

APEC ENGINEER REGISTER

CANADIAN COUNCIL OF PROFESSIONAL ENGINEERS

ASSESSMENT STATEMENT

(applicable to all disciplines of engineering)

(05-25-05)

INTRODUCTION

The Monitoring Committee recognizes the following bodies and mechanisms for the assessment of engineers as eligible to be placed on the CCPE APEC Engineer Register.

The Assessment Statement provides fundamental information on the overall assessment mechanism used for recognition as part of the APEC Engineer Register.

PART A - THE MONITORING COMMITTEE

Since the 1920's in Canada, it is a statutory requirement to be licensed in order to practise engineering. In each province and territory of Canada there is an "Engineers' Act". The authority for administering these twelve acts has been granted to the Association of Professional Engineers in each province and territory. CCPE was created in 1936 as the federation of these regulatory bodies and works in close co-operation with them in matters of engineering education (accreditation) and professional practice.

The Council of CCPE has authorized CCPE's International Committee (IC) to assume the role of the monitoring committee for the purposes of the APEC Engineer Register. The committee membership includes representatives from the CCPE Board of Directors, as well as current or past members of the Canadian Engineering Accreditation Board and the Canadian Engineering Qualifications Board.

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PART B - ASSESSMENT MECHANISMS

Eligibility for admission to the CCPE APEC Engineer Register is limited to engineers registered with one of the constituent members of CCPE (see *Attachment 1*). Such registrants are entitled to be called Professional Engineers (P.Eng.) or, in Québec, ingénieur (ing.).

1. Accreditation or Recognition of Higher Engineering Education Programs

1a. Accreditation of Engineering Programs

A graduate of a Canadian engineering program that has been accredited by the Canadian Engineering Accreditation Board (CEAB) is considered to have met the academic qualification requirement. The criteria and procedures for accreditation of engineering programs are provided in *Attachment 2* (Canadian Engineering Accreditation Board 2002 Accreditation Criteria and Procedures). The CEAB (formerly CAB) was created in 1965.

A graduate of a foreign engineering program that is evaluated by the CEAB as substantially equivalent to a CEAB-accredited program is considered to have met the academic qualification requirement. The policies governing substantial equivalence are described in *Attachment 3* (Policies and Procedures for CEAB Substantial Equivalency Evaluations).

A graduate of a foreign engineering program that is covered by a CCPE mutual recognition agreement is considered to have met the academic qualification requirement, subject to specific details of that agreement. A list of current agreements is provided in *Attachment 4*. The CCPE is a signatory and full participant in the Washington Accord.

Over 90% of professional engineers qualify using this route.

1b. Alternative Assessment Mechanisms

Individuals who have not completed an accredited or recognized engineering program can meet the academic requirement through an examination program. Upon application to one of the CCPE constituent members, an individual's academic qualifications will be assessed and a specific examination program assigned based on the Canadian Engineering Qualifications Board Examination Syllabus (*Attachment 5*). There are two types of examination programs - a confirmatory program and an assigned program. Upon successful completion of either examination program, the candidate is deemed to have satisfied the academic qualification requirement.

In some jurisdictions, candidates with more than ten years of engineering experience, may have the examination program waived in whole or in part following a professional interview. A description of a typical professional interview appears in *Attachment 6*.

2. Assessment for Independent Practice

The practice of engineering in Canada is regulated at the provincial and territorial level by an Association of Professional Engineers. Each of these bodies has the legislative authority to admit members to the profession and to govern their practice.

In addition to the academic requirements for licensure described above, there are requirements for a supervised period of engineering experience, the ability to communicate effectively in the language of business of the jurisdiction, successful completion of a professional practice examination, and validation of experience and ability through at least three sponsors. Each of these requirements is discussed below.

2a. Engineering Experience Requirement

All applicants are required to have a minimum of four years of acceptable engineering experience prior to registration. (Currently registration in the province of Québec only requires three years of experience prior to registration.) Acceptable engineering experience must include the application of theory and should provide exposure to or experience in the following broad areas: practical experience, management, communication and the social implications of engineering. Each of these areas is described in *Attachment 7 (Admission to the Practice of Engineering in Canada)*.

In practice, candidates may require more than four years to accumulate satisfactory experience.

At least one year of experience must be acquired in Canada or in a "Canadian environment".

2b. Language Requirement

Applicants must demonstrate their ability to communicate effectively, both orally and in writing, in the language of commerce in the province or territory of registration. In all provinces and territories except for Quebec, the language of commerce is English. For the province of Quebec and also New Brunswick, the language of commerce is French. Methods used to assess language competency should specifically include testimony of professional engineers who act as referees in support of the candidate's registration application. Other methods may include specific language tests.

2c. Professional Practice Examination

All candidates for registration are required to successfully complete an examination to confirm that they have sufficient knowledge of the ethical considerations and obligations that accompany the privileges of professional status, as well as the legal concepts relevant to professional engineers.

A detailed description of the range of knowledge that should be examined is provided in *Attachment 8* (Professional Practice Examination).

2d. Validation of Experience (Sponsorship)

There must be at least three references from practising professional engineers who are familiar with details of the candidate's work for the experience claimed. Candidate's present and past employers are the most suitable referees. If there have been multiple work situations, more referees may be required.

Referees should provide information regarding the candidate's technical competence in the application of engineering principles and theory, ability to communicate, ability to work on a team, ability to exercise professional judgement, and whether the candidate is of good character and repute as demonstrated through personal attributes such as integrity and responsibility. A typical referee form is in *Attachment 9*.

3. Particular APEC Engineer Assessment Items

3a, b. Seven Years Experience after Graduation; Two years in Responsible Charge of Significant Engineering Work

CCPE's definition of the practice of professional engineering appears in *Attachment 10*. By virtue of professional registration, the candidate will have met four years of this experience requirement. The candidate will be asked to submit a report verifying that he/she has completed an additional three years of experience describing the level of responsibility and the significance of the engineering work. The report must demonstrate that the individual has engaged in professional practice which, directly or indirectly, calls upon their engineering knowledge, skills, experience and judgement, and has a significant influence on the technical direction of engineering projects or programs.

To be "significant", an engineering work must:

- represent an application of the knowledge of a particular discipline that goes beyond standard solutions found in manuals of practice;
- be done in an environment where the engineer has full autonomy and responsibility;
- show evidence that the accomplishment requires a synthesis capability that only those who fully appreciate the various interactions of the topics of their discipline will have;
- be a significant part of a total engineering project, where it is clearly demonstrated that the candidate understands the total project concept.

3c. Professional Development

Engineers are bound by their Code of Ethics (see *Attachment 11*) to practise only in areas in which they are competent. Further, engineers have a responsibility to keep themselves informed in order to maintain their competence, to strive to advance the body of knowledge within which they practise and to provide opportunities for the professional development of their subordinates.

Some CCPE constituent members have implemented continuing competency/professional development (CPD) programs. For those jurisdictions, submission of a candidate's continuing competence record will satisfy the requirement. For those jurisdictions without formal continuing competency programs, candidates must submit evidence of compliance with the CCPE guideline (*Attachment 12*). In CCPE's guideline, the terms "continuing (engineering) education" and "professional development" are interchangeable and may include formal or informal training or practice devoted to enhancing the engineer's skills, knowledge and ability to practise engineering in terms of the application of theory, management of engineering, communication, or understanding the social implications of engineering. There is no single method for maintaining and enhancing one's knowledge in a specific area of practice. Acceptable methods will probably include a combination of technical work in one's field of specialization; attendance at seminars, workshops, conferences, university courses; preparation and publication of papers; participation in professional or technical societies.

3d. Compliance with Code of Conduct

All professional engineers are bound by the Code of Conduct of the Association of Professional Engineers with which they are registered. See *Attachment 13* (Professional Engineering Practice in Canada). The application for admittance to the register will require the submission of a statement from the jurisdictions in which the candidate is registered that the candidate is a member in good standing.

4. Audit of APEC Engineers

The audit provides for a Declaration of Compliance by the registrant each year and provides for random audit of current C.V. and records of CPD activities over the past three years.

C. ENGINEERING DISCIPLINES

The engineering disciplines recognized for the purposes of the APEC Engineer Register are:

Civil
Structural
Geotechnical
Environmental
Mechanical
Electrical
Industrial
Mining
Chemical
Information
Bioengineering

Although the constituent members of CCPE do not register professional engineers by discipline, the CCPE agrees for the purpose of the APEC Engineer Register, to identify the discipline in the context of which such engineers were originally assessed for entry to the profession.

D. RIGHT TO PRACTICE STATEMENT

Participation in the International Registers is intended to facilitate the exchange of information and to engender further discussion, aimed potentially, at the development of Mutual Recognition Agreements (MRAs) that recognize the qualifications of registrants of signatory countries. However, each Canadian province or territory has the exclusive authority to determine the acceptability of a registrant's qualifications for admission/licensing and to issue a license to practise professional engineering in its jurisdiction.

There are 12 associations/Ordre of professional engineers, one in each of the ten provinces and two to serve the three territories. All 12 associations/Ordre recognize the CCPE National Guideline for Admission to the Practice of Engineering in Canada, which outlines the criteria for obtaining a license to practise engineering. However, each of the associations/Ordre uses its own application for license form and follows its own admission/licensing procedures.

The APEC Register does not confer upon a registrant the legal right to practise in a Canadian province or territory. Registrants will still be required to apply to the association/Ordre in the province or territory, where they wish to practise professional engineering, and will be required to fulfill the stipulated requirements for licensure.

The use of the titles "APEC Engineer" or "Professional Engineer" as may be respectively conferred to an individual by another signatory to the APEC is not permitted in Canada without a valid license in a Canadian province or territory.

Role of CCPE in Engineering Licensure

CCPE has no legislated role in engineering licensure or conferring the legal right to practise professional engineering. In Canada, the practice of professional engineering is regulated by the provincial or territorial association of professional engineers. Each of these organizations has the legislative authority to regulate the practice of professional engineering in its jurisdiction. Professional engineering regulation entails the setting of the admission/licensing standards, granting licenses to practise to qualified individuals and governing them to ensure that the public is safeguarded where the practice of professional engineering is involved.

The laws of every province or territory require engineering practitioners to be licensed in order to be authorized to engage in the practice of engineering and to use the title “Professional Engineer” (or the abbreviation P.Eng); or, in Province of Québec, to use the title “Engineer” or “ingénieur” (or the corresponding abbreviation, Eng. or ing.).

In order to gain the legal right to practise professional engineering in a particular province or territory, an individual must apply to the association/Ordre in that jurisdiction to have their qualifications assessed. An individual who satisfies the admission/licensing requirements and is granted a license by a particular provincial or territorial association/Ordre is licensed only in that jurisdiction, and must apply for a license to practise in any other Canadian jurisdiction in which they wish to practise. To maintain their license and the privileges attendant, the engineer must adhere to the policies stipulated by that association/Ordre.

The admission/licensing criteria include satisfying established academic and engineering work experience standards, language proficiency, passing a Professional Practice Examination (PPE), on engineering ethics, professionalism, and engineering law, and validation of a applicant’s practice by professional engineer referees who are familiar with the applicant’s technical capabilities and are able to comment on their character and overall suitability for licensure.

Specific information about the admission/licensing process and application forms to obtain a license to practise engineering in a particular Canadian province or territory is available directly

from the local association/Ordre. Addresses and contact information for any of the 12 associations/Ordre may be accessed through the CCPE website at www.ccpe.ca.

Role of CCPE in International Mobility of Engineering Practitioners

The CCPE is the national and international voice of the Canadian engineering profession and it conducts work in international affairs. Its functions include international representation of the Canadian engineering profession, the negotiation of international agreements and memoranda of understanding, as well as administration of the national portion of international registers, such as the Asia-Pacific Economic Co-operation (APEC) Register and the International Register of Professional Engineers under the Engineers Mobility Forum (EMF).

CCPE negotiates international agreements on behalf of its Constituent Member associations/Ordre. However, these agreements are not binding on the associations/Ordre who reserve(s) the right to ratify them or not.

List of Attachments

Attachment 1	List of Constituent Members of CCPE
Attachment 2	Canadian Engineering Accreditation Board 2004 Accreditation Criteria and Procedures
Attachment 3	Polices and Procedures for CEAB Substantial Equivalency Evaluations
Attachment 4	CCPE List of Mutual Recognition Agreements
Attachment 5	Canadian Engineering Qualifications Board Examination Syllabus 1998 Edition
Attachment 6	Description of a Typical Interview Process
Attachment 7	CCPE Guideline - Admission to the Practice of Engineering in Canada;
Attachment 8	CCPE Guideline - Professional Practice Examination
Attachment 9	Typical Referee Form
Attachment 10	CCPE Guideline - Definition of the Practice of Professional Engineering
Attachment 11	CCPE Guideline - Code of Ethics
Attachment 12	CCPE Guideline – Continuing Professional Development and Continuing Competence for Professional Engineers
Attachment 13	CCPE Guideline - Professional Engineering Practice in Canada
Attachment 14	CCPE Guideline – For Engineer-in-Training Program