

## The Professional Engineer as an Expert Witness

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 form provided in Appendix 2.

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### PEO Mandate and Criteria for Guidelines

Professional Engineers Ontario (PEO) produces guidelines for the purpose of educating both licensees and the public about standards of practice. This is done to fulfill PEO's legislated objectives. Section 2(4)2 of the *Professional Engineers Act* states: "For the purpose of carrying out its principal object", PEO shall "establish, maintain and develop standards of qualification and standards of practice for the practice of professional engineering". The association's Professional Standards Committee is responsible for producing guidelines to meet the following objectives:

- 1. Guidelines are intended to aid engineers in performing their engineering role in accordance with the *Professional Engineers Act*, O. Reg. 941/90 and O. Reg. 260/08.
- Guidelines are intended to describe processes required by regulatory, administrative or ethical considerations associated with specific professional services provided by engineers. They do not aim to be short courses in an engineering subject.
- 3. Guidelines provide criteria for acceptable practice by describing the expected outcome of an activity, identifying the engineer's duty to the public in the particular area of practice, and identifying the relationships and interactions between the various stakeholders (e.g. government, architects, other engineers, clients).

- Guidelines add value to the professional engineer licence for licensed engineers and for the public by establishing criteria for professional standards of competence.
- 5. Guidelines help the public to understand what it can expect of engineers in relation to a particular task within the practice of professional engineering. By demonstrating that the task requires specialized knowledge, higher standards of care, and responsibility for life and property, guidelines help enhance the public perception of engineers as professionals.

This guideline is not intended to establish a "one method of practice for all" approach to the practice of professional engineering, or replace a practitioner's professional judgment when providing professional engineering services. Subject to provisions in the guideline that incorporate professional conduct requirements or legal requirements, a decision by a practitioner not to follow the guideline will not, in and of itself, indicate that a member has failed to maintain an acceptable standard of work. On the other hand, following the guideline may not ensure that a member has provided services conforming to an acceptable standard. Determining whether a practitioner's service is acceptable will depend upon the circumstances of each case.

See Appendix 3 for a list of PEO professional practice guidelines and standards.

### **Preface**

The recommendations issued by the Coroner following an inquest into an industrial accident asked PEO to prepare a guideline providing recommendations to all professional engineers on the appropriate role and responsibilities when appearing as expert witnesses. A guideline dealing with this subject already existed; however, the Professional Standards Committee decided to review the existing guideline and make revisions, if needed, to reflect the Coroner's recommendations.

Staff and volunteers reviewed the 1993 version of the guideline and removed parts of the content that were considered better addressed by other guidelines or professional standards. The remaining content was amended to deal with matters raised by the Coroner and to provide clear recommendations regarding the role of practitioners providing services as expert witnesses.

A completed draft of this document was submitted to the PSC for approval on June 21, 2011. Following editing by staff and vetting by PEO legal counsel, the final draft was approved by Council at its meeting on September 23, 2011.

### Purpose and Scope of Guideline

Professional engineers should be aware of the many legal and quasi-legal situations that might result in requests for their professional services. Of particular concern is the need for practitioners to know their specific obligations to various parties when asked to testify on behalf of a client before a court or a tribunal. This guideline briefly explains the conduct expected of professional engineers in these situations

and provides suggestions for the most effective manner in which to deal with them.

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

### 1. Introduction

Professional engineers may be called upon to appear as expert witnesses in court proceedings, public inquiries, coroners' inquests and other judicial and quasi-judicial hearings. Professional Engineers Ontario recognizes that professional engineers might not be aware of the variety of legal and quasi-legal hearings and actions in which they may become involved, the obligations and conduct expected of them in and before such proceedings, the procedures they must follow and the risks associated with their participation. For these reasons, the Professional Standards Committee has prepared a guideline to give professional engineers who might become involved in court proceedings or tribunals an idea of the situations that could arise and to provide suggestions aimed at making their services effective.

Though written as guidance for professional engineers acting as expert witnesses this guideline might also be of assistance for practitioners called to provide non-expert testimony as a fact witness; that is, as a witness giving testimony only as to what he or she did or saw. In these cases, the practitioner is providing only factual evidence and is not required to provide interpretation of facts or to give professional opinions. Since in these circumstances the practitioner is likely to be connected to one of the parties, possibly as an employee or some other personal relation, questions of bias and advocacy are not as pressing. Expert witnesses can be excluded from testifying solely on the basis that they are not neutral and impartial. A fact witness cannot be excluded on that basis.

### 2. What is an Expert Witness?

Unlike fact witnesses whose testimony can describe only personal observations, experience or knowledge, expert witnesses are allowed, even expected, to express opinions about matters in which they have been accepted as having special knowledge that the average person does not possess. Expert witnesses are needed to interpret technical information for people who do not have the knowledge to evaluate it, understand its meaning and apply it to the process of making a decision about the matter at hand. The witness' role goes beyond merely answering counsel's questions, to ensuring that participants to the proceedings, which could be either judge and jury, or chair and panel, adequately understand the technical information or opinion being offered. In keeping with this role, the engineer as expert witness must ensure that the evidence presented is understandable, reasonable, balanced and substantiated by the evidence. Experts must understand their role is to be neutral and impartial servants of the court or tribunal they appear before, and not representatives or advocates of the party hiring them.

The court has the authority to determine whether a person offered as an opinion witness will be needed or likely to provide opinions relevant to the proceedings. Over the past few years, courts have developed high expectations about the impartiality and neutrality of expert witnesses. This expectation is based on the inability of courts or tribunals to challenge an expert's opinion directly (because of their own lack of expertise). The leading case on this point, *The Ikarian Reefer*<sup>1</sup>, states as follows (case citations omitted):

### B. THE DUTIES AND RESPONSIBILITIES OF EXPERT WITNESSES

The duties and responsibilities of expert witnesses in civil cases include the following:

1) Expert evidence presented to the Court should be, and should be seen to be, the independent product of the expert uninfluenced as to form or content by the exigencies of litigation.

<sup>1.</sup> National Justice Compania Naviera SA v. Prudential Assurance Co Ltd ("The Ikarian Reefer"), (1993), 2 Lloyd's Rep 68, QBD (Com Ct).

- 2) An expert witness should provide independent assistance to the Court by way of objective unbiased opinion in relation to matters within his expertise. An expert witness in the High Court should never assume the role of an advocate.
- 3) An expert witness should state the facts or assumption upon which his opinion is based. He should not omit to consider material facts which could detract from his concluded opinion.
- 4) An expert witness should make it clear when a particular question or issue falls outside his expertise.
- 5) If an expert's opinion is not properly researched because he considers that insufficient data is available, then this must be stated with an indication that the opinion is no more than a provisional one. In cases where an expert witness who has prepared a report could not assert that the report contained the truth, the whole truth and nothing but the truth without some qualification, that qualification should be stated in the report.
- 6) If, after exchange of reports, an expert witness changes his view on a material matter having read the other side's expert's report or for any other reason, such change of view should be communicated (through client's legal counsel) to the other side without delay and when appropriate to the Court.
- 7) Where expert evidence refers to photographs, plans, calculations, analyses, measurements, survey reports or other similar documents, these must be provided to the opposite party at the same time as the exchange of reports.

This guidance, although originally from the UK, has been confirmed in Canadian jurisprudence by its application in numerous decisions, thus enshrining it as a tenet of common law.

The fundamental principle that emerged from the *Ikarian Reefer* decision is that an expert witness must never act as an advocate for a particular viewpoint. An expert opinion must be neutral, objective and strictly limited to the area of the expert's expertise.

In *R. v. Mohan*, the Supreme Court of Canada established that in order for expert evidence to be admissible, such evidence must be presented by a witness who is qualified by the court. This has nothing to do with the qualification of the expert as an engineer or scientist or other person of expertise. Qualification of witnesses refers to whether the person or evidence meets the following criteria of the Mohan test:

- (a) relevance;
- (b) necessity in assisting the trier of fact;
- (c) the absence of any exclusionary rule; and
- (d) a properly qualified expert.<sup>2</sup>

The court decides whether a person is a properly qualified expert if it can be demonstrated that he or she has acquired special or particular knowledge. For this, the court must rely on recognized licensing, certifying or registering authorities, such as PEO, have provided a knowledgeable assessment of the person's knowledge and experience.

When determining whether to qualify an individual as a professional engineering expert witness, courts or tribunals would look to whether the expert complies with the requirements in the *Professional Engineers Act*, namely whether the person is licensed to practise professional engineering in Ontario and, if the practitioner is providing services independently to a lawyer or other party, the person is providing these services under the auspices of a Certificate of Authorization.

Engineers are strongly advised to consult with counsel before engaging in any legal proceeding, to receive advice and instruction about all of their actions. Since professional engineers are not trained for performance in the adversarial justice system, their lack of knowledge of legal procedures can cause problems, which might have adverse effects on their performance. By contrast, legal counsel have had the requisite training, and are available not only to advise on matters of law, but also to interpret the effect particular facts and actions may have on the proceedings, and to plan, guide and control those proceedings to the advantage of clients.

<sup>2.</sup> R. v. Mohan, [1994] 2 S.C.R. 9.

### 3. Venues Where Expert Witnesses Appear

There are many different situations in which professional engineers may find their services required as an expert or fact witness. A partial listing of those likely to be found in Ontario is given below.

### 3.1 Informal Pre-Hearings

### 3.1.1 Examination for Discovery

Termed a pre-trial instrument of the court, examination for discovery involves a relatively informal oral examination of the witness by the opposing counsel, to determine what facts are in the possession of that witness. Responses are recorded, and transcripts are made. These may be used by opposing counsel during the trial, to challenge the witness' credibility.

### 3.1.2 Interrogatory

A pre-hearing instrument of some tribunals, the interrogatory comprises a list of questions from opposing counsel that the witness must answer. This is usually accomplished by the witness responding first to his or her own counsel, or to retaining counsel, and after correction or adjustment, to opposing counsel. These answers, duly notarized, may also be used at the trial to discredit the witness.

### 3.2 Formal Judicial or Quasi-Judicial Proceedings

### 3.2.1 The Courts of Law

Courts of law are normally intent on establishing matters of fact before they turn to issues of law. To accomplish this in instances where the testimony of non-engineers is not adequate, professional engineers may not only be required to state facts, but also to be accepted by the courts as experts permitted to give opinions based on the facts of the case. The role of expert witnesses in the courts of law is governed by the *Rules of Civil Procedure* and certain common law precedents that determine the admissibility and qualification of experts.

In Ontario, professional engineers could appear in the Ontario Court of Justice or the Superior Court of Justice.

### 3.2.2 Coroner's Inquests

Coroner's inquests are not intended to determine guilt, but to answer statutorily imposed questions and make recommendations to prevent similar deaths. Procedures for testimony are similar to those used in the courtroom, although a more informal approach usually exists. Professional engineers are expected to exhibit conduct identical to that exhibited when appearing in court.

Witnesses are usually called by the coroner, but may be called by other interested parties.

### 3.2.3 Professional Disciplinary Hearings

Under the *Professional Engineers Act*, if a complaint against a licence or certificate holder is deemed by the Complaints Committee to potentially meet the criteria of professional misconduct (Section 72, O. Reg. 941) or incompetence, PEO must conduct a hearing into the manner and the quality of that licence or certificate holder's practice and personal conduct. It does this through a discipline tribunal, a quasi-judicial body that hears the case against the licence or certificate holder and decides, if there is a finding of guilt, on the appropriate action to be taken against the holder by PEO.

Examination procedures are similar to those in the courts of law, but complained-against licence or certificate holders are usually allowed somewhat greater latitude in conducting their defence than in a court of law. Professional engineers giving evidence may be questioned by members of the discipline tribunal, in addition to being questioned by counsel for PEO and the complained-against licence or certificate holder or the holder's counsel.

Professional engineers appearing as expert witnesses before a discipline tribunal must be qualified, that is accepted by the panel as an expert witness, before they can be examined. Qualification in this situation refers to meeting the legal test, known as the Mohan test, which establishes the legitimate need for this particular individual to provide expert testimony. Qualification as an expert witness is not only an assessment of the skill, knowledge or competence of the individual, but is also a determination as to whether these particular skills and knowledge are needed to resolve the matter. If, for any reason, the tribunal decides that the professional engineer is not qualified, or that the engineer's testimony is not required, he or she will not be allowed to appear as an expert witness.

Professional engineers could also be called as an expert witness at the discipline hearings of other professionals if there is an engineering issue. For example, if there is an issue in a medical hearing about whether a physician is at fault or whether equipment might have been faulty, a professional engineer could be called as an expert witness.

### 3.2.4 Appeal Hearings

Most appeals are based solely on the transcript of the earlier hearing and do not involve the calling of fresh evidence. There are a few exceptions; some appeals are "trials *de novo*" where the original hearing is redone and sometimes fresh evidence is permitted.

Professional engineers involved in appeal hearings are required to be fully aware of what occurred at earlier hearings. They should read and become familiar with the transcript of their own testimony (if they testified earlier) and transcripts of all relevant testimony given at the earlier stages.

#### 3.2.5 Amicus Curiae

In rare instances, a professional engineer may be brought into court proceedings as an *amicus curiae*, or friend of the court. This is a circumstance in which the judge may obtain the services of an expert, to assist with examining the evidence. The professional engineer functions as an interpreter and a tutor on technical matters. His or her actions and use are controlled by the judge, and made to fulfill the judge's particular needs.

#### 3.2.6 Tribunals

Public hearings are conducted by boards and commissions constituted under municipal by-laws and provincial or federal statutes. Their purpose is to determine the rights of individuals under the particular by-law or statute under which the board or commission was established. Examples of such ongoing tribunals are the Ontario Municipal Board, the Environmental Assessment Board and the Atomic Energy Control Board.

Most tribunals have the power to compel a person to appear as an involuntary witness to provide factual testimony to a court or tribunal. If the professional engineer provided professional services in relation to the subject matter of the hearing, he or she may even be asked to express an expert opinion relating to that project. The concepts of evidence are the same as those found in court proceedings, but there is often more flexibility allowed in the presentation of that evidence. Such additional freedom, which may allow a professional engineer to present the case in a manner more nearly in accord with personal preference, must obviously be used with extreme caution, and never without due consultation with legal counsel. In this case, there is an entitlement to a witness fee (conduct money) and, if the practitioner must travel, certain travel and living expenses.

#### 3.2.7 Arbitrations

There are many types of arbitrations, including:

- modified courtroom procedure with one or more arbitrators;
- boardroom procedure, in which an agenda is struck, one item is discussed at a time and witnesses may be asked to speak separately on each;
- presentation and review of written documents, with no formal hearing;
- on-site examinations, with the arbitrator present, usually involving small claims or consumer complaints; and
- regularly scheduled arbitrations, small claims.

Comments on courtroom procedure, as set out in subsequent sections of this guideline, apply in principle, but must be modified to suit the particular circumstances and the dictates of the presiding officer.

### 3.3 Non-judicial Proceedings

### 3.3.1 Judicial Inquiries

The terms of the *Public Inquiries Act* enable the provincial government to establish commissions that will hold public hearings into particular matters arising from, or concerning, Ontario statutes. The objective of these hearings is to establish the true facts of the situation; no finding of guilt is made.

#### 3.3.2 Royal Commissions

A royal commission is constituted for the purpose of conducting a public inquiry into a specific matter or circumstance. It subsists during the time required to reach its objective, which is a formal and final report to the government. It is constituted under a special statute or government directive, which sets out its terms of reference, objectives and authorities.

Ordinarily, participants will prepare a formal statement to the royal commission and submit it before the hearing. In some instances, the statement may be entered at the hearing itself.

### 4. Accepting a Commission as an Expert Witness

Before agreeing to accept a commission as an expert witness, professional engineers should review the issues to obtain some familiarity with them, to decide if they are the appropriate experts. Professional engineers should never take on commissions unless they are competent in the subject matter, since the *Professional Engineers Act* makes this especially important when providing testimony in public as an expert witness. According to Section 77.2.iii, O. Reg. 941, when serving as a witness a practitioner shall not "provide opinions on professional engineering matters that are not founded on adequate personal knowledge and honest conviction".

Professional engineers should discuss time lines with the client in the first conversation. Most legal proceedings will require intermittent involvement by the professional engineer over a long period and the engineer will have limited control over scheduling. It is better to bow out right away than to do so after the client has committed time and resources developing a case based on the expert opinion of the professional engineer.

#### 4.1 Conflict of Interest

Professional engineers should examine their personal or professional involvement in the affairs of any of the parties to the action or the inquiry, to be able to assure clients and other parties that they have no conflicts of interest. Engineers must inform their clients if they have any connection with any of the parties or participants in the matter, or have any personal or professional interest in the matter that might be affected by the outcome of the action. Even though these connections or interests may not prejudice their judgment, professional engineers must be wary of any situation that might cause someone to question the independence of their judgment.

If there appears to be any possibility of a conflict of interest that might affect their professional judgment, professional engineers are required by section 77.4, O. Reg. 941, to advise both their clients and legal counsel immediately. If their clients are prepared to proceed regardless of the possibility that a conflict of interest might exist, professional engineers should document this discussion and their client's decision. However, even if clients allow professional engineers to proceed, there may be circumstances where a professional engineer should not participate because he or

she cannot fulfill his or her duty of neutrality and impartiality to the court or tribunal.

Where one of the other parties to an action or inquiry is a client of a professional engineer in other instances, the engineer must judge whether his or her opinion might appear to be influenced by the possibility that the case would affect the future relationship with that client. If professional engineers have any concerns that their judgment will be or appear to be conflicted by such a possibility, they must exercise professional judgment about accepting the engagement, and at least discuss the situation with the clients retaining them as expert witnesses.

### 4.2 Confidentiality

In day-to-day practice, professional engineers have an ethical, and often a contractual, obligation to keep secret and confidential any information obtained and opinions or judgments provided in the course of work undertaken on behalf of a client. The ethical obligation is stated in section 77.3, O. Reg. 941:

3. A practitioner shall act in professional engineering matters for each employer as a faithful agent or trustee and shall regard as confidential information obtained by the practitioner as to the business affairs, technical methods or processes of an employer and avoid or disclose a conflict of interest that might influence the practitioner's actions or judgment.

Reports prepared by expert witnesses that serve as the basis of their testimony may become public documents available to other parties involved in the case and to the general public. As a result, professional engineers who are asked to keep the source or the nature of proprietary information, or trade secrets, fully confidential and protected cannot extend such assurance if the information is included in the report. On the other hand, an expert witness has a duty to provide a complete report and cannot exclude relevant information simply because the client wishes to keep it confidential. If engineers are unsure about whether they have an obligation of confidentiality, they should discuss the circumstances with their own legal advisors.

The fact that documents are prepared in the context of a confidential relationship between professional engineer and

client, or are marked confidential, will not preclude disclosure in court.

Thus, professional engineers may be called upon to reveal the source or nature of their information, even though they have given promises of confidentiality. It will be up to the court or the tribunal to gauge the hardship that might ensue, should engineers be forced to violate such promises of confidentiality, and to decide if an engineer will be required to reveal confidential information. Obviously it is better to avoid such situations in the first place.

If professional engineers consult with colleagues on the issues of cases (which can be appropriate given an engineer's need for information, clarification of ideas or testing of opinions), they are expected to do so either with their client's knowledge or in a manner that respects confidentiality (e.g. done on a no-names basis or after colleagues have signed an explicit agreement of confidentiality).

### 4.3 Agreement and Fees

In some instances, legal proceedings in which professional engineers are involved are simply an adjunct to another commission or commissions, the conditions and fees for which have already been established<sup>3</sup>. Other situations may be described as lengthy and complex. For such commissions, a written contract would be preferred, if possible. If a formal contract cannot be drawn up, the engineer should prepare a detailed letter of advice directed to the client that outlines the engineer's understanding of the commission. This should be done prior to the start of work.

A client's initial approach may be to ask for a quick opinion about whether a professional engineer can provide testimony relevant to the case. However, it is usually prudent, especially with a new client, to request a retainer; this helps ensure that a sufficient financial commitment for the requested preliminary judgment exists.

Any agreement should make it clear to the client that the engineer must remain neutral and impartial, and is to be reimbursed for professional services, no matter what the outcome. A specific statement, such as "payment to the engineer is to be made without delay, and is not contingent upon the results of any legal action, arbitration or out-of-court settlement," should be included in the agreement.

Professional engineers should provide clients with an advance estimate of the total costs of their proposed services, as soon as possible after the initial meeting with the client. This will permit consideration of alternatives to the proposed scope of work, and their implementation, if appropriate.

For more complex and lengthy programs, it is useful to provide clients with a detailed fee schedule, and to make the document a part of the agreement.

Typically the engagement would involve one agreement covering the following stages:

- 1. Investigation and research and providing preliminary views;
- 2. Completion of investigation and forming opinion;
- Providing an expert report;
- 4. Reviewing and responding to the other side's expert report;
- 5. Responding to questions about the original report or the other side's reports;
- 6. Preparing for testifying; and
- 7. Testifying.

In some cases, clients may choose to terminate a contract before all stages are completed. Contracts with clients should include arrangements for payment for all work done by a professional engineer in these circumstances.

Alternatively, clients may prefer to retain professional engineers for each of the stages individually, in which case engineers should consider requesting separate contracts for each stage.

Agreements should clearly set out the rates of payment for the various services, the times and terms of payment and the desired guarantee of fees. For projects that require extended periods of investigation or activity, contracts should provide for progress payments and, if appropriate, for cost escalation.

It should be possible to describe contractually the full program envisaged, at least up to the actual court appearance, at which time control passes out of an engineer's hand. It is usual that changes and additions to the original terms of the

<sup>3.</sup> However, where a professional engineer has a pre-existing or ongoing relationship with the client, there must be consideration as to whether this precludes the professional engineer from fulfilling his or her duty of neutrality and impartiality. At a minimum, the relationship must be disclosed in the expert report.

contract will occur, initiated by client, legal counsel, or by the professional engineer. It is important that careful documentation and accounting be made for all changes to the scope of work.

### 5. Preparing for Appearance as an Expert Witness

### 5.1 Conducting Investigations and Field Work

Before professional engineers can give any evidence, they must have made an investigation that involves an examination of the matter in dispute and any analyses that might be required to reach their conclusions.

Research might also involve reviewing work, including designs, shop drawings, test data and reports, prepared by other professional engineers and agencies to interpret this information for the client and counsel or to provide opinions about the completeness, limitations and accuracy of that work.

#### 5.1.1 Documentation

It is important that all pertinent information be properly identified and recorded for later use in legal processes. Using the following checklist, professional engineers might record:

- where, when and from whom information was obtained;
- names and descriptions of things; and
- time, place and location of site investigation(s).

During site investigations, engineers should be careful to record any information that might be unavailable at a later time. Notes regarding observations, measurements and other facts available only at the site should be clearly recorded in a format that cannot be easily altered and should be protected from loss or destruction. Professional engineers should make use of photographs, video and audio recordings, on-site testing and sampling, and other appropriate data collection techniques to ensure that all relevant information is found, verified, captured and available to provide support for any opinions provided to others.

#### 5.1.2 Reports

In work done for legal purposes, it is customary to use a written report as the primary means of conveying evidence and opinions to be put forward by the expert. These reports should employ clear language and use terminology in a manner that is consistent with meanings commonly understood in the profession.

Any report prepared as an expert opinion must set out, in its entirety, the substance of the witness' proposed testimony. It is important to ensure that the client, his or her counsel, the other side, or the court or tribunal are not misled by a report that overstates the client's position, or by failure to give proper emphasis to adverse or competing considerations.

Engineering is a very collaborative profession and during the report writing phase professional engineers often ask at least one colleague to review the work. There is nothing wrong with engineers consulting with another engineer before finalizing a draft opinion. This can be a useful way of ensuring that the expert opinion is as complete and accurate as it can be. However, there are certain legal considerations that they should be aware of.

Due to recent case law and the January 2011 amendments to the *Rules of Civil Procedure*, the legal landscape for expert witnesses has changed dramatically in the past few years. Specifically, there is an assumption that a report prepared by an expert witness "should not only be, but also should be seen to be, the independent product of the expert" <sup>4</sup>. To ascertain whether this is the case, courts have taken measures to clarify for experts the rules for maintaining independence.

In particular, the *Rules of Civil Procedure* was amended to ensure that the independent and impartial role of the expert was unequivocally clear to both parties and the expert. Rule 53.03(2.1) now mandates that **every** expert report include certain information, including:

- The expert's reasons for his or her opinion, which must include:
  - a description of any research conducted by the expert that led the expert to form the opinion, and
  - a list of every document, if any, relied on by the expert in forming the opinion.

The independence of an expert was also a consideration in *Ikea Properties Ltd. v. 6038212 Canada Inc.*, a 2010 decision of the Ontario Superior Court of Justice, where the court explained that "relied on" can be interpreted to mean information that is used to support or to contradict a position or opinion.

The court in that case goes on to say that its order "does not require disclosure of any existing draft of [the] reports nor of documents, email or letter, received or sent *that were not relied on* by the expert in forming the opinion." (para. 19) However, the corollary of this statement is that if there are any documents, emails or letters, or drafts that were relied upon by the expert in coming to his or her final opinion, they may be required to be disclosed.

PEO was also pointed to R. v. Norton, a 2007 decision of the Ontario Superior Court of Justice that dealt with the question of disclosure by an expert witness. In this case, defence counsel challenged the impartiality of an acknowledged expert on the grounds that he engaged in a peer review with a colleague and created four separate drafts of his report yet failed to disclose both the number of the drafts and the extent of his discussions with others regarding the content of the report. The court found that it is not unreasonable for an expert witness to ask for a peer review of the report but also that experts are obliged to identify the peer reviewers and to specifically identify any suggestions provided by the reviewers that led to alterations of the drafts. Because the expert did not disclose this information, the court ruled the expert witness' evidence was inadmissible and the case was dismissed, because the Crown had no other evidence.

Although this decision preceded the recent amendments to the Rules, it provides guidance to experts on what should be disclosed to ensure impartiality and independence and the appearance thereof.

Courts accept that there can and should be consultation in the development of expert opinions and that changes to the report may result. However, in some circumstances there may be a need for the expert to be questioned on what impact the consultation had on his or her development of the opinion (especially if the peer review resulted in a significant change to the opinion).

To deal with this possibility, professional engineers need to keep track of any communications regarding the report so that they can disclose these communications if needed. In addition, if professional engineers make a draft of an expert opinion available to others, they need to keep a copy of the draft as it appeared both before and after it was discussed with the peer, so that changes in the draft opinion resulting from the discussion can be disclosed. Also, the fact that this

consultation occurred should be mentioned in the expert opinion report itself. All communications should be unambiguous, objective, professional in tone, and should fully explain the engineer's message in direct, explanatory sentences.

This peer consultation on a draft opinion is different from the information gathering that occurs before a professional engineer produces a draft. Professional engineers can discuss the issues (usually on a no-names basis) with peers while thinking through the issues. While they need to make a record of these consultations, at least in a general way, professional engineers do not have to disclose the evolution of the first draft of the report.

Because the legal requirements for expert witnesses are currently in flux, it is important that professional engineers who anticipate working collaboratively on reports or having other engineers review drafts should discuss the implications of these practices with legal counsel. Professional engineers should provide their client's counsel with a list of all of the sources of the engineer's information. This includes factual information collected, the conclusions of the engineer's analyses, assessment or testing, and statements from any colleagues or authorities consulted.

Before preparing the final report, it is advisable to discuss the findings of fact and the conclusions with the client and the client's counsel to ensure the report addresses the issues in the proceedings. However, professional engineers must not agree to alter their reports so as to distort their opinions to advocate for the client.

An engineering report offering opinions, judgments or analyses based on the application of engineering principles must be sealed in accordance with section 53, O. Reg. 941. Consult PEO's *Guideline on the Use of the Professional Engineer's Seal* for more information on sealing practices.

### 5.1.3 Rules of Civil Procedure

The *Rules of Civil Procedure* govern practice and procedure in the Superior Court of Justice of Ontario and are applicable to professional engineers appearing as a witness in that court<sup>5</sup>. The Rules cover such items as the type of forms to be used, methods for starting legal procedures, and the processes for notifying courts and parties or for serving subpoenas and other legal documents. In general, these rules are of interest primarily to the lawyers and court officials. However, on January 1, 2010,

<sup>5.</sup> Other courts and tribunals may have similar Rules.

the *Rules of Civil Procedure* were significantly amended and one of these amendments directly affects the expert witness.

The amendment relates to the form and content of expert reports prepared for matters that will appear before the Superior Court of Justice. These changes were made so that the court can be assured that expert witnesses are neutral and impartial and aware that they are providing assistance to the court rather than being an advocate for the party calling the expert.

To promote this goal, the new Rules have two features. The first is that expert reports must cover the following topics:

- 1. The expert's name, address and area of expertise.
- 2. The expert's qualifications, employment and educational experiences in his or her area of expertise.
- 3. The instructions provided to the expert in relation to the proceeding.
- 4. The nature of the opinion being sought and each issue in the proceeding to which the opinion relates.
- 5. The expert's opinion respecting each issue and, where there is a range of opinions given, a summary of the range and the reasons for the expert's own opinion within that range.
- 6. The expert's reasons for his or her opinion, including,
  - a description of the assumptions of fact on which the opinion is based,
  - ii. a description of any research conducted by the expert that led him or her to form the opinion, and
  - iii. a list of every document, if any, relied on by the expert in forming the opinion.

The second feature is that expert witnesses must include with their reports a certificate indicating that they understand and have complied with their duties. The *Rules of Civil Procedure* include a certificate signed by expert witnesses (Form 53 –ACKNOWLEDGMENT OF EXPERT'S DUTY, see Appendix 1) that will be used by the courts.

### 5.2 Testing

Expert engineering opinions may need to be supported by confirmatory testing, which may be undertaken by a professional engineer or by a third-party laboratory or technical expert.

When testing to support a professional engineer's evidence must be done by others, engineers should be responsible for arranging for the selection of the laboratory to be used, the assessment of the staff involved, confirmatory or other checks to be made by others and for personal involvement in the process, when it is to be done according to specific instruction. It is important that engineers have first-hand knowledge of testing and procedures to maintain personal credibility about their opinions based on the test results. If engineers cannot address questions regarding the methodology, accuracy, viability and scientific support for the test procedures, another expert should be retained to deal with these questions.

Professional engineers should advise legal counsel about the testing protocol that should be followed. If a client, for any reason, wants to omit part of the testing, engineers are required by subsection 72(2)(f), O. Reg. 941, to advise the client about the consequences of any changes to the protocol.

### 5.3 Preservation of Evidence

It is important that data and material, which may become evidence in a hearing or court procedure, be held safely under a professional engineer's control until they are required to be produced. Evidence should be identified by marking and/or tagging it with information about where, when and under which circumstances it was taken. It should be retained and protected until appropriate clearance or permission for destruction is given.

Calculations not in the report, test results and file data should be kept confidential, but in a presentable form so they can be used at an appropriate time, and on the understanding that they may become part of the court documentation.

### 6. Appearing Before a Court or Tribunal

### 6.1 Professional Conduct of an Expert Witness

### 6.1.1 Pre-hearing Preparation

Expert witnesses should know their subject thoroughly. Therefore, it is incumbent on them to review all relevant file documents to the point where they are fully familiar with the contents, and believe they can answer questions relating to them. Engineers should be aware that opposing counsel may, and in all likelihood will, ask questions different from those anticipated. This likelihood should emphasize the need to insist on conducting the preparation with assistance from legal counsel.

When appearing on behalf of a client who is represented by a lawyer, it is essential that engineers request a preparatory meeting with the lawyer. This allows them to review the evidence that will be presented, and ensure that counsel for the client understands what will be said on the stand. It is essential that counsel not only knows what evidence will be given, but also understands what that evidence means. It may be necessary to provide a crash course to the lawyer; if counsel does not ask the right questions, both the lawyer and the witness might appear less than fully professional. At the preparatory meeting, it is appropriate for the lawyer to perform a "mock cross-examination" of the professional engineer.

### 6.1.2 Content of an Expert Witness' Testimony

Expert witnesses should state the facts or assumptions upon which their opinions are based. They should not omit to consider material facts that could detract from their opinions. Expert witnesses should make it clear when a particular question or issue falls outside their expertise. If insufficient data is available, this must be stated. Similarly, any qualification of an opinion should be stated in the testimony.

If, after exchange of reports, expert witnesses change their views on a material matter having read the other side's expert's report or for any other reason, such change of view should be communicated (through legal representatives) to the other side without delay, and documented.

It is important that expert witnesses remember that the testimony being given is not directed to the examiner, cross-examiner or client, but to the court, with the objective of enabling the court to make the best judgment possible.

Expert witnesses should not speak as advocates, or as debaters, but should present facts, expert observations and conclusions.

In less formal proceedings, such as arbitrations or tribunals, there may be more freedom in the process. In such cases, this freedom extends to committee members, and to members of the public present; their questions, often of a nature that would not be admitted in court, might be more difficult to deal with than would be the case in court, or more formal board proceedings. Engineers should remember their personal role in such questioning, confining answers to those matters with which they are thoroughly familiar and avoiding non-engineering-related comments.

In public inquiries, where there is less likelihood of being asked pointed and direct questions to clarify testimony, expert witnesses are obliged to choose their words carefully, so that those for whom the hearing has been convened are sure to understand any technical information. It may be useful to rehearse the presentation using the fewest possible words and terms that listeners will understand. The avoidance of technical terms and acronyms is preferred, unless they are defined carefully when used.

### 6.1.3 Giving Testimony

It is important that professional engineers appearing as expert witnesses be properly prepared for their testimony by reviewing all evidence prior to a hearing. They must have a complete understanding of the case and the basis for their expert opinion.

When attending a hearing and especially when providing testimony, professional engineers should be dressed in business attire, well-groomed, and behave with appropriate decorum. They should remember that they are representatives of the profession. While some might question the importance of dress, they should realize that people tend to discredit witnesses who are unkempt, obnoxious or otherwise offensive.

Witnesses should avoid exhibiting an air of superiority, frivolity or disdain, and should avoid loss of temper, sarcasm and condescension in their demeanour. Appearing to be overly conscious of one's status as a professional is not helpful. Above all, professional engineers must never allow themselves to become angry. While qualifications should

not be discounted, they should be used with humility, and not flaunted.

### 6.2 Procedures and Rules for Courts and Tribunals

The court's dealings with expert testimony have three parts. The first stage is to determine whether expert opinion is needed. If the court agrees that factual evidence cannot be evaluated by the triers of fact and that they will need to rely on opinions offered by experts, the court will then determine whether the witness should be accepted as an expert. This stage is called "qualifying" the expert. The third stage is hearing the opinion evidence.

Witnesses are called in a previously agreed upon order. They will be subject to direct examination, cross-examination, redirect examination and, very occasionally, re-cross-examination, in that order.

Witnesses should take instructions from the officials of the court, such as the judge and the lawyers involved; they should follow their lead, and observe with care the customary courtesies. It is not desirable to be moving about when not actively involved. A discreet silence should be maintained.

When waiting to be called as a witness, it is important to be careful in conversations with strangers, or those whose particular interests in the proceeding are unknown. While politeness is expected, and safe topics may be treated in a light vein, discussion of evidence should be avoided. Whatever is said in such discussions can be asked of the expert witness on cross-examination.

It is useful to pay close attention to the proceedings, and to attempt to get to know and understand the positions of the parties appearing before the tribunal.

Once called and sworn or affirmed<sup>6</sup>, witnesses under examination customarily are not allowed to discuss the case with anyone, until asked to stand down. However, on occasion, they may properly discuss with their client's counsel matters that have not been covered in the examination up to that time, but it is inadvisable for witnesses to initiate such discussions. Between completion of examination by a client's lawyer (examination-in-chief) and commencement of cross-examination by opposing counsel, no discussion of matters dealt with, related to, or touched upon during the examination-in-chief may take place. Similarly, during cross-examination, and between the completion of cross-examination and the com-

mencement of re-examination, no discussions relative to any aspect of the proceedings are permitted.

Witnesses before lay tribunals will usually find that many of the usual courtroom procedures will apply. However, the conduct of the hearing will follow the rules laid down by the chair; these must be observed.

### 6.2.1 Qualification as an Expert by the Court

The process of "qualifying" an expert is like a mini-hearing. The party calling the witness asks the expert questions demonstrating the expertise of the witness in a particular area. That expertise can be obtained by study or experience (usually both) and is generally demonstrated by evidence of degrees, diplomas or certificates earned by the witness and the possession of licences issued by authorities regulating a profession. The expertise can be verified by such indicators as published books or articles (particularly if they are peerreviewed), invited speeches or presentations, professional awards or recognitions, and previous acceptance by a court or tribunal as an expert witness in the area. It is important for the party calling an expert to clearly indicate the field or area in which the expert will be asked to express an opinion.

In giving oral evidence as to qualifications, the witness should concentrate on the knowledge, skill and experience that relates to the case at hand, and should avoid wasting time reciting non-relevant information. Prepared listings of qualifications or *curricula vitae*, are sometimes useful, and may, with the agreement of counsel, be introduced into the proceedings as an exhibit. They should also be shown to counsel well in advance of the hearing.

The other party is then given the opportunity to challenge the expertise of the expert. Generally, this is done by cross-examining the expert. Sometimes the challenge is genuine (i.e. being a true attempt to persuade the tribunal not to receive the evidence). More commonly, the challenge is simply to lay the groundwork for later arguments as to why the expert's evidence should not be given much weight.

After any re-examination, the court or tribunal then has to determine whether to receive the evidence.

Relevance of the evidence provided by a witness is decided by the judge as a question of law. Occasionally, expert evidence may not be admitted where there is a danger that it may be misused or may distort the fact-finding process, or may confuse the jury. The judge will decide that expert testimony is necessary if the ability to understand and reach an opinion based solely on the facts is beyond the experience and knowledge of the trier of facts.

#### 6.2.2 Conduct Under Examination

Examination-in-Chief. The witness will first be examined by the client's lawyer, who will ask a series of questions similar to those discussed in private, at an examination for discovery, or in an interrogatory. It is important that the answers given are consistent with previous replies, unless new evidence or information may lead to different opinions. There will probably not be any serious challenge at this stage, but witnesses must be careful to be as consistent and clear as possible, at least where the information upon which their opinions are based remains unchanged. The truth is generally considered to be the accurate answer to a question. To have meaning, however, the answer must be understood in an accurate fashion. Understanding is the essential element; professional engineers' answers must convey an accurate representation of engineering phenomena that can be understood. It is important that expert witnesses avoid trying to impress anyone with terms that are unnecessarily complex, while remembering that over-simplification can have equally adverse effects.

The commonly accepted test of suitability for a response is to determine whether it is what a highly qualified colleague would say under similar circumstances.

If an expert is asked a difficult question, there is nothing wrong in asking for time to reflect on it before answering.

Extreme caution should be taken when an opinion is asked outside the field of expertise in which an expert is accredited. If professional engineers believe it is not possible to provide a justifiable opinion, they should say so. An opinion may be justified if it is possible for an engineer who does not have expert knowledge to provide a perspective on the matter based on general engineering knowledge or experience. If professional engineers decide to give qualified responses, responses should begin with a statement that the question requires them to provide an opinion on a matter in which they are not experts.

If a witness remembers something or needs to provide additional information after they have answered a question, there will be no objection to retracing previously covered steps, provided the lawyer agrees. However, it is best not to interrupt the flow of questioning.

An expert witness can provide information not requested by counsel, judge or panel if the expert believes it is needed to fully and fairly answer a question. Thus, if questions are asked in a way that calls for incomplete or misleading answers, expert witnesses have a duty to provide complete answers. If questions are not asked that result in opinions being incomplete or misleading, expert witnesses have a duty to answer the questions that were not asked. However, it is generally frowned upon for an expert witness to otherwise volunteer answers to questions that were not asked, as this can show bias on the part of the expert witness. That is, the role of the expert witness is to answer questions and not to assume the role of an advocate (who, in our adversarial system, get to choose what evidence will and will not be offered).

While on the stand, the use of, or reference to, notes, codes, handbooks or other reference materials should occur only if such a procedure has been agreed to beforehand by the parties involved, including legal counsel, who must consider the possibility that such notes could be forced into evidence, as exhibits. On occasion, permission of the judge or tribunal to consult reference materials is needed. When testifying as experts, it is essential that witnesses give only their own opinions; repeating the opinions of other experts or reciting information from text books is self-defeating.

Professional engineer witnesses should always keep in mind the sections of O. Reg. 941 respecting appearances at public hearings and relations with other professional engineers. Section 77.2.iii., O. Reg. 941, deals with a professional engineer's duty as a witness to provide only competent, unbiased testimony. Inasmuch as there will likely be professional engineers appearing as expert witnesses on behalf of the opposing party or parties, engineers should pay particular attention to sections 77.7.i, ii and iii of O.Reg.941, which deal with conduct in relation to other engineers. It is important that witnesses couch their responses in the most con-

structive and positive terms when referring to other professionals, or their work. It is patently unethical for one engineer to refer to another in a malicious manner; this also creates a public spectacle demeaning not only to the participants, but also to the profession as a whole. Such conduct also undermines an expert's own plausibility as the key component to an expert's credibility is neutrality. However, according to section 77.8 of Reg. 941, a professional engineer testifying before any public tribunal must reveal any unprofessional, dishonest or unethical conduct exhibited by another engineer that is known to the testifying engineer.

 Cross-examination. This stage will be conducted by lawyers representing other parties. Their objective might well be to discredit witnesses by questioning their competence to say certain things, or by trying to find inconsistencies in their testimony. If they are successful in finding even one thing wrong, they might be able to cast doubt on the whole testimony.

Lawyers use many techniques to put witnesses off guard. They may suggest variations of what was originally intended by witnesses and ask them to agree to generalizations of increasing narrowness, until witnesses are unable to prevent themselves from being shown to be inconsistent. Another technique is to offer different assumptions of fact that should change the expert's opinion to see if the expert witness will maintain the same opinion, thereby demonstrating a lack of impartiality.

The safest policy for expert witnesses is to listen closely to the exact question put by the cross-examiner and, unless fully satisfied that the proposition that is put correctly expresses their views, use their own language rather than the language of the cross-examiner. If asked why they are reluctant to agree to a cross-examiner's proposition, witnesses can safely reply that they can never quite be sure what the cross-examiner means by some of his or her language, but can at least be sure of what they themselves have in mind when using particular words to express opinions.

It is most important to preserve credibility. This may be accomplished by consistency in all answers, by reasonable, logical explanations where possible, by asking for clarification when necessary and by acknowledging that one does not know, when that is the case. Witnesses should never attempt to justify their actions. If a cross-examiner attacks in an accusatory fashion, implying that something is wrong, a witness should listen carefully to the question, and answer it as directly as possible, consistent with previous testimony (where the information and the assumptions are the same). If a cross-examiner demands a yes or no answer in cases where a witness judges that one is not appropriate, the witness should explain that the question cannot be answered in that way without misleading the court or tribunal. However, it is essential that the witness be able to explain or confirm this contention, or credibility will be lost.

Expert witnesses should scrupulously maintain an attitude of professionalism, accompanied with sincerity and complete honesty. It is particularly important that professional engineers avoid losing their tempers, or displaying any rudeness toward cross-examining counsel. It is not unusual for counsel to attempt to annoy witnesses, by using an abrasive approach during cross-examination. Engineers should avoid becoming argumentative or uncooperative. It is an opposing counsel's duty to test and clarify a witness's opinions and to identify points where an opinion is weakly supported. Expert witnesses do not support their positions if they feel threatened or intimidated and become angry. If counsel is successful, witnesses will appear to be less sympathetic and credible. Remember, lawyers are advocates, expert witnesses are not; they are governed by different expectations.

Finally, witnesses should provide direct responses to questions and avoid being evasive. That is part and parcel of being neutral and impartial. An evasive response may be judged to be a non-answer, or may lead into areas best left alone. If witnesses do not understand the question, they should ask for clarification.

 Re-direct examination. Re-direct examination may follow cross-examination. If such a procedure is used, it should be judged to be very important. Counsel for the client may ask additional questions on points not previously raised by the witness, and on which clarification is needed. The additional questioning may also be necessary to correct misunderstandings the client's lawyer suspects may have been made during cross-examination. Following re-direct examination, the judge or tribunal may ask questions. These are generally only questions for clarification. Expert witnesses should listen carefully to such questions to see if there are areas of confusion or misinterpretations of what the expert has said.

### 6.2.3 Advising Counsel during Examination of Other Witnesses

There is an increasingly prevailing view that acting as a trial assistant may show partiality by an expert witness. As a result, where feasible, legal counsel often use two experts, one as a trial assistant and one as an expert witness. If fulfilling both roles, professional engineers should maintain neutrality as much as possible. Keep in mind that conversations with legal counsel are disclosable once an expert witness takes the witness stand.

If asked to advise a lawyer during examination of other witnesses, professional engineers may agree. However, the lead should come from the lawyer; consequently, the engineer should not anticipate upcoming questions. Notes may usually be taken during the proceedings.

Expert witnesses may be asked to assist a client's counsel in two particular situations. The first involves acting as an interpreter of technical testimony given by an opposing expert under questioning by opposing counsel. The second involves the initiation of questions that the client's counsel might ask the opposing expert under cross-examination. It is in this latter situation that professional engineers must be particularly conscious of their obligations to fellow engineers under the Code of Ethics; they must avoid phrasing such questions in a malicious or destructive manner. Elicitation of the desired admissions can be accomplished through the

use of objective, impersonal and indeed constructive forms of questioning, which will reflect the professionalism and integrity of the assisting expert. Therefore, professional engineers should allow counsel to phrase these questions, providing ideas only.

Such assistance, if given at all, should be done in a fair and balanced manner. A good test for the appropriateness of assistance is to ask yourself: "Would I feel uncomfortable if this discussion were taped and played when I am under cross-examination on the witness stand?"

### 6.2.4 The Use of Courtroom Aids

Models, posters, slides, audio and video recordings and photographs might serve a useful purpose in certain courtroom situations. It is a professional engineer's duty to convey technical knowledge related to a case to the court in a manner that has proper technical balance, and can be understood by non-technical people. Visual aids may be helpful, especially when the information should be presented in a clearer fashion to illustrate the point properly. Any such aids should be prepared with the active participation of counsel, and used only after counsel's full approval has been given. Please note that the admission of any such aids may result in an objection from the opposing counsel. The judge or chair will have the final determination as to whether the aid can be used. It is important that counsel agree that the proposed presentation will be helpful even though it may come into evidence as an exhibit. It is essential that the witness be in a position to substantiate or verify any of the exhibits under cross-examination. The effectiveness of the presentation may hinge on the surroundings, and the decision to use such an approach may be affected by the suitability of the courtroom, or other facility, for adequate viewing.

### 7. Definitions

- Expert Witness—person with specialized knowledge of a technical or scientific subject, whose testimony includes interpretation of the facts and the giving of opinions about their relevance in making judgments about the matter under consideration.
- *Evidence*—any information furnished in a legal proceeding, either by witnesses or documents, to support a contention. Engineers are cautioned that the use of the word "evidence" in engineering contexts sometimes has a different meaning than its use in the courts.
- Fact—something known to exist or to have occurred.
   Facts are usually perceived directly through the five senses. Practitioners are cautioned to make a clear distinction between opinion and fact.

- Fact witness—person providing testimony of personal observations or experience, or of known facts related to the matter under consideration.
- Opinion—a belief or judgment based on the analysis
  of facts rather than the direct observation of the facts
  themselves.
- Trier of fact—a person or group of people who assess the
  evidence presented during a legal proceeding and decide
  what the facts are. To decide a fact is to judge whether
  something existed or some event occurred. The trier of
  fact may be the judge, the jury, or a panel in a hearing
  or tribunal.

### Appendix 1. Form 53-Acknowledgement of Expert's Duty

### FORM 53

Courts of Justice Act

### ACKNOWLEDGMENT OF EXPERT'S DUTY

(General heading)

### ACKNOWLEDGMENT OF EXPERT'S DUTY

1.	My name is
2.	I have been engaged by or on behalf of
3.	I acknowledge that it is my duty to provide evidence in relation to this proceeding as follows:
	(a) to provide opinion evidence that is fair, objective and non-partisan;
	(b) to provide opinion evidence that is related only to matters that are within my area of expertise; and
	(c) to provide such additional assistance as the court may reasonably require, to determine a matter in issue.
4.	I acknowledge that the duty referred to above prevails over any obligation which I may owe to any party by whom or on whose behalf I am engaged.
Dat	re
	OTE: This form must be attached to any report signed by the expert and provided for the purposes of subrule 03(1) or (2) of the <i>Rules of Civil Procedure</i> .
( N c	vember 1, 2008) RCP-E 53

# Appendix 2. 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

Professional Standards Committee Attention:

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

**Email:** practice-standards@peo.on.ca

### Appendix 3. PEO Professional Practice Guidelines and Standards

### 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. Engineering Services to Municipalities (1986)
- 9. Environmental Site Assessment, Remediation and Management (1996)
- 10. General Review of Construction as Required by the Ontario Building Code (2008)
- 11. Geotechnical Engineering Services (1993)
- 12. Guideline to Professional Practice (1998)
- 13. Human Rights in Professional Practice (2009)
- 14. Land Development/Redevelopment Engineering Services (1994)
- 15. Mechanical and Electrical Engineering Services in Buildings (1997)
- 16. Professional Engineer as an Expert Witness (2011)
- 17. Professional Engineer's Duty to Report (1991)
- 18. Project Management Services (1991)
- 19. Reports for Pre-Start Health and Safety Reviews (2001)
- 20. Reports on Mineral Properties (2002)
- 21. Roads, Bridges and Associated Facilities (1995)
- 22. Selection of Engineering Services (1998)
- 23. Services for Demolition of Buildings and other Structures (2011)
- 24. Solid Waste Management (1993)
- 25. Structural Engineering Services in Buildings (1995)
- 26. Temporary Works (1993)
- 27. Transportation and Traffic Engineering (1994)
- 28. Use of Agreements between Client and Engineer for Professional Engineering Services (including sample agreement) (2000)
- 29. Use of Computer Software Tools Affecting Public Safety or Welfare (1993)
- 30. Use of the Professional Engineer's Seal (2008)
- 31. Using Software-Based Engineering Tools (2011)

### Standards

- 1. General Review of Construction of a Building (2008)
- 2. General Review of Demolition and Demolition Plans (2008)

### Notes



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