



ONTARIO
SOCIETY
OF PROFESSIONAL
ENGINEERS

Continuing Professional Development

Maintaining and Enhancing Our Engineering Capability

June 19, 2013



THE VOICE OF ONTARIO'S ENGINEERS

Executive Summary

This report was prepared by the Ontario Society of Professional Engineers' (OSPE's) Continuing Education Working Group at the request of the OSPE Board of Directors. The purpose of this report is to propose a Continuing Professional Development (CPD) Program for discussion with Professional Engineers Ontario (PEO). This report presents a best practices approach from the perspective of OSPE's members. However, establishing a CPD program for Ontario engineers is the responsibility of PEO.

Ontario has lagged behind the other engineering jurisdictions in Canada in defining a Continuing Professional Development program for its licensees. OSPE is concerned that, over time, Ontario's licensed engineers will lose credibility in the eyes of the public, including clients and employers, both inside and outside Ontario if PEO does not establish an effective CPD program. Eight provinces now have mandatory CPD programs.

This report recommends a mandatory program based on the Association of Professional Engineers and Geoscientists of Alberta (APEGA) CPD program and complies with guidance from Engineers Canada's (EC's) Canadian Framework for Licensure – Continuing Professional Development [R4]. A description of the CPD Program that OSPE is recommending for Ontario engineers is summarized in Appendix 4. A new PEO CPD Review Board has been recommended that would administer the CPD Program including an inspection program using random sampling methods.

Some changes to the APEGA CPD program have also been recommended by the Working Group to make the reporting process less onerous on both the licensees and the regulator and to make the CPD program more flexible to better meet the needs of the individual licensees and their employers. The following changes have been recommended:

- Requiring licensees to report CPD status on an “as requested basis” by PEO rather than on a mandatory annual submission basis by all licensees. PEO would use a sampling method to select licensees for CPD assessment based on an evaluation of the risk in different professional practice areas.
- Requiring licensees to acknowledge annually on their fee renewal form that they understand the requirements of the CPD program, have planned their CPD activities and will report the status of their CPD activities within 60 days of a request to do so by PEO.
- Increasing the maximum number of credits for each of 6 CPD activity categories to 50% of the required 3-year total Professional Development Hour¹ (PDH) credits. This will provide additional flexibility to tailor the CPD activities to better match the individual training needs of each licensee and the employer's workload demands.
- Reducing the mandatory 240 PDHs credits over 3 years to 180 PDHs at age 50 and to 120 PDHs at age 60 to reflect the lower CPD requirements of experienced engineers.
- A process for the licensee to self-reactivate his/her practice.

The Working Group recommends that PEO make available to its members sample templates, spreadsheets and guidelines that allow an individual licensee to self assess their CPD needs, prepare a CPD Plan and status their plan so that reporting, when requested by PEO, is both simple and timely. PEO's current on-line tool for registering PDHs, should be enhanced to allow data to be directly downloaded from the spreadsheet used by license holders.

¹ Professional Development Hours (PDHs) are credits for specific professional development activities undertaken by license holders. The PDH credits may or may not be equal to the hours spent depending on the activity.

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1. Introduction

The Ontario Society for Professional Engineers (OSPE) was founded in 2000 through the collaborative efforts of Professional Engineers Ontario and the Canadian Society of Professional Engineers (CSPE). OSPE's mandate is to advance the professional and economic interests of its members. This is accomplished through advocacy and member services including professional development services.

Ontario has lagged behind the other engineering jurisdictions in Canada in defining a Continuing Professional Development program for its licensees. OSPE is concerned that, over time, Ontario's licensed engineers will lose credibility in the eyes of the public, including clients and employers, and among other engineers, clients and employers outside Ontario if PEO does not establish an effective CPD program.

At the special meeting of the OSPE Board on December 19, 2012, an OSPE Continuing Education Working Group (simply referred to as the Working Group in this report) was formed to recommend a best practice method to ensure continuing professional development (CPD) by practicing professional engineers. OSPE will submit this proposal to Professional Engineers Ontario (PEO) for their consideration in developing a CPD program for Ontario's engineers. The Working Group operated with a set of guiding principles that are contained in Appendix 1.

While the Working Group found no hard data that measures the effectiveness of mandatory CPD programs, it is widely recognized that it is important for self-governing professional bodies to maintain public trust and confidence in their ability to ensure each licensee continues to be competent throughout their career. New knowledge and experience created continuously in the engineering profession needs to be imparted to existing licensees through continuing professional development.

This study proposes a mandatory CPD program for Ontario that should find sufficient support among licensees and the public so that government demands through the Attorney General's office to implement a mandatory CPD program for engineers will not be necessary in the future. This report presents a best practices approach from the perspective of OSPE's members. However, establishing a CPD program for Ontario engineers is the responsibility of PEO.

2. Canadian CPD Programs

Before discussing the details of engineering CPD programs in Canada it is important to note that there is a significant difference between engineering and other professions such as medicine, law and teaching. Most engineering work is performed in a corporate setting either in consulting engineering firms or in industrial companies or government departments. In these settings individual engineers work as part of a team that usually includes an engineering supervisor who reviews their work. In industries with greater public impact, such as the nuclear industry, there is a rigorous quality assurance process that is an inherent part of the work processes and it includes both supervisory and independent review of the engineering work. Consequently, errors by individual engineers working in engineering teams are less

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likely to reach a member of the public compared to other professionals such as doctors, lawyers and teachers who work directly and independently with the public.

Organizations that incorporate industry or international quality assurance (QA) programs into their engineering work processes typically also have CPD programs imbedded into those QA programs. The CPD programs are designed to ensure people who work independently are qualified to do so before they start a task otherwise supervision and/or mentoring is provided to guide them until they are fully qualified. Formal QA program typically include periodic audits. The audit findings related to the engineering functions can easily be provided to an engineering regulator such as PEO. That would eliminate the need for PEO to monitor the CPD program independently of the company. QA programs are also much more effective at ensuring public safety because they typically have processes to identify defective work and correct it before it reaches the public. A full QA program for engineering work is outside the scope of this report and will not be dealt with in detail here. However, it is interesting to note that APEGBC is now implementing a voluntary Organizational Quality Management (OQM) program [R22] in British Columbia.

Also, the engineering work typically progresses through different groups of engineers, technical staff or trade persons in the work sequence (e.g.: design, construction, commissioning, operations, maintenance). Consequently there is some opportunity for engineering errors to be caught in downstream steps by other technical individuals as a routine part of the normal engineering quality control processes embedded in the work flow.

A review of complaints and disciplinary cases in Ontario suggests there is no significant competency problem in the engineering profession. PEO only receives about 80 complaints a year out of about 80,000 licensed engineers and only a handful are referred to the Disciplinary Committee. This suggests that any competency issues are identified and effectively dealt with as part of the normal engineering work control processes and current voluntary CPD activities undertaken as part of licensees' ethical responsibility to maintain their competency. Professional engineers understand the importance of continuing professional development both to accumulate knowledge and experience required for their immediate jobs and also to prepare for the demands of new emerging technologies.

Engineers Canada reported in their March 2009 Study on "Trends in Continuing Professional Development" [R5] that a 1999 study² of 343 professional regulatory bodies across Canada found that the majority had CPD policies and that in four out of five of those professions with policies, the CPD programs are mandatory. The study also found that 48% of those professions that did not have CPD policies were planning to introduce such policies.

The Engineers Canada study found that more than 80% of engineers participate in continuing professional development programs. However, the study also found that engineers in jurisdictions with mandatory programs undertook about 1 week more CPD activities compared to Ontario engineers where there is no formal CPD policy.

² Assessment Strategies Inc., Licensure, Certification, and Continuing Competence Practices among Canadian Regulated Professions, March 1999.

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Engineers Canada also reported in the study that the number of professional development days were typically similar for engineers in their first 25 years in the profession but then began to drop to about ½ by the time they reached 65 years of age. Although no reason was given for the decline in later years, we can speculate that more experienced engineers tend to spend less time on detailed engineering work and more time on reviewing, supervising, and directing the work of others. The latter activities do not require as much CPD activity related to acquiring new knowledge and skills because the value added services of experienced engineers is their many years of practical knowledge. An efficient CPD program should reflect this reality in setting its minimum credits.

The difficulty in establishing CPD programs in the engineering profession is rooted in differing views of how best to maintain competence and how best to measure that without creating an onerous bureaucratic process.

Engineers Canada has published the “Canadian Framework for Licensure – Continuing Professional Development” [R4]. This document lists the purpose, policy direction and key considerations in developing a CPD program that will be accepted across Canada and that will lower the administrative burden of licensees and regulators to comply with CPD requirements when licensees work in more than one province.

Alberta’s APEGA was the first professional engineering regulatory body in Canada to initiate a mandatory CPD program approximately 15 years ago. Many of the other provinces appear to have modeled their CPD programs on APEGA’s program with some changes. Engineers Canada reported [R6] that by 2012, 8 provinces had mandatory continuing professional development programs. Table 1 below summarizes the program status in each jurisdiction. Ontario is now the only jurisdiction in Canada that does not specify detailed CPD requirements for its engineering licensees.

The Working Group also reviewed a rigorous CPD program developed by the North American nuclear industry³. The program maps specific knowledge and skills for each job and then assesses each individual’s knowledge and skills against their job requirements. The gaps then result in an individual CPD Plan that drives the training program for that individual. Both initial training and refresher training are included. Formal training courses and seminars typically include evaluations with a minimum grade for successful completion. The Working Group considers this nuclear CPD program appropriate for nuclear technology but too rigorous and expensive for most other engineering job situations.

³ National Academy for Nuclear Training, Guidelines for Training and Qualification of Engineering Personnel, ACAD 98-004, August 2011, Revision 2.

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Table 1

Engineering Continuing Professional Development Programs in Canada

<u>Province/Territory</u>	<u>Regulator</u>	<u>Type</u>	<u>Notes⁴</u>
Alberta	APEGA	Mandatory	Mandatory reporting of PDHs
Saskatchewan	APEGS	Mandatory	Voluntary reporting
New Brunswick	APEGNB	Mandatory	Reporting when requested
Nova Scotia	Engineers NS	Mandatory	Annual certification of compliance
Prince Edward Island	Engineers PEI	Mandatory	Mandatory reporting of PDHs
Newfoundland and Labrador	PEGNL	Mandatory	Mandatory reporting of PDHs and activities
Quebec	OIQ	Mandatory	Mandatory reporting of PDHs
Manitoba	APEGM	Mandatory	Mandatory reporting of PDHs
British Columbia	APEGBC	Voluntary	Considering mandatory program
Ontario	PEO	Voluntary	No specific PDH requirements
Yukon	APEY	Voluntary	Fee charged for not reporting
Northwest Territories and Nunavut	NAPEG	Voluntary	Requirements but no reporting required

The mandatory provincial programs typically require a minimum of 60 to 80 PDH credits each year and/or 240 over a 3-year period. These programs allow both formal activities (e.g.: courses and seminars with evaluation) and informal activities (e.g.: courses and seminars without evaluation, self study, trade shows, field trips, etc.). The formal activities usually receive 1 to 1 credit for the hours spent; the informal activity hours in some jurisdictions are credited at only ½ the rate. The total annual PDH credits that may be claimed in various categories of professional development are also typically capped. For example the APEGA CPD program has 6 activity categories with annual caps for each category as follows:

- Professional practice work, each 15 hours of work = 1 PDH, max. 50 PDHs/yr.

⁴ Ontario has an on-line tool to report PDHs but has not issued any formal requirements on how many PDHs are expected. All other Canadian jurisdictions identify specific PDH credit requirements.

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- Formal training, each hour of course attendance = 1 PDH, 1 CEU=10 PDHs, max. 30 PDHs/yr. Note: CEUs are continuing education units from course providers.
- Informal training, each hour of activity = 1 PDH, max. 30 PDHs/yr.
- Peer participation, each hour participation = 1 PDH, max. 20 PDHs/yr. but no more than 10 PDHs max/yr. for non-technical community service.
- Presentations, each hour preparation and delivery = 1 PDH, max. 20 PDHs/yr.
- Contributions to knowledge, 1 to 15 PDHs per item depending on the nature of the activity, max. 30 PDHs/yr.

APEGA allows licensees to carry unused PDH credits forward for 2 years from the date of the completion of the activity. It is the Working Group's view that increasing the PDH maximum limit in each activity category to 50% of the 3-year minimum for all activity categories and removing the annual restriction will add flexibility to the CPD program to meet the licensee's individual training needs and the employer's project scheduling needs. This flexibility is becoming increasingly important as more engineers are employed under contract and need to adjust their professional development activities to better fit their contract work periods.

The Working Group also notes that APEGA's CPD program recognizes that engineers learn on the job as they perform their work and agree that allowing PDH credits for professional practice hours is an important element in a CPD program. The Working Group also recognizes the importance of continual personal development for engineers, to maintain professional and ethical standards.

3. Challenges in Designing a CPD Program

There are four primary needs when considering the design of CPD programs:

- a) The public's needs
- b) The regulator's needs
- c) The licensee's needs
- d) The employer's needs

The public expects a high level of safety, environmental, functional and economic performance of the engineering works they come into contact with. The public also expects that only fully qualified licensed engineers will work independently. The public expects licensees who are not fully qualified to do specific work, or, other individuals who are not licensed, will work under the direction of a fully qualified licensed engineer. The public also expects licensed practicing engineers to engage in relevant CPD activities to maintain their qualifications throughout their career. The public also expects PEO to effectively administer the Professional Engineers Act (PEA).

The regulator is concerned that the public's trust in a self-regulated engineering profession is not misplaced. Consequently, the regulator wants to ensure the public's expectations as

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outlined above are met. On a secondary level, the regulator is also concerned that its administration of the PEA is performed efficiently and effectively so that members' fees are spent wisely. The regulator expects licensed engineers to engage in relevant CPD activities to maintain their technical qualifications, as well as their commitment to the Code of Ethics and public safety. The regulator also needs to have a reasonable level of confidence that engineers are undertaking the relevant CPD activities.

The licensee is concerned about meeting the public's expectations with respect to safety, environmental, functional and economic performance of the engineering works they come into contact with. On a secondary level, the professional engineer is concerned about meeting the requirements of the regulator so that their right to practice is maintained. The licensee wants to focus on CPD activities that are relevant for his/her practice in maintaining the necessary knowledge and skills. The licensee does not want to expend time and money on unnecessary CPD activities nor to be required to submit excessively onerous reports of those activities.

The employer expects that their employee engineers will develop and maintain their qualifications to do the work but also that their CPD activities do not require an excessive amount of time away from the job especially during critical periods on their project. The employer also wants employer-funded CPD investments to be cost effective and directly applicable to the employer's needs.

The needs of the regulator, employer and licensee can be in conflict if the CPD program is not efficiently structured. If the regulator demands excessive training and development activities or excessive reporting requirements, it will discourage individual university engineering graduates from registering as profession engineers. The laws in Ontario and 5 other provinces and one territory allow any individual to practice professional engineering provided they are supervised by a licensed profession engineer who assumes responsibility for their work. This means that if the CPD requirements become excessively onerous, some individuals may opt out of the program and work under the direction of a licensed engineer who maintains his/her CPD requirements current. The development of online training could aid in easing the process of technical and personal development.

If the number of licensees drops, the fees to each license holder will need to rise to collect sufficient funds to pay for the functions of the regulator. Consequently it is important to ensure the regulatory CPD demands and reporting burdens are both reasonable and effective so that license holders will comply rather than work as unlicensed personnel.

Furthermore, employers will have less flexibility in assigning work if fewer of their engineering personnel are licensed. Employers would have concerns if there were insufficient license holders to supervise the work of growing numbers of unlicensed personnel. This is especially relevant in the industrial sector now that the so-called "industrial exemption" in the Professional Engineers Act is scheduled to be removed on September 1, 2013.

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The most important aspect of a CPD program is that it addresses the individual licensee's knowledge and experience requirements at the "workface" and that the planned CPD activities will improve his/her capability to do the immediate work and any anticipated future professional growth. Consequently a licensee needs to assess their CPD requirements in order to establish an effective CPD plan and list of CPD activities. The licensee's plan should also be sufficiently flexible that emerging work demands or emerging development opportunities can be incorporated easily.

The Working Group has not found published data quantitatively showing the effectiveness of mandatory CPD programs for engineers. However, experienced engineers know that individuals with the right knowledge and experience for a given job produce better quality work with reduced demand on supervisors. Employees who are happy at work also work more efficiently, improving productivity. Effective CPD programs that improve the knowledge and experience of individual engineers should result in reduced probability of errors. A mandatory reporting requirement therefore provides the regulator an opportunity to assess if the licensee is selecting a reasonable set of activities to achieve the objectives of the CPD program.

It is important for the licensee to monitor progress against his/her CPD plan to ensure the planned CPD activities are actually completed. However, requiring all licensees to report status annually on standard forms, if the regulator is not going to assess them all, is a waste of licensee effort. Sampling methods are available to the regulator to achieve a reasonable level of confidence that the CPD program is achieving its objectives. Annual reminders of the licensee's obligations with respect to the CPD requirements is useful and can easily be included in the annual license renewal form (both hardcopy and on-line) along with the licensee's acknowledgement (check-off) of those requirements.

4. Best Practices in CPD Programs

Each regulator for each profession has made decisions on CPD programs based on their individual profession and jurisdictional needs.

Engineers Canada has prepared a guideline for CPD programs to assist Canadian engineering regulators in developing their own program [R1] and a step-by-step guide for individual engineers to produce a CPD Plan [R2].

Eight of Canada's engineering regulators who have a mandatory CPD program have taken different approaches with respect to reporting compliance. Some require annual reporting of PDH hours, some require an annual declaration of compliance with the CPD program and others only require reporting on an as requested basis (typically a random sampling method performed by the regulator). Some regulators audit the reported CPD activities for compliance with the rules, others audit the relevance of the CPD with respect to the work and some regulators undertake practice audits and competency assessments on a sample or exception basis. The various mandatory reporting approaches of the 8 engineering regulators can be found on their websites [R8] thru [R14] inclusive and [R16].

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Audits can be time consuming and expensive for both the regulator and the individual engineer depending on the nature and depth of the audit. The audits to confirm that CPD reporting rules are followed are relatively straight forward, audits to confirm the CPD is relevant to the work are more time consuming and audits to confirm the CPD is effective (competency assessments) are very time consuming.

Unless there is evidence from the public via complaints or from practicing engineers via concerns about high levels of errors in the engineering work processes, it is not reasonable to impose onerous reporting and auditing requirements in the CPD program.

The Working Group has reviewed the CPD programs of the other 9 provinces and 2 territorial regulators [R8 through to R18]. Appendix 2 summarizes the PDH credit requirements of the engineering regulators in Canada. Most of these regulators appear to have modeled their CPD programs after the APEGA CPD program and made changes to meet their own needs. The APEGA CPD Program is fairly comprehensive and the Working Group believes it is a good template to use for the CPD program for Ontario. However, there are a few changes that the Working Group believes will make reporting less onerous on both the licensee and regulator and will provide additional flexibility to tailor the CPD activities to better match the individual training needs of each licensee and the employer's workload demands.

The Working Group believes the APEGA CPD Program template combined with the recommended changes constitute the best practices among the provinces and should be considered for Ontario's engineering CPD program. There are 6 significant changes:

1. Status reporting on an as-requested basis.
2. An annual declaration at the time of fee renewal.
3. Relaxing maximum PDH credits for each activity category.
4. Introducing a component of professional development which maintains ethical standards.
5. Reducing the mandatory PDH credits for more experienced licensees.
6. A process for the licensee to self-reactivate his/her practice.

APEGNB only requires its license holders who have been selected for assessment to submit their CPD status reports. The Working Group believes this is a best practices approach. Ontario has approximately 80,000 licensed engineers. CPD programs typically apply only to practicing engineers. However, even if only 50 or 60% of license holders are practicing engineers, this still constitutes a large number of status reports that would need to be submitted annually. Most of these reports would never be assessed by PEO. A more efficient process is to have PEO select the licensees annually that PEO intends to assess and only have those individuals report their CPD status. PEO would use a sampling method to select licensees for CPD assessment based on an assessment of the risk in different professional practice areas. Experience gained monitoring the CPD program and the risk factors should result in adjustments to the sampling methodology in order to minimize public risk on an ongoing basis.

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In order for PEO to operate a sampling program based on risk factors, PEO will need to request some additional data from licensees when they renew their licenses annually regarding the nature of their work and the environment under which the work is performed (eg: working alone or in a team, with or without a formal engineering quality assurance program, etc.). PEO should also determine and report on the effectiveness of the CPD program periodically and make adjustments to the program based on the experience gained.

To make sure licensees do not forget about their CPD obligations and to remind them of the possibility PEO will ask them to report status on short notice, there will be a need to revise the current on-line and hardcopy fee renewal forms to include an annual declaration with a check-off acknowledging the CPD program requirements. The declaration would state that the licensee understands the requirements of the CPD program, has planned his/her CPD activities and will report the status of their CPD activities within 60 days of a request to do so by PEO.

The 60 day period is being recommended so that licensees will not need to ask for extensions to accommodate normal project activities such as out of town field trips. Extended vacations and other extended trips may require the licensee to request an extension to the 60 day CPD status reporting deadline.

The third change involves relaxing the maximum credits on each of the activity categories. APEGA's CPD program has relatively modest annual limits on PDH credits in each activity category (see Appendix 3) even though the overall PDHs are monitored over 3 years. The effect of these annual limits is to force the licensee to spread their CPD activities over a wider range of activities every year. To mitigate the professional development distortion this could cause, APEGA allows carryover of unused credits for 2 years. Since there are no published data that demonstrates the effectiveness of this regulatory restriction, the Working Group suggests this restriction should be relaxed because it reduces the flexibility of the CPD program to meet the immediate training needs of the licensee and the workload demands of the employer. The Working Group suggests a more flexible approach is to increase the maximum PDH credits for any activity category to 50% of the 3 year requirement and to eliminate the annual restriction. Also to make sure that a licensee does not use the additional flexibility to circumvent the professional development objectives of the CPD program, the CPD Review Board should have the authority to impose consequences if a licensee is accumulating PDH credits with no legitimate professional development value.

The fourth change is to recognize the reduced CPD requirements of experienced engineers as they move from independent detailed engineering work in the initial phase of their careers to review, supervise and direct engineering work of others in the later phase of their careers as evidenced by Engineers Canada labour market studies [R5]. The Working Group suggests that the mandatory 240 PDHs credits over 3 years used by most Canadian engineering regulators is appropriate for the first 25 years of experience to age 50, but at age 50 the requirement should drop to 180 PDHs and at age 60 it should drop to 120 PDHs.

APEGA requires licensees who suspend their practice for more than 2 years to submit a request to the CPD Practice Review Board to reactivate his/her practice. The Working Group

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is comfortable with this process for a quick reactivation but feels it should also be possible for the licensee to self-reactivate their practice by complying with the 3 year requirements of the CPD Program and submitting objective evidence to PEO that the CPD activities have been completed.

5. Conclusions

The engineering regulators in eight provinces have adopted mandatory CPD programs. One province and 2 territorial regulators have voluntary programs. These 11 regulators have specific requirements for PDH credits. Ontario's PEO has not issued a formal CPD policy with program details and requirements regarding PDH credits. Ontario licensees are left to their own discretion as to how many PDHs are appropriate for their situation. Ontario has an on-line tool that allows licensees to report PDHs but reporting is also voluntary.

Alberta's CPD program seems to have been the template used by other provinces to develop their CPD program. By adopting a mandatory program similar to APEGA's CPD program with some changes to reduce the reporting burden on licensees and improve flexibility to meet their needs, Ontario would come into alignment with the Engineers Canada *Canadian Framework for Licensure – Continuing Professional Development* [R4].

PEO can achieve a reasonable level of assurance that licensees are meeting CPD requirements by using a sample-based reporting approach. PEO can use a sampling method to select licensees for CPD assessment based on an assessment of the risk in different professional practice areas. Experience gained monitoring the CPD program and the risk factors should result in adjustments to the sampling methodology in order to minimize public risk on an ongoing basis.

In order for PEO to operate a sampling program based on risk factors, means PEO will need to request some additional data from licensees when they renew their licenses annually regarding the nature of their work and the environment under which the work is performed (e.g.: alone or in a team, with or without a formal engineering quality assurance program, etc.).

If a sampling system is used to report CPD status, it will be necessary to remind licensees of their CPD obligations each year during their fee renewal and to the possibility of a request from PEO on short notice to submit a CPD status report.

The most experienced engineers (over 25 years work experience) require less professional development to maintain an adequate level of competency than less experienced engineers.

Removing the annual maximum limits on CPD activity categories would simplify reporting and make the CPD program more flexible to better match the needs of the licensee and employer. However, to discourage excessively narrow CPD plans, setting a maximum limit for each activity category at 50% of the minimum 3-year PDH requirement is prudent.

Standard templates and forms from PEO for CPD Plans and Status Reports would help licensees manage their CPD activities and report status to PEO conveniently on an as requested basis.

6. Recommendations

The Working Group recommends a program that is a modified version of the Alberta APEGA program, using the same program guidelines except as follows:

- a) Mandatory status reporting of PDH's only upon request by PEO. The regulator should make those requests using a sampling program (e.g.: an attribute sampling plan). The sampling methodology should be adjusted regularly to minimize public risk and the effectiveness of the CPD program should be determined and reported.
- b) Annual reminder for the licensee to be aware of the CPD program requirements, to undertake appropriate CPD activities for the work performed and to report CPD status to PEO within 60 days upon request.
- c) Voluntary preparation of a CPD Plan and retained by the licensee (or employer). A sample CPD Plan template and guidelines from PEO should be available to assist licensees to develop an individual CPD plan. The CPD Plan is not submitted to PEO.
- d) Reducing the minimum PDH credits from 240 over 3 years down to 160 over 3 years in the year the license holder reaches age 50 or older and down to 120 over 3 years in the year the license holder reaches age 60 or older. Also relaxing the maximum PDH credits for each of the six activity categories to 50% of the 3 year total.
- e) The CPD Review Board randomly requests a limited number of license holders to submit their CPD status reports for the 36 month period prior to their license renewal date. The CPD Review Board allows 60 days for license holders to comply with the request. Submission deadline extensions may be requested for valid reasons such as extended vacations, field trips or illness. The CPD Review Board should request a status of completed CPD activities and may request a copy of objective evidence of completion of the reported activities. The basic review should ensure compliance with the PDH credit requirements. After an initial review, the CPD Review Board may choose to expand the scope of the review to include an assessment of whether the CPD activities are appropriate for the individual's engineering practice. In the first 2 years that the mandatory CPD program is implemented, the licensee has the option of reporting a full 3 year period using prior historical data or reporting shorter periods and pro-rating the 3-year PDH requirements (e.g.: 1 year with 1/3 of the required PDH's or 2 years with 2/3 of the required PDH's).
- f) Exemptions should be available for licensees who do not practice. Reactivation of practice would require approval of the CPD Review Board or alternatively the licensee can self-reactivate his/her practice immediately after completing the 3-year PDH requirements within 3 years and submitting a status report to PEO with objective evidence of completion of the reported activities.

A description of the proposed CPD Program for Ontario is summarized in Appendix 4.

7. Abbreviations

The following abbreviations have been used in this document:

APEGA – Association of Professional Engineers and Geoscientists of Alberta

CEU – Continuing Education Unit

CPD – Continuing Professional Development

CPE – Continuing Professional Excellence

EC – Engineers Canada

OSPE – Ontario Society of Professional Engineers

PDH – Professional Development Hour

PEA – Ontario Professional Engineers Act

PEO – Professional Engineers Ontario

QA – Quality Assurance

8. References

The following references have been used to produce this document:

- R1. Engineers Canada, 2004, *Guideline on Continuing Professional Development and Continuing Competence for Professional Engineers*,
<http://www.engineerscanada.ca/e/files/guidelinecompetency2004.pdf>
- R2. Engineers Canada, 2004, *Step-By-Step Guide for the Preparation and Implementation of an Individual Continuing Professional Development Plan*,
<http://www.engineerscanada.ca/e/files/interpretiveguide-5.pdf>
- R3. Engineers Canada, Status Table, *Continuing Professional Development Programs in Canadian Engineering Associations*,
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9. Acknowledgements

OSPE would also like to acknowledge the contributions made to this document by members of its Continuing Education Working Group. They include:

- Paul Acchione, P. Eng., Chair
- Richard Hohendorf, P. Eng.
- Derek Pinder, P. Eng.
- Shannon Pole, E.I.T.
- Oskar Sigvaldason, P. Eng.
- Lee Weissling, OSPE Staff
- Shannan McShane, OSPE Staff

Appendix 1 – Continuing Education Working Group - Guiding Principles

- a) The proposal should focus on competency issues that impact public safety (eg: that the professional engineer, acting alone or in combination with appropriate supervision, is capable of producing quality professional engineering work for the specific task or project assigned to them).
- b) The proposal should reflect the fact that many engineering tasks are unique or innovative and result in new knowledge and experience as an inherent part of completing the task. The a priori lack of such knowledge and experience should not prevent an engineer from being considered competent to begin the work.
- c) The proposal should reflect the needs of both professional engineers in a consulting engineering environment operating under a Certificate of Authorization and professional engineers in an industrial environment operating without a Certificate of Authorization.
- d) The proposal should recognize both the impact on public safety of the engineering work being performed and the quality assurance processes used to prevent or detect errors.
- e) The proposal should encompass the different employment settings (eg: working alone versus working within a large integrated engineering team).
- f) The proposal should acknowledge that there are various ways to develop and maintain professional competency and should not exclude any legitimate method or mandate that any one method must be used exclusively if other viable methods are available.
- g) The proposal should not impose an undue burden on the professional engineer, their employer or the regulator (PEO) with excessive amounts of documentation and record keeping.
- h) The proposal should recognize that some engineers and engineering organizations already maintain records to comply with industry, national or international standards for continuing education and competency assurance.
- i) The proposal should ensure that any required record of training or capability assessment for a professional engineer should be portable from one job to another or from one employer to another.
- j) The proposal should ensure that any required records are in a form that permits the regulator (PEO) to ascertain if the individual has met continuing professional development requirements in the event of a complaint or for potential future practice reviews.
- k) The proposal should not require professional engineers who do not prepare, review or approve professional engineering work to comply with the continuing professional development requirements.

Appendix 2 – CPD Programs for Canadian Professional Engineers

Minimum PDH Requirements

<u>Province/Territory</u>	<u>Regulator</u>	<u>Type</u>	<u>Minimum Requirement</u>
Alberta	APEGA	Mandatory	240 PDHs over 3 years
Saskatchewan	APEGS	Mandatory	240 PDHs over 3 years
New Brunswick	APEGNB	Mandatory	240 PDHs over 3 years
Nova Scotia	Engineers NS	Mandatory	240 PDHs over 3 years, 60 in any year
Prince Edward Island	Engineers PEI	Mandatory	240 PDHs over 3 years, 60 in any year
Newfoundland and Labrador	PEGNL	Mandatory	240 PDHs over 3 years, 60 in any year
Quebec (1)	OIQ	Mandatory	30 PDHs over 2 years
Manitoba (1)	APEGM	Mandatory	240 PDHs over 3 years
British Columbia	APEGBC	Voluntary	240 PDHs over 3 year
Ontario (2)	PEO	Voluntary	No minimum specified
Yukon	APEY	Voluntary	240 PDHs over 3 years
Northwest Territories and Nunavut	NAPEG	Voluntary	240 PDHs over 3 years

Notes: (1) With the exception of Quebec and Manitoba there are maximum PDH credits in any year for activities in each activity category. For institutions that issue Continuing Education Units (CEUs) for formal training activities, the typical conversion is 10 PDHs for each CEU.

(2) Ontario has an on-line tool at its “members only” website page to register PDHs but has not issued any formal requirements on how many PDHs are expected. This is left to each license holder to decide for their own circumstances.

Appendix 3 – Alberta’s APEGA Mandatory CPD Program

Alberta Program Summary:

- Mandatory program for license holders.
- Exemptions permitted:
 - students, exam candidates and members-in-training (interns).
 - non-practicing professionals or professionals working exclusively out-of-province, non-practicing declaration submitted annually, cannot practice in the province during non-practicing status.
 - part-time work - upon request to the Practice Review Board, reduced requirement typically 30 PDH per year in any activity category.
 - unemployment, parental/maternity leave, health problems/disability, full time studies - upon request to the Practice Review Board, reduced requirement typically 30 PDH per year in any activity category, or, alternatively a non-practicing declaration if you don't practice.
- Practice Review Board review to resume practice after non-practice exemption granted for 2 years.
- Mandatory reporting of PDH hours against each category of activities for previous 12 months. Detailed activity record submitted only on demand.
- CPD Plan is recommended by not mandatory.
- Practice Review Board may initiate a detailed review and require submission of detailed activity records or proof of completion of activities up to 3 years prior. Practice Review Board may subsequently request a practice review.
- Failure to produce required records may result in removal from the APEGA register of license holders.
- Minimum Requirements:
 - 240 PDHs over 3 years
 - 6 activity categories:
 - professional practice, 15 hours work = 1 PDH, 50 PDHs max/yr.
 - formal activity, if > ½ day, 1 hour attendance = 1 PDH, 1 CEU = 10 PDH, 30 PDHs max/yr.
 - informal activity, if < ½ day, 1 hour activity = 1 PDH, 30 PDHs max/yr.
 - participation, 1 hour activity = 1 PDH, 20 PDHs max/yr., 10 PDHs max/yr. for community services

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- presentations, 1 hour preparation & deliver = 1 PDH, 20 PDH max/yr. (unique presentations only).
- contributions to knowledge, 30 PDHs max/yr. with:
 - codes and standards, 1 hour committee work = 1 PDH
 - patents, 1 registered patent = 15 PDH
 - peer reviewed publications, 1 paper = 15 PDHs
 - completed Master or Ph.D., each thesis = 30 PDHs
 - book publication, 1 book = 60 PDHs over 2 years
 - article publication or company report, each = 10 PDHs, 10 PDHs max/yr.
 - reviewing articles for publications, 1 hour = 1 PDH, 10 PDHs max/yr.
 - editing papers for publication, 1 hour = 1 PDH,
- at least 3 activity categories each year.
- carryover of unused credits for 2 years from activity completion date.
- failure to submit annual CPD reports may result in a Practice Review Board review of your activities for 3 years. Failure to produce records may result in removal from the register. Failure to satisfy the Board that you are complying with the CPD program requirements may result in a practice review and the Board may determine consequences.

Note: for more details refer to the APEGA “Continuing Professional Development Program”, June 2006, at:
<http://www.apega.ca/pdf/Guidelines/ProfessionalDevelopment.pdf>

Appendix 4 – A Proposed Mandatory CPD Program for Ontario

Program Summary:

- The Ontario CPD Program should adopt the detailed requirements in the APEGA CPD Program as described in their CPD Program document dated June 2006 [R8] except for those changes described below.
- The Ontario CPD Program should be mandatory for all license holders. Documentation is only submitted to the regulator on request. PEO uses a sample inspection program to identify individuals that must submit a status report. PEO should monitor risk factors and adjust the sampling methodology to maximize the effectiveness of its assessment resources and to minimize public risk. Any useful results from PEO's licensee CPD program assessments (aggregated data without names) should be made public in Engineering Dimensions to help licensees improve their CPD plans.
- Mandatory annual statement of compliance check-off identifies that the licensee is aware of the CPD program requirements, is undertaking appropriate CPD activities for the work performed and will report CPD status to PEO within 60 days upon request. The compliance statement check-off is made on the annual fee renewal form (hardcopy or on-line). In many cases, course completion certificates or company training records provide objective evidence. In some cases the only objective evidence available for unevaluated computer-based training (CBT) may be a record of the time and date of taking the CBT and a screenshot of the first page. If there is a question as to whether an individual actually took the CBT, the PEO Review Board may have to query the individual on CBT content.
- PEO should create a CPD Review Board to administer the CPD program and to decide on consequences for non-compliance with CPD Program requirements.

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- Exemptions permitted:
 - students, exam candidates and members-in-training (interns).
 - non-practicing professionals or professionals working exclusively out-of-province. A non-practicing declaration is submitted annually. The licensee cannot practice in the province during non-practicing status except under the supervision of a practicing licensed professional engineer.
 - part-time work - upon request to the CPD Review Board, reduced requirement typically to 30 PDHs per year.
 - unemployment, parental/maternity leave, health problems/disability, full time studies - upon request to the CPD Review Board, reduced requirement typically to 30 PDHs per year, or, alternatively a non-practicing declaration if the licensee is not practicing independently.
- Reactivation of practice would require approval of the CPD Review Board or alternatively the licensee can reactivate his/her practice immediately after completing the 3-year PDH requirements within 3 years and submitting a CPD status report to PEO with objective evidence of completion of the reported activities.
- Voluntary development of a CPD Plan is encouraged. The CPD plan is kept by the licensee (or employer). A sample CPD Plan template and guidelines from PEO should be available to assist licensees to develop an individual CPD plan. The CPD Plan is not submitted to PEO.
- Mandatory recording of PDHs for CPD activities against each category of activities for the previous 36 months. Record of hours, activity description and objective evidence of completion is submitted to PEO only on demand. A sample CPD Status Reporting form/spreadsheet should be available from PEO for use. In many cases, course completion certificates or company training records provide objective evidence. In some cases the only objective evidence available for unevaluated computer-based training (CBT) may be a record of the time and date of taking the CBT and a screenshot of the first page. If there is a question as to whether an individual actually took the CBT, the PEO Review Board may have to query the individual on CBT content.
- Minimum PDH Credit Requirements:
 - 240 PDHs over 3 years for engineers under age 50 (typically less than 25 years experience). 180 PDHs over 3 years in the year the licensee reaches age 50 or older and 120 PDHs over 3 years in the year the license holder reaches age 60 or older.
 - CPD in at least 3 activity categories out of 6 each year is recommended but not mandatory.

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- PDHs are reported in the following 6 activity categories with no activity category representing more than 50% of the required PDHs over 3 years:
 - **Professional practice**, each 15 hours work = 1 PDH.
 - **Formal training with evaluation**, each hour attendance = 1 PDH, 1 CEU = 10 PDHs. (Note that this can include computer-based training.)
 - **Informal training without evaluation**, each hour attendance or self-study = 1 PDH, 1 CEU = 10 PDHs. (Note that this can include computer-based training.)
 - **Peer participation**, each hour of mentoring, technical committee or review activity = 1 PDH.
 - **Presentations**, each hour preparation and delivery = 1 PDH (repeat deliveries are not counted).
 - **Contributions to knowledge:**
 - codes and standards, each hour committee work = 1 PDH
 - patents, each registered patent = 15 PDH
 - peer reviewed publications, each paper = 15 PDHs (for each named contributor)
 - completed Master or Ph.D., each thesis = 50 PDHs
 - book publication, each book = 60 PDHs
 - article publication or company report, each = 10 PDHs.
 - reviewing articles for publications, each hour = 1 PDH.
 - editing papers for publication, each hour = 1 PDH.
- the CPD Review Board requests the license holder to submit their CPD documentation for the 36 month period prior to their license renewal date. The CPD Review Board allows 60 days for license holders to comply with the request. Submission deadline extensions may be requested for valid reasons such as extended vacations, field trips or illness. The CPD Review Board should request a status of completed CPD activities and may request a copy of objective evidence of completion of the reported activities. The basic review should ensure compliance with the PDH credit requirements. After an initial review, the CPD Review Board may choose to expand the scope of the review to include an assessment of whether the CPD activities are appropriate for the individual's engineering practice. In the first 2 years that the mandatory CPD program is implemented, the licensee has the option of

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reporting a full 3 year period using prior historical data or reporting shorter periods and pro-rating the 3-year PDH requirements (eg: 1 year with 1/3 of the required PDH's or 2 years with 2/3 of the required PDH's).

- Failure of the licensee to produce the required records may result in the removal of the licensee's name from the PEO register of license holders.
- Failure to satisfy the CPD Review Board of compliance with the CPD program requirements may result in a practice review and the CPD Review Board may determine consequences.
- If the CPD Review Board finds evidence that the licensee is gaming the CPD reporting process to meet the PDH credit requirements, without contributing to the licensee's professional development, the CPD Review Board may determine consequences.

Examples of Individual Situations:

Due to the flexibility provided by the proposed rules an individual can satisfy their CPD obligations over 3 years by a combination of up to 6 activity categories. No activity category can represent more than 50% of the required PDHs over 3 yrs.

An individual under 50 years old who does at least 1800 hours of engineering work over 3 years will qualify for 120 PDHs. That means 120 hours over 3 years will need to come from the other 5 activity categories. This is 40 hours of professional development a year.

An individual between 50 and 60 years old who does at least 1350 hours of engineering work over 3 years will qualify for 80 PDHs. That means 90 hours over 3 years will need to come from the other 5 activity categories. This is 30 hours of professional development a year.

An individual over 60 years old who does at least 900 hours of engineering work over 3 years will qualify for 80 PDHs. That means 80 hours over 3 years will need to come from the other 5 activity categories. This is about 20 hours of professional development a year.

An individual who does not work can request a non-practicing exemption and be excused from CPD requirements but the individual cannot practice independently during the exemption.

An individual who does not work or works part time can request a reduction in CPD credit requirements. These can be lowered by the CPD Review Board down to 30 PDHs per year depending on the amount of part time work and the reason the individual cannot work. The individual can continue to work independently.

An individual under 50 years old who does not work and does not request a reduction in CPD credit requirements would need to earn 240 PDHs of professional

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development over 3 years in the other 5 activity categories. This is 80 hours or 2 weeks of professional development a year.

An individual between 50 and 60 years old who does not work and does not request a reduction in CPD credit requirements would need to earn 180 PDHs of professional development over 3 years in the other 5 activity categories. This is 60 hours or 1.5 weeks of professional development a year.

An individual over 60 years old who does not work and does not request a reduction in CPD credit requirements would need to earn 120 PDHs of professional development over 3 years in the other 5 activity categories. This is 40 hours or 1 weeks of professional development a year.