



**Professional Engineers
Ontario**

GUIDELINE

Conducting a Practice Review

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Notice: The Professional Standards Committee has a policy of reviewing guidelines every five years to determine if the guideline is still viable and adequate. However, practice bulletins may be issued from time to time to clarify statements made herein or to add information useful to those professional engineers engaged in this area of practice. Users of this guideline who have questions, comments or suggestions for future amendments and revisions are invited to submit these to PEO using the standard form included in the following online document: http://peo.on.ca/index.php/ci_id/23427/la_id/1.htm.

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1. PEO Purpose for Guidelines

Professional Engineers Ontario (PEO) produces guidelines for the purpose of educating both licensees and the public about best practices.

For more information on PEO's guideline and development process, which includes PEO's standard form for proposing revisions to guidelines, please read our document:

http://peo.on.ca/index.php/ci_id/23427/la_id/1.htm.

Appendix 3 is the revision form alone.

For a complete list of PEO's guidelines at time of printing, please see Appendix 4. For a real-time list, please visit: http://www.peo.on.ca/index.php/ci_id/1834/la_id/1.htm.

2. Preface

Practice reviews are occasionally ordered by a discipline panel, making it necessary for PEO to provide guidance for how these reviews can be carried out fairly, consistently, thoroughly and in a manner that complies with the purpose of the review. Previously, PEO did not have a guideline on the professional aspects of operating and managing a professional engineering practice.

During 2009, the Professional Standards Committee (PSC) prepared terms of reference for a subcommittee, instructing them to prepare a guideline to be used by professional engineers conducting practice reviews of companies, organizations, departments, or any entity providing professional engineering services.

As part of this process, policies of other professional bodies in Ontario and engineering licensing organizations in other jurisdictions were reviewed.

3. Purpose and Scope of Guideline

This guideline aims to provide engineers conducting practice reviews of companies, organizations, departments, or any entity that provides professional engineering services, guidance on the professionally acceptable manner of operating and managing a professional engineering practice.

PEO considers the recommendations in this guideline to be commensurate with the professional responsibilities of engineers. This guideline should be used in conjunction (as appropriate) with the guideline *Professional Engineers*

Reviewing Work Prepared by another Professional Engineer, which focuses on technical reviews, as this guideline focuses on operating and managing an engineering practice.

This guideline provides information and best practices on how reviewers should carry out their assignments in an ethical and legal manner. It provides an overview of the:

- purpose of a practice review;
- process of conducting a practice review;
- topics to be reviewed;
- communications between reviewers and other parties;
- reporting of the outcomes of a review; and
- ethical obligations.

The primary purpose of this guideline is to define the content of practice reviews so reviews can be conducted in a consistent manner. These reviews are intended to provide an opinion on the compliance of non-technical practices with the *Professional Engineers Act*, as well as with industry best practices for operation and management.

Note: References in this guideline to “engineers” apply equally to professional engineers, temporary licence holders, provisional licence holders and limited licence holders.

References in this guideline to “reviewees” refer to companies, organizations, departments, or other entities providing professional engineering services. It is intended that this guideline be applied to engineering departments and to Certificate of Authorization (C of A) holders, whether they are individuals (i.e. sole proprietors) or companies.

For the purposes of this guideline, the term “public interest” refers to the safeguarding of life, health, property, economic interests, the public welfare and the environment.

4. Introduction

The *Professional Engineers Act* refers only once to the notion of reviewing the standards of practice associated with the practice of professional engineering. That reference is in clause 2(4)2, which states the association shall: “...establish, maintain and develop standards of qualification and standards of practice for the practice of professional engineering”.

This is a specific but limited requirement, and is in contrast to the detail provided in the Act regarding “standards of qualification”; nevertheless, the wording is clear. This statement and the conflict of interest provisions of the Act

provide a suitable framework for determining rules governing the reviewing of an engineering practice. This guideline is provided to identify the preferred procedures implied in these general principles.

Reviewees should not object to having their practices reviewed as the review of one's practice by another engineer is reasonable. Such reviews must be carried out objectively and fairly, and be consistent with engineers' ethical obligations, PEO's responsibility to maintain high professional standards and the need to maintain the public's trust in the profession.

All engineers should be aware of the broader implications of offering opinions on the practice of others (i.e. reviewees). In some cases, the fact a company's practice was subjected to a review may have a negative impact on that company's reputation. Even when results of reviews are not widely known, unfavourable opinions of practices can permanently impair relationships between engineers and their clients or employers. Reviewers need to be aware of procedures for ensuring fairness, impartiality, privacy and completeness of the review process.

Reviewers will document and assess whether reviewees have appropriate policies and procedures in place, and if they are implemented. Practice reviews are not intended to determine if **all** staff are following the procedures, but rather to determine that all staff are aware of the procedures and that steps are being taken to ensure that procedures are followed. The intent is that reviewees exhibit good operating and management practices in providing their services to their clients. An objective assessment may identify deficiencies or problems in practices that need to be corrected.

5. Reviewing a Professional Engineering Practice

5.1 Purpose of a Practice Review

Generally, the essential purpose of a practice review is to assess the fundamental policies and procedures in place for how the practice of engineering is conducted.

This guideline does not apply to reviews designated as work/project or "technical reviews", which are intended to provide an opinion on whether a reviewee's work complies with technical and industry standards and whether a design, technical report, or other engineering work is accurate and appropriate for a client's needs. Further, this

guideline does not assess the economic value of designs or the services provided by authoring engineers. Recommended best practices for carrying out work/project or "technical" reviews are provided in a separate PEO guideline (*Professional Engineers Reviewing Work Prepared by another Professional Engineer*). However, should reviewers see practices that might raise technical questions, they should refer the matter to the requestor (the body, entity, company, or review board that requested the practice review) to determine if a "technical review" should be undertaken.

Practice reviewers will submit their Summary Review Reports only to reviewees and requestors unless both parties agree otherwise.

5.2 Conducting a Practice Review

5.2.1 Steps before a review

The process of conducting a practice review must be systematic and thorough, although the extent of the review will vary depending upon the size of a reviewee's practice. A larger company/department would likely have documented procedures and policies in place, while a smaller company/department, or independent engineer, might operate in a less formal manner (i.e. might not have extensive written procedures) and should not necessarily be penalized for this. Such reviewees should, however, have documented policies so they can clearly communicate to staff and/or clients as appropriate. The extent of a practice review is subject to a reviewer's reasonable discretion and dependent on judgments about how best to adequately undertake the assignment. The Agenda provided in Appendix 1 and the Practice Review Checklist provided in Appendix 2 are meant to guide the practice review. The checklist is not a list of requirements to be met but, rather, a list of items for consideration during a practice review.

The thoroughness of a review must be based on the principle of fairness; that is, the review must be thorough enough to provide the reviewee with sufficient information to resolve outstanding questions and to warrant the observations made by the reviewer. If a review is not thorough enough, the reviewer may miss issues that should be brought to the attention of the reviewee and the requestor. In that case, that reviewer's service might be inadequate.

Conversely, a review must not be taken to the point of making criticisms outside of the scope of a practice review.

Nevertheless, reviewers may include technical concerns in their Summary Review Reports and provide them to requestors to consider for further investigation.

5.2.2 Preparing for a practice review and setting up the review meeting

When preparing for a review, requestors should contact reviewees to inform them why they have been selected for a practice review and who will carry out the review (reviewer). Requestors have authority to name reviewers. However, reviewees should be given the opportunity to suggest an alternative reviewer be named by the requestor should a potential conflict of interest arise. The ultimate decisions rest with requestors. Reviewees should be advised that they will be contacted by reviewers.

Reviewers should contact reviewees and negotiate a time for conducting the review, preferably within the coming two to three months, at a mutually agreed-upon time. Reviewees should ensure appropriate personnel are available to attend the meeting, and be available to reviewers throughout the process. Reviewers should communicate the confirmed meeting date to requestors.

Reviewers should forward the Agenda (Appendix 1) and the Practice Review Checklist (Appendix 2) to reviewees at least two months prior to the review meeting so reviewees can appropriately prepare for the meeting. This includes the gathering of policies/procedures and/or files to show how the items in the Practice Review Checklist are addressed and implemented.

At least one month prior to the review, reviewees should complete the Practice Review Checklist and return it to reviewers. Reviewers should consider the completed Practice Review Checklist and identify key items for follow-up at the review meeting.

Should reviewees have any questions or concerns about the review, they should contact reviewers prior to the review meeting.

5.2.3 Review meeting

It is suggested a day be allocated for the review meeting, though it may be completed in less time.

The requirement for subsequent meetings or follow-up will be determined on a case-by-case basis.

5.3 Topics to be Reviewed

The following is an overview of topics to be reviewed. A Practice Review Checklist with specific items to be considered is provided in Appendix 2 and the Agenda is provided in Appendix 1.

Where appropriate, reviewers can perform detailed audits of any (or all) specific section(s) contained in the checklist (Appendix 2).

The following subsections are a brief overview of the topics outlined in more detail in the checklist (Appendix 2).

5.3.1 Proposals/contracts (offering services)

Reviewees should be capable of demonstrating competence in developing proposals and contracts for providing services to clients, either by preparing these documents themselves, becoming party to documents prepared by others, or using standard forms. All such documents must clearly stipulate the work that will be provided to the client by the reviewee and the fees that will be charged for such work. Further, the documents must clearly state the involvement of any third parties in the work and the scope and degree to which they will be involved.

Proposals provide general guidance to clients regarding the scope of services to be provided and costs.

Contracts (including purchase orders) identify both consultant and client responsibilities. These are the legal documents that may be later relied on if an issue arises with the work provided. Contracts may refer to other proposals or agreements prepared. Contracts must be signed by all concerned parties and copies of executed contracts distributed to all signatories.

5.3.2 Subconsultants/subcontractors (retaining services)

Reviewees should ensure that subconsultants and subcontractors, if any have been engaged, are capable of providing the services for which they have been retained. They should confirm that subconsultants/subcontractors operate with integrity and competence in the same manner as the reviewee would be expected to operate; this could be directly assured by, for example, the subconsultant or subcontractor being a C of A holder with PEO or having other professionally recognized qualifications. A written contract should be in place with subconsultants and contractors, which clearly identifies responsibilities, including the infor-

mation outlined under 3.3.1 above. If applicable, it should also identify whose C of A applies to the work being done.

5.3.3 Document management and project-related correspondence

Document management is an integral part of providing engineering services. The ability to retrieve and reproduce documents is very important to meeting client needs. Documents would include, but not be limited to, drawings, supporting calculations, specifications, field notes and figures. Reviewers should ensure documents are maintained in a retrievable manner.

Reviewees must demonstrate that project-related correspondence to clients is in a professional and clear manner. Reports, drawings, specifications, schedules and other documents can change frequently, especially on large projects, and must be issued to clients from time to time. Hence, reviewees must demonstrate that systems in effect to identify changes enable reconstruction of changes over the course of the project. Each issuance of a modified document must be clearly and concisely transmitted to the client, preferably in a manner that requires formal client confirmation of receipt of the modified documents. The use of a transmittal log that includes formal client confirmation and details of all documents transmitted therein would be a suitable method of demonstrating an acceptable procedure for issuing project correspondence and documents.

Management of documents (digital and electronic), including comments and approvals received from review agencies, is also of the utmost importance.

Electronic documents are widely used for correspondence. Consequently, all electronic documents should be centrally and securely retained either by digital means or hard copies. Furthermore, an appropriate filing system should be established to enable all such communication to be efficiently retrieved.

5.3.4 Project management

Project management is a broad subject that can include many aspects. A practice review will undertake to determine that a reviewee has project management processes and procedures in place to ensure the public and clients receive highly professional service.

Project management should commence at the beginning of a project and continue to project closeout. Some focus areas for tracking include:

- **Scope**—At project inception a client may provide specific requirements to be completed or may provide general parameters within which the reviewee may be required to define the services to be provided and related costs. In all cases, tracking and managing the scope, including requested changes, will be essential to justify adequate compensation for work performed and to avoid disputes. Open communication between the reviewee and client is an essential component of ensuring the best possible outcomes for a project.
- **Cost control**—A contract should define whether a project will be billed as a fixed budget, time and materials with an upset limit, agreed upon per diem rates, or other means for payment for services. Sound project management will require budget monitoring to ensure that fees are on track or, when engineering fees are part of a larger budget, are within the approved budget. Where an open definition project or an ill-defined scope is encountered, tracking and communicating changes should include discussion on engineering fees and overall project budget.
- **Schedule**—Having a clear understanding of the importance of a schedule will ensure a work program and staffing levels can be tailored to meet deadlines. In some instances, there may be strict timelines to be met for regulatory or legal reasons. In such cases, these must be clearly understood. In addition, there might be operational or construction-related matters that might have an impact on the budget that the reviewee might want to consider.
- **Staffing**—Ensuring there are sufficient staff resources with requisite competencies is essential for successful completion of a project. Further, the project manager or functional manager is responsible for allocating additional resources and ensuring requisite supervision of all staff, in particular engineering interns, technologists, scientists, other non-professionals and any engineers requiring supervision.

Other areas that should be considered include risk management, communication plans and procurement management. Appropriate procedures for project management (if followed) will help ensure that delivery of engineering services

and the products, whether drawings, specifications, or physical assets, meet their purpose. Tracking the progress of the project is key and should be considered necessary.

5.3.5 Use of up-to-date information, programs, equipment

Access to and use of appropriate information, including guidelines, codes, standards, programs, and equipment is imperative. If outdated codes are referenced, or uncalibrated equipment is used, the results can have serious consequences. Proper and up-to-date information should be available and used.

5.3.6 Health and safety

The review of health and safety procedures will need to be adjusted to suit the size of the company being reviewed. Reviewers and reviewees should be aware of the applicable provincial, federal and municipal health and safety requirements that could have an impact on their work. The review related to health and safety is not meant to be comprehensive or ensure that a reviewee is meeting all of the regulatory requirements around health and safety.

5.3.7 Employment relations

The review of employment relations is to be adjusted to suit the size of the company being reviewed. Though not directly related to engineering, it does relate to areas of practice that should be considered. Employment relations includes things like complaints resolution, claims investigation procedures, discrimination policies, hiring and promotion policies, harassment policies, and education programs for staff.

5.3.8 Quality control and quality assurance (QA/QC)

Quality assurance programs (formal or informal) are important to all practising engineers. Absence of these programs could have an impact on public safety, due to improper design or calculations. The establishment, implementation and monitoring of a quality assurance program or plan would typically be a strong indicator of the commitment to providing good quality services. Alternatively, smaller firms may elect to have work reviewed by outside engineers (refer to PEO guideline *Professional Engineers Reviewing Work Prepared by another Professional Engineer*). Ultimately, some objective review of engineering work by a qualified engineer is the most appropriate assurance of quality work.

5.3.9 Maintaining competence

The review of how competence is maintained is to be adjusted to suit the size of the company being reviewed. The procedures for a company with a staff of three will be different from a company with a staff of 100. Maintaining and continuing qualifications and competence is critical for engineers, since it constitutes professional misconduct for engineers to undertake work for which they are not competent to perform by virtue of their training and experience. The ability of reviewees to provide evidence of continuing competence may alleviate concerns regarding practice competence. Having a system in place that demonstrates that a company monitors staff competence would be an indication of dedication to maintaining competence.

There are five areas of professional development activity identified by PEO:

1. Formal methods (structured courses or programs);
2. Informal methods (seminars, conferences, technical field trips, trade shows);
3. Participation (self-directed study, mentoring, committee meetings);
4. Presentations (technical or professional presentations prepared and presented outside regular job function); and
5. Contributions to knowledge (presentations, written papers, developed codes and standards).

5.4 Communications between Reviewer and Other Parties

While undertaking reviews, reviewers may need to communicate with various parties. A reviewer must at all times adhere to the requirements of confidentiality (section 77.3, O. Reg. 941).

Before communicating with anyone other than a reviewee, including other staff working for the reviewee, a reviewer must advise the reviewee of the identity of the parties with whom he or she proposes to communicate, and of the purpose of the communication. The reviewer must obtain approval from the reviewee, preferably in writing, for the communication with others. However, a reviewee's approval of communication with other parties is not mandatory if, in the course of the review, a reviewer uncovers a situation that constitutes an imminent risk to public safety. If all efforts to obtain a reviewee's approval to notify another

party have been exhausted, a reviewer has a professional obligation, given in section 72(2)(c) of O. Reg. 941, to advise parties capable of mitigating the risk of the identified danger. The reviewer should maintain a record of all significant communications with the reviewee and any other party contacted during the course of the review. Significant communications should be appropriately documented.

5.5 Reporting–Outcome of the Review

Any immediate action items should be identified and documented with a reviewee within a week of the review meeting.

A Summary Review Report should be prepared to identify areas reviewed, conditions found and issues noted in support of the assessment. The report should be provided to the reviewee within one month of the review meeting. The Summary Review Report should contain:

- an introduction that identifies who requested the review;
- the contact information of the reviewer;
- the purpose and scope of the review;
- a copy of the agenda;
- a summary/overview of documentation provided to the reviewer and of communications made during the review;
- the Practice Review Checklist provided by the reviewee and the one used by the reviewer;
- the reviewer’s observations;
- a disclaimer limiting the use of the report for the stated purpose; and
- next steps.

The report should state the conclusions of the review as follows:

- a. No further action required;
- b. Areas for improvement are minor in nature; or
- c. Areas for improvement are significant.

See section 5.5.1 for what to do if a reviewee does not agree with findings in the Summary Review Report.

The report should not contain statements of technical engineering judgments as these are outside of the scope of a practice review. The report must be based on facts gathered during the review.

Reviewers should be careful about language in the report or in conversations with others. The tone of the report should

be professional and objectively neutral. Reviewers should not include accusatory or inflammatory language.

Reviewers should not express opinions as to whether reviewees met professional standards of competence or conduct. It is also inappropriate for reviewers to comment on whether another professional engineer is practising in accordance with the *Professional Engineers Act* or the Code of Ethics. These assessments are up to PEO through its complaints and discipline process. Reviewers are to report observed facts; it is for others to take actions on these facts if it is deemed necessary.

5.5.1 After preparation of the Summary Review Report

Although reviewees may be concerned about the outcome of this process, the best approach is to wait until a review is completed and then deal objectively with the reviewer’s comments. There should not be any surprises in the Summary Review Report, as any areas of significant concern should have been raised at the initial or a subsequent meeting.

After a review is completed, a reviewee might want to communicate with the reviewer to obtain clarifications of the reviewer’s observations. These communications should not be used as an attempt to persuade the reviewer to change his or her findings, but simply as an opportunity to obtain greater clarity. Furthermore, these communications should be done within two weeks of a review being conducted. They should be confined to supplying missing or misunderstood factual information to the reviewer and to making requests for explanations of any confusing portions of the Summary Review Report.

If a reviewee responds in writing with reasoned arguments, the reviewer should carefully consider them and may provide an addendum to the original report if appropriate. However, a single response should be sufficient and repeated objections from a reviewee should be referred to the requestor for appropriate response.

The steps after a requestor and reviewee receive the Summary Review Report are at the discretion of the requestor. If the report identifies “No further action required” or “Areas for improvement are minor in nature”, this would likely be the end of the reviewer’s involvement. If the report identifies “Areas for improvement are significant”, the requestor will need to meet with the reviewer and reviewee to discuss findings, determine a timeline to address them,

and set up a follow-up meeting to review how areas of concern have been addressed.

Decisions to make changes to their practices must be left to reviewees. Reviewers cannot compel reviewees to make changes to their practices they are not willing to accept. If a reviewee agrees to make changes suggested by a reviewer, it should be noted in writing in the Summary Review Report or Addendum.

5.6 Ethical Obligations

Ethical obligations of engineers are prescribed in section 77, O. Reg. 941, otherwise known as the Code of Ethics for the profession. Engineers are expected at all times to govern their behaviour in accordance with all principles of the code.

To be fair to reviewees, reviews should be conducted in an objective and consistently applied manner. Reviewers will sometimes need to report negatively on aspects of the policies and practices in place by another professional engineer; that is their role. However, reviewers may believe they are expected to be critical and that it is necessary to identify issues that, though not necessarily wrong or detrimental, can be cast in a negative way. Reviewers should ensure that the manner in which negative assessments are reported is consistent with the sections in the Code of Ethics describing an engineer's duties to other engineers. These duties are given in section 77.7, which states: "A practitioner [engineer] shall,

- i. act towards other practitioners with courtesy and good faith,...
- iii. not maliciously injure the reputation or business of another practitioner".

One may wonder how much responsibility reviewers take for the reviewed policies and practices. The answer is none; however, reviewers should be clear that the information provided in a review is not to be used by the client or employer for any purpose other than an appraisal of the reviewee's practice.

Obligations of reviewers include:

- **Confidentiality**—Engineers must consider themselves at all times to be engaged in professional relationships with their clients, employers and colleagues. A professional relationship is built on trust and requires engineers to comport themselves in ways that are conducive to

gaining and maintaining that trust. However, it must be noted that a reviewee might not be a client of the reviewer. Consequently, the confidentiality provision in the Code of Ethics might not apply. Therefore, it is recommended that a reviewer and requestor have a written contract that directs the reviewer to treat all the information obtained during the course of the review as confidential. Any information received from the reviewee, especially such proprietary information as trade secrets, must be treated as confidential disclosures.

A reviewer should not communicate directly with any other person regarding the review unless he or she has sought and obtained permission from the reviewee and the requestor.

- **Fairness**—According to section 77.1.i of the Code of Ethics, engineers have a duty "to act at all times with fairness" to their associates, including other members of the profession. Fairness is the principle that must guide any person who has discretion about the distribution of burdens and benefits among members of a group. In the case of review, reviewers have a certain freedom in making opinions about practices. These opinions may benefit or burden reviewees or other parties in various ways depending on the nature of the opinions and the consequences created by the opinions.

Reviewers must not make statements or allow publication of all or any part of their Summary Review Reports in a manner that might be considered detrimental to the reputation, professional status or financial interests of reviewees for malicious reasons. Reviewers must not participate in any such activity unless publication of a report is required by freedom of information or other legislation.

However, the duty of fairness does not prohibit an engineer from reporting facts or expressing an honest opinion that might have a negative consequence for another engineer.

- **Duty to Report**—Engineers have a duty to report or correct a situation which may endanger the safety or welfare of the public. If while conducting a practice review a reviewer finds work that is of such unprofessional quality that the reviewer believes the reviewee is practising professional engineering in a manner that is not conducive to the public interest, the reviewer should inform PEO and can request a technical review. Reviewers are

encouraged to review the *Professional Engineering Practice* guideline for more information on the duty to report.

- **Conflict of Interest**—Another issue that might arise when providing professional services is a relationship between an engineer and one or more parties that could be perceived as a conflict of interest. Reviewers should be familiar with the *Professional Engineering Practice* guideline, since it provides advice on handling situations with the potential for conflict of interest.

Note that according to section 72 of the *Professional Engineers Act* the misconduct is a result of *failing to tell* all the parties about an interest that conflicts, or may appear to conflict, with a duty; this implies that the existence of conflicting interests is not in itself an unethical or illegal act. For this reason, a reviewer should notify the requestor, before beginning the review, of any pre-existing relationship between the reviewer and the reviewee. These relationships will not necessarily disqualify the reviewer from taking on the assignment, but that decision should be left with the requestor.

Though the Code of Ethics and misconduct provisions deal specifically with engineers' obligations to avoid conflicts with their clients' or employers' interests, in the case of reviews reviewers should also consider, out of an abundance of caution and an obligation of professional fairness, any potential for conflict with reviewees' interests.

Reviewers must recognize the potential for creating appearances of conflict of interest and ensure that their behaviour is, at all times, consistent with the limited purpose of providing a review of a reviewee's practice. Reviewers must conduct reviews in accordance with the Code of Ethics.

6. Definitions

The following definitions apply for the purposes of this guideline and may not be generally applicable in other situations.

Client

Receiver of services, can be external (in another organization) or internal (within the same organization)

C of A holder

A Certificate of Authorization (C of A) is issued by PEO to allow business entities to offer and provide professional engineering services to the public, as distinct from a licence issued to individuals to practise professional engineering. A C of A holder is a business entity that has a C of A.

Engineer

References in this guideline to the term engineer(s) apply equally to professional engineers, temporary licence holders, provisional licence holders and limited licence holders.

Practice review

A review of a workplace providing professional engineering services to assess whether the processes and procedures for carrying out professional engineering activities are consistent with the standards of the profession. Practice reviews include "inspection" as specified in the *Professional Engineers Act* and the Discipline Committee Handbook.

Professional standards

The acceptable manner of carrying out a professional engineering task as described in regulations under the *Professional Engineers Act* or in guidelines and standards published by Professional Engineers Ontario or, where there are none, by generally accepted professional engineering standards.

Reviewee

Companies, organizations, departments or any other entity providing professional engineering services subject to a practice review

Reviewer

The engineer conducting a practice review

Requestor

The body, entity, company or review board that requested the practice review

Technical review

A review of an engineering document to determine whether the engineering content of the work is correct, complete or suitable for the intended application

Appendix 1–Sample Agenda for Practice Review Meeting

Introductions

- Introduction of reviewer and reviewee/company
- Agenda presentation
- Purpose of the practice review

Practice Review Checklist (**Do you have a policy/procedure? Is it reasonable?**)

- Proposals/contracts (offering services)
- Subconsultants/contractors (retaining services)
- Document management and project-related correspondence
- Project management
- Use of up-to-date information/programs/equipment
- Health and safety
- Employment relations
- Quality assurance/quality control
- Maintaining competence

Tour of Work Environment/Review of Policies/Procedures (**identify which of the areas below is to be further discussed at the Review Meeting. Do they have policies/procedures and are they being implemented?**)

- Proposals/contracts (offering services)
- Subconsultants/contractors (retaining services)
- Document management and project-related correspondence
- Project management
- Use of up-to-date information/programs/equipment
- Health and safety
- Employment relations
- Quality assurance/quality control
- Maintaining competence

Next Steps

- Go over initial findings/recommendations
- Identify if additional follow-up is appropriate
- Identify when Summary Review Report will be provided to reviewee

Appendix 2–Practice Review Checklist

Step 1: Determine what is applicable

Step 2: Document observations

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>1. Proposals/contracts (offering services)</p> <p>1. Do you have policies/procedures related to preparation of proposals, and/or contracts?</p> <p>2. Proposals should identify:</p> <ul style="list-style-type: none"> a. basis for preparation of proposal—this is usually information that would have been provided by the client. The specific version of the client information should be referenced in the proposal (i.e. RFP number), or the client information should be directly included in the proposal. b. Project scope and work plans—tasks to be included and those excluded (including assumptions) and list of deliverables c. Project schedule, including critical path (if applicable) d. Identification of project manager and project team members (if applicable) e. Document control systems and QA/QC programs/plans and reviews f. Third-party involvement (subconsultants or subcontractors), including scope g. Expected costs (labour and expenses) h. How scope changes will be addressed i. Potential conflict of interest (if applicable) j. It should also be explicitly noted in proposals that specific contract terms may be done subsequent to any proposal, or if a contract sign-back is included in the proposal, appropriate information outlined below should be included. <p>3. Contracts should identify (or reference documents that identify):</p> <ul style="list-style-type: none"> a. Scope of services to be provided, including specific reference to any proposal b. Managing changes to scope 			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<ul style="list-style-type: none"> c. Ownership of intellectual property (if applicable) d. Parties responsible for acquisition of any applicable building permits, environmental reviews, and inspections by statutory authorities or any other designate organization e. Fees f. Payment basis–how often invoices will be prepared, lump sum or time and materials, progress payments and associated milestones, when payment expected g. Project schedule h. Management of late payments (if applicable) i. Management of contract default–dispute resolution, suspension of services j. Governing law for litigation (for cross province or cross country projects) k. Conflict of interest l. Insurance and liability information m. Indemnification n. Health and safety information o. Confidentiality p. Warranty <p>It may also include:</p> <ul style="list-style-type: none"> q. Project commissioning plan r. Document management system and QA/mgmt program/plan/system s. Project closure plan, including document responsibility t. Reference to prime agreement (if applicable) <p>4. Execution of Contracts:</p> <ul style="list-style-type: none"> a. Are contracts signed by all concerned parties? b. Are copies of executed contracts distributed to all signatories? c. Are executed contracts securely stored in a retrievable location? d. How do you ensure that the signatory has the authority to bind the company (if applicable)? 			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>2. Subconsultants/contractors (retaining services)</p> <ol style="list-style-type: none"> 1. Do you have policies/procedures related to retaining servicing from subconsultants contractors? 2. How do you ensure subconsultants/contractors are capable of providing the services they have been retained to provide? 3. How do you ensure that subconsultants/contractors operate with integrity and competence in the same manner as the reviewee would be expected to operate? 4. Do you maintain written contract with subconsultants/contractors that clearly identifies responsibilities, including the information outlined under 5.3.1 above. Should also identify whose C of A applies to the work being done (if applicable). <p>3. Document management and project-related correspondence</p> <ol style="list-style-type: none"> 1. Do you have policies/procedures related to management of digital files? This could include: <ol style="list-style-type: none"> a. Tracking of submission documents to client or review agency (transmittal log) b. Use of electronic transmittals for CAD drawings c. Retaining and/or tracking of all comments received by clients and review agencies d. Preparation of PDF of submission documents e. Final directory for submission documents 2. Do you have policies/procedures related to management of hard copy files? Again, consider reasonableness and usage. This could include: <ol style="list-style-type: none"> a. Tracking of submission documents to client or review agency (transmittal log) b. Retaining hard copies of all submission documents c. Retaining and/or tracking all comments received by clients and review agencies 			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>3. Do you have policies/procedures related to version control? This could include:</p> <ul style="list-style-type: none"> a. Naming/filing conventions for latest version b. Inclusion of revision references on all documents <p>4. Do you have policies/procedures to ensure that sealing of documents is done in accordance with PEO regulations and guidelines?</p> <p>5. Do you have off-site back-up files (either digital or hard copy)?</p> <p>6. Do you have back-up of emails?</p> <p>7. Do you have policies/procedures to ensure that retention of documents is done in accordance with PEO regulations and guidelines?</p> <p>4. Project Management</p> <p>1. Do you have policies/procedures related to project management? Are the policies reasonable and followed? This could include tracking of:</p> <ul style="list-style-type: none"> a. Scope b. Cost monitoring c. Schedule d. Staffing e. Risk f. Quality <p>5. Use of up-to-date information/programs/equipment</p> <p>1. Do you have policies/procedures related to use of up-to-date information, programs and equipment? This could include access to up-to-date technical resources and tools, such as:</p> <ul style="list-style-type: none"> a. Necessary hardware b. Computer software 			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>c. National and provincial codes and standards d. Standards from technical bodies and certification organizations e. Certified and calibrated equipment</p> <p>2. Do you maintain records regarding calibration of equipment (both owned and rented)?</p> <p>3. Is the reviewee aware of professional responsibilities and ethical obligations described in O. Reg. 941 and PEO guidelines?</p> <p>4. Do you know and follow the available PEO guidelines? Which of the following listed on the PEO website are relevant to the work being conducted: http://peo.on.ca/index.php/ci_id/1834/la_id/1.htm?</p> <p>6. Health and Safety</p> <p>1. Do you have policies/procedures related to health and safety? This could include (if applicable):</p> <p>a. Do you undertake assignments that do or could present risks to staff?</p> <p>b. List the risks that staff may encounter: _____</p> <p>c. Do you have written safety procedures for staff that visit or work on sites?</p> <p>d. How are safety procedures communicated to staff?</p> <p>e. Are the written safety procedures for staff visiting work sites specific to particular work sites and the hazards and precautions peculiar to certain work sites?</p> <p>f. Does the company have a written safety training program that is both reasonable and followed?</p> <p>g. Are records kept of the safety training sessions and who attended them?</p> <p>h. Does the company provide safety apparel and/or instrumentation for its staff?</p> <p>i. List the safety apparel and/or safety instrumentation supplied: _____</p>			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>j. Does the company have a designated manager responsible for the company’s safety program?</p> <p>k. Does the company have a Health and Safety Committee?</p> <p>l. Does the company have a published contact list of those who should be contacted in the event of an emergency?</p> <p>m. Does the company have written procedures for site work to minimize or eliminate the risk of an accident and to ensure safety?</p> <p>n. If applicable, does the company have written procedures for responding to accidents on site?</p> <p>o. Does the company have a health monitoring program for staff who might be exposed to environmental health hazards, such as radiation, noise and/or toxins?</p> <p>p. Does the company have a written checklist method of ensuring that any subcontractor or subconsultant that it employs has adequate safety procedures or does the company issue its own procedures to the subcontractor?</p> <p>7. Employment Relations (applies only if there is more than one person working)</p> <p>1. Do you have policies/procedures related to employment relations? This could include:</p> <ul style="list-style-type: none"> a. Complaints resolution procedures b. Claims investigation procedures c. Policies related to discrimination d. Policies related to hiring and promotion e. Policies related to harassment f. Education programs for staff <p>2. Are you:</p> <ul style="list-style-type: none"> a. Familiar with the guideline on <i>Human Rights in Professional Practice</i>? b. Proactive in understanding human rights issues? 			

Appendix 2—Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>c. Familiar with applicable legislation?</p> <p>d. Ready to take action where appropriate to protect human rights?</p> <p>e. Vigilant against discrimination and harassment?</p> <p>8. Quality assurance/quality control</p> <p>1. Do you have formal policies/procedures related to quality? Are the policies reasonable and followed? This could include:</p> <p>a. That all work is performed in compliance with the current applicable provincial, national and industry standards</p> <p>b. That an ongoing program to ensure periodic recalibration of all measuring instruments has been implemented and is maintained</p> <p>c. That a design review process is in place wherein final approval is granted by the responsible engineer</p> <p>d. That any deviations from the original scope of work are fully documented and the resulting changes in construction and installation meet the original design specifications, and are mutually accepted and approved by both the engineer and owner (user)</p> <p>e. That comments received from approval authorities have been properly considered and addressed</p> <p>f. That complete project documentation (including reports, data, correspondence, quality assurance documentation, and other engineering documents) is retained as appropriate, possibly for the life of the project or product</p> <p>9. Maintaining competence</p> <p>1. Do you have formal policies/procedures related to maintaining competence? Are the policies reasonable and followed? This could include supporting the five categories of professional development activity identified by PEO:</p> <p>a. Formal methods (structured courses or programs)—Do you provide support for staff to attend formal training, or if a staff member requests to attend an event, do you allow them to take time to attend?</p>			

Appendix 2–Practice Review Checklist

	Has policies/procedure? (yes/no/not applicable)	Policies/procedures reasonable and Implemented? (yes/no)	Remarks
<p>b. Informal methods (seminars, conferences, technical field trips, trade shows)—Do you provide support for staff to attend informal training, or if a staff member requests to attend an event, do you allow them to take time to attend?</p> <p>c. Participation (self-directed study, mentoring, committee meetings)—Do you provide mentorship opportunities for staff, or do you provide in-house training opportunities/ knowledge exchange for staff?</p> <p>d. Presentations (technical or professional presentations prepared and presented outside regular job function)—Do you provide support for staff to attend presentations, or if a staff member requests to attend an event, do you allow them to take time to attend?</p> <p>e. Contributions to knowledge (presentations, written papers, developed codes and standards)—Do you provide opportunities for staff to contribute to knowledge by allowing them time to join and participate in technical or other organizations?</p> <p>2. Membership Support—Do you provide support for staff to maintain memberships in technical associations, including (but not limited to) PEO? Do you maintain records regarding PEO membership of staff?</p> <p>3. Do you have requirements for staff to maintain competence?</p> <p>4. Do you provide staff with engineering and other journals relevant to your work?</p>			

Step 3: Overview of Practice Review Findings (select as appropriate)

Y/N	Finding	Remarks
	a) No further action required	
	b) All areas for improvement are minor in nature	
	c) Some areas for improvement are significant	

Final Steps

- Submit report to requestor and reviewee
- If c) then reviewer set up meeting to discuss findings with the reviewee. Reviewee and reviewer to determine time-line to address concerns and then set up follow-up meeting to review how areas of concern have been addressed. A revised Summary Review Report should then be prepared. This may include a recommendation that a technical review be undertaken.

Appendix 3. Amendment and Revision Submission Form

Guideline:

Statement of proposed amendment or revision:

Reason:

Submitted by: _____ Date: _____

Mail: Professional Engineers Ontario
101-40 Sheppard Avenue West
Toronto ON M2N 6K9

Attention: Standards and Guidelines Coordinator

Fax: (416) 224-1579 or (800) 268-0496

Email: practice-standards@peo.on.ca

Appendix 4. PEO Professional Practice Guidelines and Standards

Practice Guidelines

1. Acoustical Engineering Services in Land-Use Planning (1998)
2. Acting as Contract Employees (2001)
3. Acting as Independent Contractors (2001)
4. Acting under the Drainage Act (1988)
5. Building Projects Using Manufacturer-Designed Systems & Components (1999)
6. Commissioning Work in Buildings (1992)
7. Communications Services (1993)
8. Conducting a Practice Review (2014)
9. Developing Software for Safety Critical Engineering Applications (2013)
10. Engineering Services to Municipalities (1986)
11. Environmental Site Assessment, Remediation and Management (1996)
12. General Review of Construction as Required by the Ontario Building Code (2008)
13. Geotechnical Engineering Services (1993)
14. Human Rights in Professional Practice (2009)
15. Land Development/Redevelopment Engineering Services (1994)
16. Mechanical and Electrical Engineering Services in Buildings (1997)
17. Professional Engineer as an Expert Witness (2011)
18. Professional Engineering Practice (2012)
19. Project Management Services (1991)
20. Reports for Pre-Start Health and Safety Reviews (2001)
21. Reports on Mineral Properties (2002)
22. Reviewing Work Prepared by Another Professional Engineer (2011)
23. Roads, Bridges and Associated Facilities (1995)
24. Selection of Engineering Services (1998)
25. Services for Demolition of Buildings and Other Structures (2011)
26. Solid Waste Management (1993)
27. Structural Engineering Services in Buildings (1995)
28. Temporary Works (1993)
29. Transportation and Traffic Engineering (1994)
30. Use of Agreements between Client and Engineer for Professional Engineering Services (including sample agreement) (2000)
31. Use of Computer Software Tools Affecting Public Safety or Welfare (1993)
32. Use of the Professional Engineer's Seal (2008)
33. Using Software-Based Engineering Tools (2011)

Performance Standards

1. Design of Certain Buildings (2014)
2. General Review of Construction of a Building (2008)
3. General Review of Demolition and Demolition Plans (2008)
4. Engineering Evaluation Reports under *Safe Drinking Water Act, 2002* (Drinking Water Systems) (2014)
6. Environmental Site Assessment Reports (2014)



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