



Final Report

CONTINUING PROFESSIONAL DEVELOPMENT, COMPETENCE AND QUALITY ASSURANCE TASK FORCE
November 20, 2015

Executive Summary

This Task Force was directed by Council to prepare a concept for a comprehensive approach to continuing professional development and quality assurance. The approach developed by the Task Force was not intended to solve a particular problem. Rather, as stated in the Terms of Reference for this Task Force, "Council is implementing this policy in recognition of the fact that PEO should be proactive in regulating the profession. A proactive stance focuses on preventing faulty engineering practice rather than relying on a system for punishing licence holders for practice failures that could possibly have caused harm."

The Task Force has developed the framework for a proposed continuing professional development (CPD) program that

- i) recognizes that there are both practising and non-practising licence holders
- ii) focuses on maintaining provision of competent engineering services rather than introducing a bureaucratic hurdle
- iii) ensures CPD requirements will be based on the risk that the work of the individual licence holder presents to the public and the profession
- iv) encourages licence holders and their employers to adopt risk mitigation measures within the work environment
- v) improves on programs implemented by associations in other provinces

The report provides the basic concept of a procedure for determining the CPD requirements for individual licence holders based on a number of factors that may or not be present in their practice environment and which may contribute to the risk to the public. The program allows licence holders and their employers to make independent choices regarding how they will mitigate this risk through either continuing professional development or the implementation of various best practice measures. Having finished its work the Task Force is recommending that Council establish a new Task Force for the purpose of developing the detailed structure of the program outlined in this report.

Introduction

In September 2013, OSPE presented a report on continuing professional development (CPD) to PEO Council. The report recommended that PEO adopt a modified version of the program used by the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

After review of the report by the Professional Standards Committee and consultation with the PEO membership, Council decided to create the Continuing Professional Development, Competence, and Quality Assurance Task Force (Task Force).

Council approved the Terms of Reference (ToR) and created this task force on March 21, 2014. The ToR calls for the Task Force “to prepare a plan for a comprehensive program of continuing professional development and quality assurance”. Subsequently, ten PEO volunteers, each representing a different demographic of PEO membership as described in the Terms of Reference, were selected to sit on the Task Force. Annette Bergeron, as representative of the Executive Council, was installed as chair. In addition to the Task Force, due to the importance of this matter, a review network was established. That network consists of 60 members who sought to participate on the Task Force but were not selected. The purpose of this network is to consider and comment on proposals made by the Task Force in order to refine the final output.

On October 15, 2014 the Honourable Paul R. Bélanger, Commissioner of the Elliot Lake Inquiry, released his report on the collapse of the Algo Mall in Elliott Lake. Among the recommendations in the report one was of significance for the Task Force.

Recommendation 1.24

The Professional Engineers of Ontario (PEO) should establish a system of mandatory continuing professional education for its members as soon as possible, and in any event no later than 18 months from the release of this Report.

The members of the Task Force noted that the Council decision to proceed with planning for a CPD program was made before the issuance of the Bélanger Report. However, the Task Force also recognizes the possibility that, due to the high profile afforded to the incident at the Algo Mall by the media and the Inquiry, the government will pressure all parties to adopt the recommendations. The Task Force feels that Council must be prepared to respond to government by demonstrating a progressive concept.

During the period from September 18, 2014 to October 7, 2015 the Task Force held 12 meetings. The Task Force considered many pieces of research on competency assessment and continuing professional development, arranged for stakeholder consultation through focus groups, polling and written submissions and has developed a set of guiding principles that define a future PEO continuing professional development and quality assurance program.

Background

PEO owes it to licence holders and the public to make a decision on CPD based on a thorough investigation of the facts. As the Task Force’s Terms of Reference reported, “PEO Council has formed at least three task forces and committees to investigate the need for and the ways of implementing competency assurance or continuing professional development. Council has also conducted two membership surveys that found strong support for the implementation of a continuing competency

program, created but did not implement the Professional Excellence Program and passed motions directing the Registrar to develop a system of mandatory self-declaration of competence maintenance.”

Except for APEGBC and PEO, all provincial and territorial engineering associations have mandatory continuing professional development requirements for all practising licence holders. The programs in place require licence holders to complete 240 hours of continuing professional development over a three year period. In most programs, practising as a professional engineer can account for up to 50 hours per year. The programs also allow the licence holder to attribute up to 10 hours per year of non-engineering related community participation and 10 hours per year of engineering related participation (mentoring, judging science fairs, or serving on public committees). Formal educational activities, authoring engineering papers, presenting at seminars or conferences, and other contributions to the knowledge of the profession can also be applied towards the licence holder’s CPD requirements.

PEO has consistently relied on licence holders to comply with their ethical obligation “to act at all times with competence in the performance of any professional engineering services that are undertaken.” (s. 7.1.v, O. Reg. 941). Compliance with this obligation would require that licence holders determine their capability whenever they take on engineering work. However, numerous psychological and pedagogical studies have found that self-assessment of competence is notoriously unreliable. A form of natural cognitive bias (the Dunning-Kruger effect) leads the vast majority of people in every profession and activity to consistently overestimate their competence in skills and knowledge. Many other professional regulators in Canada and elsewhere have acted on this information and removed reliance on self-assessment of competence from their regulatory policies. In its place, these regulators have instituted competence maintenance programs that incorporate externally assisted self-assessments, formal practice reviews conducted by trained evaluators, and compulsory education programs.

The Task Force studied the programs put in place by doctors, physiotherapists, nurses, architects, dentists and other professions and, in some cases, the policy reviews that gave rise to these programs. The larger professions in Ontario have, for the most part, abandoned reliance on self-assessment of competence and have also moved away from simple continuing professional development programs that merely count hours or equivalents.

The Task Force recognized that professional engineering practice differs from that in other professions primarily because the work of engineers is generally subjected to scrutiny either because it is done in teams or because the output of the work is reviewed by regulators. This additional layer of quality assurance, in many cases, reduces the risk to the public associated with the provision of professional engineering services.

Guiding Principles for a CPD Program

1. CPD Program must be necessary to improve the regulation of professional engineering

The first principle that the Task Force adopted stipulates that PEO should not implement a CPD program that is essentially “window dressing”. Those advocating for a CPD program often point out that PEO is the only professional engineering association in Canada that does not have a CPD program. The Task Force felt that no program should be put in place solely for PEO to say they have a program.

PEO’s role as mandated by the *Professional Engineers Act*, is to regulate the practice of professional engineering in order that the public interest may be served and protected. It is clear that decisions made by PEO must not be made on the basis of member self-interest, the interest of the profession, or the

interest of engineering companies. Whatever policies are adopted must fulfill PEO obligation to the public.

The Task Force has established a need for a CPD program based on protecting the public interest.

2. CPD Program Requirements must be Relevant for Practice

Following from this principle, the Task Force concluded that whatever CPD program is established it must be relevant to the practice of professional engineering and it must be done in the interest of safeguarding public health, safety and welfare. For this reason, the Task Force also concluded that PEO should not follow the lead of most other provincial associations by adopting a program that allows licence holders to acquire CPD credits for activities unrelated to the practice of professional engineering.

A CPD program should be implemented only to facilitate the obligations that professional engineers have already taken upon themselves by accepting the privilege of licensure. A CPD program should be tied to the engineering services provided by the practitioner and the skills and knowledge needed to perform that work.

3. CPD Program must be Pragmatic

Goals established by professional regulatory bodies for a CPD program vary from profession to profession. Some professions specifically identify the need to push the profession to higher levels of skills and knowledge. The objective of this approach is to continually raise the standard of practice within the profession.

Commissioner Bélanger seems to have this conception of CPD in mind as the recommendation states a mandatory PEO CPD program should enable “members to expand and gain greater expertise and competence in their areas of practice”.

The Task Force decided that introducing a CPD program for this purpose was unnecessary. Not all practitioners work at the leading edge of science and technology. Those that do will be driven by employers or market forces to augment their skills and knowledge. The Task Force agreed that the purpose of any future PEO CPD program should be to ensure that practitioners maintain a level of knowledge and skill commensurate with safeguarding the public.

4. CPD Program must recognize Diversity of Practitioners’ needs and resources

The Task Force agrees that diversity of both engineering practices and member demographics is not an excuse for PEO to avoid implementing a CPD program. Instead the program should be designed with diversity in mind. Consequently, PEO should not rely on a one size fits all CPD approach as done in other provinces. A single all-encompassing CPD program would be either too onerous for some licence holders or watered-down to meaninglessness for others. Most importantly, the program should allow professional engineers the opportunity to design their CPD plan to align with their area of practice and the available professional development opportunities.

PEO must ensure that licence holders in every area of the province are reasonably accommodated and will have suitable CPD resources available to meet the program requirements. Therefore the program should be flexible to accommodate different methods of skills and knowledge delivery.

Since a CPD program should be aimed at improving knowledge and skills utilized in practice, the program needs to treat practising and non-practising licence holders differently. Some members of the

Task Force have expressed concern regarding the need for non-practising engineers to have any CPD requirements. However, there is recognition that non-practising licence holders who wish to continue to hold a licence that provides practice rights, even if they do not exercise those rights, have the same benefits and obligations as those practising. For instance, non-practising licence holders must understand that, even though they are in a non-practising capacity, any act or statement made by them when they identify themselves as licence holders is subject to the same duty of care as a practising member.

Every practitioner should be familiar with the role of licence holders and obligations established in the *Professional Engineers Act* and its regulations. They should be aware of changes in the regulations that govern the profession including professional standards, as well as changes in both statutory and common law that may impact on them whether they are practising or not. PEO's practice advisory unit has found that a large percentage of the membership is either unfamiliar with or confused about many of the fundamental provisions established in the Act and its regulations. For instance, based on questions brought to the attention of the Professional Standards Committee, a large majority of the membership is confused about the meaning of the term "public" in the Act.

The existence of a similar situation in Quebec led to the introduction of mandatory professionalism courses by the OIQ. The Task Force has suggested that a minimum level of CPD should ensure that both practising and non-practising licence holders have a current understanding of the Act and its regulations as well as best practices for professionalism described in such PEO Guidelines as the *Guideline for Professional Practice* and the *Guideline for Use of the Professional Engineer's Seal* .

5. CPD Program Requirements must be Scalable and Proportional to Risk to the Public

The Task Force decided to address the diversity of practice among licence holders by adopting a risk-based approach to CPD. That is, CPD requirements would be correlated to the amount of risk to the public the practitioner's work entails. The Task Force has spent much of its meeting time devising a methodology to categorize the risk to the public posed by individual practitioners.

The risk attributable to practising engineers is often mitigated through the implementation of risk management measures within firms and industry or through oversight of the work by regulatory authorities. For instance, the nuclear industry undoubtedly has a high degree of risk associated with it. However, industry and government have mitigated that risk by creating a heavily regulated system with both internal checks and balances and regulatory oversight.

The task force views CPD as only one of a variety of methods that may contribute to a reduction in risk to the public. Therefore, to establish a licensee's individual CPD requirement, each licensee would carry out a standardized Engineering Practice Risk Review of his or her practice. The parameters for such a review could include items such as the following:

1. Practitioner's area of practice or discipline
2. Practitioner holds an external industry certification that requires CPD
3. Percentage of time practising vs. management, marketing, etc.
4. Has practitioner's scope of practice changed recently?
5. Does practitioner work in an emerging field of technology?
6. Practitioner's responsibility level (A-F) according to Classification Guide of Engineering Responsibility Levels

7. Severity of errors or omissions in work performed (economic, environmental, number of persons affected).
8. Severity of consequences possible due to practitioner error
9. Is practice covered by professional liability insurance?
10. Does practitioner's work follow well established industrial codes and standards?
11. Is the firm audited as part of an industry approved quality assurance program?
12. Size and structure of organization for or through which the practitioner provides engineering services.
13. Internal quality assurance programs or peer reviews.

Based on the outcome of the risk review, the practitioner would be assigned CPD requirements in an effort to further address the residual risks not addressed by other initiatives. The Task Force believes that this approach will encourage many firms or individual practitioners to adopt risk management procedures such as quality assurance programs or peer reviews as alternatives to compulsory CPD as the sole means of reducing risk. Under these conditions CPD requirements for a practitioner would be commensurate with the actions taken by the practitioner or firm while still achieving PEO's goal of reducing the overall risk associated with the member's engineering practice.

To accommodate these considerations the Task Force has suggested that the CPD program have levels of CPD requirements assigned according to:

Tier	Category	CPD Requirements
1	Non-practising	Professionalism (Ethics, Regulatory, Legal)
2	Practising	Tier 1 + self-directed technical commensurate with engineer's practice risk review
3	Specialist	Tier 1 + Tier 2 + mandatory technical

Additional tiers such as retired status or different categories of practising may be considered for variations in risk associated with different industries or types of business organization. The CPD requirements for particular areas of practice could be flexibly adapted to deal with issues reported by clients, employers or government. For example, the Ontario government has recently reported to PEO concerns regarding the quality of work provided by professional engineers in the area of environmental site assessment. Most of these problems indicate a lack of understanding of the regulations or of best practices available to the industry. Most of these problems are attributable to small firms that do not have the resources to interpret the regulations or investigate best practices. By creating a CPD requirement for these specific practitioners and ensuring that the appropriate training is made available, PEO benefits both these practitioners and the public.

Some members of the Task Force have suggested that specific areas of practice need recognition as specialist categories. The introduction of specialist categories needs to be considered in light of one of the other recommendations from the Bélanger Inquiry. That recommendation called for a structural assessment of buildings to be carried out by a Structural Engineering Specialist.

6. CPD Program must be Effective

Like all policy implementations, PEO must have a means for determining whether the program is effective. To accomplish this task there must be a stated goal for the program, a baseline, and a means for measuring progress towards the goal. Further consideration must be given to how this data can be

obtained. PEO will likely need to obtain advice on how to do this from experts with experience in development and assessment of continuing professional development programs.

Also, PEO must have a system to ensure that members who consider their work to be low risk are not actually doing high risk work. For instance, control and software engineers have reported that they have very little or no impact on the public safety. This may be the result of a misunderstanding of who the public is (the public includes workers in the plant and the firms and consumers to whom completed products are distributed) or what kinds of risks professional engineers are responsible for preventing or mitigating.

Finally, PEO must ensure that the program provides assistance to professional engineers for both determining their individual CPD requirements and for locating suitable means of complying with those requirements. PEO will have to provide guidance documents and staff support in order to assist licence holders as they work through the risk review form.

Consultation

Each of the previous attempts initiated by PEO Council to implement a CPD program was abandoned in the face of opposition. There are always contrary opinions that make a decision challenging to implement. Opposition can only be countered by dealing with the concerns of those opposed either through better design of the program or through communication that explains the program in a way that addresses objections.

Therefore, the Task Force has made considerable effort to consult with PEO licence holders and to ensure that membership is aware of the details of the program. The Task Force Chair, Annette Bergeron, presented the proposed program at Town Hall meetings across the province during the period of September to November 2015.

The Task Force also commissioned Ipsos Reid to carry out a policy research project to ascertain attitudes and perceptions of PEO licence holders towards the proposed CPD program. The project had two components. First, Ipsos Reid conducted three focus groups with 29 PEO members as participants. The major take-aways from these discussions were:

- CPD must be mandatory if it is to work. Participants in the focus groups stated that practitioners were unlikely to voluntarily undertake CPD and report their activities. This is borne out by experience. Currently, PEO has a voluntary program for reporting CPD. Only 15 licence holders have taken advantage of this program.
- The participants overwhelmingly agreed that knowledge and skills required for practising as professional engineers is constantly changing and that it is important for engineers to remain up-to-date.
- The observers noted that generally the participants assumed that mandatory means PEO would set compulsory courses for all practitioners. This is a misunderstanding since mandatory refers to the reporting aspect of the program only.
- The participants noted that the principles of the program were clear and set important objectives for the program. However, they also noted that implementation is key to success – program must be well constructed and well communicated.
- The CPD should be flexible on the whole to allow the broad spectrum of engineering fields to participate, while being specialized to provide useful and relevant training to engineering disciplines.

The second component of the policy research project was an on-line survey of licence holders to gauge their reactions to the proposed CPD program. A total of 6,786 licence holders completed the survey. This represents an 8.8% response rate and the margin of error is $\pm 1.14\%$ 19 times out of 20.

The survey indicated that over 80% of PEO licence holders would like to see PEO develop a CPD program based on the principles outlined above. The respondents thought that the principles did a good job of communicating that CPD requirements will be based on a risk review; however, more needs to be done to clarify that the onus is on individual engineers to develop their own CPD plans and that firms may adopt risk management procedures in order to reduce CPD requirements for individual licence holders.

The results of this survey will be a resource that may be used to assist in the refining the design of the program and to develop a communications and education plan to explain the CPD program to all stakeholders.

Proposed Implementation

All PEO licence holders will be required to complete an on-line annual report as part of their licence renewal process (Appendix A). For non-practising licence holders the report will simply be a declaration that they are not practising professional engineering in any capacity. Non-practising licence holders will have no CPD requirements other than a regular ethics and professional practice refresher course. The Task Force has decided that this course is needed in order to ensure that licence holders declaring non-practice status understand what activities are foreclosed to them when making this declaration. They should also understand the ethical obligations and legal consequences of giving opinions on engineering matters even while not employed in an engineering position.

For those who are practising the initial part of the report will be the completion of an engineering practice risk review form. See Appendix B for a draft risk review matrix developed by the Task Force. The form requires licence holders to respond to questions that ascertain the risk associated with their practice and the related best practices and risk mitigation measures employed. Completion of this form will generate the individual CPD requirements.

Appendix C contains example scenarios and, where applicable, example engineering practice risk review forms for a member with 23 years of engineering practice in a consulting firm and a non-practising member.

Appendix D is the beginning of a list of definitions needed to clarify some aspects of the program. The follow-up implementation task force will need to refine these definitions and introduce additional definitions where needed. The implementation task force should prepare a guideline that will assist licence holders with the CPD assessment procedure.

Recommendations

The Task Force is making the following recommendations which will be framed as motions in the accompanying Council briefing note.

1. That Council accept the guiding principles and the basic program elements outlined in the section on Proposed Implementation.

2. That Council direct the Registrar to create Terms of Reference for an CPD program development task force which will be responsible for developing the risk review form, the CPD requirement algorithm, and the criteria for acceptable technical activities and to provide these Terms of Reference to Council for approval at its February 2016 meeting.

3. That Council direct the Registrar to develop and implement a communications plan to notify PEO licence holders and other stakeholders about the proposed continuing professional development and quality assurance program and provide that plan to Council for approval at its February 2016 meeting.

Prepared by the Continuing Professional Development, Competence, and Quality Assurance Task Force
November 20, 2015

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