



GENERAL

# PEER REVIEW

VERSION 1.0  
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**ENGINEERS &  
GEOSCIENTISTS**  
BRITISH COLUMBIA



# PREFACE

These *Professional Practice Guidelines – Peer Review* were developed by Engineers and Geoscientists British Columbia to guide professional practice related to Peer Reviews across all engineering and geoscience areas of practice.

These guidelines were first published in 2022 to establish roles and responsibilities regarding Peer Reviews and clarify obligations of Engineering/ Geoscience Professionals who conduct Peer Reviews, or are subject to Peer Review, within any discipline and/or area of practice. Quality management related to Peer Reviews is also addressed in these guidelines.

Peer Reviews are a critical part of professional practice; however, confusion exists around the requirement, intent, and standard outcomes of Peer Reviews. It is important to distinguish between Peer Reviews, Practice Reviews, Independent Reviews,

documented Checks, Expert Opinion, and other types of legislated reviews, as well as to clarify the conduct and requirements for Peer Reviews completed by Registrants. Engineers and Geoscientists BC has therefore developed these guidelines to clarify the role of Peer Reviews in professional practice and guide Registrants in the steps to be taken when completing a Peer Review or when subject to a Peer Review.

These guidelines describe the expectations and obligations of professional practice to be followed at the time they were prepared. However, this is a living document that is to be revised and updated as required in the future, to reflect the developing state of practice.

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# ABBREVIATIONS

ABBREVIATION	TERM
BC	British Columbia

# DEFINED TERMS

The following definitions are specific to these guidelines. These words and terms are capitalized throughout the document.

TERM	DEFINITION
<b>Act</b>	<i>Professional Governance Act</i> [SBC 2018], Chapter 47.
<b>Authenticate, Authentication</b>	A Professional Registrant applying all of the following to a Document: (a) the Professional Registrant’s manual seal; (b) the Professional Registrant’s handwritten signature; and (c) the date of Authentication. OR (a) the Professional Registrant’s digital seal; (b) a digital image of the Professional Registrant’s signature; (c) a digital image of the date of Authentication; (d) the Professional Registrant’s digital certificate.
<b>Authority Having Jurisdiction</b>	The jurisdictional body (usually municipal) with authority to administer and enforce the <i>British Columbia Building Code</i> , the <i>City of Vancouver Building By-law</i> , the <i>National Building Code of Canada</i> , or a local building bylaw or code, as well as government agencies that regulate a particular function in a building.
<b>Bylaws</b>	The Bylaws of Engineers and Geoscientists BC made under the <i>Act</i> .
<b>Checks, Checking</b>	A documented process to confirm that the professional engineering or professional geoscience work is complete, meets all input requirements, and is suitable for its intended use or purpose. This encompasses all of the various Checks that occur or ought to occur throughout the development, presentation, production, and performance of any Regulated Practice work in any sector.
<b>Code of Ethics</b>	The Code of Ethics of Engineers and Geoscientists BC, set out in Schedule A of the Bylaws.
<b>Document(s)</b>	Includes any physical or electronic record, including but not limited to a report, certificate, memo, specification, drawing, map, or plan, that conveys a design, direction, estimate, calculation, opinion, interpretation, observation, model, or simulation that relates to the Regulated Practice.
<b>Documentation</b>	See the definition for “Record”.
<b>Engineering/Geoscience Professional(s)</b>	Professional engineers, professional geoscientists, professional licensees engineering, professional licensees geoscience, and any other individuals registered or licensed by Engineers and Geoscientists BC as a “professional registrant” as defined in Part 1 of the Bylaws.
<b>Engineers and Geoscientists BC</b>	The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC.

TERM	DEFINITION
<b>Expert Opinion</b>	An independent, objective assessment of an engineering or geoscience issue (such as an event or situation or the work of another Engineering/Geoscience Professional) in order to assist a decision maker (such as in legal proceedings) in reaching an informed decision
<b>Independent Review</b>	A documented evaluation of the concept, details, and Documentation based on a qualitative examination of Documents containing all relevant and material information before the professional activity or work is submitted to those who will be relying on it, by an appropriately qualified and experienced Professional Registrant who has not been involved in the professional activity or work. This applies to both Independent Review of structural designs and Independent Review of high-risk professional activities or work, in accordance with the Bylaws and quality management guides.
<b>Originating Professional</b>	An Engineering/Geoscience Professional whose engineering or geoscience work is subject to Peer Review
<b>Peer Review</b>	The evaluation by a Reviewing Professional of the engineering or geoscience work done by the Originating Professional, including work done under the direct supervision of another Engineering/Geoscience Professional, for a specific purpose defined by the Requesting Party.
<b>Practice Review</b>	A detailed technical and/or focused review of a Registrant’s practice conducted by subject matter experts and directed by the Audit and Practice Review Committee, in cases where professional or ethical issues or risks have been identified either during an audit, a Practice Review, or through the complaint and investigation process.
<b>Professional Registrant</b>	Professional engineers, professional geoscientists, professional licensees engineering, professional licensees geoscience, and any other individuals registered or licensed by Engineers and Geoscientists BC as a “professional registrant” as defined in Part 1 of the Bylaws.
<b>Professional of Record</b>	The Engineering/Geoscience Professional who is professionally responsible for activities, work, or Documents related to the Regulated Practice.
<b>Record (Documentation)</b>	Any Document that is evidence of Regulated Practice activities, events, or transactions, or is evidence that a Professional Registrant has met their professional and contractual obligations.
<b>Registrant</b>	Means the same as defined in Schedule 1, section 5 of the <i>Act</i> .
<b>Registrant Firm</b>	A firm that is registered with Engineers and Geoscientists BC as a Registrant.
<b>Regulated Practice</b>	As defined in the <i>Act</i> and the <i>Engineers and Geoscientists Regulation</i> , the carrying on of a profession by a registrant of a regulatory body, which for the purposes of these guidelines means the practice of professional engineering or the practice of professional geoscience.
<b>Regulatory Authority</b>	The governmental body charged by statutes or regulations applicable in British Columbia with administering or enforcing regulatory requirements involving the engineering or geoscience practice of a Registrant. The Regulatory Authority may be an Authority Having Jurisdiction, or it may be another governmental body.

PROFESSIONAL PRACTICE GUIDELINES  
PEER REVIEW



TERM	DEFINITION
<b>Requesting Party</b>	The party requesting the Peer Review, which may be Engineers and Geoscientists BC, a Regulatory Authority, an Authority Having Jurisdiction, a client, an employer, a supervisor, a third party, a member of the public, or the Originating Professional.
<b>Reviewing Professional</b>	An appropriately qualified Engineering/Geoscience Professional who is completing a Peer Review of an Originating Professional's work.

# VERSION HISTORY

VERSION NUMBER	PUBLISHED DATE	DESCRIPTION OF CHANGES
<b>1.0</b>	August 2, 2022	Initial version.

# 1.0 INTRODUCTION

Engineers and Geoscientists British Columbia is the regulatory and licensing body for the engineering and geoscience professions in British Columbia (BC). To protect the public, Engineers and Geoscientists BC establishes, monitors, and enforces standards for the qualification and practice of its Registrants.

Engineers and Geoscientists BC provides various practice resources to its Registrants to assist them in meeting their professional and ethical obligations under the *Professional Governance Act (the Act)* and Engineers and Geoscientists BC Bylaws (Bylaws). Those practice resources include professional practice guidelines, which are produced under the authority of Section 7.3.1 of the Bylaws and are aligned with Code of Ethics Principle 4.

Each professional practice guideline describes expectations and obligations of professional practice that all Engineering/Geoscience Professionals are expected to have regard for in relation to specific professional activities. Engineers and Geoscientists BC publishes professional practice guidelines on specific professional activities where additional guidance is deemed necessary. Professional practice guidelines are written by subject matter experts and reviewed by stakeholders before publication.

Having regard for professional practice guidelines means that Engineering/Geoscience Professionals must follow established and documented procedures to stay informed of, be knowledgeable about, and meet the intent of any professional practice guidelines related to their area of practice. By carefully considering the objectives and intent of a professional practice guideline, an Engineering/Geoscience Professional can then use their professional judgment when applying the guidance to a specific situation. Any deviation from the guidelines must be documented, including the rationale for the deviation. Where the

guidelines refer to professional obligations specified under the *Act*, the Bylaws, and other legislation or regulation, Engineering/Geoscience Professionals must understand that such obligations are mandatory.

Peer Reviews are a critical part of professional practice; however, confusion exists around the requirement, intent, and standard outcomes of Peer Reviews. It is important to distinguish between Peer Reviews, Practice Reviews, Independent Reviews, documented Checks, Expert Opinion, and other types of legislated reviews, as well as clarify the conduct and requirements for Peer Reviews completed by Registrants. Engineers and Geoscientists BC has therefore developed these guidelines to clarify the role of Peer Reviews in professional practice, and to guide Registrants in the steps to be taken when completing a Peer Review or when subject to a Peer Review.

These *Professional Practice Guidelines – Peer Review* provide guidance on professional practice for the information of Registrants, Regulatory Authorities, Authorities Having Jurisdiction, employers, clients, the public, and other stakeholders who might be involved in Peer Reviews as they pertain to the practices of engineering and geoscience in BC.

These guidelines outline the appropriate standard of practice to be followed at the time they were prepared. This is a living document that is to be revised and updated as required in the future, to reflect the developing state of practice.

## 1.1 PURPOSE OF THESE GUIDELINES

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This document provides guidance on professional practice to Engineering/Geoscience Professionals, Registrant Firms, and others involved in Peer Reviews, such as:

- a professional completing a review (the Reviewing Professional), who could be a single Reviewing Professional or part of a team of Reviewing Professionals;
- a professional subject to review (the Originating Professional);
- a Requesting Party;
- a Regulatory Authority;
- a representative of a Registrant Firm;
- an employer;
- an owner; or
- a client.

The purpose of these guidelines is to clarify professional expectations and obligations related to Peer Reviews.

Following are the specific objectives of these guidelines:

1. Describe expectations and obligations of professional practice that Engineering/Geoscience Professionals are expected to have regard for in relation to undertaking Peer Reviews, or when having their work reviewed, by:
  - specifying required tasks and/or services that Engineering/Geoscience Professionals should complete;
  - specifying professional and ethical obligations under the *Act*, the Bylaws, and other legislation and regulations, including the primary obligation to protect the safety, health, and welfare of the public and the environment; and
  - describing the established norms of practice in this area.

2. Describe the roles and responsibilities of the various participants/stakeholders involved in Peer Reviews. The document assists in delineating the roles and responsibilities of the various participants/stakeholders, which may include the Reviewing Professional, Originating Professional, Authorities Having Jurisdiction, Regulatory Authorities, employers, and owners and/or clients.
3. Define the skill sets that are consistent with the training and experience required to carry out Peer Reviews.
4. Provide guidance on how to meet the quality management requirements under the *Act* and the Bylaws when carrying out Peer Reviews.

## 1.2 ROLE OF ENGINEERS AND GEOSCIENTISTS BC

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These guidelines form part of Engineers and Geoscientists BC's ongoing commitment to maintaining the quality of professional services that Engineering/Geoscience Professionals provide to their clients and the public.

Engineers and Geoscientists BC has the statutory duty to serve and protect the public interest as it relates to the practice of professional engineering and professional geoscience, including regulating the conduct of Engineering/Geoscience Professionals. Engineers and Geoscientists BC is responsible for establishing, monitoring, and enforcing the standards of practice, conduct, and competence for Engineering/Geoscience Professionals. One way that Engineers and Geoscientists BC exercises these responsibilities is by publishing and enforcing the use of professional practice guidelines, as per Section 7.3.1 of the Bylaws.

Guidelines are meant to assist Engineering/Geoscience Professionals in meeting their professional obligations. As such, Engineering/Geoscience Professionals are required to be knowledgeable of, competent in, and meet the intent of professional practice guidelines that are relevant to their practice.

The writing, review, and publishing process for professional practice guidelines at Engineers and Geoscientists BC is comprehensive. These guidelines were prepared internally by Engineers and Geoscientists BC staff and reviewed at three stages by a formal review group, with the final draft undergoing a thorough consultation process with various advisory groups and technical divisions of Engineers and Geoscientists BC. These guidelines were then approved by Council and, prior to publication, underwent final editorial and legal reviews.

Engineers and Geoscientists BC supports the principle that appropriate financial, professional, and technical resources should be provided (i.e., by the client and/or the employer) to support Engineering/Geoscience Professionals who are responsible for carrying out professional activities, so they can comply with the standards of practice provided in these guidelines. These and other guidelines may be used to assist in the level of service and terms of reference of an agreement between an Engineering/Geoscience Professional and a client.

## 1.3 INTRODUCTION OF TERMS

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### 1.3.1 DEFINED TERMS

See the [Defined Terms](#) section at the front of the document for a full list of definitions specific to these guidelines.

### 1.3.2 DETAILED DEFINITION OF PEER REVIEW

These guidelines define Peer Review as an evaluation by an appropriately qualified Engineering/Geoscience Professional (the Reviewing Professional) of the engineering or geoscience work done by the Originating Professional, for a specific purpose defined by the Requesting Party. This includes work done under the direct supervision of the Originating Professional.

The various types of Peer Reviews are determined by:

- the intended purpose of the Peer Review, or the trigger for the Peer Review process;

- the scope of the Peer Review, including the Peer Review criteria and level of detail required;
- the required results, output, or deliverable of the Peer Review.

Subsets of Peer Review include Independent Reviews and, in some cases, other legislated reviews. Practice Reviews, second opinions, documented Checks, and Expert Opinions have entirely different definitions and are described in further detail in [Section 3.0 Guidelines for Professional Practice](#).

Peer Reviews are often requested or mandated by clients, Regulatory Authorities (including Authorities Having Jurisdiction), employers, or others. Engineers and Geoscientists BC does not require Peer Reviews on all projects; however, Engineering/Geoscience Professionals are required to follow quality management processes for all engineering or geoscience work, such as documented Checks.

In specific cases, however, Engineers and Geoscientists BC does mandate certain types of Peer Reviews, such as Independent Reviews or Peer Reviews ordered by the Engineers and Geoscientists BC Discipline Committee, and often requires other types of reviews, such as Practice Reviews. These types of reviews are addressed in the following documents:

- *Guide to the Practice Review Program for Individual Registrants* (Engineers and Geoscientists BC 2021a)
- *Quality Management Guides – Guide to the Standard for Documented Independent Review of Structural Designs* (Engineers and Geoscientists BC 2021b)
- *Quality Management Guides – Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021c)
- *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work* (Engineers and Geoscientists BC 2021d)

See also [Section 4.0 Quality Management in Professional Practice](#).

## 1.4 SCOPE AND APPLICABILITY OF THESE GUIDELINES

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These guidelines provide guidance on professional practice for Engineering/Geoscience Professionals who carry out or are subject to Peer Reviews. The intent of these guidelines is to provide guidance and methods for Registrants conducting Peer Reviews, or having their work reviewed, as discussed in [Section 1.3.2](#) above. These guidelines do not cover other types of reviews and/or assessments, aside from summarizing the distinguishing characteristics of each type of review. In many cases, requirements for other types of reviews are documented in legislation, regulations, codes, and standards published by others, and are beyond the scope of this document.

This document provides guidance on professional behaviour expected of Registrants when conducting or undergoing a Peer Review. In addition, there are many situations or conditions where Peer Review may be appropriate, but the steps for determining how and when to request a Peer Review is outside the scope of these guidelines.

These guidelines are not intended to provide technical or systematic instructions for how to carry out these activities; rather, these guidelines outline considerations to be aware of when carrying out these activities. Engineering/Geoscience Professionals must exercise professional judgment when providing professional services; due to the diversity of engineering and geoscientific practice, Professional Registrants must use their professional and ethical judgement to determine how to apply the principles in these guidelines to the specifics of their practice.

Although these guidelines may provide thresholds above which professional involvement is required, Engineering/Geoscience Professionals must always use their professional and ethical knowledge, experience, and judgment to apply the appropriate standards of practice that are commensurate with the risk of their professional activities to public safety and/or the environment.

An Engineering/Geoscience Professional's decision not to follow one or more aspects of these guidelines does not necessarily represent a failure to meet professional obligations, if the decision and rationale are documented, and the decision is professionally and ethically appropriate. For information on how to appropriately depart from the practice guidance within these guidelines, refer to the *Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines* (Engineers and Geoscientists BC 2021e), Section 3.4.2.

## 1.5 ACKNOWLEDGEMENTS

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This document was reviewed by various advisory groups and technical divisions of Engineers and Geoscientists BC. Review of these guidelines does not necessarily indicate the individuals and/or their employers endorse everything in these guidelines.

Content has been adopted and modified from other sources, including the Professional Engineers of Ontario practice guidelines, titled *Professional Engineers Reviewing Work Prepared by Another Professional Engineer* (Professional Engineers of Ontario 2011).

Sources throughout these guidelines have been cited and referenced accordingly (see [Section 6.0 References and Related Documents](#)).

# 2.0 ROLES AND RESPONSIBILITIES

## 2.1 COMMON FORMS OF PROJECT ORGANIZATION

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Typically, Peer Reviews involve the Engineering/Geoscience Professional who is performing the Peer Review (the Reviewing Professional) and the Engineering/Geoscience Professional whose work is subject to Peer Review (the Originating Professional).

Peer Reviews may be triggered by a legislated or mandated process, a regulatory review, or a request from one of a number of other parties, referred to in these guidelines as the Requesting Party. The responsibilities and obligations of each party are outlined in [Section 2.2 Responsibilities](#).

Communications and recordkeeping requirements for Peer Reviews are addressed in [Section 3.4.2 Communications and Recordkeeping](#).

## 2.2 RESPONSIBILITIES

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This section delineates the roles and responsibilities of the following parties involved in Peer Reviews:

- The Reviewing Professional and Peer Review teams, who perform Peer Reviews (this section also discusses the role of the owner's representative, who may coordinate and undertake various types of review on behalf of a client)
- The Originating Professional, whose work is subject to Peer Review
- The Requesting Party, whose request initiates the Peer Review
- The Registrant Firm, which may undertake or otherwise participate in Peer Reviews

- Engineers and Geoscientists BC, which requires certain forms of Peer Review for certain types of projects, or as part of investigative or legal proceedings

### 2.2.1 REVIEWING PROFESSIONAL

#### 2.2.1.1 Overall Responsibilities of Reviewing Professionals

As Engineering/Geoscience Professionals, Reviewing Professionals have a duty to undertake the Peer Review in accordance with the Engineers and Geoscientists BC Code of Ethics.

See the *Guide to the Code of Ethics* (Engineers and Geoscientists BC 2021f) for detailed information on how these principles apply to Peer Reviews and other types of work reviews.

**Abide by the Code of Ethics:** The principles of the Code of Ethics apply directly to the Peer Review process and expectations of Reviewing Professionals.

Accordingly, Reviewing Professionals must:

- be competent in the area of practice of the work being reviewed and be knowledgeable regarding common law and applicable enactments and regulations in the area in question (Code of Ethics principles 2 and 3);
- be aware of additional requirements of the Reviewing Professional that are outlined in applicable regulations, codes, and/or standards (Code of Ethics principles 3 and 5);
- understand the intended uses of the Peer Review deliverables and understand the scope and level of effort required to support the intended uses (Code of Ethics principle 4);
- provide an objective, fair, and honest opinion, or comment, and, when providing deliverables,

distinguish between professional opinion and fact (Code of Ethics principle 7);

- be aware of and disclose real and perceived conflicts of interest that relate to the Peer Review in question (Code of Ethics principle 8); and
- conduct themselves with fairness, courtesy, and good faith towards the Originating Professional, the Requesting Party, and others (Code of Ethics principle 13).

**Take professional responsibility:** Conducting a Peer Review requires the application of engineering or geoscientific principles and judgment, and is therefore considered the practice of professional engineering or professional geoscience, and must be completed by a qualified Engineering/Geoscience Professional, as appropriate.

For this reason, Peer Review deliverables must also be Authenticated by the Reviewing Professional (see [Section 4.1.2 Authenticating Documents](#)).

The work of non-Registrant specialists (persons with specialized technical skills who are not registered with Engineers and Geoscientists BC) may be relied upon by the Reviewing Professional, if required; however, the Reviewing Professional must understand how the work of the specialist will be incorporated into their own work and must still take professional responsibility for the Peer Review and Peer Review deliverables. The work of a non-Registrant specialist must not constitute the reserved practice of engineering or geoscience (unless completed under the direct supervision of a Registrant), and the specialist must be otherwise qualified to perform that work.

**Ensure independence:** The Reviewing Professional may be selected by the Originating Professional or by the Requesting Party, or may be identified via a documented policy or procedure (as defined by a Regulatory Authority).

In any case, the Reviewing Professional should have an appropriate degree of independence from the Originating Professional and the work being reviewed, and should maintain this independence throughout the Peer Review.

**Maintain objectivity:** Peer Reviews can vary in formality; typically, Peer Reviews that are conducted in-house are relatively informal, and those conducted by outside firms are more formal. The Reviewing Professional must understand the important role of Peer Review in professional practice and be prepared to raise questions and identify concerns, regardless of the formality of the Peer Review or any political or organizational hierarchies that may be present. The Reviewing Professional must, in accordance with the Code of Ethics, hold paramount the safety, health, and welfare of the public, including the protection of the environment and the promotion of health and safety in the workplace.

For informal Peer Reviews, the fact that the Reviewing Professional may have prior involvement in the work being reviewed may have little impact on the review itself. In cases where Peer Reviews are conducted in-house, some prior knowledge or involvement in the work is likely. However, Reviewing Professionals should determine whether this may affect their ability to be objective during a Peer Review and, if so, must decline the role and may nominate another Reviewing Professional.

For formal Peer Reviews, the Reviewing Professional should not have prior involvement in the work being reviewed and should maintain this independence throughout the review (see [Section 3.3.2 Determining Formality](#)).

**Avoid conflict of interest:** In cases where a real or perceived conflict of interest may exist, this should be documented by the Reviewing Professional and communicated to the Requesting Party. The Requesting Party is responsible for assessing whether the conflict of interest is acceptable and communicating their assessment to the Reviewing Professional.

In cases where the conflict of interest is unacceptable, the Reviewing Professional should not undertake the Peer Review.



**Maintain professionalism:** As a professional courtesy, the Reviewing Professional should endeavour to contact the Originating Professional prior to reviewing their work. This provides the opportunity for the exchange of pertinent information that would assist in the Peer Review, which may improve the quality of the Peer Review itself, and also benefits the professional practice of the Originating Professional. Reviewing Professionals are encouraged to use open communication, as well as a professional and collegial approach, when reviewing the work of another Engineering/Geoscience Professional.

If the Requesting Party asks the Reviewing Professional not to contact the Originating Professional, the Reviewing Professional may inform the Requesting Party that not to do so is contrary to the intent of principle 13 of the Code of Ethics, that Registrants must demonstrate fairness, courtesy, and good faith towards clients, colleagues, and others, and must accept, as well as give, honest and fair professional comment. The Reviewing Professional should also inform the Requesting Party that contacting the Originating Professional will benefit both the Peer Review process and its outcomes.

Nevertheless, the Reviewing Professional should be aware that there are instances where it is inappropriate to contact the Originating Professional. For example, where Peer Review is part of legal process (for example, a review of a design by an expert witness), the Reviewing Professional may not be permitted to contact the Originating Professional.

#### 2.2.1.2 Multi-discipline or Multi-party Peer Review Teams

In some situations, a team of Reviewing Professionals, rather than a single Reviewing Professional, may conduct a Peer Review. This can be the case with multi-discipline Peer Reviews of complex projects.

If so, each Reviewing Professional on the team should be clearly identified by the Requesting Party. The scope of work of each Reviewing Professional should be distinct, and should be defined, understood, and agreed

upon by both the Reviewing Professionals and the Requesting Party.

The Requesting Party should also nominate a coordinating Reviewing Professional when multiple Reviewing Professionals are required for a single Peer Review. The coordinating Reviewing Professional is responsible for coordinating the scopes of work of each Reviewing Professional within the overall scope of the Peer Review (as discussed in [Section 3.3](#)), to confirm that Peer Review requirements outlined in these guidelines are followed.

The coordinating Reviewing Professional may hold one of two roles:

- As a coordinating Reviewing Professional who is exclusively responsible for coordinating the scopes of work of each individual Reviewing Professional, ensuring that no gaps or omissions in the overall scope exist.
- As a lead Reviewing Professional who, in addition to performing this coordination task, receives the deliverables of each individual Reviewing Professional, conducts an overall review of each Reviewing Professional's work, and submits the compiled results in a comprehensive Peer Review.

The Requesting Party may choose either of these models for the Peer Review, depending on the requirements of the specific project. As noted above, the scopes of work and role requirements should be communicated in writing and made clear to all Reviewing Professionals involved in the Peer Review.

#### 2.2.1.3 Owner's Representative

An owner's representative (also called an owner's engineer) is typically retained by a client/owner on large-scale construction projects. The owner's representative acts in the interest of the client/owner and provides day-to-day technical support and/or project management. The owner's representative usually represents a firm that is separate from that of the design engineers or design firms, although the owner's representative may be a firm itself.

The owner's representative may review incoming Documentation from contractors and consultants and may provide input on decisions or identify issues that arise. These reviews are primarily for coordination and project management purposes and represent the interests of the client/owner, leveraging the technical background of the individual or firm in this role.

In addition to these types of project-related reviews, over the duration of this role, an owner's representative may also conduct various types of Peer Reviews of the design engineers' (Originating Professional's) work. It is the responsibility of the owner's representative to determine, with the client/owner and on a project-to-project basis, the scope of work and level of effort for a Peer Review and ensure this information is included in the contract Documentation.

However, because owner's representatives may have limited professional background (i.e., limited to one area of practice, such as structural or mechanical engineering), they should not do a detailed technical review of all incoming Documentation or decisions. A review by the owner's representative must not be construed as a detailed technical review, or as a documented Check (as defined in [Section 3.1.1 Peer Review versus Checks](#)).

Similarly, the owner's representative is not the Professional of Record, and a review by the owner's representative does not mean that the owner's representative takes responsibility for the work being reviewed.

## 2.2.2 ORIGINATING PROFESSIONAL

As Engineering/Geoscience Professionals, Originating Professionals whose work is subject to Peer Review also have a duty to uphold the Code of Ethics during the Peer Review process.

See the *Guide to the Code of Ethics* (Engineers and Geoscientists BC 2021f) for detailed information on how these principles apply to Peer Reviews and other types of work reviews.

**Abide by the Code of Ethics:** The principles of the Code of Ethics apply directly to the Peer Review process and expectations of Originating Professionals.

Accordingly, Originating Professionals should:

- understand the role of Peer Reviews in professional practice and be willing to accept honest and fair professional comment (Code of Ethics principles 4 and 13);
- provide pertinent information as required by the Reviewing Professional unless confidentiality or privacy clauses or concerns prevent this (Code of Ethics principles 8 and 13; see also [Section 3.4.3](#)); and
- conduct themselves in a professional and cooperative manner (Code of Ethics principle 13).

**Take professional responsibility:** The Originating Professional retains professional responsibility for the work being reviewed; the act of conducting a Peer Review does not indicate that the Reviewing Professional is taking responsibility for the work.

Similarly, the Originating Professional cannot rely on Peer Review to take the place of documented Checks and Independent Reviews, which are both quality management processes required by Engineers and Geoscientists BC. (See [Section 4.1 Engineers and Geoscientists BC Quality Management Requirements](#).)

The Originating Professional is usually provided with the findings of the Peer Review. Originating Professionals should view this information as a benefit to their professional practice and consider the findings and conclusions in the Peer Review to revise the work in question or inform future professional decisions. Note that the Originating Professional is fully responsible for any updates or revisions to work that are based on findings from a Peer Review.

Originating Professionals should consider the findings of the Peer Review and adequately resolve the concerns, and must document which actions were taken and which were not, providing the rationale for those decisions. Additional details on resolving concerns

identified during Peer Reviews are provided in [Section 3.6 Peer Review Closeout](#).

Project implications related to schedule or budget are not appropriate grounds for dismissing Peer Review comments and concerns. Similar requirements are contained in the quality management guides titled, *Guide to the Standard for Documented Independent Review of Structural Designs* and *Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021b, 2021c).

**Maintain professionalism:** The Originating Professional cannot unreasonably refuse or object to having their work reviewed. Refusing or objecting to a Peer Review can lead to professional consequences of varying severity, depending on the circumstances (e.g., project delays, withholding of payment). Aside from financial consequences (including project delays or loss of work), refusing or objecting to a Peer Review may be grounds for an Engineers and Geoscientists BC investigative or disciplinary process regarding the Originating Professional's ethical or professional conduct.

**Avoid conflict of interest and maintain confidentiality:** The Originating Professional should be aware of the requirements of the Requesting Party outlined in [Section 2.2.3](#). If the Originating Professional refuses to provide specific information due to conflict of interest or to privacy, confidentiality, or intellectual property concerns, this should be documented by both the Originating Professional and the Reviewing Professional.

See [Section 3.4.3 Protection of Confidentiality and Intellectual Property](#) for how to address issues that arise from confidentiality and privacy concerns. [Section 2.2.3 Requesting Party](#) also details considerations when requesting a Peer Review and provides guidance on the responsibilities of the Originating Professional if they need to refuse a Peer Review.

## 2.2.3 REQUESTING PARTY

### 2.2.3.1 Overall Responsibilities

As with others involved in Peer Reviews, the Requesting Party should be aware of the professional obligations of Engineering/Geoscience Professionals, specifically how the principles in the Code of Ethics apply to Peer Review. See the *Guide to the Code of Ethics* (Engineers and Geoscientists BC 2021f) for detailed information on how these principles apply to Peer Reviews.

The Requesting Party may be a Regulatory Authority, an Authority Having Jurisdiction, a client, an employer, a supervisor, a third party (such as a prospective buyer), a member of the public, or the Originating Professional. It is important to note that Requesting Parties who are Registrants (i.e., Registrant Firms) are bound by the *Act* and Bylaws of Engineers and Geoscientists BC and should be aware of their obligations related to this regulatory framework.

The Requesting Party may have a number of responsibilities related to Peer Reviews, including the following.

#### **Select and/or Recommend Reviewing Professionals:**

The Requesting Party may select the Reviewing Professional or may ask the Originating Professional to select the Reviewing Professional. In certain circumstances, the Reviewing Professional may be identified via a documented policy or procedure (as defined by a Regulatory Authority).

A specific Reviewing Professional may be selected based on prior experience or due to a contractual obligation. The Requesting Party should obtain confirmation from the Reviewing Professional that the Reviewing Professional is competent and experienced in the area of practice being reviewed.

**Assess potential conflicts of interest:** The Requesting Party is responsible for assessing conflicts of interest identified by the Reviewing Professional and for deciding whether the Peer Review should proceed, or a different Reviewing Professional should be found. When completing this assessment, the Requesting Party should be aware of the intended audience of the Peer Review deliverables (see [Section 3.3.2](#)) to determine whether a conflict of interest is present.

**Define the scope and expectations of the Peer**

**Review:** The Requesting Party should define and document the scope of the required Peer Review and provide pertinent Documentation to assist in the Peer Review, where practicable.

When requesting a Peer Review, defining the scope of a Peer Review, and/or selecting a Reviewing Professional, the Requesting Party should also consider the following:

- Maintain realistic expectations of the role of Peer Review in professional practice. A Peer Review will not address all risks inherent in a given project, nor will a Peer Review provide comprehensive assurances to the Requesting Party. Peer Review is not intended to be used as a mechanism for adding scope to an existing project.
- Understand the possible outcomes of a Peer Review (i.e., recommendations resulting from differing professional opinions) and be prepared to address these or rely on a Regulatory Authority or decisionmaker to determine an acceptable approach in these situations.
- Address which party will bear the cost of a Peer Review. In some cases, this is explicitly defined within policies, regulations, or enactments; whereas, in other cases this will need to be defined by the Requesting Party.
- Consider which party will bear the associated costs if the Peer Review does not proceed (e.g., if the Originating Professional refuses to provide information, or if the Peer Review is cost-prohibitive), or if the Peer Review causes project delays or significant added costs. The Requesting

Party should be aware of the potential outcomes of requesting a Peer Review, or having their request denied.

- Communicate to the Originating Professional and the Reviewing Professional the expectations for how the Peer Review’s findings will be used, and ensure a documented process is in place for resolving identified concerns. This may include provisions for a second opinion on the Peer Review deliverables, if required.

**Maintain documented processes for Peer Review:**

The Requesting Party should have clear and documented processes for Peer Review in place for the Reviewing Professional to follow; these processes should also describe how to resolve conflicting professional opinions, should any arise.

The Requesting Party should clarify the expectations of both the Originating Professional and the Reviewing Professional in advance, in case the Peer Review results in differing professional opinions or highlights more serious concerns (see [Section 3.6 Peer Review Closeout](#)).

Especially in formal Peer Reviews involving separate firms, the Requesting Party should rely on these types of documented processes at the outset of the Peer Review, to avoid any situation where the Requesting Party must make professional judgments on the findings of the Peer Review or act as an intermediary between the Originating Professional and the Reviewing Professional.

**2.2.3.2 Responsibilities of Regulatory Authorities**

Regulatory Authorities (including Authorities Having Jurisdiction) may set out policies that outline the submissions or circumstances that trigger the requirement for Peer Review. If these policies are accompanied by related Regulatory Authority processes for conducting Peer Reviews, all parties involved will clearly understand the expectations, processes, and deliverables for Peer Reviews.

Nevertheless, even if a policy and/or process for Peer Review is not in place, the Regulatory Authority can still request a Peer Review.

Note that a regulatory review of the work of an Engineering/Geoscience Professional (such as for a permit application) is not considered a Peer Review (see [Section 3.1.3](#)).

## 2.2.4 REGISTRANT FIRM

In some situations, a Registrant Firm may be engaged to conduct a single Peer Review that involves multiple Reviewing Professionals. This may be required for Peer Reviews of complex projects, where several Reviewing Professionals would be needed in order to conduct a comprehensive Peer Review of a multi-discipline project.

For multi-discipline or multi-party Peer Reviews, the Registrant Firm should nominate a coordinating Reviewing Professional to be responsible for coordinating the scopes of work of each Reviewing Professional within the overall scope of the Peer Review, and to confirm that Peer Review requirements outlined in these guidelines are adhered to. See [Section 2.2.1.2 Multi-discipline or Multi-party Peer Review Teams](#) and [Section 3.3 Establishing the Scope of Peer Review](#) for more information.

Registrant Firms employing Engineering/Geoscience Professionals who undertake or undergo Peer Review are required to establish, maintain, and follow documented quality management procedures, to ensure that all participants are knowledgeable of, competent in, and meet the intent of professional practice guidelines relevant to the professional activities or services they provide.

## 2.2.5 ENGINEERS AND GEOSCIENTISTS BC

Engineers and Geoscientists BC has the statutory duty to serve and protect the public interest as it relates to the practice of professional engineering and professional geoscience, including regulating the conduct of Engineering/Geoscience Professionals. Engineers and Geoscientists BC is responsible for establishing, monitoring, and enforcing the standards of practice, conduct, and competence for Registrants. Peer Reviews directly contribute to consistent, high professional practice standards and, as such, are encouraged by Engineers and Geoscientists BC where appropriate.

Engineers and Geoscientists BC does not require that all works done by Engineering/Geoscience Professionals undergo Peer Reviews. On projects involving structural designs or high-risk professional activities or work, Engineers and Geoscientists BC mandates Independent Reviews. Refer to the quality management guides titled, *Guide to the Standard for Documented Independent Review of Structural Designs* and *Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021b, 2021c).

Other forms of Peer Review may be commissioned by Engineers and Geoscientists BC via formal processes, including, but not limited to, the following:

- While investigating a complaint against a Registrant or Registrant Firm, Engineers and Geoscientists BC may request an Expert Opinion.
  - See the *Professional Practice Guidelines – Expert Witness* (Engineers and Geoscientists BC 2016).
- When addressing a practice issue that has been raised related to the professional practice of a Registrant, Engineers and Geoscientists BC may require the Registrant to undergo a Practice Review.
  - See the *Guide to the Practice Review Program for Individual Registrants* (Engineers and Geoscientists BC 2021a).

- As a response to discipline proceedings, the Engineers and Geoscientists BC Discipline Committee may order Peer Review of a Registrant's work for a specified period of time.

Note that Engineers and Geoscientists BC requires documented Checks of all engineering and geoscience work as part of standard professional practice; however, this is outside of any Peer Review requirement and the two should not be used interchangeably. See the *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work* (Engineers and Geoscientists BC 2021d) for more information.

Engineers and Geoscientists BC does not provide guidance on contractual or financial aspects of Peer Reviews, other than to encourage the parties involved to establish contracts related to Peer Review requirements early in the process.

# 3.0 GUIDELINES FOR PROFESSIONAL PRACTICE

## 3.1 PURPOSE OF PEER REVIEW

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The Requesting Party and the Reviewing Professional should both clearly understand the purpose of the Peer Review, in order to guide development of the objectives and scope of the Peer Review.

In addition, the Reviewing Professional should clearly understand how the Requesting Party expects to use the deliverables before the Peer Review is carried out.

In order to clarify the requirements of Peer Reviews and how they may overlap similar processes or deliverables, the following sections compare Peer Reviews to other reviews such as:

- Documented Checks of engineering and geoscience work;
- Independent Reviews of structural designs or of high-risk professional activities or work;
- regulatory reviews;
- Practice Reviews and compliance audits;
- second opinions; and
- Expert Opinions.

### 3.1.1 PEER REVIEW VERSUS CHECKS

Documented Checking is a quality management process to confirm that the underlying work is complete, meets all input requirements, and is suitable for its intended use or purpose. Checking is not equivalent to a Peer Review, as the purpose and requirements for each type of review are different.

Checks may be carried out by qualified individuals independent of, or associated with, the work being Checked, or by the Engineering/Geoscience Professionals who prepared the work (i.e., self-Checking). Checks are how Engineering/Geoscience Professionals confirm that work they prepare meets input requirements and the appropriate standards of practice, conduct, and competence expected of them for similar professional work.

Peer Reviews may involve Checking, as the Reviewing Professional is likely required to conduct some Checks to confirm that the work of the Originating Professional is complete, and to determine the reliability of the work. However, unlike Checks, Peer Reviews cannot be completed by the Originating Professional (i.e., self-Checking) and are not considered a quality management process required at every stage of engineering and geoscience work.

Peer Reviews are generally conducted at a broader scope than Checks; for example, at an overall project or design level. Furthermore, Checks are often more iterative than Peer Reviews; Checking may occur multiple times at various stages of a project or design.

Documented Checks are outside the scope of these guidelines. For more information, see the *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work* (Engineers and Geoscientists BC 2021d).

### 3.1.2 PEER REVIEW VERSUS INDEPENDENT REVIEW

Independent Review is a requirement defined in the Engineers and Geoscientists BC Bylaws with respect to Independent Reviews of structural designs and of high-risk professional activities or work.

An Independent Review is a documented evaluation by an appropriately qualified Engineering/Geoscience Professional who has not been involved in preparing the work, of substantially complete Documentation before it is submitted to those who will be relying on it. This applies to Independent Review of structural designs and Independent Review of high-risk professional activities or work.

Independent Reviews are considered a subset of Peer Reviews, as both types of reviews involve a documented evaluation by one Engineering/Geoscience Professional (the Reviewing Professional) of work done by another Engineering/Geoscience Professional (the Originating Professional), including work done under the direct supervision of another Engineering/Geoscience Professional. However, Independent Reviews have a specific legal definition and a clearly defined scope that does not apply to all Peer Reviews.

These guidelines do not address Independent Reviews. For more information, see the quality management guides titled, *Guide to the Standard for Documented Independent Review of Structural Designs* and *Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021b, 2021c).

### 3.1.3 PEER REVIEW VERSUS REGULATORY REVIEW

Regulatory reviews are reviews of the work of the Originating Professional conducted by representatives of a Regulatory Authority (including an Authority Having Jurisdiction), which are typically required by a regulatory process such as a permit application.

A Regulatory Authority can be a municipality or local government (e.g., City of Vancouver), a provincial governing body (e.g., BC Ministry of Environment and Climate Change Strategy, Technical Safety BC), or a federal governing body (e.g., Fisheries and Oceans Canada, Health Canada). More than one Regulatory Authority may have jurisdiction over an Engineering/Geoscience Professional's work on a given project.

An Authority Having Jurisdiction is defined in the *BC Building Code* as the governmental body responsible for the enforcement of any part of the code, or the official or agency designated by that body to exercise such a function.

The primary intent of a regulatory review is to assess compliance or coordination with regulations, bylaws, or standards administered by the Regulatory Authority. As such, a regulatory review is not considered a Peer Review, although aspects of regulatory review may include components of Peer Review. Some regulatory reviews may involve detailed evaluation of technical information; the scope and nature of this type of regulatory review is best defined by the Regulatory Authority itself. If a regulatory review does consist of some aspect of a technical review (i.e., review of the engineering/geoscience decisions/application of the work in question) and is conducted by a Professional Registrant, it is considered a Peer Review, and the Professional Registrant should have regard for these guidelines. Regulatory Authorities should be aware that conducting a Peer Review requires the application of engineering or geoscientific principles and judgment; therefore, the Peer Review must be completed by a qualified Engineering/Geoscience Professional, as appropriate.

A Regulatory Authority may request that an external Peer Review be conducted on the work of an Engineering/Geoscience Professional that is being submitted for regulatory review. In this situation, the Regulatory Authority is considered the Requesting Party (see [Section 2.2.3 Requesting Party](#)) and should follow the guidance outlined in these guidelines.



### 3.1.4 PEER REVIEW VERSUS SECOND OPINION

A review to obtain a second opinion differs from a Peer Review in that a second Engineering/Geoscience Professional is retained to independently assess the same information, or complete the same tasks, as the Originating Professional. The goal of obtaining a second opinion is not to review the work of the Originating Professional, but to develop an entirely independent outcome or solution that can be compared to the results obtained by the Originating Professional.

In this case, the second Engineering/Geoscience Professional does not have access to the Originating Professional's work, although the same general inputs, such as project requirements, overall concepts, field data, laboratory data, or testing data, may be used.

As such, a second opinion is not considered a Peer Review and vice versa.

### 3.1.5 PEER REVIEW VERSUS PRACTICE REVIEWS AND COMPLIANCE AUDITS

With the introduction of the *Act*, Engineers and Geoscientists BC now has two separate programs that review the practice of Registrants in different ways; neither is considered Peer Review.

The Practice Review Program<sup>1</sup> is a reactive and targeted process that reviews the practice of Registrants where professional or ethical issues or risks have been identified or are suspected. A Practice Review is a detailed technical and/or focused review of a Registrant conducted by subject matter experts, and outcomes are determined by the Audit and Practice Review Committee. The Practice Review process, while reactive, is intended to identify risks and regulatory gaps in a Registrant's practice while also providing remedial pathways and tools to address any identified issues.

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<sup>1</sup> The current Practice Review Program that is required under the *Act* is a reactive program, and should not be confused with a similarly named program required under the former *Engineers and Geoscientists Act*, which was a proactive quality assurance check of a Registrant's practice undertaken primarily for educational purposes.

The Audit Program<sup>2</sup> is a proactive program intended to assess Registrants' compliance with regulatory requirements, and where a subset of Registrants is audited annually. Auditors assess the practice of Registrants for regulatory requirements, such as compliance with the requirements for continuing professional education, quality management, the Code of Ethics, and declared areas of practice.

Practice Reviews and audits are not considered Peer Reviews. These types of reviews are generally much wider in scope than Peer Reviews and are focused on evaluating compliance with regulatory obligations; for example, by reviewing continuing education records and evaluating work products and processes.

For more information on Practice Reviews, see the *Guide to the Practice Review Program for Individual Registrants* (Engineers and Geoscientists BC 2021a).

### 3.1.6 PEER REVIEW VERSUS EXPERT OPINION

An Expert Opinion is an independent and objective assessment of an engineering or geoscience issue, or of the work of another Engineering/Geoscience Professional, in order to assist a decisionmaker (such as in legal proceedings) in reaching an informed decision.

An expert within a specific area of practice may be asked in an Expert Opinion to give a professional opinion as to the applicable practice standards employed at the relevant time and location in question. This may include a professional opinion regarding the acceptability of a design, approach, process, method, or procedure used relative to the applicable practice standards.

Opinions belong to individual experts; different experts may express different opinions about the same issue. It is not appropriate for an expert to determine whether

<sup>2</sup> The Audit Program is new under the *Act*, but incorporates approaches from ISO audits and Engineers and Geoscientists BC's previous Organizational Quality Management program.

compliance with practice standards was achieved; this is for the decisionmaker in question to determine.

An Expert Opinion may be considered a type of Peer Review; however, this topic is addressed more specifically in the *Professional Practice Guidelines – Expert Witness* (Engineers and Geoscientists BC 2016).

## 3.2 PEER REVIEW CRITERIA

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A Peer Review should establish a test or criteria against which the Originating Professional’s work will be evaluated.

Historically, this criterion has been “whether another reasonably competent and reasonably prudent Engineering/Geoscience Professional acting in similar circumstances would have conducted themselves in the same manner.” This criterion may or may not apply during all types of Peer Reviews but should be considered when determining the intent of a review, and should subsequently be evaluated throughout the Peer Review process.

Table 1: Review Types and Intents below lists typical examples of reviews, along with the intent of the reviews, and whether they are considered Peer Reviews.

Table 1: Review Types and Intents

TYPE OF REVIEW	LEVEL OF FORMALITY	DESCRIPTION	INTENT(S) OF REVIEW <sup>a</sup>	WHETHER CONSIDERED PEER REVIEW
Internal technical reviews	Informal or formal	<ul style="list-style-type: none"> <li>An in-house review of a project, report, or design, when the Reviewing Professional and the Originating Professional are employed by the same firm</li> <li>May be requested at any stage of a project</li> <li>May be an iterative process</li> </ul>	<ul style="list-style-type: none"> <li>Internal quality assurance and quality control</li> <li>Conceptual or feasibility assessment at early stages</li> <li>Determine reliability of conclusions or work</li> <li>Review assumptions, processes, and methods</li> <li>Confirm that the work meets objectives and is aligned with current standards of practice</li> <li>Check for omissions in processes and results</li> <li>Assess reliability of assumptions</li> <li>Risk assessment or risk management for the firm</li> </ul>	<ul style="list-style-type: none"> <li>Possibly</li> <li>May contain components of Peer Review, if the Reviewing Professional is not involved in the work, and independence between the Originating Professional and Reviewing Professional is maintained</li> <li>The considerations in these guidelines may not all apply to internal technical reviews</li> <li>Internal technical reviews are often primarily intended to provide quality control or risk management in support of overall quality management (e.g., Checks or Independent Reviews)</li> </ul>
External technical reviews	Formal	<ul style="list-style-type: none"> <li>A review of a final or substantially complete (as appropriate) project, report, or design—typically commissioned by a client/owner or Regulatory Authority—when the Reviewing Professional and Originating Professional are not employed by the same firm</li> </ul>	<ul style="list-style-type: none"> <li>Determine reliability of conclusions or work</li> <li>Review assumptions, processes, methods</li> <li>Confirm that the work meets objectives and is aligned with current standards of practice</li> <li>Check for omissions in processes and results</li> <li>Assess reliability of assumptions</li> <li>Risk assessment or risk management for the client</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>External technical reviews typically meet the definition provided in <a href="#">Section 1.3.2</a>, without exceptions that apply to other types of reviews outlined in <a href="#">Section 3.1</a></li> <li>The considerations in these guidelines apply to external technical reviews</li> </ul>
Independent Review (see <a href="#">Section 3.1.2</a> )	Formal	<ul style="list-style-type: none"> <li>A review of a unique, complex, or high-risk design project, or components of a project; for example, reviews of structural designs or of high-risk professional activities or work</li> </ul>	<ul style="list-style-type: none"> <li>Determine reliability of conclusions or work</li> <li>Review assumptions, processes, methods</li> <li>Confirm that the work meets objectives and is aligned with current standards of practice</li> <li>Check for omissions in processes and results</li> <li>Assess reliability of assumptions</li> </ul>	<ul style="list-style-type: none"> <li>Yes</li> <li>Defined in the quality management guides titled, <i>Guide to the Standard for Documented Independent Review of Structural Designs</i>, and <i>Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work</i> (Engineers and Geoscientists BC 2021b, 2021c).</li> </ul>

TYPE OF REVIEW	LEVEL OF FORMALITY	DESCRIPTION	INTENT(S) OF REVIEW <sup>a</sup>	WHETHER CONSIDERED PEER REVIEW
Regulatory reviews (see <a href="#">Section 3.1.3</a> )	Formal	<ul style="list-style-type: none"> <li>A review of a professional submission conducted by a Regulatory Authority to determine conformance with regulatory or legal requirements</li> </ul>	<ul style="list-style-type: none"> <li>Confirm that the submission meets regulatory requirements or that work is effectively coordinated within regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>No, when conducted solely to determine conformance with regulatory or legal requirements. Technical reviews of engineering or geoscience work that involve application of engineering/geoscience judgment would be subject to the requirements of these guidelines.</li> <li>A regulatory review conducted by a Regulatory Authority is primarily intended for coordinating regulatory requirements; regulatory review requirements are outside the scope of these guidelines</li> <li>Note, however, that external Peer Reviews requested by Regulatory Authorities are considered Peer Reviews, because the Regulatory Authority is considered the Requesting Party</li> </ul>
Second opinion (see <a href="#">Section 3.1.4</a> )	Formal	<ul style="list-style-type: none"> <li>A process where a second professional is retained to independently assess the same information or complete the same tasks as the Originating Professional</li> </ul>	<ul style="list-style-type: none"> <li>Provide an entirely independently developed outcome or solution that can be compared to the results obtained by the Originating Professional</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>A second opinion involves a second Engineering/Geoscience Professional completing the same work as the Originating Professional, and does not involve reviewing the Originating Professional's work</li> </ul>
Practice Reviews or audits (see <a href="#">Section 3.1.5</a> )	Formal	<ul style="list-style-type: none"> <li>A detailed review initiated as the result of identified professional or ethical issues or risks (for Practice Reviews); or in a proactive manner to assess compliance with regulatory requirements (for compliance audits)</li> </ul>	<ul style="list-style-type: none"> <li>Assess competence or professional or ethical responsibility or compliance</li> </ul>	<ul style="list-style-type: none"> <li>No</li> <li>The considerations in these guidelines generally do not apply to Practice Reviews and audits</li> <li>Refer to the <i>Guide to the Practice Review Program for Individual Registrants</i> (Engineers and Geoscientists BC 2021a) for additional information</li> </ul>
Expert Opinion (see <a href="#">Section 3.1.6</a> )	Formal	<ul style="list-style-type: none"> <li>A legal assessment initiated as the result of an engineering failure, ethical issue, or discipline case</li> </ul>	<ul style="list-style-type: none"> <li>Assess legal, professional, or ethical responsibility</li> </ul>	<ul style="list-style-type: none"> <li>Possibly</li> <li>May contain components of Peer Review</li> <li>The considerations in these guidelines may not all apply to Expert Opinions</li> <li>Expert Opinions often have specific boundaries outlined by legal requirements, such as those discussed in the <i>Professional Practice Guidelines – Expert Witness</i> (Engineers and Geoscientists BC 2016).</li> </ul>

**NOTE:**

<sup>a</sup> Intent(s) of reviews are to be determined with the Requesting Party.

### 3.3 ESTABLISHING THE SCOPE OF PEER REVIEW

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The scope of a Peer Review is highly dependent on the intent of the Peer Review and the Requesting Party's requirements for the deliverables.

#### 3.3.1 DEFINING THE SCOPE AND LEVEL OF DETAIL

The Requesting Party should determine the required scope of the Peer Review and the level of detail, in communication with the Reviewing Professional. A contract or agreement should be made between the Reviewing Professional and the client (who is usually, but not always, the Requesting Party) that details the scope of the review.

The following list of possible scope requirements may be used to guide the Peer Review; this list is not intended to be all-inclusive, and some items may not apply to all areas of practice.

- Review conceptual or high-level aspects of the project while in the preliminary stages
- Review potential or anticipated impacts of the work and/or identified risks, hazards, and consequences
- Review objectives, criteria, problem formulation, constraints, and performance requirements
- Review the proper application of regulations, codes, standards, bylaws, and other enactments
- Review data collection methods, processes, and outcomes (or representative samples)
- Review input data for completeness, accuracy, reliability (or representative samples)
- Examine representative samples of data, calculations, estimates, and assumptions for thoroughness, detail, and consistency
- Review inputs intended for use in analysis, software, and/or calculations (or representative samples)

- Review technical methods, processes, tools, calculations, and/or software applications (or representative samples)
- Review decisions, assessments, evaluations, conclusions, assumptions, opinions, judgments, and/or omissions, and associated Documentation
- Review potential data gaps and associated Documentation
- Review drawings, details, reports, designs, and/or associated Documentation (or representative samples)
- Review outcomes, deliverables, or results with respect to documented objectives, and review the adequacy of supporting information
- Review the substantial completeness of Documentation, based on the documented objectives

The Requesting Party may add items or details as required. Peer Reviews can take place at various stages of a project; the stage of the project and timing of the Peer Review will determine the available level of detail, as well as the level of effort required of the Reviewing Professional.

Note that a Peer Review is not intended to be an audit of quality management processes, nor should the Reviewing Professional be concerned with grammar, communication style, marketing materials, business practices, or business or financial decisions, except as they relate to professional practice.

#### 3.3.2 DETERMINING FORMALITY

Peer Reviews can vary in formality; typically, Peer Reviews conducted in-house are relatively informal, and those conducted by external firms are more formal.

- **Informal Peer Reviews:** The Reviewing Professional and Originating Professional may not always maintain independence; consequently, informal reviews may involve more frequent and informal communication between these parties. During informal reviews, the Reviewing Professional should rely on professional judgment to determine the work to be reviewed.

- **Formal Peer Reviews:** The independence between the Reviewing Professional and the Originating Professional must be maintained and documented, and Registrants' duties to avoid conflicts of interest are more likely to be relevant.

Any communications between the Reviewing Professional and Originating Professional should be documented, and the Requesting Party should be provided with copies, as applicable. Different types of formal Peer Review will have particular rules and process requirements. For example, in legal settings, communications between the Reviewing Professional and Originating Professional may be prohibited. Formal regulatory reviews may have strict requirements set out by Regulatory Authorities or industry associations (see [Section 3.1.3](#)).

All levels of Peer Reviews should have documented scope requirements, documented processes, and documented outcomes; however, informal Peer Reviews may have simplified Documentation for these components.

Respectful professional conduct is always required throughout any type of Peer Review (see [Section 3.6.1](#)). Engineers and Geoscientists BC also publishes practice advisories related to professional conduct and relying on the work of others, which may be beneficial in the development of Peer Review deliverables.

### 3.3.3 IDENTIFYING THE AUDIENCE

While establishing the scope of a Peer Review, the Requesting Party and Reviewing Professional should define which parties will ultimately have access to the Peer Review deliverables, which in turn determines who will be the audience of the Peer Review deliverables.

In most cases, it is the Originating Professional and the quality of the work in question that would benefit from the findings of the Peer Review. In some cases, the Regulatory Authority or Authority Having Jurisdiction may benefit from being provided with the findings in the Peer Review.

Many cases where Peer Review is legislated will have specific requirements for who receives the Peer Review deliverables; however, in some cases, the Requesting Party and the Reviewing Professional will determine the audience of the Peer Review deliverables.

Engineering/Geoscience Professionals should keep in mind their duty to report, as well as other principles of the Code of Ethics that apply to Peer Review (see [Section 3.6.3 Duty to Report](#)).

## 3.4 CONDUCT DURING PEER REVIEW

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### 3.4.1 MANAGING CLIENT EXPECTATIONS

In accordance with the Code of Ethics, Engineering/Geoscience Professionals should conduct themselves with fairness, courtesy, and good faith towards all parties involved in Peer Reviews.

The Reviewing Professional should develop a contract or agreement with the Requesting Party, when a Peer Review is required.

Defining the scope of a Peer Review is a key component of managing client expectations (see [Section 3.3](#)). Determining the scope should be a collaborative process between the Requesting Party and the Reviewing Professional.

Contracts or agreements between the Reviewing Professional and the client (which may or may not be the Requesting Party) should address:

- the type of Peer Review required;
- the scope of the Peer Review;
- the information or Documentation required to carry out the requested level of review (and considerations regarding the availability of this information);
- communication methods and processes;
- the expected format of deliverables or reports;
- fees for reviewing services;
- the anticipated schedule for deliverables;

- considerations for change management during the Peer Review;
- existing or potential conflicts of interest;
- considerations for confidentiality, privacy, and intellectual property; and
- considerations for discussing the findings of the Peer Review with the Originating Professional, if it is deemed necessary.

### 3.4.2 COMMUNICATIONS AND RECORDKEEPING

Communications about Peer Reviews between the Reviewing Professional, the Originating Professional, the Requesting Party, and the client/owner must be documented in writing, whenever feasible, and when important decisions are made.

The scope definition should address what is considered acceptable communication processes between the Reviewing Professional, Originating Professional, and Requesting Party (including frequency, timing, deliverables, and methods). The contract should also address how the Reviewing Professional can obtain existing project information that informs the Peer Review, whether directly from the Originating Professional or from the client or Requesting Party.

The Reviewing Professional should obtain approval from the Requesting Party to communicate directly with the Originating Professional. The Reviewing Professional should, where practicable and permitted by the governing rules or processes, contact the Originating Professional, both as a professional courtesy and to facilitate the exchange of pertinent information for the Peer Review. As previously noted, legal proceedings impose specific restrictions that may prohibit communication between the Reviewing Professional and the Originating Professional. Professional Registrants should obtain their own independent legal advice on these restrictions.

Any follow-up communication between the Reviewing Professional and the Originating Professional after Peer Review deliverables are submitted must also be documented. The Reviewing Professional and Originating Professional may also choose to

(or be retained to) issue addenda to the original reports or deliverables.

In accordance with the *Quality Management Guides – Guide to the Standard for Retention of Project Documentation*, Documentation produced during the Peer Review (including input Documentation provided by the Originating Professional) should be retained for a minimum of 10 years after the Peer Review is completed (Engineers and Geoscientists BC 2021g) or after the Documentation is last used, whichever is later.

Furthermore, if a party involved in the Peer Review requires a nondisclosure agreement (or similar contractual agreement), the agreement must allow the Reviewing Professional to retain input Documents related to the Peer Review, and Documentation generated throughout the review, including decisions and communications. See the *Practice Advisory – Contractual Provisions Regarding Retention and Disclosure of Project Documentation* (Engineers and Geoscientists BC 2021h), and the Bylaws, Section 7.8.

### 3.4.3 PROTECTING CONFIDENTIALITY AND INTELLECTUAL PROPERTY

Peer Reviews can elicit concerns about confidentiality, intellectual property, and proprietary processes, designs, or methods. Peer Reviews are an important component of professional practice and quality management. The Originating Professional should be aware of the potential for Peer Review on any project and, as such, should be prepared to respond to requests for information pertaining to Peer Reviews.

Where confidentiality concerns exist, the Originating Professional may request a nondisclosure agreement, or a similar arrangement, with the Reviewing Professional; this may require discussion with legal counsel.

The Reviewing Professional should request only information required within the scope of Peer Review, as defined by the Requesting Party. Depending on the terms of the contract, information may be requested directly from either the Originating Professional or from the client or Requesting Party.

Contractual obligations may not override requests for information for a Peer Review. Contractual obligations also must not override legal requirements, such as the duty to report (see [Section 3.6.3](#)). Section 7.8 of the Bylaws prohibits Registrants from entering into contracts that would result in or require the breach of a duty under the *Act*, associated regulations, or the Bylaws. A Registrant should seek legal advice if they believe a contractual provision may conflict with their duty to report, obligation to preserve complete project Documentation, or Section 7.8 of the Bylaws.

Confidentiality considerations may prohibit the Originating Professional from providing all the requested information to the Reviewing Professional. In this case, the Reviewing Professional should discuss the matter with the Requesting Party, and should consider one or a combination of the following options:

- Pursue additional information to proceed with the Peer Review
- Revise or reduce the scope of the Peer Review with the Requesting Party
- Proceed with the Peer Review to the extent possible with the information available, and document which information was made available for review and which information was not
- Decline to proceed with the Peer Review

If the missing information prevents the Peer Review from going forward, this should be documented and communicated back to the Requesting Party, and the Peer Review should not be carried out. If proprietary information is of particular concern on a project, parties should seek a Reviewing Professional who does not stand to benefit from the knowledge obtained during a Peer Review, provided they are otherwise qualified to complete the Peer Review.

Note that not all the options listed above are available to the Reviewing Professional in all cases. For example, for a Peer Review ordered by the Discipline Committee, the Originating Professional must comply with requests for information; if the Originating Professional does not comply, the Peer Review should not be completed, and the Reviewing Professional should report the reason for discontinuing the Peer Review to the Discipline Committee.

The Reviewing Professional should understand which types of information obtained during the Peer Review must be kept confidential. This information should then be protected throughout the Peer Review and should not be used by the Reviewing Professional in any context other than the Peer Review. Unless otherwise approved and documented, it is best practice to consider all information (including in-person or digital communications) obtained during a Peer Review confidential.

Similarly, the Reviewing Professional should understand which parts of the Originating Professional's work is considered proprietary information or intellectual property. The Reviewing Professional should be aware of aspects of the work that help the Originating Professional gain competitive or market advantage. Following the Peer Review, the Reviewing Professional must not reproduce or reuse any similar work in the Reviewing Professional's own work or professional practice. A Registrant who uses information obtained from a Peer Review for their own gain may be subject to investigative and disciplinary proceedings by Engineers and Geoscientists BC that could result in a fine, suspension, or cancellation of their registration as a Registrant. Should a situation arise that appears to contravene this rule (i.e., the Reviewing Professional had a similar project underway at the time of the Peer Review), the Reviewing Professional should communicate this to the Originating Professional and the Requesting Party as soon as practicable to avoid a potential conflict of interest (refer to [Section 2.2.1 Reviewing Professional](#)). If this is of particular concern in a Peer Review, the Reviewing Professional should be



replaced by another who will not benefit from the knowledge obtained during a Peer Review.

As described in [Section 3.4.2 Communications and Recordkeeping](#), if a party involved in the Peer Review requires a nondisclosure agreement (or similar contractual agreement), the agreement must enable the Reviewing Professional to retain Documents received over the course of the Peer Review (including but not limited to Documents obtained from the Originating Professional that form the basis of the Peer Review), and Documentation generated throughout the Peer Review (such as communications and decisions) for the minimum 10 years, as required by Section 7.3.2 of the Bylaws. Registrants can find more information about Document retention in the *Quality Management Guides – Guide to the Standard for Retention of Project Documentation* (Engineers and Geoscientists BC 2021g).

### 3.5 PEER REVIEW DELIVERABLES

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Deliverables for a Peer Review may vary based on the type and purpose of the review. All Peer Review deliverables should be provided in writing and documented appropriately; for example, in the form of a completed checklist, marked-up drawings with cover sheet, technical memo, or formal report.

The Peer Review deliverables or Documentation should be addressed to, and subsequently delivered to, the parties for whom it was intended. The Originating Professional should receive copies of the Peer Review deliverables, where appropriate.

The Peer Review report should identify items that were within the scope of the Peer Review, per the original contract; a statement of limitations may be included to communicate the boundaries of the work carried out by the Reviewing Professional and address the potential impacts of the opinions contained in the report.

The Reviewing Professional should logically present the findings of the Peer Review and provide supporting rationale for the findings. Importantly, the Reviewing

Professional must clearly state which findings are being presented as opinion, assumptions, or facts throughout the Peer Review Documentation. While opinions and assumptions may be included in Peer Review deliverables, the Reviewing Professional should carefully avoid presenting them as facts. The Peer Review report should include the Reviewing Professional's conclusions, stating whether further investigation or review is warranted.

The Reviewing Professional must Authenticate the Peer Review deliverables, if the information will be relied on by others and contains engineering and/or geoscience content or judgment. As discussed in [Section 2.2.1](#), the Reviewing Professional takes professional responsibility for the contents of the Peer Review deliverables, not for the actual work undergoing review.

### 3.6 PEER REVIEW CLOSEOUT

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The Requesting Party usually provides the Originating Professional with a copy of the Peer Review report. If so, the Originating Professional should view this information as a benefit to their professional practice, and consider using the Reviewing Professional's findings and conclusions to revise the work in question or inform future professional decisions.

#### 3.6.1 CONSIDERING THE FINDINGS OF THE PEER REVIEW

Originating Professionals should consider the findings of the Peer Review deliverables and adequately resolve the concerns, and must document which actions were taken and which were not, including the rationale for those decisions. The best practice is for the Originating Professional and the Reviewing Professional to openly discuss and resolve concerns resulting from the Peer Review.

In some cases, there is a fundamental difference of professional opinion between the Originating Professional and the Reviewing Professional. If the differences cannot be resolved to the satisfaction of

both parties, the Originating Professional may ask the Requesting Party whether a second Peer Review is required. Sometimes, a second Peer Review can be conducted on select portions of the work in question, in which case the second Reviewing Professional should be informed of the first Reviewing Professional's opinion of that portion before undertaking the review. See also the quality management guides titled, *Guide to the Standard for Documented Independent Review of Structural Designs* and *Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021b, 2021c).

If the Originating Professional disagrees with the findings of the Reviewing Professional, all parties should follow the procedure laid out by the Requesting Party at the onset of the Peer Review as to how to address this situation (refer to [Section 2.2.3 Requesting Party](#)).

Based on the results of the Peer Review, the Originating Professional may choose to revise designs or reissue reports; however, the Originating Professional still retains full responsibility for the work as defined in the original agreement or contract.

### **3.6.2 MAINTAINING RESPECTFUL PROFESSIONAL CONDUCT DURING REVIEWS**

The Code of Ethics states that Engineering/Geoscience Professionals should conduct themselves with fairness, courtesy, and good faith towards others, and accept, as well as give, honest and fair professional comment.

Accordingly, the Reviewing Professional should not include unprofessional commentary, malicious or disparaging language, or misleading statements in the Peer Review deliverables.

Throughout the Peer Review, the Reviewing Professional should consider how the Peer Review will impact the Originating Professional. The Reviewing Professional should provide an objective professional opinion that focuses solely on the Originating Professional's work and outcomes, rather than competence. Poorly worded

findings can harm the reputation of the Originating Professional. Inappropriate findings about the competence of the Originating Professional or comments unrelated to the substance of the Peer Review can harm the reputation of the Reviewing Professional.

Reviewing Professionals should avoid soliciting further work from the Requesting Party, or from the Originating Professional's client, while the Peer Review is underway. Exceptions to this may be if the professional arrangement between the Originating Professional and client has ended, or if an earlier professional arrangement was made prior to the start of the Peer Review. To avoid potential conflicts of interest, and to follow best practices, the Reviewing Professional should not accept offers to work on the project undergoing Peer Review. (See also [Section 3.4.3 Protecting Confidentiality and Intellectual Property](#).)

### **3.6.3 DUTY TO REPORT**

Section 58 of the *Act* and principle 9 of the Code of Ethics establish a duty to report that applies to all Registrants. Registrants must report to Engineers and Geoscientists BC and other applicable authorities if they, on reasonable and probable grounds, believe that:

1. the continued practice of a Regulated Practice by another Registrant or other person, including firms or employers, might pose a risk of significant harm to the environment or to the health or safety of the public or a group of people; or
2. a Registrant or another individual has made decisions or engaged in practices which may be illegal or unethical.

All Engineering/Geoscience Professionals must be aware of the duty to report when conducting Peer Reviews or when undergoing Peer Review. It should be noted that the duty to report applies to all Engineering/Geoscience Professionals, whether their role in the Peer Review is that of the Originating Professional, the Reviewing Professional, the Requesting Party, or another role.

As noted previously, if there is a fundamental difference of professional opinion between the Originating Professional and the Reviewing Professional, they should first try to understand each other's position. If the differences cannot be resolved to the satisfaction of both parties, a second Peer Review may be conducted, possibly on only select portions of the work in question. If so, the second Reviewing Professional should be informed of the first Reviewing Professional's opinion.

An Engineering/Geoscience Professional's duty to report may be activated during Peer Review when:

- the fundamental difference in opinion is such that the Engineering/Geoscience Professional believes there is significant risk to the environment, the public, or a group of people if no action is taken, or the Engineering/Geoscience Professional is aware of an individual who has made decisions or engaged in practices which may be illegal or unethical;
- the concern has been brought to the attention of the Engineering/Geoscience Professional who is responsible for the work being reviewed; and
- the Engineering/Geoscience Professional does not agree with the concern and is not open to obtaining a second Peer Review.

Note that reports cannot be made anonymously; all reports to Engineers and Geoscientists BC are treated as complaints. Additional information about duty to report and filing complaints can be found on the Engineers and Geoscientists BC website at [egbc.ca/Complaints-Discipline/Complaints-Discipline/Duty-to-Report](http://egbc.ca/Complaints-Discipline/Complaints-Discipline/Duty-to-Report). Registrants must discern who to inform; some situations may require reporting to another appropriate authority. Due to diversity of engineering and geoscience practices, these guidelines cannot list all potential appropriate authorities, and

Registrants should use their familiarity with their field of practice to identify appropriate authorities to whom their duties to report may apply.

The duty to report in section 58 of the *Professional Governance Act* obliges Registrants to report "even if the information on which the belief is based is confidential and its disclosure is prohibited under another Act". Reviewing Professionals must be aware of their obligations under the Code of Ethics, and may consider seeking independent legal advice.

Additional information on duty to report can be found in the *Guide to the Code of Ethics* (Engineers and Geoscientists BC 2021f).

### 3.7 CONSIDERATION OF RISK

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The Professional of Record has a professional responsibility to uphold the principles outlined in the Engineers and Geoscientists BC Code of Ethics, including protection of public safety and the environment. With respect to the Peer Review itself and any deliverables arising from the Peer Review, the Reviewing Professional is the Professional of Record.

The Reviewing Professional must therefore use a documented approach to identify, assess, and mitigate risks that may impact public safety or the environment when providing professional services, including Peer Reviews.

Other areas of risk encountered in professional practice are quality, technical, financial, and commercial risks. Engineering/Geoscience Professionals should consider risks in such areas using techniques that are appropriate to their area of practice.

# 4.0 QUALITY MANAGEMENT IN PROFESSIONAL PRACTICE

## 4.1 ENGINEERS AND GEOSCIENTISTS BC QUALITY MANAGEMENT REQUIREMENTS

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Engineering/Geoscience Professionals must adhere to applicable quality management requirements during all phases of the work, in accordance with the Engineers and Geoscientists BC Bylaws and quality management standards.

To meet the intent of the quality management requirements, Engineering/Geoscience Professionals must establish and maintain documented quality management processes for the following activities:

- Use of relevant professional practice guidelines
- Authentication of professional Documents by application of the professional seal
- Direct supervision of delegated professional engineering or professional geoscience activities
- Retention of complete project Documentation
- Regular, documented Checks using a written quality control process
- Documented field reviews of engineering or geoscience designs and/or recommendations during implementation or construction
- Where applicable, documented independent review of structural designs prior to construction
- Where applicable, documented independent review of high-risk professional activities or work prior to implementation or construction

Engineering/Geoscience Professionals employed by a Registrant Firm are required to follow the quality management policies and procedures implemented by the Registrant Firm, as per the Engineers and Geoscientists BC's permit to practice program.

### 4.1.1 USE OF PROFESSIONAL PRACTICE GUIDELINES

Engineering/Geoscience Professionals are required to comply with the intent of any applicable professional practice guidelines related to the engineering or geoscience work they undertake. As such, Engineering/Geoscience Professionals must implement and follow documented procedures to ensure they stay informed of, knowledgeable about, and meet the intent of professional practice guidelines that are relevant to their professional activities or services. These procedures should include periodic checks of the Engineers and Geoscientists BC website to ensure that the latest version of available guidance is being used.

For more information, refer to the *Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines* (Engineers and Geoscientists BC 2021e), which also contains guidance for how an Engineering/Geoscience Professional can appropriately depart from the guidance provided in professional practice guidelines.

#### 4.1.2 AUTHENTICATING DOCUMENTS

Engineering/Geoscience Professionals are required to Authenticate (seal with signature and date) all Documents, including electronic files, that they prepare or deliver in their professional capacity to others who will rely on the information contained in them. This applies to Documents that Engineering/Geoscience Professionals have personally prepared and those that others have prepared under their direct supervision. In addition, any Document that is Authenticated by an individual Engineering/Geoscience Professional must also have a permit to practice number visibly applied to the Document. A permit to practice number is the unique number that a Registrant Firm receives when it obtains a permit to practice from Engineers and Geoscientists BC.

Failure to appropriately Authenticate and apply the permit to practice number to Documents is a breach of the Bylaws. Authenticated Documents lacking a permit to practice number do not meet the requirements of the Bylaws, Section 7.3.7(14) and may be rejected by the receiving party.

Peer Reviews containing engineering or geoscience interpretation or judgment that will be relied upon by others similarly must be Authenticated by the Reviewing Professional and bear the permit to practice number of the Reviewing Professional's Registrant Firm.

For more information, refer to the *Quality Management Guides – Guide to the Standard for the Authentication of Documents* (Engineers and Geoscientists BC 2021i).

#### 4.1.3 DIRECT SUPERVISION

Engineering/Geoscience Professionals are required to directly supervise any engineering or geoscience work they delegate. When working under the direct supervision of an Engineering/Geoscience Professional, an individual may assist in performing engineering or geoscience work, but they may not assume responsibility for it. Engineering/Geoscience Professionals who are professional licensees engineering or professional licensees geoscience may only directly supervise work within the scope of their license.

When determining which aspects of the work may be appropriately delegated using the principle of direct supervision, the Engineering/Geoscience Professional having ultimate responsibility for that work should consider:

- the complexity of the project and the nature of the risks associated with the work;
- the training and experience of individuals to whom the work is delegated; and
- the amount of instruction, supervision, and review required.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Direct Supervision* (Engineers and Geoscientists BC 2021j).

#### 4.1.4 RETENTION OF PROJECT DOCUMENTATION

Engineering/Geoscience Professionals are required to establish and maintain documented quality management processes to retain complete project Documentation for a minimum of ten (10) years after the completion of a project or ten (10) years after an engineering or geoscience Document is no longer in use.

These obligations apply to Engineering/Geoscience Professionals in all sectors. Project Documentation in this context includes Documentation related to any ongoing engineering or geoscience work, which may not have a discrete start and end, and may occur in any sector.

Many Engineering/Geoscience Professionals are employed by firms, which ultimately own the project Documentation. Engineering/Geoscience Professionals are considered compliant with this quality management requirement when reasonable steps are taken to confirm that (1) a complete set of project Documentation is retained by the organizations that employ them, using means and methods consistent with the Engineers and Geoscientists BC Bylaws and quality management standards; and (2) they consistently adhere to the documented policies and procedures of their organizations while employed there.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Retention of Project Documentation* (Engineers and Geoscientists BC 2021g).

#### **4.1.5 DOCUMENTED CHECKS OF ENGINEERING AND GEOSCIENCE WORK**

Engineering/Geoscience Professionals are required to perform a documented quality Checking process of engineering and geoscience work, appropriate to the risk associated with that work. All Engineering/Geoscience Professionals must meet this quality management requirement; Peer Reviews must also be Checked as part of this quality management requirement.

The Checking process should be comprehensive and address all stages of the execution of the engineering or geoscience work. This process would normally involve an internal Check by another Engineering/Geoscience Professional within the same organization. Where an appropriate internal checker is not available, an external checker (i.e., one outside the organization) must be engaged. In some instances, self-Checking may be appropriate. Where internal, external, or self-Checking has been carried out, the details of the Check must be documented. The documented quality Checking process must include Checks of all professional deliverables before being finalized and delivered.

Engineering/Geoscience Professionals are responsible for ensuring that the Checks being performed are appropriate to the level of risk associated with the item being Checked. Considerations for the level of Checking should include:

- the type of item being Checked;
- the complexity of the subject matter and underlying conditions related to the item;
- the quality and reliability of associated background information, field data, and elements at risk; and
- the Engineering/Geoscience Professional’s training and experience.

As determined by the Engineering/Geoscience Professional, the individual doing the Checking must have current expertise in the discipline of the type of work being Checked, be sufficiently experienced and have the required knowledge to identify the elements to be Checked, be objective and diligent in recording observations, and understand the Checking process and input requirements.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work* (Engineers and Geoscientists BC 2021d).

#### **4.1.6 DOCUMENTED FIELD REVIEWS DURING IMPLEMENTATION OR CONSTRUCTION**

Field reviews are reviews conducted at the site of the construction or implementation of the engineering or geoscience work. They are carried out by an Engineering/Geoscience Professional or a subordinate acting under the Engineering/Geoscience Professional’s direct supervision (see [Section 4.1.3 Direct Supervision](#)).

Field reviews enable the Engineering/Geoscience Professional to ascertain whether the construction or implementation of the work substantially complies in all material respects with the engineering or geoscience concepts or intent reflected in the engineering or geoscience Documents prepared for the work.

Field reviews may or may not apply to the Peer Review in question, but this should be determined on a case-by-case basis. In some situations, it may be necessary for a field review to undergo Peer Review.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Field Reviews During Implementation or Construction* (Engineers and Geoscientists BC 2021k).

#### 4.1.7 DOCUMENTED INDEPENDENT REVIEW OF STRUCTURAL DESIGNS

Engineering Professionals developing structural designs are required to engage an Independent Review of their structural designs. An Independent Review is a documented evaluation of the structural design concept, details, and Documentation based on a qualitative examination of the substantially complete structural design Documents, which occurs before those Documents are issued for construction or implementation. It is carried out by an experienced Engineering Professional qualified to practice structural engineering, who has not been involved in preparing the design.

The Professional of Record must conduct a risk assessment after conceptual design and before detailed design to (1) determine the appropriate frequency of the Independent Review(s); and (2) determine if it is appropriate for the independent reviewer to be employed by the same firm as the Professional of Record, or if the independent reviewer should be employed by a different firm.

The risk assessment may determine that staged reviews are appropriate; however, the final Independent Review must be completed after Checking has been completed and before the Documents are issued for construction or implementation. Construction must not proceed on any portion of the structure until an Independent Review of that portion has been completed.

As noted in [Section 3.1.2 Peer Review versus Independent Review](#), Independent Review is a special subset of Peer Review for which there are specific standards and guidance.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Independent Review of Structural Designs* (Engineers and Geoscientists BC 2021b).

#### 4.1.8 DOCUMENTED INDEPENDENT REVIEW OF HIGH-RISK PROFESSIONAL ACTIVITIES OR WORK

Engineering/Geoscience Professionals must perform a documented risk assessment prior to initiation of a professional activity or work, to determine if that activity or work is high risk and requires a documented Independent Review.

If the activities or work are deemed high risk, and an Independent Review is required, the results of the risk assessment must be used to (1) determine the appropriate frequency of the Independent Review(s); and (2) determine if it is appropriate for the independent reviewer to be employed by the same firm as the Professional of Record, or if the independent reviewer should be employed by a different firm.

The documented Independent Review of high-risk professional activities or work must be carried out by an Engineering/Geoscience Professional with appropriate experience in the type and scale of the activity or work being reviewed, who has not been involved in preparing the design.

The documented Independent Review must occur prior to implementation or construction; that is, before the professional activity or work is submitted to those who will be relying on it.

As noted in [Section 3.1.2 Peer Review versus Independent Review](#), Independent Review is a special subset of Peer Review for which there are specific standards and guidance.

For more information, refer to the *Quality Management Guides – Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work* (Engineers and Geoscientists BC 2021c).

## 4.2 OTHER QUALITY MANAGEMENT REQUIREMENTS

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Engineering/Geoscience Professionals must also be aware of any additional quality management requirements from other sources that are relevant to their work, which may include but are not limited to:

- legislation and regulations at the local, regional, provincial, and federal levels;
- policies of Regulatory Authorities at the local, regional, provincial, and federal levels;
- agreements and service contracts between clients and Engineering/Geoscience Professionals or their firms; and/or
- standards for engineering or geoscience firms, particularly those that apply to quality management system certification; for example, the ISO 9000 family.

Engineering/Geoscience Professionals should assess any areas of overlap between the Engineers and Geoscientists BC quality management requirements and the requirements of other applicable sources. If the requirements of different sources overlap, Engineering/Geoscience Professionals should attempt to meet the complete intent of all requirements.

Where there are conflicts between requirements, Engineering/Geoscience Professionals should negotiate changes or waivers to any contractual or organizational requirements which may conflict with requirements of any legislation or regulation, the Bylaws, or the Engineers and Geoscientists BC Code of Ethics.

Generally, no contractual obligation or organizational policy that may apply to an Engineering/Geoscience Professional will provide justification or excuse for breach of any of the Engineering/Geoscience Professional's obligations under any legislation or regulation, the Bylaws, or the Engineers and Geoscientists BC Code of Ethics.

Where such conflicts arise and cannot be resolved, Engineering/Geoscience Professionals should consider seeking legal advice from their own legal advisers on their legal rights and obligations in the circumstances of the conflict. They may also seek practice advice from Engineering and Geoscientists BC on any related ethical dilemma that they may face in the circumstances.

## 4.3 PRACTICE ADVICE

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Engineers and Geoscientists BC provides their Registrants and others with assistance addressing inquiries related to professional practice and ethics.

Practice advisors at Engineers and Geoscientists BC can answer questions regarding the intent or application of the professional practice or quality management aspects of these guidelines.

To contact a practice advisor, email Engineers and Geoscientists BC at [practiceadvisor@egbc.ca](mailto:practiceadvisor@egbc.ca).



# 5.0 PROFESSIONAL REGISTRATION & EDUCATION, TRAINING, AND EXPERIENCE

## 5.1 PROFESSIONAL REGISTRATION

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Engineering/Geoscience Professionals have met minimum education, experience, and character requirements for admission to their professions. However, the educational and experience requirements for professional registration do not necessarily constitute an appropriate combination of education and experience for Peer Reviews. Professional registration alone does not automatically qualify an Engineering/Geoscience Professional to take professional responsibility for all types and levels of professional services in this area of practice.

## 5.2 EDUCATION, TRAINING, AND EXPERIENCE

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Peer Review, as described in these guidelines, requires minimum levels of education, training, and experience in many overlapping areas of engineering and geoscience.

Engineering/Geoscience Professionals who take responsibility for Peer Reviews must adhere to the second principle of the Engineers and Geoscientists BC Code of Ethics, which is to “practice only in those

fields where training and ability make the registrant professionally competent” and, therefore, must evaluate their own qualifications and must possess the appropriate education, training, and experience to provide the services.

The Reviewing Professional must be a Professional Registrant with Engineers and Geoscientists BC in order to be able to take professional responsibility for the Peer Review deliverables. The Reviewing Professional must be competent with similar work of equivalent risk and complexity and have current knowledge of industry standards of practice.

The level of education, training, and experience required of Engineering/Geoscience Professionals should be adequate for the complexity and risk of the project. Reviewing Professionals should also consider whether they possess sufficient local or regional expertise, such as knowledge of specific regulatory requirements or environmental conditions, as applicable.

The Requesting Party may request evidence of the Reviewing Professional’s qualifications or competency, and the Reviewing Professional should be prepared to provide this information.

# 6.0 REFERENCES AND RELATED DOCUMENTS

Documents and legislation cited in these guidelines appear in [Section 6.1 Legislation and Regulations](#) and [Section 6.2 References](#).

Related documents that may be of interest to users of these guidelines but are not formally cited elsewhere in this document appear in [Section 6.3 Related Documents](#).

## 6.1 LEGISLATION AND REGULATIONS

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The following legislation and regulations are referenced in these guidelines:

Professional Governance Act [SBC 2018], Chapter 47.

Professional Governance Act, Engineers and Geoscientists Regulation [B.C. Reg. 14/2021].

## 6.2 REFERENCES

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The following documents are referenced in these guidelines:

Engineers and Geoscientists BC 2021a. Guide to the Practice Review Program for Individual Registrants. Version 1.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Practice-Review>.

Engineers and Geoscientists BC. 2021b. Quality Management Guides – Guide to the Standard for Documented Independent Review of Structural Designs. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021c. Quality Management Guides – Guide to the Standard for Documented Independent Review of High-Risk Professional Activities or Work. Version 1.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021d. Quality Management Guides – Guide to the Standard for Documented Checks of Engineering and Geoscience Work. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021e. Quality Management Guides – Guide to the Standard for the Use of Professional Practice Guidelines. Version 1.1. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021f. Guide to the Code of Ethics. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Complaints-Discipline/Code-of-Ethics/Code-of-Ethics>.

Engineers and Geoscientists BC. 2021g. Quality Management Guides – Guide to the Standard for Retention of Project Documentation. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021h. Practice Advisory – Contractual Provisions Regarding Retention and Disclosure of Project Documentation. Version 1.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 29]. <https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories>.

Engineers and Geoscientists BC. 2021i. Quality Management Guides – Guide to the Standard for the Authentication of Documents. Version 3.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021j. Quality Management Guides – Guide to the Standard for Direct Supervision. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2021k. Quality Management Guides – Guide to the Standard for Documented Field Reviews During Implementation or Construction. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/Practice-Resources/Individual-Practice/Quality-Management-Guides>.

Engineers and Geoscientists BC. 2016. Professional Practice Guidelines – Expert Witness. Version 1.1. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 23]. <https://www.egbc.ca/app/Practice-Resources/Individual-Practice/Guidelines-Advisories>.

Professional Engineers Ontario (PEO). 2011. Guideline: Professional Engineers Reviewing Work Prepared by Another Professional Engineer. Toronto, ON: PEO. [accessed: 2022 Mar 23]. <https://www.peo.on.ca/knowledge-centre/practice-advice-resources-and-guidelines/practice-guidelines>.

## 6.3 RELATED DOCUMENTS

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The following resources provide general information:

Engineers and Geoscientists BC. 2021. Regulation of Firms Permit to Practice Manual. Version 1.1. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 24]. <https://www.egbc.ca/Practice-Resources/Firm-Practice/Firm-Practice>.

Engineers and Geoscientists BC. 2021. Guide to the Continuing Education Program. Version 2.0. Burnaby, BC: Engineers and Geoscientists BC. [accessed: 2022 Mar 31]. <https://www.egbc.ca/Continuing-Education/Continuing-Education/Program-Overview>.









