate is able to communicate in a manner so as to be understood, then their communication skills are deemed to be adequate. If instances of deficiency are identified, which is extremely rare, then the applicant may be interviewed and given recommendations for areas of improvement and invited to be interviewed for assessment.

Recent changes to the *Professional Engineers Act* has eliminated the requirement that an applicant be a Canadian citizen or landed immigrant hence making it much easier for an applicant from outside Canada to apply and become licensed.

In an article recently published in the Dec 2010 – Jan 2011 issue of the Canadian Association Management magazine² PEO is recognized as being a leader in helping foreign-trained engineers to integrate into the Canadian workforce. In the article, Wendy Sue Lyttle, a consultant and a principal at LAL Association Member Services, is referenced as follows - “Then there are professional organizations responsible for accrediting and licensing their members. They need to actively look at integrating foreign professionals into the country’s marketplace. Lyttle points to engineering groups such as Professional Engineers Ontario that have had tremendous success in determining how to get foreign-trained engineers up to speed so that they are able to integrate into the Canadian workforce.”

As a result of the review of the Entry-to-Practice requirements conducted, it is found that the experience requirements are relevant and necessary, that there are no PEO imposed work place barriers, there are no language barriers as PEO does not require specific English proficiency testing, nor are there citizenship requirement barriers since applicants need not be a Canadian citizen or permanent resident in order to be licensed, hence there are no recommendations for changes to the PEO licensing requirements.

² *Membership Diversity should be on the Front Burner!*, Roma Ihnatowycz, p.30, Canadian Association Management Magazine, Dec 2010-Jan 2011 issue

5.2 Recommendations for Part B – Efficiency and Timeliness

Upon examination of the steps involved in the licensure process, the efficiency and timeliness of it appears in general to be adequate and conforms to reasonable expectations for the steps involved. Previous Office of the Fairness Commissioner Reviews and audits by an independent auditing firm, Deloitte, have confirmed the adherence to the timings indicated. As in any process, timings can always be reduced given unlimited resources and funding. Over the years the licensure process has evolved into the current one which allows for efficient and fair review and assessment while not compromising the thoroughness and cost effectiveness of the process.

However some areas of recommended change to increase the efficiency and timeliness are:

1. **Encourage the Professional Practice Exam (PPE) to be written parallel to the licensing process.** Currently the PPE is written after the applicants academic credentials have been verified. By permitting applicants to write the PPE exam any time after submitting their application, this step could be completed in parallel with fulfilling the other requirements, thus reducing the time to licensure.
2. **Offer a free initial information session to applicants on the licensing process on a regular basis.** This will provide applicants a better understanding of the PEO licensure process and will reduce delays in obtaining information and completion of steps. The licensure process is applicant driven and many times the process is held up due to delays in the applicant providing required information.
3. **Create an online application and follow-up system.** Currently all applications must be completed manually and mailed, faxed, or dropped off. Online files are then created and data input by PEO staff. Creation of an online application system would speed up the process.
4. **Create the ability for an applicant to check the status of the application online.** This will allow for greater ease for the applicant to know where in the process his or her licence stands. Applicants are currently informed by mail when an assessment decision has been made, but on an interim basis they may call their Admissions representative at any time to learn the status of their application. An online mechanism so that the applicant may check themselves might be of benefit and would increase the efficiency and timeliness of their ability to know their current status at any point in time.

5.3 Recommendations for Part C – Reasonableness of Fees

The setting of registration fees in a cost based manner provides for an objective basis for the amounts charged. The fees associated with obtaining a professional engineering licence are in fact lower than the actual costs incurred by PEO due to the subsidization of the fees by the annual membership dues of licensed members. Ontario has the largest number of licensed engineers within Canada.

The existence of a Financial Credit Program (FCP) available to Internationally Educated Graduates (IEG) who have landed in Canada within six months further reduces potential financial obstacles for newly landed internationally educated applicants. The program waives the P.Eng. licence application fee and the cost of first year of membership in the Engineering Intern Training (EIT) program. IEG applicants must ensure that all documents to support their FCP application are received by PEO within six months of the date they landed in Canada.

In comparison to other professional engineering associations within Canada, the fees associated with the licensing process such as the application fee, the PPE exam, registration fee, EIT program membership, also tend to be lower than the average. The fees were also found to be generally lower in comparison to other regulatory bodies such as pharmacists, lawyers, etc.

This review therefore finds that the registration fees charged by PEO are quite fair and very reasonable, and there are no recommendations for changes to said fees.

6 Implementation Plans

As a result of the examinations it is found that the experience requirements are relevant and necessary and that there are no significant barriers imposed by PEO on work placement, language, or citizenship requirements, hence no recommendations for changes or an implementation plan for them is required.

The following are the implementation plans for the recommended changes to the licensure process:

1. **Encourage the Professional Practice Exam (PPE) to be written parallel to the licensing process.** Candidates will be permitted to write the PPE exam once they have submitted their application for licensure, rather than waiting until their academics have been assessed and approved. This recommendation may be implemented immediately.
2. **Offer a free initial information session to applicants on the licensing process on a regular basis.** Plans to develop information sessions will be developed in second quarter 2011 and implemented in third quarter 2011.
3. **Create an online application and follow-up system.** An initial general scoping of an online application system has been conducted with a business management consultant. Creation of an online application system will take approximately two years for completion. Many proposed changes to the Regulations under the *Professional Engineers Act* will affect the registration process and requirements. While initial development work may begin in 2011, to avoid potential rework and additional charges, the development of an online system cannot be completed and put online until the licensing regulation amendments have been filed with the Registrar of Regulation and are officially in place.
4. **Create the ability for an applicant to check the status of the application online.** This recommendation can be implemented concurrently with the development on an online application. The timing of this implementation is subject to the same conditions as the online application system above.

The registration fees charged by PEO are found to be fair and reasonable and are in fact below cost due to the subsidization of the costs by the annual dues of licensed members, hence no changes to the fee structure are recommended nor an implementation plan required.

7 Statement of Approval

I hereby certify that:

- I have reviewed the information submitted in this PEO Entry-to-Practice Review (the “Review”).
- The information contained in the Review is accurate.
- I approve of the analysis and recommendations made.

Name of the individual with the authority to sign on behalf of the organization: Kim Allen, P.Eng.,
FEC

Title: CEO and Registrar

Date: February 28th, 2011

8 Reference Sources

The Licensing Guide and Application for Licence, 2010, Professional Engineers Ontario, www.peo.on.ca

Guide to the Required Experience for Licensing as a Professional Engineer in Ontario, 2009, Professional Engineers Ontario www.peo.on.ca

Professional Engineers Act, R.S.O. 1990, c P.28 (Provincial government site)

GENERAL – R.R.O. 1990. Regulations 941/90 (Provincial government site)

Ontario Regulations 260/08 – Performance Standards (Provincial government site)

National Guideline for Engineer-in-Training Program, Engineers Canada

Guideline for Assessment of Engineering Work Experience, Engineers Canada

Fair Registration Practices Report Engineers (2009), PEO

Conducting Entry-to-Practice Reviews: Guide for Regulators of Ontario Professions

National Licensure Framework Constituent Association Assessment Times, Engineers Canada

History of Years of Experience Issue, 2002, CEQB Admission Issues Task Force

Professional Engineers of Ontario Audit of Registration Practices, 2008, Deloitte

J.A. Harcourt & Associates, Business Management Consultant, London, Ontario

Provincial Engineering Association websites

Association of Professional Engineers and Geoscientists of British Columbia, www.apeg.bc.ca

Association of Professional Engineers, Geologists, and Geoscientists of Alberta, www.apgeqga.org

Association of Professional Engineers and Geoscientists of Saskatchewan, www.apegs.sk.ca

Association of Professional Engineers and Geoscientists of the Province of Manitoba, www.apegm.mb.ca

Professional Engineers Ontario, www.peo.on.ca

Ordre des ingenieurs du Quebec, www.oiq.qc.ca

Association of Professional Engineers of Nova Scotia, www.apens.ns.ca

Engineers PEI, www.engineerspei.com

Professional Engineers and Geoscientists of Newfoundland and Labrador, www.pegnl.ca

Association of Professional Engineers of Yukon, www.apey.yk.ca

Northwest Territories and Nunavut Professional Engineers and Geoscientists, www.napeg.nt.ca

Other Regulatory body websites

Ontario College of Pharmacists, www.ocpinfo.com

Canadian Alliance of Physiotherapy Regulators, www.alliancept.org

Certified General Accountants of Ontario, www.cga-ontario.org

Ontario Association of Certified Engineering Technicians and Technologists, www.oacett.org

Ontario Association of Social Workers, www.oasw.ca

Ontario Dental Hygienists Association, www.odha.on.ca

Ontario Architects Association, www.oaa.on.ca

Ontario College of Teachers, www.oct.ca

Law Society of Upper Canada, www.lsuc.on.ca

9 Appendices

9.1 Appendix A: National Licensure Framework Constituent Association Assessment Times

Provincial Association	Academic Assessment			Language Assessment	Work Experience Assessment	Professional Practice Exam		Personal References
	Review of academic credentials	Conduct interview	Assign and set exams	Assign, set and mark language test	Assess work experience	Set exam	Mark exam	
APEGBC APEGGA	2-3 mo.			TOEFL TOEFL, CanTEST	2-3 mon.	NPPE		1-2 mo.
APEGS	3 wk - 4 mo.				2-4 mo.	2/year	8 wk. results	1 wk.
APEGM	1-2 mo.	3-12 mo.	1--2 mo.	CLB	1 mo.	2/year	2 mo. results	1 mo.
PEO	6 wk.	6 wk.		N/A	6 wk.	3/year	6 wk. results	6 wk.
OIQ	1 wk.	N/A	4 mo.	N/A	2 wk.	14/year	1 wk.	N/A
APEGNB	1-4 mo.			N/A	> 1 mo.	NPPE		> 1mo.
APENS PEI	1-2 mo.			N/A	1 mo.	NPPE		1 mo.
PEGNL	1 wk-months see	3-6 mon.	4-6 wk.	N/A	4-6 wk.	NPPE see	see	4-6 wk. see
APEY	APEGGA see			see APEGGA	see APEGGA	APEGGA see	APEGGA see	APEGGA see
NAPEG	APEGGA			see APEGGA	see APEGGA	APEGGA	APEGGA	APEGGA

TOEFL – offered online, on demand, results within 2 weeks

NPPE – offered 4 times per year, results within 4-6 weeks

CanTEST – offered frequently, results within 2 weeks

CLB = Canada Language Benchmark test, offered frequently, results within 2 weeks

9.2 Appendix B: Registration costs

Cost Object	Total Cost (\$)	Total number paid applications	Revenue received	Fee charged per application	Actual cost per application	FCP applications (fee waiver)
P.Eng. Application and Licence Processing						
<i>Application and Licence Processing costs</i>	\$2,468,242					
Total	\$2,468,242	3159	\$947,730	\$300	\$563	1227

Cost Object	Total Cost (\$)	Total number new members	Registration fee revenue	Registration fee charged per member	Actual cost per registration
P.Eng. Registration					
<i>Registration costs</i>	\$888,334				
Total	\$888,334	3052	\$763,070	\$250	\$291

Cost Object	Total Cost (\$)	Total EIT members	Revenue received	Fee charged per EIT	Actual cost per application	FCP applications (fee waiver)
EIT						
<i>Internship</i>	\$603,496					
Total	\$603,496	5315	\$398,606	\$75	\$92	1227

Cost Object	Total Cost (\$)	Total # PPE exams written	Revenue received	Fee charged per PPE exam	Actual cost per application
PPE Exam					
<i>PPE</i>	\$712,983				
Total	\$712,983	3972	\$655,380	\$165	\$180

Cost Object	Total Cost (\$)	Total # registrations	Revenue received	Fee charged to register	Actual cost per registration
Technical exam program registration					
<i>Exam program registration</i>	\$157,949				
Total	\$157,949	286	\$118,690	\$415	\$552

Cost Object	Total Cost (\$)	Total # exams written	Revenue received	Fee charged each	Actual cost per exam
Technical exam					
<i>Technical exam</i>	\$260,048				
Total	\$260,048	1097	\$181,005	\$165	\$237

9.3 Appendix C: Glossary of Acronyms

ARC – Academic Requirements Committee

CCPE – Canadian Council of Professional Engineers

CEAB – Canadian Engineering Accreditation Board

DMC – Document Management Centre

EIT – Engineering Intern Training

ERC – Experience Requirements Committee

IEG – Internationally Educated Graduate

L&R – Licensing and Registration

NOP- Notice of Proposal to Refuse to Issue License

OACETT – Ontario Association of Certified Engineering Technicians and Technologists

PEA – Professional Engineers Act

P.Eng. – Professional Engineer

PEO – Professional Engineers Ontario

PPE – Professional Practice Exam



**Professional Engineers
Ontario**

