

ASIA PACIFIC ECONOMIC COOPERATION APEC ENGINEER

Procedures Manual

Drafted by:

Canadian Council of Professional Engineers APEC Register Implementation Task Force

> Draft - Version 2.0 April 9, 2002

DISTRIBUTION TO ASSOCIATIONS/ORDRE: ◇ Board of Examiners/ Academic Requirements Committee Chairman ◇ Academic Examiners ◇ Experience Examiners ◇ Experience Examiners ◇ Board Members ◇ Registration Staff ISSUED TO:

FOREWORD TO THE FIRST EDITION

The purpose of this manual is to provide to constituent Associations/Ordre of CCPE, including members of Board of Examiners, Academic and Experience Requirement Committees (as applicable) and Association/Ordre registration staff with a complete set of policies and procedures to facilitate the registration of APEC Engineers.

Established policies arise from the requirements established in *The APEC Engineer Manual, The Identification of Substantial Equivalence, November 2000.*

Control of this manual is from the CCPE Department of Professional and International Affairs. Revisions will be issued as policies or procedures are changed or new ones are approved. A master distribution list is maintained from which numbered individual copies are issued. Copies are retained and distributed by each Association/Ordre through its own registration/admissions office

It is recommended that each member of the Board of Examiners, ARC, ERC or Registration Committee (as applicable in each jurisdiction), as well as each staff member of the registration/admissions offices of the Associations/Ordre are supplied with a copy for retention and their exclusive use during their term of appointment.

Manuals are to be returned to the respective Association/Ordre registration/admissions office at the conclusion of their appointment. This manual is for the internal use of the Associations/Ordre and CCPE and shall not be reproduced or distributed in whole or in part to outside parties without the written permission of the Department of Professional and International Affairs of the CCPE.

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SECTION 1 PURPOSE OF THE MANUAL

1.1 Canadian Engineers and APEC

Canada has been an active participant in a project that has led to the establishment of the APEC Engineer Register in a number of economies in the APEC organisation. The Register has been established in Canada through the Canadian Council of Professional Engineers.

The Register has also been established in Australia, Hong Kong, China, Japan, Korea, Malaysia, New Zealand, and the United States of America. Other economies are expected to follow.

The practical effect of establishing the APEC Engineer Register is to reduce barriers and to ease the processes by which engineers gain access to practice rights in other economies where MRAs are established. The easier access to overseas practice is expected to open up a wide range of employment opportunities to Canadian engineers. This should lead to a wider range of experience which in turn should lead to even further opportunities. Employers benefit from the scheme because they can market to overseas clients the demonstrated experience and skill of their engineers accepted for the Register.

The Asia Pacific Economic Co-operation (APEC) Human Resources Development Working Group (HRD WG) has established a project to assist professional engineer bodies to maintain an APEC Engineer Register in each economy as the basis of a transparent system to facilitate the mobility of professional engineers within the region. Inclusion on the Register is governed by criteria agreed to by the participating economies.

The APEC Engineer Register will establish a common basis on which bilateral agreements with other economies can be negotiated. It will include a group of engineers in each of the participating economies that have been accepted as "equal".

The purpose of this manual is to provide a common procedure for each of the CCPE constituent members to examine the applications for APEC Register membership in order to add or remove names. Appendices A to F include standard forms for advertising the APEC Register, application, continued professional development report, presentation of experience, referee, and application checklist.

1.2 APEC Engineers from Other Economies Coming to Canada

APEC Engineers have no status at this time and there is no obligation to confer any rights to them. Should bilateral mutual recognition agreements with other economies be reached, the situation will be revisited.

SECTION 2 THE APEC ENGINEER

2.1 APEC Engineer Recognition

An APEC Engineer is defined as a person who is recognised as a professional engineer within an APEC economy, and has satisfied an authorised body in that economy, operating in accordance with the criteria and procedures approved by the APEC Engineer Co-ordinating Committee, that they have:

- completed an accredited or recognised engineering program; and
- been assessed within their own economy as eligible for independent practice; and
- gained a minimum of seven years practical experience since graduation; and
- spent at least two years in responsible charge of significant engineering work; and
- maintained their continuing professional development at a satisfactory level.

In addition all practitioners seeking registration as APEC Engineers must also agree to be:

- bound by the codes of professional conduct established and enforced by their home jurisdiction and by any other jurisdiction within which they are practising; and be
- held individually accountable for their actions, both through requirements imposed by the licensing or registering body in the jurisdictions in which they work and through legal processes.

The guidelines for applicants are based on an Assessment Statement prepared by the Canadian Monitoring Committee (Canadian Engineering International Board) for the APEC Engineer Register. The Monitoring Committee is represented on the international APEC Engineer Co-ordinating Committee established within the APEC Human Resources Development framework. The Co-ordinating Committee carries ultimate responsibility for the criteria, standards and assessment mechanisms for APEC Engineers. The Canadian Monitoring Committee is authorized to operate an APEC Engineer Register.

2.1.1 Disciplines and Definitions

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

- Chemical
- Civil
- Electrical
- Environmental
- Geotechnical
- Industrial
- Mechanical
- Mining
- Structural

Chemical Engineering

Indicative area of practice

Chemical Engineers are concerned with research, teaching, design, development, economics, manufacture, installation, operation, sales, maintenance and management of commercial scale chemical plants and process systems, industrial processing and fabrication of products undergoing chemical and/or physical changes. Chemical Engineering is applied to materials for construction, process systems and equipment for instrumentation and control, and protection of the environment. Applicants must have experience in the safety aspects of design and/or operations. In addition they must have experience in two of the following functions involving process systems and equipment: design, evaluation, operation, materials selection and fabrication.

Civil Engineering

Indicative area of practice:

Civil Engineers are concerned with materials such as steel, concrete, timber, earth and rock, and with their application in the research, teaching, design, development, manufacture, construction, operation, maintenance and management of hydraulic, structural, environmental and systems aspects of infrastructure works and services such as water, sewerage, transport, urban development and municipal services, and with building and construction for other infrastructure industries.

Electrical Engineering

Indicative area of practice

Electrical Engineers are concerned with research, teaching, design, development, manufacture, installation, operation, maintenance and management of equipment, plant and systems within the electrical, electronic, communication and computer systems areas. Electrical Engineering is applied to electrical power generation, transmission, distribution and utilization, manufacture, instrumentation and control in industry, communications networks, electronic plant and equipment, integration and control of computer systems.

Environmental Engineering

Indicative area of practice

Environmental Engineers use their specialised training and experience to work closely with professional engineers from other disciplines to achieve environmentally sustainable outcomes. Collectively and holistically, they apply an integrated approach to technical, economic, social, legal and scientific considerations. Environmental Engineers work on new or existing projects that require some form of improvement, remediation or rehabilitation in the natural and built environment. Environmental Engineers work in many areas of environmental protection including water quality, waste water and storm water management, waste management, contaminated land remediation, natural resource management, air quality, noise management, greenhouse gas emission reduction, environmental management systems, environmental information systems, social impact analysis and environmental risk assessment as well as teaching of environmental engineering. While all engineers have a duty of care to the community on environmental matters and effects, Environmental Engineers approach issues on a multidisciplinary and integrative basis and involve other professionals where necessary.

Geotechnical

Indicative area of practice

Geotechnical engineers use soil, rock and geosynthetics as engineering materials. They design and/or teach design of earth and rock filled dams, levees, tunnels, braced excavations, and foundations for structures of all types. Geotechnical engineers are also involved in geoenvironmental issues, such as landfill design and performance, contaminant transport through soils and site remediation. Mitigation of earthquake damage to structures is another important aspect of geotechnical engineering. A knowledge of other fields, such as geology and structural engineering, is required for the geotechnical engineer.

Industrial

Indicative area of practice

Industrial engineers require expertise in machinery, materials, procedures, human resources and processes. This broad field addresses the many factors concerned with production – economic, environmental, psychological, social and technological – and their integration to address business needs and challenges. Specialty areas in this branch include teaching, facility layout, production planning, quality assurance, logistics systems, and management and operations.

Mechanical Engineering

Indicative area of practice

Mechanical Engineers are concerned with research, teaching, design, development, evaluation, manufacture, installation, testing, operation, maintenance and management of machines, machine and thermodynamic processes, and manufacturing and materials handling plants and systems. Mechanical Engineering is applied to manufacturing, transport, electricity generation, and in works and services using machine systems, including the environment of building interiors. Applicants must have experience in the safety aspects of design and/or operation of machines, plant, systems or processes.

Mining

Indicative area of practice

Mining engineers discover, extract and prepare minerals to be used by manufacturing and energy industries. Areas of study include surface and underground mining, material handling, blasting ventilation, rock mechanics, mineral processing and mining economics. Opportunities in this field include careers with mining companies, consulting firms, teaching, governments and equipment manufacturers.

Structural Engineering

Indicative area of practice

Structural Engineers have expertise in research, teaching, planning, design, construction, inspection, monitoring, maintenance, rehabilitation and demolition of permanent and temporary structures and structural systems and their components and with associated technical, economic, environmental, aesthetic and social aspects. Structures might include buildings, bridges, in-ground structures, footings, frameworks and space frames, including those for motor vehicles, space vehicles, ships, airplanes and cranes, composed of any structural material including composites and novel materials.

2.1.2 Accredited or Recognized Program

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.

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.

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.

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. 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.

2.1.3 Practical Experience

A person who is registered with one of the constituent members of the CCPE must provide a description of experience to demonstrate at least seven years in a recognized discipline of engineering.

Applicants are expected to have initially practised under supervision and to have taken an increasing level of responsibility for engineering work during the seven years stipulated. They must also demonstrate involvement in a comprehensive range of roles and activities appropriate to their field of engineering.

Appendix C includes a guideline on presentation of experience.

2.1.4 Responsible Charge

An applicant must provide evidence of two years experience in responsible charge of significant engineering work.

Significant engineering work shall have required the exercise of independent engineering judgement. The projects or programs concerned shall have been substantial in duration, cost, and complexity, and the applicant must have been personally accountable for his or her success or failure. 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 syntheses capability that only those who fully appreciate the various interactions of the topics of their discipline will have; and
- Be a significant part of a total engineering project, where it is clearly demonstrated that the candidate understands the total project concept.

In general, Applicants will be considered to have been *in responsible charge of* significant engineering work when they have:

- planned, designed, coordinated, executed and commissioned a complete engineering project; or
- undertaken a significant part of a large engineering project based on an understanding of the whole project; or
- undertaken novel, complex and/or multidisciplinary work associated with a significant engineering project.

2.1.5 Peer Recommendation

All candidates are required to nominate four or more Canadian and/or US referees. All should be Engineers (Québec)/professional engineers with first-hand knowledge of the candidate's work. Preferably two, but at least one Engineer (Québec) /Professional engineer familiar with the candidate's work from outside his or her company should be nominated if possible. If experience outside Canada/United States must be verified, additional referees are required. A separate letter is required to explain if the candidate cannot nominate the required referees. Engineers (Québec)/Professional engineers with indirect knowledge of the candidate's work may be nominated if absolutely necessary. Please refer to the reference forms in Appendix E for more information.

2.1.6 Satisfactory Continued Professional Development (CPD)

Applicants must provide evidence that they have maintained their continuing professional development in accordance with Appendix D for the twelve month period preceding application.

2.2 CCPE Monitoring Committee and APEC

The APEC Engineer Coordinating Committee has given the CCPE Monitoring Committee the authority to develop and maintain a Register of APEC Engineers in Canada. "While recognized as competent by, and possibly exercising some functions on behalf of, the <constituent members> responsible for the registration and licensing of professional engineers in <Canada>, the Monitoring Committee <is> an independent authorized body, and <has been given the mandate by the APEC Engineer Coordinating Committee> to certify the qualifications and experience of individual professional engineers directly or by reference to the constituent members".

The specific responsibilities of the Monitoring Committee for the development and maintenance of the APEC Engineer Register are given below and the broader Terms of Reference are in *The APEC*

¹ The APEC Engineer Manual – The Identification of Substantial Equivalence, APEC Engineer Coordinating Committee, November 2000.

Engineer Manual – The Identification of Substantial Equivalence, APEC Engineer Coordinating Committee, November 2000.

APEC Engineer Coordinating Committee

"To ensure consistency in application of the agreed criteria, ultimate authority for conferring the title of APEC Engineer will remain with the APEC Engineer Coordinating Committee, which is to include one voting representative from each Monitoring Committee. That authority may be delegated from time to time by the APEC Engineer Coordinating Committee to an authorized Monitoring Committee in each participating economy. The main role of the Coordinating Committee is to facilitate the maintenance and development of authoritative and reliable decentralized Registers of APEC Engineers, and to promote the acceptance of APEC Engineers in each participating economy as possessing general technical and professional competence that is substantially equivalent to that of professional engineers registered or licensed in that economy.

The APEC Engineer Coordinating Committee will also:

- develop, monitor, maintain and promote mutually acceptable standards and criteria for facilitating practice by APEC Engineers throughout the participating APEC economies;
- seek to gain a greater understanding of existing barriers to such practice and to develop and promote strategies to help governments and licensing authorities reduce those barriers and manage their processes in an effective and non-discriminatory manner;
- through the mechanisms available within APEC, encourage the relevant governments and licensing authorities to adopt and implement streamlined procedures for granting rights to practise to APEC Engineers;
- identify, and encourage the implementation of, best practice for the preparation and assessment of engineers intending to practise at the professional level; and
- continue mutual monitoring and information exchange by whatever means are considered most appropriate, including:
 - regular communication and sharing of information concerning assessment procedures, criteria, systems, manuals, publications and lists of recognised practitioners;
 - invitations to verify the operation of the procedures of other participants;
 - invitations to observe open meetings of any boards and/or commissions responsible for implementing key aspects of these procedures and relevant open meetings of the governing bodies of the participants; and
 - reporting on the use by engineers to monitor the performance of the Registers.

To maximize communication between APEC economies, the APEC Engineer Coordinating Committee will issue an open invitation for the appropriate bodies within non-participating APEC economies to nominate non-voting members to serve on the Committee. These members will not be entitled to vote on any issue, nor to participate in the debate on the initial or continued authorization of a Monitoring Committee to operate a Register of APEC Engineers within an economy."²

Registers of APEC Engineers

² The APEC Engineer Manual – The Identification of Substantial Equivalence, APEC Engineer Coordinating Committee, November 2000.

The primary objective of the CCPE Monitoring Committee is to develop and maintain a Register of APEC Engineers for practitioners based in the Canada. The Monitoring Committee prepared a statement setting out the criteria and procedures by which applicants for designation as APEC Engineers within Canada are proposed to be assessed. The statement was reviewed by the APEC Engineer Coordinating Committee in accordance with its published Rules and guidelines. Following that review, authorization was given to the CCPE Monitoring Committees to establish and operate a Register.

"The Monitoring Committee will arrange to provide timely and accurate information on the status of any practitioner claiming to be listed on that Register to any person or organization having a legitimate need for access to such information, to exchange relevant data with the other authorized Monitoring Committees, and, within <Canada>, to function as a single point of contact on all matters relating to APEC Engineers.

The Monitoring Committee must further undertake to:

- accept and promote the substantial equivalence of the competence of APEC Engineers registered by other authorized Monitoring Committees;
- make every reasonable effort to ensure that the bodies responsible for registering or licensing
 professional engineers to practise within their economy recognize that APEC Engineers have
 general technical and professional competence substantially equivalent to that of engineers already
 registered or licensed in that economy;
- ensure that all practitioners registered by them as APEC Engineers comply fully with the requirements specified in the APEC Engineer Framework, and that a substantial majority of these practitioners have demonstrated their compliance through the primary procedures and criteria set out in the Assessment Statement for that economy;
- ensure that practitioners applying for registration as an APEC Engineer are required to provide evidence that they have engaged in an appropriate level of recent continuing professional development; and
- ensure that practitioners registered by them as APEC Engineers apply from time to time for renewal of their registration, and, in so doing, provide evidence that they have engaged in an appropriate level of recent continuing professional development."³

2.3 The Register

The Register will be centrally maintained by the CCPE Monitoring Committee. However, names will be added and removed from the register solely on the advice of the constituent members of the CCPE. Consistent with the application form, the names, addresses and disciplines of those on the Register will be made available to the public.

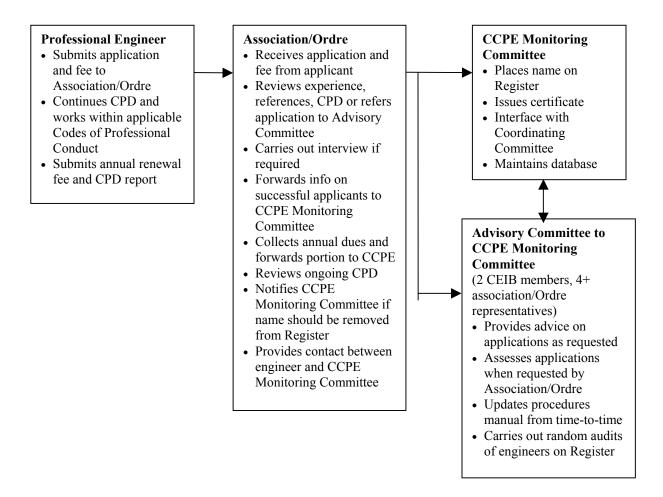
³ The APEC Engineer Manual – The Identification of Substantial Equivalence, APEC Engineer Coordinating Committee, November 2000.

SECTION 3 ROLE OF CCPE MONITORING COMMITTEE AND ASSOCIATIONS/ORDRE

3.1 Communications Between CCPE Monitoring Committee and Associations/Ordre

The CCPE Monitoring Committee will have a sub-committee called the Advisory Committee comprised of two CEIB members and four or more representatives of the Associations/Ordre. The Advisory Committee will be responsible for updating this procedures manual from time-to-time and will provide advice to the Associations/Ordre regarding applications when it is requested. Furthermore, an Association/Ordre may forward applications to the Advisory Committee for assessment should they choose to.

The following flow chart provides a description of the communication and responsibilities of the CCPE Monitoring Committee and the Associations/Ordre.



3.2 Association/Ordre Legislation and the APEC Engineer

Association/Ordre to provide pertinent text to clarify legislative authority or restrictions on assessing engineers for the APEC Register.

3.3 Budgetary and Fee Considerations

The application fee for a new engineer applying to be put on the Register will be \$200 plus G.S.T and applicable provincial taxes. This amount will cover the review of the application, placement on the Register and the issuance of the certificate. The fee will be collected by the Association/Ordre. The CCPE will be responsible for issuing the certificate to the successful applicant.

An annual membership fee of \$100 will be collected by the Association/Ordre. Ninety percent of the annual membership fee will be forwarded to the CCPE to maintain the Register.

3.4 The Register

3.4.1 APEC Database, Accessibility

The APEC database will be in Microsoft Excel format. This will allow for importing and exporting information on individual engineers. The database will be placed on the members only section of the CCPE website as a read only file and will be maintained by CCPE staff on the advice of the Associations/Ordre. The database will include the following fields:

- Name
- Association/Ordre and licence number
- Other association memberships
- Specialty
- Contact information work and home
- Date of birth
- Academic background

3.4.2 Communications with APEC Economies

Any communications with APEC Economies will be carried out through the CCPE Monitoring Committee who will be responsible for providing responses. Communications will be copied to all Associations/Ordre.

3.4.3 Communications with Canadian APEC Engineers

Communications with Canadian APEC Engineers will be carried out through the Associations/Ordre. Any information bulletins, updates, requirements, etc. received by the CCPE Monitoring Committee will be distributed to the Registrars of the Associations/Ordre for distribution to Canadian APEC Engineers. Questions from Canadian APEC Engineers will be directed through the Association/Ordre and forwarded to the CCPE Monitoring Committee for response. All questions and answers will be shared among the Associations/Ordre. The CCPE Monitoring Committee will develop a series of Frequently Asked Questions to assist in streamlining responses. Appendix G contains an initial set of questions.

3.4.4 Communications with APEC Engineers from Other Economies

Communications with APEC Engineers from other economies will be directed through the CCPE Monitoring Committee to the appropriate Association/Ordre. The CCPE Monitoring Committee will develop a series of Frequently Asked Questions to assist in streamlining responses.

3.5 Audits

Persons on the Register shall be subject to random audit of their records of continuing professional development for the immediate past three-year period. The CCPE Monitoring Committee will carry out the random audits through the Association/Ordre in which the person applied to be placed on the APEC Register.

3.6 Removal from the Register

Persons on the Register may be removed from the register for one or more of the following reasons:

- Non-payment of fees.
- No longer in good standing with one or more of the jurisdiction in which he or she is licensed to practice engineering.
- Not in compliance with the Continued Professional Development requirements.
- Subjected to disciplinary action in one or more of the jurisdiction in which he or she is licensed to practice engineering.

The Associations/Ordre will notify the CCPE Monitoring Committee of the need to remove a person from the Register.

3.7 Assessment of Applications

3.7.1 Role of Associations/Ordre

The Associations/Ordre will be responsible for assessing applications for the APEC Register from their members or for forwarding those applications to the Advisory Committee to the CCPE Monitoring Committee for assessment. The application form and application fee will be submitted to the Association/Ordre who will review the experience, references, CPD and carry out an interview with the applicant if deemed necessary or who will forward the information to the Advisory Committee.

3.7.2 Role of CCPE Monitoring Committee

The CCPE Monitoring Committee will maintain the APEC Register and add or remove names as recommended by the Associations/Ordre or by the Advisory Committee if the Association/Ordre has asked the Advisory Committee to carry out the assessment of the application. The CCPE Monitoring Committee will issue certificates to successful candidates.

3.7.3 Members of Multiple Jurisdictions

Applicants must apply to be on the APEC Register in one jurisdiction in which they are licensed. They must further declare membership in other jurisdictions. The CCPE Monitoring Committee will inform all Associations/Ordre that the engineer is in good standing on the APEC Register. Members are required to declare any changes in their membership status.

SECTION 4 ASSESSMENT OF APPLICANTS

4.1 P.Eng./Eng./ing.

Applicants must hold a valid, current licence registered with the Provincial/Territorial Association/Ordre in which they are applying to be on the APEC Register.

4.2 Peer Recommendation

Applicants must include the names, professional designations and current positions of referees who will attest to their experience. At least two of the referees should be from outside the applicant's firm or organization. Applicants are responsible for sending the APEC reference forms with a copy of their experience document to the nominated referees. Reference forms must be sent (faxed or mailed) directly to Association/Ordre by the referee.

The Association/Ordre (or Advisory Committee to the CCPE Monitoring Committee as requested) will review the information provided by the referee and contact the referee if deemed necessary to answer any outstanding questions regarding the applicant. All information provided by the referee will remain confidential.

4.3 Reporting and Assessment of Experience

Applicants must include a detailed account of their experience, indicating how the seven years of experience after graduation including two years in responsible charge of significant engineering work requirements have been fulfilled. The Association/Ordre (or Advisory Committee to the CCPE Monitoring Committee as requested) will assess the experience reported against the information provided by the applicant's referees. It may be necessary to interview the applicant to satisfy the assessors that the appropriate experience has been gained.

Appendix C contains a guideline for the presentation of experience.

4.4 CPD Requirements

Applicants must provide evidence that they have maintained their continuing professional development in accordance with Appendix D for the twelve month period preceding application.

The Association/Ordre (or Advisory Committee to the CCPE Monitoring Committee as requested) will review the report on CPD to verify compliance.

4.5 Character

An applicant must have "good character and reputation".

The assessment of character will be carried out in accordance with the constituent member's statutes, regulations and by-laws for admission and registration to the practice of engineering.

4.6 Codes of Professional Conduct and Accountability

Codes of professional conduct

For the purposes of this manual, the term "Code of professional conduct" also means "Code of Ethics". All practitioners seeking registration as APEC Engineers must agree to be bound by the codes of professional conduct established and enforced by their home jurisdiction and by any other jurisdiction within which they are practising. Such codes normally include requirements that practitioners place the

health, safety and welfare of the community above their responsibilities to clients and colleagues, practice only within their area of competence, and advise their clients when additional professional assistance becomes necessary in order to implement a program or project. The CCPE Monitoring Committee is required to certify that at registration the applicant has signed a statement of compliance with such applicable professional codes.

Accountability

APEC Engineers must also agree be held individually accountable for their actions, both through requirements imposed by the licensing or registering body in the jurisdictions in which they work and through legal processes.

4.7 Self-Declaration

Each year, the APEC Engineer will supply his or her CPD information with the membership fee to the Association/Ordre to confirm that he or she has complied with the CPD requirements and confirm that his or her circumstances have not placed him or her outside the minimum practice requirements.

The CCPE Monitoring Committee will conduct random audits, through the Associations/Ordre, of registered practitioners each year. Those selected will be asked to produce evidence of their CPD participation during the preceding three years.

This evidence can take the form of:

- a summary of diary records;
- course/seminar enrolment records;
- receipts;
- certificates:
- attendance lists:
- assessment reports;
- employer reports;
- statutory declarations.

Members are advised to retain all records for at least three years.

These regulations ensure that registered professionals are complying with their professional obligations, and provide each with an opportunity to renew their commitment to personal and professional development.

4.8 Sharing of Information on the APEC Register
All applicants must agree to allow their contact information and status on the APEC Register to be
shared among the Associations/Ordre and other APEC Economies.

ADECED	<i>APPENL</i>		<i>C</i>
APEC Register of	Projessional En	gineers – Call j	or Applications



Association/ Ordre Logo here

APEC REGISTER OF PROFESSIONAL ENGINEERS CALL FOR APPLICATIONS

The Canadian Council of Professional Engineers, representing twelve provincial and territorial constituent engineering associations/ordre, is establishing its **APEC Register of Professional Engineers**. This is the first step in developing protocols to allow engineers from the Canadian APEC Register to practice throughout the APEC economies. Currently Australia, Japan, Hong Kong (China), Korea, Malaysia, New Zealand and Thailand have joined Canada in initiating the establishment of an APEC Register in their economies. The Association/Ordre will be accepting applications from its members to establish the Canadian APEC Register of Professional Engineers.

Interested and qualified applicants with the following background are invited to apply:

- registered as a practising engineer(Québec)/professional engineer in Province/ Territory;
- registered and currently practising in the Chemical, Civil, Electrical, Environmental, Industrial, Mechanical, Mining or Structural Engineering;
- a minimum of seven years practical experience since graduation, with at least two years in responsible charge of significant engineering work;
- demonstrated continuing professional development at a satisfactory level.

Interested candidates who fulfill these qualifications are invited to access application forms and information on the Association/Ordre or CCPE website at http://www.xxxx.xx.ca or to contact:

Reg Ister, PEng Director, Admissions/Registration **The Association/Ordre** Address Fax, e-mail

APPENDIX B Register of Professional Engineers	

Association/Ordre Logo Here

APPLICATION APEC REGISTER OF PROFESSIONAL ENGINEERS

Please complete and return this form with a detailed account of your experience summary and a completed Continuing Professional Development Report. A minimum of three references should be sent by the referees directly to the address or fax at the right.

Association/Ordre Address Address

Tel: (xxx) xxx-xxxx Fax: (xxx) xxx-xxxx

E-mail: _	
n	Has registration been naintained continuously?
ate which	discipline (one only) in which
	Electrical
	Industrial
	Structural
	n ate which

Continuing Professional Development

•	-			
Are you currently registered in Professional Development Pro	-		in a mandatory	Continuing
If yes, in which Province/Territory?				
If no, you must show evidence of comp APEC Continuing Professional Develo		uing Professional Develop	oment requirements by	completing the
				\Rightarrow

Experience

You must show seven years of engineering experience after graduation, including two years in responsible charge of significant engineering work. Attach a detailed account of your experience, indicating how these requirements have been fulfilled.

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.

References

Include the names, professional designations and current positions of referees who will attest to your experience. At least two of the referees must be from outside your firm or organization. Applicants are responsible for sending the APEC reference forms with a copy of their experience document to the nominated referees. Reference forms must be sent (faxed or mailed) directly to Association/Ordre by the referee.

	Name of Referee	Professional Designation		Position, Organization
		(P.Eng., ing., P.E.)	Jurisdiction and Registration #	
i.				
ii.				
iii.				
iv				

Character Have you ever applied for registration or licence to practice or membership in any professional society or organization and been rejected? Have you ever, as a member or licensee of a professional society or organization, been disciplined? (If yes, please provide details in a separate letter) Have you ever been convicted of a criminal offence? (If yes, please provide details in a separate confidential letter.) □ Yes □ No

Fees (all fees include GST)

Application Fee (non-refundable; include with application): \$214.00 Annual Fee (due upon placement on the register): \$107.00

The names of those on the APEC Register, their addresses and discipline will be available to the public. By signing this application, you agree that this information may be released to the public. Please read the following release and sign below.

My signature on this application represents my irrevocable consent for the Association/Ordre to obtain and to release information and records relevant to the application process. I also hereby release any party providing such information and records from liability for such action. I hereby certify that the foregoing is a true record of my professional background and experience. I understand that I may be required to attend, at my own expense, an interview to assess my qualifications.

APEC Enginee	APPENI er – Presentatio	ice Guideline

APEC ENGINEER PRESENTATION OF EXPERIENCE GUIDELINE

A requirement for admission to the *CCPE APEC Register of Professional Engineers* is a minimum of seven years of practical experience since graduation with at least two years in responsible charge of significant engineering work. By virtue of his or her professional registration the Applicant will have already met a portion of this requirement. The Applicant must provide a report verifying that you have completed the additional experience to meet this requirement. The report must demonstrate that you have engaged in professional practice which, directly or indirectly, calls upon your 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.

Candidates are to present their experience in the following format. Experience presented in other formats will be returned to the candidate for resubmission.

- a. A chronological list of employers, and positions held
- b. A list of Typical Projects, e.g. "Granville Place Residential Highrise, Richmond"
- c. A project sampling, listing project date, name and position held, e.g. 2000/01/03 597 East Hastings Seismic Review Senior Engineer
- d. A detailed engagement record, listing detailed examples of three projects and providing dates, responsibilities, supervising engineer (if any), details of Tasks, Level of Responsibility and Engineering Decisions Made

APPENDIX D Continuing Professional Development Report



APEC REGISTER REPORTING

Please complete and return this form with your application

	one Fa	x Toll-Free						
ıme:								
	ensure qual	lification for includatory Continuinovide documenta	usion on the req ig Professional	jister, an applic Development p	ant must either rogram, and she	show that she/he e/he is in complia	the following infor is registered in a ance with those re e on Continuing P	jurisdictio quirement
	I am in com	pliance with the	mandatory Cor	itinuing Profess	ional Developm	ent Program in	`jurisdicti	<u> </u>
	OR						jurisaicii	UII
	I have com	pleted the requi	red information	below:				
	Indicate the month perio		fessional Develo of 80 hours mu	st be claimed v	vith activities cla	nimed in three of	tegory for the mos the six categories	
	on of Activity ore sheets if	Professional Practice	Formal Activity (Max. 30/yr)	Informal Activity (Max. 30/yr)	Participation (Max. 20/yr)	Presentations (Max. 20/yr)	Contributions to Knowledge (Max. 30/yr)	Total
essary iiled d	to provide a lescription of activity	(Max. 50/yr)						
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CONTINUING PROFESSIONAL DEVELOPMENT

APEC GUIDELINE AND REPORTING

INDIVIDUAL ENGINEER'S ACQUISITION OF KNOWLEDGE

It is recognized that engineers work in a changing and dynamic environment. The need to maintain competence in one's area of expertise will drive the ongoing acquisition and assimilation of knowledge. To be relevant, the knowledge gained must be focused on current or intended future professional activity.

There is no single method for maintaining and enhancing the currency of one's knowledge in a specific area of practice. The unique circumstances of each engineer, and association, will dictate the means by their licensees remain up-to-date. The following elements constitute recommended activities for continuing professional development

Practice of engineering Technical work in one's field of specialization.

Formal activity Attendance at and provision of seminars, conferences, workshops, university courses,

in-house instruction, and development programs

Informal activity Self-directed learning, reading, discussions with one's peers, participation in meetings

and committees.

Publication Preparation and publication of papers, journals, or Codes or Standards.

Participation Active participation in professional or technical societies.

Value to Professional Practice

The following criteria may be used by Engineers/Professional Engineers to judge the merit of any proposed continuing education or professional development activity.

Acceptable continuing education and professional development should embody at least some aspects of the following:

Application of Theory

Practical Experience

Management of Engineering

Communication Skills

Social Implications of Engineering

These criteria are adapted from the CCPE/CEQB Guideline on Admission to the Practice of Engineering in Canada. The guideline includes numerous examples to illustrate each of the criteria.

KEEPING RECORDS & REPORTING

Each practising professional is expected to maintain a complete record of their continuing professional development program. It is expected that your records would contain the following information

your individual scope of practice

your program plan

your record of completed activities and number of PDHs earned

Program Plan and Content

Once you have identified your scope of practice, the next step is to develop a program to address any required knowledge or skill maintenance or improvement, or the acquisition of new abilities. In effect, this requires developing a personalized training program. The most important principle to remember is that your professional development activities must be related to your scope of practice. The following section provides categories of activity and levels of effort suitable for a continuing professional development program. The activities listed are not inclusive; rather, they are intended to give general guidance for the selection of activities. These lists also identify activities that comprise lifelong learning. Given the diversity of member practice, some activities may be more appropriate for you than others. Use your own judgement in selecting activities that relate to your individual scope of practice and that work best for your continued learning.

Continuing professional development activities will relate to your individual scope of practice. They may also embody some or all of the following concepts: application or development of technical theory, learning of new concepts, practical experience, management of engineering, communication and interpersonal skills, public, community and professional service

Activity Categories and Levels of Effort

A credible continuing professional development program must define minimum levels of effort. The unit of measure for this effort is time: a Professional Development Hour (PDH). CCPE recognizes six general activity categories as contributing to continuing professional development. These are listed below with corresponding PDHs.

To encourage planning over a few years, a typical program has a three-year rolling time period. Here are some guidelines for ensuring that you have met the program requirements You must accumulate at least 240 PDHs over three years. You are strongly encouraged to accumulate at least 80 PDHs per year. You must be active in at least three of the six categories. Note the maximum allowed PDHs in each category when developing your plan. Be careful not to count the same effort in more than one activity. Once you are in the third or subsequent year of the program, you must maintain a rolling average of a minimum of 240 PDHs over three years.

1. Professional Practice

Active professional practice is known to be a significant factor contributing to maintaining and improving skills. As such, it earns PDHs as follows: One PDH is earned for each 15 hours of professional work within your scope of practice. A maximum of 50 PDHs per year may be claimed in this category.

2. Formal Activity

Formal activities are those provided as a structured course or program, often for credit, occasionally with an evaluation process. Although formal activity is not specifically required, all members should strive to include some formal activities within their continuing professional development program. Delivery methods might include traditional classroom settings, and remote techniques such as written correspondence, video, or interactive electronic exchange. Formal activities could include courses provided through universities, technical institutes and colleges industry sponsored courses, programs and seminars, employer training programs and structured on-the-job training, short courses provided by technical societies, industry or educational institutions. Every hour spent in attendance at the course (contact hour) earns one PDH. For courses offering Continuing Education Units (CEUs), each CEU will equate to 10 PDHs. A maximum of 30 PDHs per year may be claimed in this category.

3. Informal Activity

These are activities not normally offered by an educational institution or other non-structured course, but which nevertheless expand your knowledge, skills or judgement. They include self-directed study, attendance at conferences, technical sessions, talks, seminars, workshops and industry trade shows attendance at meetings of technical, professional or managerial associations or societies structured discussion of technical or professional issues with one's peers. Each hour of informal activity earns one PDH. A maximum of 30 PDHs per year may be claimed in this category.

4, Participation

Activities that promote peer interaction and provide exposure to new ideas and technologies both enhance the profession and serve the public interest. These activities include acting as a mentor to a Member-in-Training or other less experienced professional member or technologist service on public bodies that draw on your professional expertise (i.e., planning board, development appeal board, investigative commissions, review panels or community building committees); activities that contribute to the community which require professional and ethical behaviour, but not necessarily the application of technical knowledge, including active service for professional, service, charitable, community or church organizations, coaching league sports teams, or elected public service on municipal, provincial or federal levels or school boards; service on standing or ad-hoc committees of technical, professional or managerial associations, or societies: 1 PDH per hour of service, a maximum of 10 PDHs per year may be claimed for the participation category.

5. Presentations

These are technical or professional presentations that you make outside your normal job functions. Both preparation and presentation of material would be expected. Presentations might occur at a conference or meeting a course, workshop or seminar either within your company, or at an event sponsored by a technical or professional organization. Each hour of preparation and delivery earns one PDH. A maximum of 20 PDHs per year may be claimed in this category.

6. Contributions to Knowledge

CCPE acknowledges that activities that expand or develop the technical knowledge base in must be recognized. It also realizes that not every member is able to make such a contribution outside his or her normal job function. Contributions could include development of published Codes and Standards, one PDH per hour of committee work; patents 15 PDHs per patent; registered; publication of papers in a peer-reviewed technical journal, 15 PDHs per paper published; publication of articles in non-reviewed journals, 10 PDHs per article (a maximum of 10 PDHs per year may be claimed); reviewing articles for publication, 1 PDH per hour of review (a maximum of 10 PDHs per year may be claimed); editing papers for publication, 1 PDH per hour of editing; A maximum of 30 PDHs per year may be claimed in this category.

APPENDIX E APEC Register Reference



REFERENCE

This form is to be completed by the Referee and returned directly to the Association/Ordre by fax or by mail.

Association/Ordre Logo or Name Address

Address

Telephone Fax Toll-Free

PLEASE TYPE OR PRINT LEGIBLY

REFEREE NAME:	APPLICANT NAME:
ADDRESS:	
	DATE:
Your name has been put forward by this applicant as a Referee APEC Register of Professional Engineers. This is the first ste Canadian APEC Register to practice throughout the APEC eco Korea, Malaysia, New Zealand and Thailand have joined Canad their economies. The Association/ is accepting applications from Professional Engineers. More information can be found at www.x	ep in developing protocols to allow engineers from the nomies. Currently Australia, Japan, Hong Kong (China) da in initiating the establishment of an APEC Register in its members to establish the Canadian APEC Register o
This form must be accompanied by a chronological work ex "Satisfactory Engineering Experience - APEC Register". Association/Ordre and the Canadian Council of Professional Enganswer all questions to the best of your direct knowledge only.	It is important to the applicant, as well as to the
As a referee, you are urged to consider your assessment careful concerning experience and performance of the applicant. Please decision. If for any reason, you feel that you cannot provide an a Association and note your reasons below in the space provided. you for taking part in this most important aspect of the procould be contacted during the day in the event that further informations.	e do not suppress any information that might influence the assessment of this applicant, please return this form to the All statements will be treated as confidential. Thankocess. Please provide a telephone number at which you
Telephone Number:	
If you are unable to act as a referee, please indicate the reason in	n the space provided:

YOUR PERSONAL KNOWLEDGE OF THE APPLICANT Α. 1. For how many years have you known the applicant: Personally? Professionally? 2. In your opinion, is the applicant's character: Acceptable Not Acceptable (please elaborate below): В. YOUR PROFESSIONAL KNOWLEDGE OF THE APPLICANT (Please provide additional comments which may assist the Review Committee in its decision) What is or was your professional relationship to the applicant? ____ Supervisor _____ Client _____ Other (please describe) For how long? (Please provide dates) 2. In your opinion, does the applicant possess sound professional judgement? ☐ Yes No have the ability to recognize and work within his/her limitations? ☐ Yes No adhere to Association/Ordre's Code of Ethics? ☐ Yes No C. YOUR ASSESSMENT OF THE APPLICANT'S EXPERIENCE 1. An Applicant to the APEC Register must have completed the required seven years of experience since graduation in his or her discipline of registration including two years in responsible charge of significant engineering works. 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.

	In you	opinion, has the	applicant fulfilled t	this experie	nce requirement?		_
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D.	ADDI	IONAL INFORM	ATION				
	1.			nation that v	vill assist in our evaluation, ple	ase provide it below:	
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2.	If for	any reason you	believe that the	e applican	t should not be considere	d for inclusion on the	APEC
	Regis	ter, please comm	ient below:				
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POS	ITION				DESIGNATION REGISTRATION/LICENCE		
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EMP	LOYER				JURISDICTION		

Please return this form <u>and</u> the applicant's work experience summary to <u>Association/Ordre</u> at the address at the top of the Front page.

THANK YOU FOR TAKING THE TIME TO PROVIDE THIS REFERENCE

(Province/State/Country)

SATISFACTORY ENGINEERING EXPERIENCE - APEC REGISTER

A requirement for admission to the *CCPE APEC Register of Professional Engineers* is a minimum of seven years of practical experience since graduation with at least two years in responsible charge of significant engineering work. By virtue of your professional registration you will have already met a portion of this requirement. The Applicant must provide a report verifying that you have completed the additional experience to meet this requirement. The report must demonstrate that you have engaged in professional practice which, directly or indirectly, calls upon your engineering knowledge, skills, experience and judgment, 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.

The following general criteria provide guidance to the type of experience expected.

a) Practical Experience

Involvement in the implementation of engineering designs

- i. visits to locations where engineering designs are being put into practice; preparation, assembly, installation, testing, commissioning, operation and maintenance.
- ii. observation of how the individual design elements fit into the whole process.
- iii. exposure to problems that arise during the implementation of engineering design, e.g. the practicality of design tolerances, adjusting designs to fit practical problems, maintenance philosophies.

b) Application of Theory

Active and responsible participation in several aspects of the following:

- i. **analysis**, including scope and operating conditions, safety and environmental issues and judgments concerning economic feasibility and technical merit.
- ii. **design and synthesis**, including specification, compliance with codes and standards, integration of components and sub-systems into larger systems, reliability, ease of maintenance, human and environmental aspects, and societal implications.
- iii. **testing**, including methodology and techniques, functional specification verification, product or technology commissioning and assessment.
- iv. **implementation**, including engineering cost studies, optimization techniques, process flow and time studies, quality assurance implementation, cost/benefit analysis, safety, environmental assessment, maintenance and replacement evaluation.

c) Management

Management of engineering work, demonstrating increased responsibility in areas such as planning, scheduling, budgeting, supervision, management of technology, project control and risk assessment.

d) <u>Communications</u>

Demonstrate proficiency in written work, presentations to colleagues, management, clients and the general public.

e) Social Implications of Engineering

Demonstration of engineering's impact on the public in the field of human safety, the environment, finance and education. Demonstration of the understanding of the role of the engineer from several points of vies including environmental, economic and the advancement of knowledge..

f) Sponsorship

Referees provide confirmation of the candidate's experience. References are required from practicing professional engineers familiar with details of the candidate's work during the internship. Present and past direct supervisors are the most suitable referees. If a candidate claims experience from several positions, extra references may be required.

All candidates are required to nominate four or more Canadian and/or US referees. All should be Engineers (Québec)/professional engineers with first-hand knowledge of the candidate's work. Preferably two, but at least one Engineer (Québec) /professional engineer familiar with the candidate's work from outside his or her company should be nominated if possible. If experience outside Canada/United States must be verified, additional referees are required. A separate letter is required to explain if the candidate cannot nominate the required referees. Engineers (Québec)/Professional engineers with indirect knowledge of the candidate's work may be nominated if absolutely necessary. Please refer to the reference forms for more information.

APPENDIX F APEC Register – Application Checklist

APEC Register

Application Checklist

Applicant Name				
Registered as Association/Ordre P.Eng./ing. in				
Chemical)	Civil		Electrical
Environmental)	Geotechnical		Industrial
Mining/Petroleum/Geological)	Mechanical		Structural
Application Form – Signed				
Fee \$214 Enclosed				
CPD form □ Details □	(Other Province Confirm	ned	
References				
Experience 7 Years Since	Gra	aduation 🚨 2 Years Re	espon	sible Charge
Format Correct				

APPENDIX G Frequently Asked Questions

APEC REGISTER OF PROFESSIONAL ENGINEERS Frequently Asked Questions

- Q. What are the advantages of becoming an APEC Register Professional Engineer?
- A. At this time there are no specific advantages. However, many APEC economies are developing APEC Registers concurrently with Canada, and there will be considerable recognition of the APEC Registers over the next few years.
- Q. Do I need to be licensed to practice engineering in the participating countries/economies?
- A. This varies from economy to economy. Most economies in APEC are moving towards the use of the APEC Register as the model for licensure and/or registration for offshore engineers.
- Q. Is there an international register how does another country/economy know I'm an APEC Register Professional Engineer?
- A. The Register is to be decentralized but available to all participating APEC Economies. The Register of Canadian Engineers who are APEC Engineers will be maintained by the Canadian Council of Professional Engineers (CCPE) and will me made available freely to corresponding organizations or government agencies in other economies.
- Q. Does an APEC engineer have a special designation?
- A. This is still under consideration.
- Q. Is there a fee to keep one's name on the Register?
- A. Yes, there will be an annual fee sufficient to cover administrative.